

CRANFIELD UNIVERSITY

JOSE MENDOZA

TOWARDS THE FORMATION AND MEASUREMENT OF ETHNIC
PRICE PERCEPTION

School of Management
DBA Thesis

DOCTOR OF BUSINESS ADMINISTRATION
Academic Year: 2009 - 2016

Supervisor: Professor Paul Baines
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This thesis is submitted in partial fulfillment of the requirements for
the degree of Doctor of Business Administration

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ABSTRACT

This research is the outcome of a preeminent interest in the topic of price perception. Pointedly, the perception of prices is part of the purchasing process, the same willingness to pay and the actual purchase behaviour, and is indubitably a perceptual construct. As such, perception is problematic to measure as it does not relate to an observable behaviour. On the other hand, pricing is regarded as an important variable in the marketing mix. This research contributes to theory by augmenting the current knowledge on the perception of prices including the methods used in the measurement of such perception. Moreover, this research addresses a gap in the understanding of how diverse ethnic groups perceive prices. The relationship set in this study between ethnicity and price perception is thought-provoking as it contributes to the current discussion around diversity in the marketplace. For example, the literature shows advances in areas such as multicultural and ethnic marketing and this research makes a significant contribution to these areas from price perception. Accordingly, this study involved a systematic review of the literature and presented a framework that suggested that the formation of price perception is affected by external factors such as culture and ethnicity. Furthermore, a qualitative study examined the formation of price perception around ethnic groups. Next, this research used a quantitative study that sought differences in price perception among ethnic groups. Thus, the quantitative study used a price perception scale (Lichtenstein et al., 1993) and a choice-based conjoint analysis. Also, the study adopted structural equation modelling (SEM) to measure differences among scales and the multinomial logit model to analyse the choice-based conjoint analysis. The findings of both the quantitative and the qualitative studies link to the systematic review and support the framework for the formation and measurement of price perception originally proposed.

Keywords:

Ethnic pricing, price perception, cross-cultural pricing, repertory grids, choice-based conjoint analysis, structural equation modelling.

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LIST OF ABBREVIATIONS

CBC	Choice-Based Conjoint Analysis
CFA	Confirmatory Factor Analysis
DCE	Discrete Choice Experiments
EFA	Exploratory Factor Analysis
MANOVA	Multivariate Analysis of Variance
P1	Refers to the first project that was completed as a partial requirement to fulfil the requisites of the Doctor of Business Administration degree. This first project was related to a systematic review on the formation and measurement of consumer price perception.
P2	Refers to the second project, a qualitative study on the formation of consumer price perception among ethnic groups that used the repertory grid technique to identify key constructs in the formation of price perception.
RGT	Repertory Grid Technique
SEM	Structural Equation Modelling

TOWARDS THE FORMATION AND MEASUREMENT OF ETHNIC
PRICE PERCEPTION

LINKING DOCUMENT

1 Linking Document

1.1 Introduction

It is widely accepted that pricing is one of the most important variables of the marketing mix (Roy and Henry, 1995), and the majority of research on the long-term effect of marketing variables in brand performance is related to pricing (Ataman et al., 2010). Also, the study of pricing has evolved, adding the marketing perspective to the economic viewpoint. From an economic perspective, there is a tendency to position the buyers' responses to prices as a rational behaviour under conditions of *ceteris paribus*. Whereas the marketing perspective assumes different approaches explained by theoretical approaches¹ derived especially from social psychology (and other fields such as social anthropology) and, in particular, from the area of human perception (Varki and Colgate, 2001). Furthermore, in practice, pricing is used in marketing in conjunction with other variables of the marketing mix rather than in isolation, as suggested in the economic perspective (Skouras et al., 2005), therefore providing an argument for studying how consumers perceive prices.

Therefore, this positive association between how buyers respond to prices and price perception is interesting, as it provides academics and practitioners with a better understanding of the effect of pricing on brand performance. At the same time, determining how consumers perceive prices poses an exciting challenge, particularly when it comes to measuring such price perceptions.

The next section will present a personal statement that explains the background and rationale behind the interests in price perception, followed by an overview of the research projects.

¹ The theoretical approaches explaining the formation of price perception are summarised in Figure 1-3 (p. 24) and will be discussed in the systematic review (project 1).

1.2 Background and Rationale

The purpose of this study was to reconcile the different strands of literature surrounding consumer price perceptions and their formation and to survey existing measurement methods for identifying price perceptions. Although pricing in academic literature has been extensively covered, it is also a very dynamic construct. From the practitioner's perspective, pricing is a very powerful component of the marketing mix and often the most readily used. The evolution of the Internet and mobile technologies has allowed consumers to be more informed about the characteristics of product and services, but also about prices (e.g. witnessing the increasing proliferation of price comparison websites), thus creating constant challenges in maintaining product differentiation that is capable of supporting a particular price positioning.

The author is particularly interested in the topic of pricing, and especially in:

- Understanding how consumers perceive prices and how this can be used for developing pricing strategies that incorporate current market dynamics (e.g. the Internet, mobile technologies, social networking, and others).
- Enhancing comprehension around pricing constructs such as multicultural pricing, ethnic pricing, premium pricing, and international pricing, as these constructs take into account the heterogeneity of the consumer, and this is not well covered in the literature (according to the author's literature review). Although these concepts are not considered further in this project, premium pricing and the impact of consumer heterogeneity on pricing will be taken up in later projects.
- Applying the knowledge acquired in the formation and measurement of price perceptions for developing customer segmentation models based on pricing.

- Experimenting with the use of price-based segmentation models in the retail environment where the consumer's purchase intention is affected by contextual factors.² This experiment could bring a novel innovation, as the use of dynamic prices³ is nowadays restricted to the Internet but not the physical (retail) environment. However, the research around dynamic pricing in retail environments will be considered in further studies.
- Reconcile different strands of research on the topic of neuromarketing (i.e. neuropricing), big data and network theory. Thus, in order to develop practical applications of retail pricing, that incorporates the consumer's perceptual process (i.e. as reported in the field of neuromarketing), along with predictive analytics (i.e. big data), and network theory (i.e. the identification of pricing hubs, among a consumer set). Accordingly, the author has presented at conferences on the applications of neuromarketing and big data, for the setting of retail prices. Moreover, the author currently uses eye-tracking technology and choice-based conjoint analysis, in developing pricing experiments.

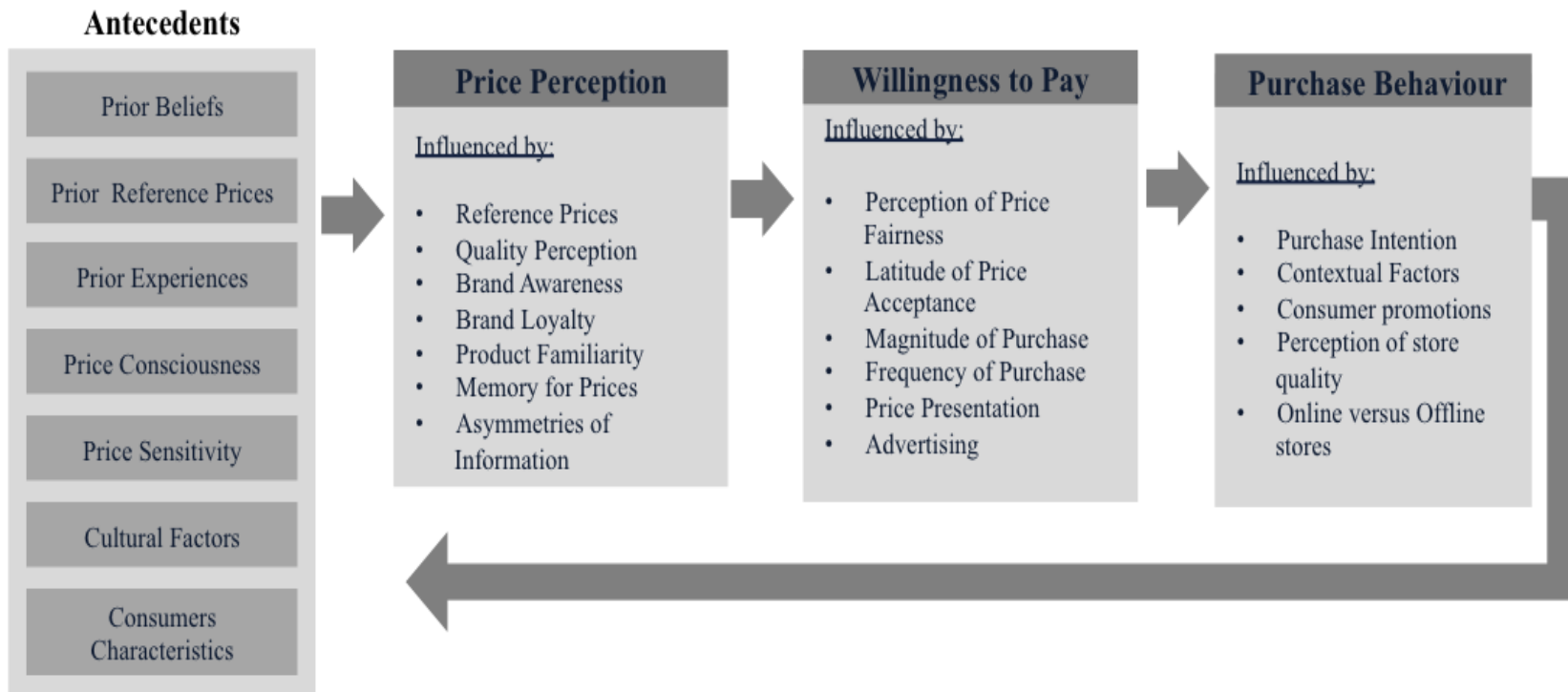
1.3 Summary of the Research Process

This study consisted of three related research projects. Firstly, a systematic review surveyed the literature on consumer price perception (explained in detail in section 2). As a result of the systematic review, a framework on the formation of price perception was produced (see Figure 1-1) and disseminated. The framework was presented at the ANZMAC conference in 2012, and it has been referenced in the literature (Mendoza and Baines, 2012).

² Contextual factors (stock-out situations, in-store promotions, price promotions, location and store format, among others) affect the perception of places when the purchase occasion takes place.

³ The author considers that prices in the retail sector can be dynamic (adjusted in real-time, in the store, based on the consumer's characteristics) with the use of different technologies (such as mobile, QR code scanning, retail beacons, biometrics, facial recognition, among others), and for that purpose, a thorough understanding of the price formation and price-based segmentation models is deemed appropriate.

Figure 1-1 Framework on the Formation of Price Perception



Next, an exploratory study (qualitative) investigated how consumers perceive prices based on their ethnic background (explained in detail in section 3). This study found key constructs that were elicited by ethnic group to explain differences in their assessment of prices for the same product category.

Finally, a third project resulted in a quantitative study that investigated the differences in consumer price perception by ethnic group and sought to understand such differences (explained in detail in section 4). This study found differences in price consciousness⁴, coupon proneness, and price-quality schema among the ethnic groups under study.⁵ Moreover, this study also validated that respondents value the constructs of Brand and Price, over other constructs, by the research literature shown in the systematic review.

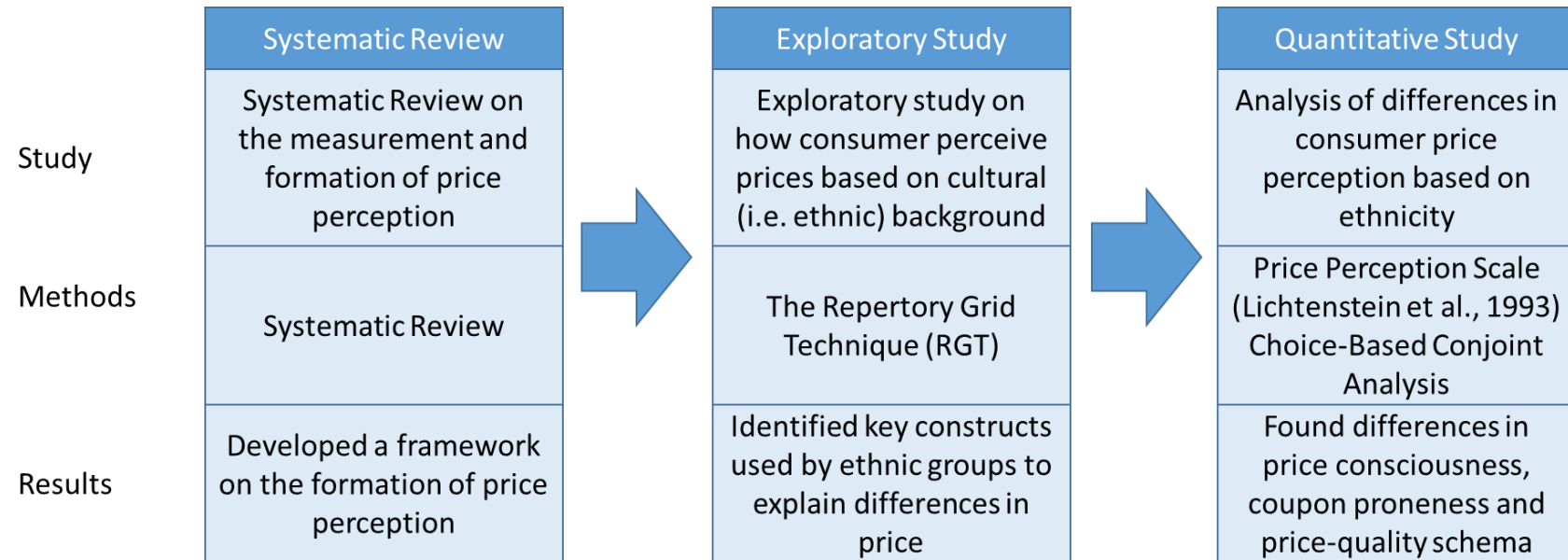
Figure 1-2 shows an overview of the research projects that were undertaken as part of this doctoral work.

The next sections will elaborate on every project in detail, including the methods used, and an explanation of the results.

⁴ Price consciousness, coupon proneness, and price-quality schema, are constructs of the price perception scale (Lichtenstein et al., 1993) used in the experimental study and explained in detail in section 4.

⁵ This research worked with African-Americans, Hispanics, and Caucasians, females, living in the metropolitan area of Chicago, in the United States.

Figure 1-2 Overview of Research Projects



1.3.1 Research Projects

This section will introduce the three research projects that were undertaken as part of this doctoral work and summarised previously in Figure 1-2. The sequence of the projects explained in the next sections is consistent with the requirements to fulfil the degree of Doctor of Business Administration, at Cranfield University.

As such, the first project undertaken was a systematic review of the literature on the formation and measurement of consumer price perception that is presented in the next section.

1.3.2 Systematic Review

A systematic review is a method of critical appraisal, summarisation, and reconciliation of the evidence that informs policy and practice and that is often used to test a hypothesis or series of related hypotheses (Petticrew and Roberts, 2006). Also, systematic reviews can be applied to the management field, to inform knowledge and practice, by developing context-sensitive research (Tranfield et al., 2003). Moreover, “systematic reviews aim to provide an objective, comprehensive summary of the best evidence” (Petticrew and Roberts, 2006, p.23). On the contrary, approaches such as traditional literature reviews and narrative reviews, are regarded as often biased by the researcher and lacking rigour (Tranfield et al., 2003, Petticrew and Roberts, 2006). Furthermore, alternative approaches such as meta-analysis focused more on descriptive causation than the development of explanatory theories (Tranfield et al., 2003, Petticrew and Roberts, 2006).

The goal of this research project was to bring together different theoretical perspectives around the formation of consumer price perceptions by performing a systematic review of the literature. Also, the study considered the various methods used to measure price perceptions, as evidenced from the literature. As an output, this research project produced a theoretical framework on the formation of consumer price perception that served as a base for the remaining two projects of this research work (see Figure 1-2 for an overview of the

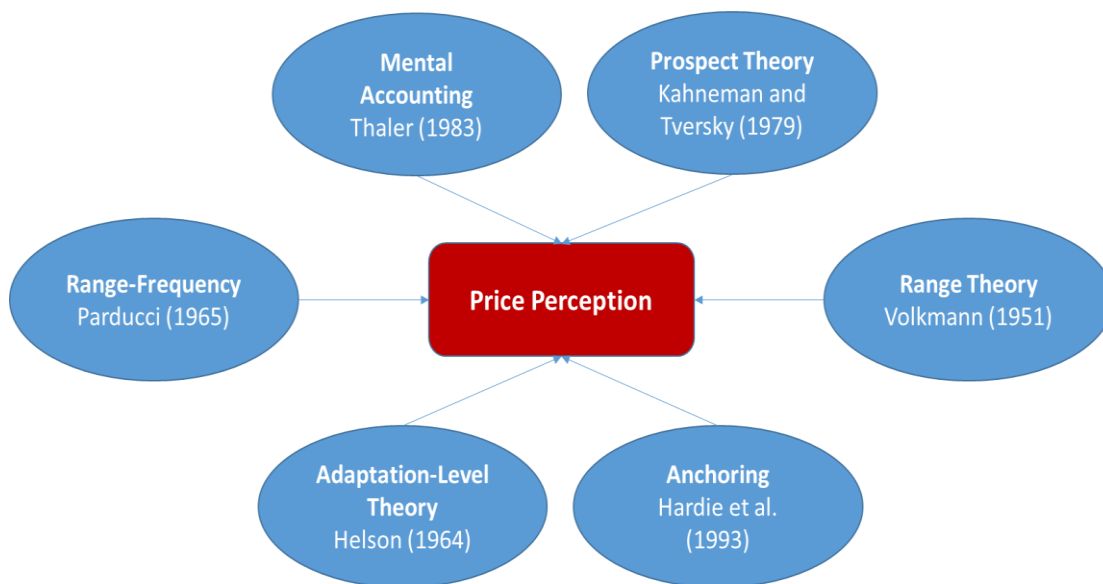
research projects). The theoretical framework suggested that there were internal and external factors that influenced the formation of consumer price perception. The framework was shown in Figure 1-1.

The framework resulting from this research study has several implications. Firstly, it suggests that the formation of consumer price perception is cyclical. In other words, after a purchase behaviour occurs, the process starts again. Secondly, it suggests that price perception is a separate construct from a willingness to pay and purchase behaviour. Moreover, price perception is antecedent to a willingness to pay, that in turn, it is a precursor to the purchase behaviour. This suggestion is interesting as there is a wealth of research focused on a willingness to pay and purchase behaviour, but according to this framework, the construct of price perception might not be reflected in these studies. Thus, the systematic review revealed, in turn, a separate strain of research on the topic of price perception. This strain of the investigation relates pricing more to a psychological construct (i.e. more akin to the perceptual process). This relation is also thought-provoking as it suggests that price perception might be related to a psychological construct. Furthermore, the association between price perception and a psychological construct can support the notion that there is the formation of price perception, even when there is no purchase (i.e. a purchase behaviour).

Additionally, the framework suggested the existence of contextual factors, such as cultural factors, that affect the formation of price perception. Accordingly, consumers from different cultural groups might perceive prices differently. An example of a cultural group is an ethnic group. As such, this research studied whether there are differences in price perception among different ethnic groups.

Finally, this systematic review reconciled different theories in the formation of consumer price perception. The theories are presented in Figure 1-3 and further explained in the systematic review.

Figure 1-3 Theories Supporting the Formation of Price Perception



1.3.2.1 Research Questions

The systematic review surveyed the literature on consumer price perception, existent in the domains of consumer behaviour and psychological prices. The primary goal of the study was to bring understanding about how consumer price perceptions are formed. Consequently, there was a question on whether there were internal or external factors that influence the formation of such perception. Next, there was an interest in understanding how price perception is measured. In other words, it was not just about understanding the formation of a perceptual process, but how it is measured. The latter will perhaps bring a bigger contribution to practice, by moving from understanding to measuring the price perception.

Thus, the research questions posed in the systematic review were:

R1: What do we know about how consumer price perceptions are formed and measured?

R2: *What internal and external factors affect the formation of price perception?*

R3: *How can price perception be measured?*

Granted, the nature of the research questions evolved over the duration of the doctoral process. For example, in the exploratory study (Project 2) and the quantitative study (Project 3), the research questions were scoped out and more related to the topic of ethnic price perception. In other words, the research issues in the systematic review seem broader when considering ethnic price perception, but on the other hand, the broad scope allowed for the finding of ethnicity, as a factor that influences the formation of price perception. This approach can be considered “outside-in,” in the sense that the systematic review presented broad research questions, with subsequent studies narrowing the focus.

What follows is an introduction to the second research project that sought to explore the differences in consumer price perception by ethnic group.

1.3.3 Exploratory Study

The previous section described the systematic review undertaken on the literature around the topic of consumer price perception. Moreover, different contributions resulted from the systematic review, including a framework for the formation of consumer price perception (see Figure 1-1). As part of the framework, it is proposed that price perception is affected by some factors including cultural factors. An example of cultural factors is ethnicity (Worrell, 2016). In fact, according to Worrell (2016), the terms culture, ethnicity, and race, are used interchangeably in the literature⁶.

Whereas the systematic review proposed that cultural factors, such as ethnicity, influence price perception, an exploratory study (explained in detail in section 3)

⁶ The exploratory study focuses on ethnic groups that is a form of a multi-cultural groups. Hence, from this point forward, the linking document will make mentions to ethnic groups only.

was conducted to understand the nature of such influence. The research questions introduced in this exploratory study are:

1. Does perception towards prices differ by ethnic group?
2. How can such perceptions be identified and measured?
3. What are the primary attributes (i.e. key constructs) among cultural groups that define perceptions towards prices?

In other words, this study does not just seek to validate the existence of differences in the perception of prices by ethnic group, but also this research looks at the understanding of these differences.

Initially, the exploratory study was centred on multicultural groups, and more specifically, ethnic groups. For example, the exploratory study was conducted with a group of female respondents, of African-American, Caucasian, or Hispanic ethnicity, living in the metropolitan area of Chicago, in the United States.⁷

Furthermore, in the last study of this research, a quantitative study (explained in detail in section 4), there are references to ethnic groups, rather than multicultural groups.⁸

This exploratory study used the repertory grid technique (RGT), as suggested by Bell (2005) and Tomico et al. (2009). The repertory grid technique is based on Kelly's theory of personal constructs (Fransella et al., 2003, Bell, 2005, Jankowicz, 2005). It can be used to obtain a rich understanding of multi-ethnic (or cross-cultural) analysis in consumer behaviour research (Hunter, 2006, Tomico et al., 2009), including qualitative market research (Jankowicz, 2005, Hair et al., 2009, Baxter et al., 2014). Moreover, the repertory grid technique

⁷ The exploratory study used refrigerated brands of orange juice as a stimulus for the research. It was found in the research (explained in detail in section 3), that refrigerated orange juice was found to be a common product category for all three ethnic groups.

⁸ According to Worrell (2016), the research literature interchangeably uses the terms race, culture, and ethnicity, however, to retain consistency with the latest construct of ethnic marketing, the quantitative project (P3), refers to ethnic groups, rather than cultural groups.

has previously been used in the study of consumer perceptions (Baxter et al., 2014).

The use of a repertory grid technique (RGT) in this study sets up an interesting contribution to research since, as it is explained in the systematic review, the study of price perception has been done mostly with surveys, scales, and questionnaires, and not with a qualitative technique such as RGT.

So far this section has presented an introduction to the second project (P2) that was undertaken as part of this research project. In the next section, there is an opening of the third project (P3), a quantitative study that completed this research work.

1.3.4 Quantitative Study

The previous section presented a description of the second study (described in detail in section 4). In that study, it was possible to see how different ethnic groups were able to elicit different constructs for the same brands, but however, it was not feasible to establish statistically significant differences.

So, the third study consisted of a quantitative study that aimed to answer the following research questions:

R1. Do price perceptions differ by ethnic group?

R2. If so, what are the differences in the perception of prices among ethnic groups about a product category?

In other words, this study seeks to validate the framework on the formation of price perception presented in the systematic review (see Figure 1-1). Additionally, this study aims to understand the differences in price perception among ethnic groups, and not just to find out whether there are differences or not.

Accordingly, this study used a combination of the price perception scale (Lichtenstein et al., 1993) and a choice-based conjoint analysis. The rationale behind the utilisation of these methods is that the price perception scale would

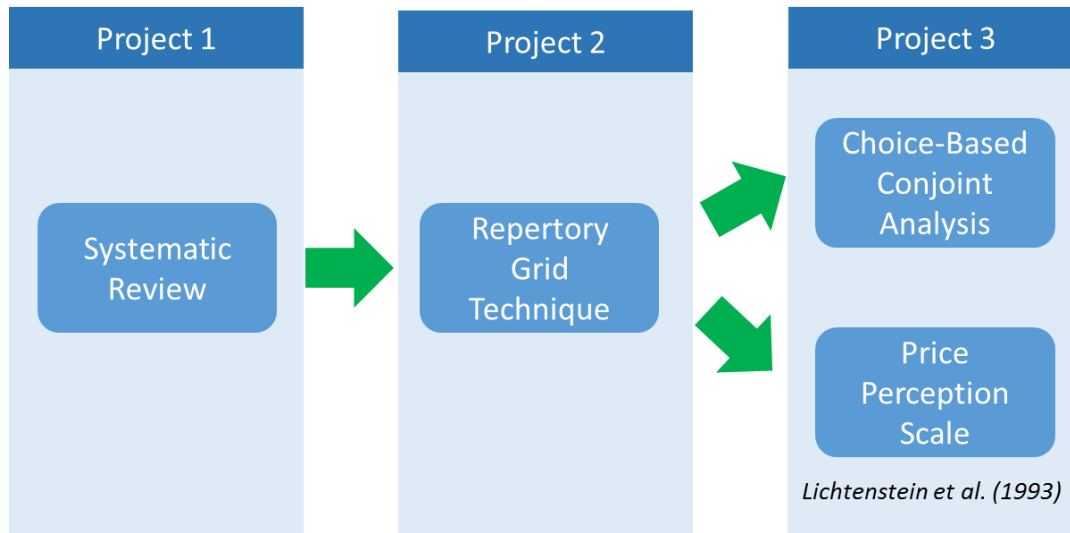
tell us about differences between ethnic groups, whereas the choice-based conjoint analysis would describe the nature of such differences. Moreover, the choice-based conjoint analysis allows this quantitative study to link to the exploratory study, by using the key constructs elicited from the ethnic groups.

So, the next section will introduce the research methods, including an overview of the sampling method utilised in this research work.

1.4 Research Methods

This research project uses a variety of research methods, according to the research projects presented in Figure 1-2. An overview of the research methods is shown in Figure 1-4.

Figure 1-4 Research Methods



First, a systematic review of the literature on the topic of consumer price perception was conducted. The systematic review allows us to synthesise the evidence with methodological rigour and to accumulate knowledge from a range of studies (Tranfield et al., 2003). Moreover, according to Tranfield et al. (2003), the systematic review also allows for knowledge transfer between academics and practitioners, thus, presenting an ideal method for this DBA research project.

The systematic review surveyed a large number of documents, which were screened against established quality criteria. As such, a total of 8,130 documents were examined using EPPI Reviewer 4, a systematic review software developed by Thomas et al. (2010). As an output, 7,613 documents were excluded based on exclusion criteria. The resulting 517 documents were screened based on quality criteria, resulting in 92 documents, which were grouped in clusters of documents, depending on different codes. The codes were generated using a text clustering tool, Lingo3G, that is part of the software

EPPI Reviewer 4, and that allows the researcher to undertake the coding process by grouping documents that are related. A complete description of the document clustering process is presented as part of the systematic review project, in section 2.

Next, a narrative synthesis allowed for the organisation of theories that supported the formation of price perception, a survey of methods used in the measurement of price perception, and the development of the framework on the formation of price perception, presented in Figure 1-1.

However, the framework shown in Figure 1-1 suggested that price perception is affected by some factors, such as cultural factors. For example, ethnicity is regarded as a cultural factor (Worrell, 2016). So, this research work sought to find out how ethnicity could affect the perception of prices.

As such, the second project used the repertory grid technique (RGT). In the RGT, grids are regarded as a map of the mental construct system of an individual (Fransella et al., 2004). Repertory grids are a form of structured interviewing (Jankowicz, 2005), and it allows for the study of idiosyncratic views of individuals with regards to existing products (Tomico et al., 2009).

The RGT was conducted with 45 participants, females, from three different ethnic groups (African-Americans, Caucasians, and Hispanics), in the metropolitan area of Chicago. There were 15 participants per ethnic group. The ethnic groups used in this study are relevant because together, they represent 92.6% of the US population (Humes et al., 2011). Moreover, the RGT used brands of refrigerated orange juice, as the elements of the repertory grid.⁹ The use of refrigerated orange juice, as a single product category, was selected since it was a product category that was common to respondents from all three ethnic groups.

⁹ The brands used in the study were Tropicana, Minute Maid, Florida's Natural, Simply Orange, Tampico, and Minute Maid. The brands were selected after ensuring that the respondents from different ethnic groups were familiar with these brands.

The final project resulted in a quantitative study that uses the price perception scale, proposed by Lichtenstein et al. (1993), and a choice-based conjoint analysis (CBC)¹⁰. The price perception scale (Lichtenstein et al., 1993) allows for comparisons among ethnic groups with regards to a specific set of constructs.¹¹ The choice-based conjoint analysis compares the ethnic groups based on constructs such as brand, price, sweetness, and flavour. These constructs were elicited in the exploratory study (P2).

Consequently, this study used structural equation modelling (SEM). Furthermore, to analyse the choice-based conjoint analysis, this study used a multinomial logit analysis. A complete description of both methods is presented in section 4.

The next section introduces a summary of the findings.

¹⁰ Appendix D shows the survey containing the price perception scale and the CBC analysis.

¹¹ The constructs are explained in detail in section 4. However, as proposed by Lichtenstein et al. (1993), the constructs are value consciousness, price consciousness, coupon proneness, sale proneness, price mavenism, price-quality schema, and prestige sensitivity.

1.5 Summary of Findings

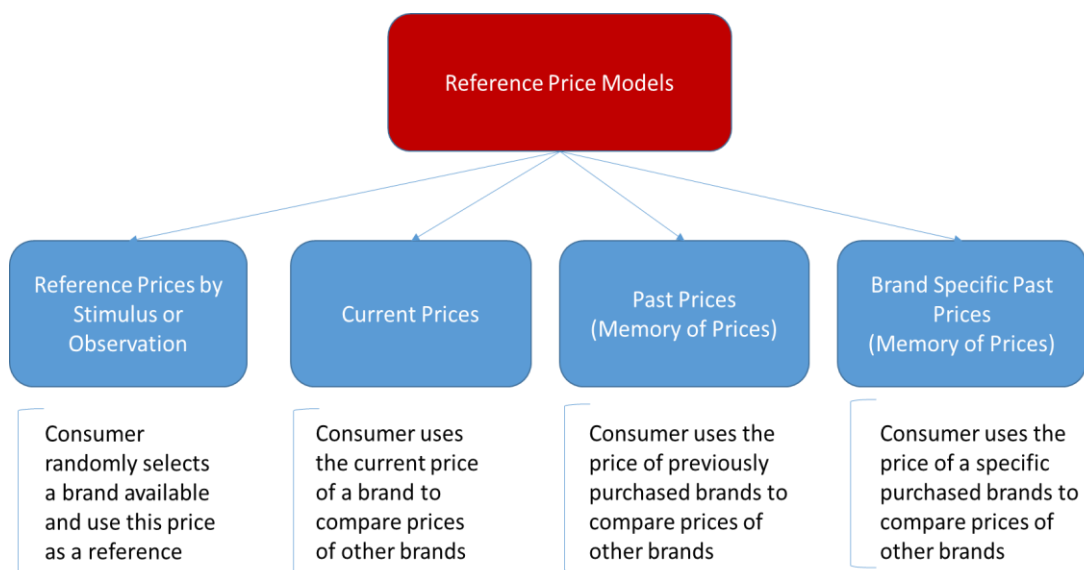
1.5.1 Systematic Review

As explained in section 1.3, the research questions proposed in the systematic review dealt with the formation and the measurement of consumer price perception. As such, the systematic review reconciled some theories that supported the formation of price perception. Moreover, the systematic review also considered the relationship between reference prices and price perception. Accordingly, consumers rely on past prices in the process of the formation of price perception (Kalyanaram and Winer, 1995).

1.5.1.1 Finding: Reference Prices Affect Price Perception

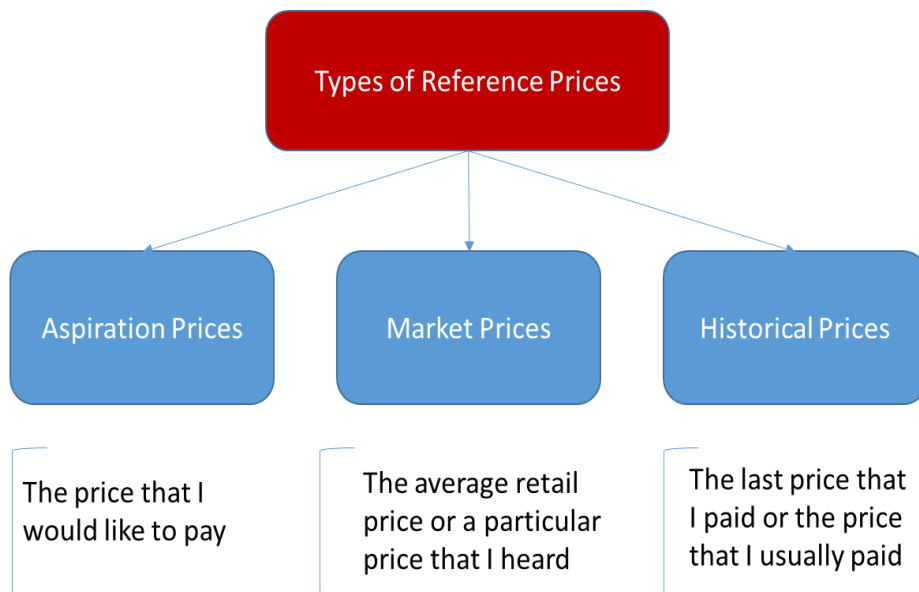
The understanding of reference prices is interesting since, according to the systematic review, there were two approaches to studying reference prices. For example, Casielles and Alvarez (2007) summarised the research on reference prices depending on the memory of prices (or how prices are stored in the memory). Figure 1-5 shows a summary of the reference price models, according to Casielles and Alvarez (2007).

Figure 1-5 Reference Price Models



Moreover, another approach describes the type of reference prices depending on whether there is the past, existing or expected reference prices (Klein and Oglethorpe, 1987). Figure 1-6 shows the types of reference prices according to Klein and Oglethorpe (1987).

Figure 1-6 Types of Reference Prices

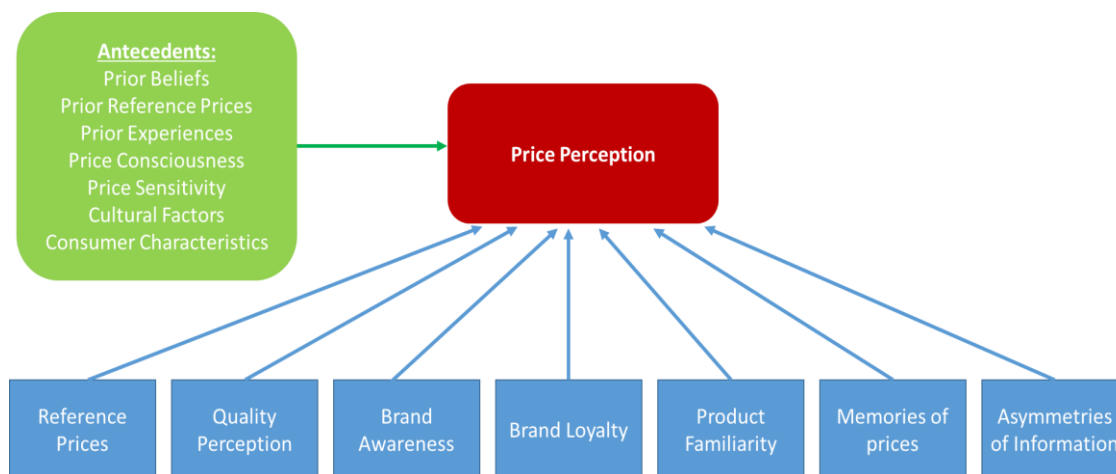


Thus, the understanding of the relationship of reference prices is impressive since, as explained by Kalyanaram & Winer (1985), consumers rely on reference prices in the development of price perception. However, the systematic review revealed that in addition to reference prices, there are a number of factors affecting the formation of price perception.

1.5.1.2 Finding: There are Factors that Influence Price Perception

Figure 1-7 shows the factors that influence the formation of price perception, according to the systematic review.

Figure 1-7 Factors Affecting the Formation of Price Perception

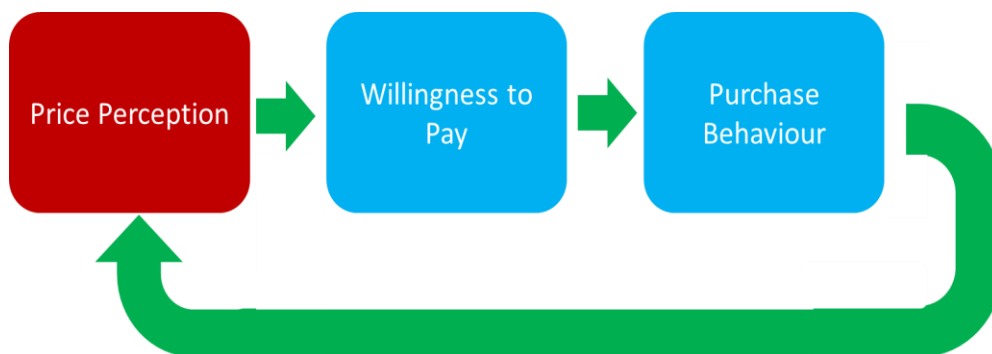


However, the factors presented in the previous figure are interesting, since the systematic review of the literature summarised studies that support the relationship between these factors and price perception. Notwithstanding, the research also revealed that there were antecedents that also explained differences in the formation of price perception. For example, according to Figure 1-6, cultural factors also influence the perception of prices. This finding is interesting since there is a suggestion that consumers from different cultural groups (i.e. ethnic groups) perceive prices differently. This finding supports the practice of multicultural marketing and the notion that there is a multicultural price construct.

1.5.1.3 Finding: Price Perception is a Cyclical Process

Furthermore, the systematic review suggested that price perception is cyclical, and it is an antecedent to a willingness to pay and purchase behaviour. The process is presented in Figure 1-8.

Figure 1-8 Price Perception Process



The process shown in Figure 1-7 is interesting for practitioners as it suggests the existence of a construct, which influences the purchase behaviour, and that is even a precursor to a willingness to pay. Consequently, practitioners should acknowledge that differences in price perception exist, and these differences might be affected by different factors, including cultural factors such as ethnicity (see Figure 1-1).

1.5.1.4 Finding: Price Perception is Measured Using Hypothetical and Real Prices

Moreover, the systematic review also surveyed the various methods utilised in the research literature to measure price perception. The study found that price perception was measured either directly (i.e. asking pricing questions directly) or indirectly (i.e. asking the respondent to make different choices, rather than asking for prices). Moreover, the review also found that most studies asked for hypothetical prices, whereas other studies used real prices. However, this research did not elaborate on which approaches were better, and this might be an opportunity for further research. Figure 1-9 shows the various ways of measuring price perception as revealed by the systematic review.¹²

¹² The original systematic review, done in 2012, reported open-ended questions, rather than questionnaires (that included both open-ended and closed-ended questions). This has been updated for this thesis.

Figure 1-9 Measurement of Price Perception

		Type of Measurement	
		Direct	Indirect
Context	Hypothetical Prices	Surveys / Scales / Questionnaires	Choice-Based Conjoint Analysis
	Real Prices	BDM Method	Incentive-Based Conjoint Analysis

Thus, so far, the systematic review reported findings by the research questions presented. The next section will report on the results of the second research project.

1.5.2 Exploratory Study

In the previous section, it was suggested that the use of the repertory grid technique (RGT), in the study of price perception, might represent a contribution to research, and to knowledge, by adapting an existing methodology.

Furthermore, the exploratory study surveyed the literature related to culture and price perception and found a limited number of studies in areas such as cultural influence, value perceptions, price dimensions, risk aversion, and social context. Figure 1-10 presents a summary of these areas.

Figure 1-10 Culture and Price Perception

Cultural Influence	Value Perceptions	Price Dimensions	Risk Aversion	Social Context
Explain how culture explain differences in shopping behaviour	Posed that value perceptions varied based on social and cultural factors	Posed the existence of constructs (i.e. value, coupons, price-quality, prestige, etc.) that accounted for differences in perception of prices	Argued that the shopping environment (i.e. face to face versus online) produces effects in the perception of prices	Suggest that social context influences the perception of prices

1.5.2.1 Finding: The Literature on Price Perception can be summarised in Five Key Areas

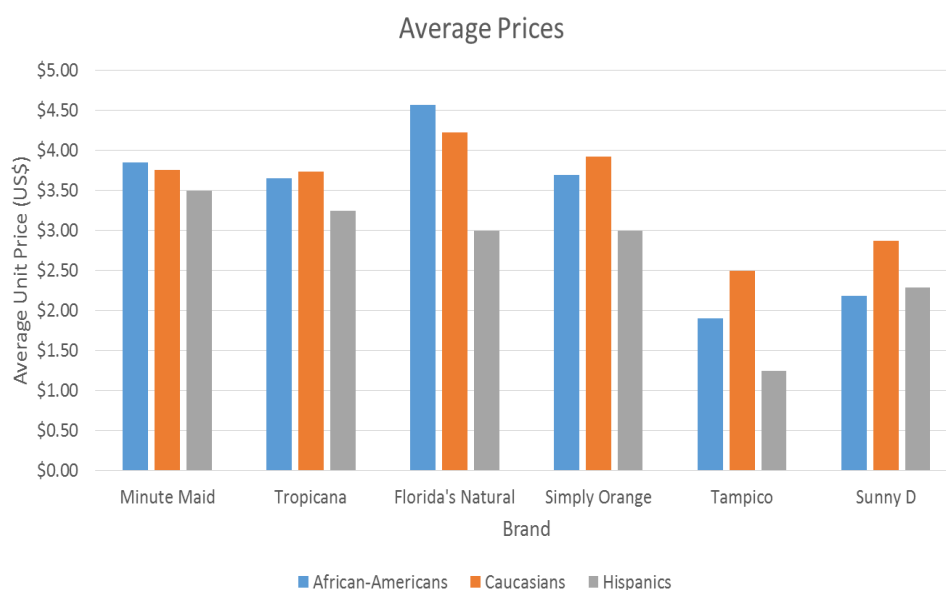
However, in the Summary presented in Figure 1-10, there are no mentions of differences in the perception of prices by the cultural or ethnic group. Thus, the systematic review revealed a relationship between price perception and ethnic groups. Therefore, a significant contribution of this exploratory study is to investigate these relationships.

1.5.2.2 Finding: There are Suggestions that Ethnic Groups Reported Different Average Prices for the Same Brands

Accordingly, this exploratory study revealed differences in the average prices for the same brands of refrigerated orange juice. These differences are not statistically significant, given the sample size and the qualitative nature of the study, but can offer some directions. For example, Hispanics assigned a lower average price to the same brands than African-Americans and Caucasians.

Figure 1-11 shows the average prices reported by ethnic group.

Figure 1-11 Average Prices by Ethnic Group



1.5.2.3 Finding: Ethnic Groups Described the Same Brands regarding Different Key Constructs

However, the average prices reported in Figure 1-11 are interesting but not conclusive. For example, it is not possible to test whether there are statistically significant differences. So, the exploratory study reported constructs that were elicited by the respondents. According to the repertory grid technique, constructs are a “basic unit of description” (Jankowicz, 2005, p. 10) and a way in which we construe the world (Kelly, 1955). So, in this study, the constructs represent the way in which respondents from different ethnic groups perceive the same brands, regarding prices. Figure 1-12 shows the constructs that were elicited by ethnic group.

Figure 1-12 Constructs Reported by Ethnic Group

	Hispanics	African-Americans	Caucasians
①	High Quality	Natural Healthy Juice	Natural Juice
②	Traditional Brand	Inexpensive Juice	Flavourful Brand
③	Big Sweet Juice	Big Juice	Fresh Juice
④	Natural Flavour	Convenient Packaging	Convenient Packaging
⑤	Taste	Good Packaging	Good Juice Packaging

An interesting finding reported in Figure 1-12, is that Hispanics primarily reported constructs related to quality, brand, taste, and flavour. However, African-Americans seemed more concerned with taste (i.e. natural and healthy), price, and packaging (i.e. big juice, convenience packaging, and good packaging). Likewise, Caucasians reportedly elicited constructs more akin to taste (i.e. natural and fresh), flavour, and packaging. In other words, even though respondents obtained some constructs, they seem to be grouped into a few categories such as quality, brand, taste, flavour, price, and packaging.

The key constructs reported by ethnic group bring a significant contribution to marketing, as it shows the relative importance of constructs such as quality, brand, and taste.

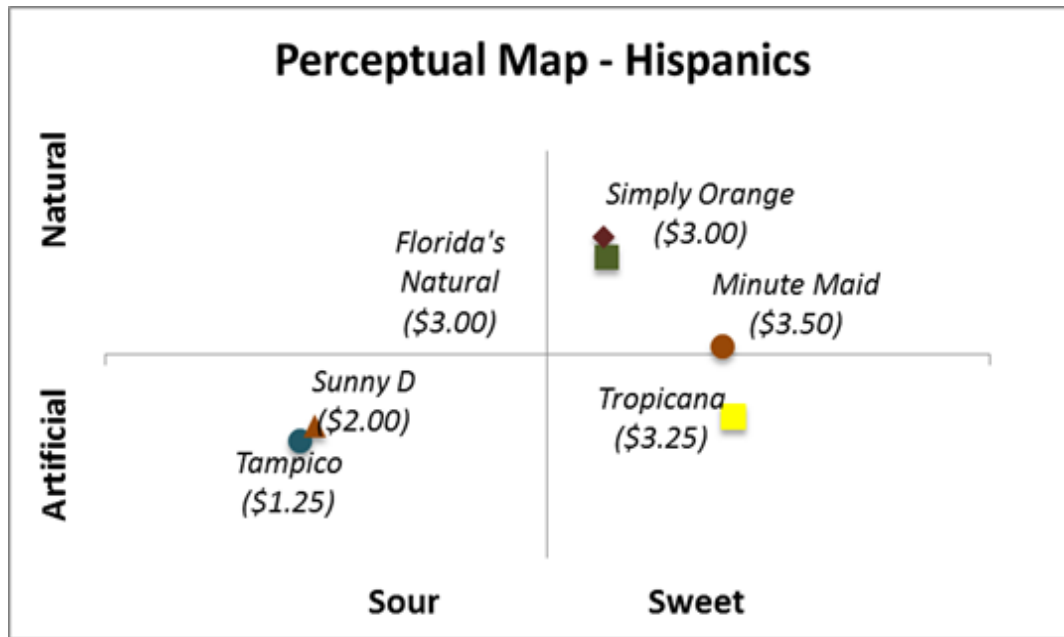
1.5.2.4 Finding: Flavour and Taste Constructs are related to Higher-Lower Prices

However, the constructs presented in Figure 1-12 are not rated, so it is not possible to understand the relationship between constructs from the same ethnic group (for example, how close are the first and the second constructs in every ethnic group?). So, the study presented perceptual maps by ethnic group.

By presenting these maps, it is possible to observe how respondents ranked every brand, using the repertory grid technique.

Figure 1-13 shows the perceptual map obtained from Hispanic respondents.

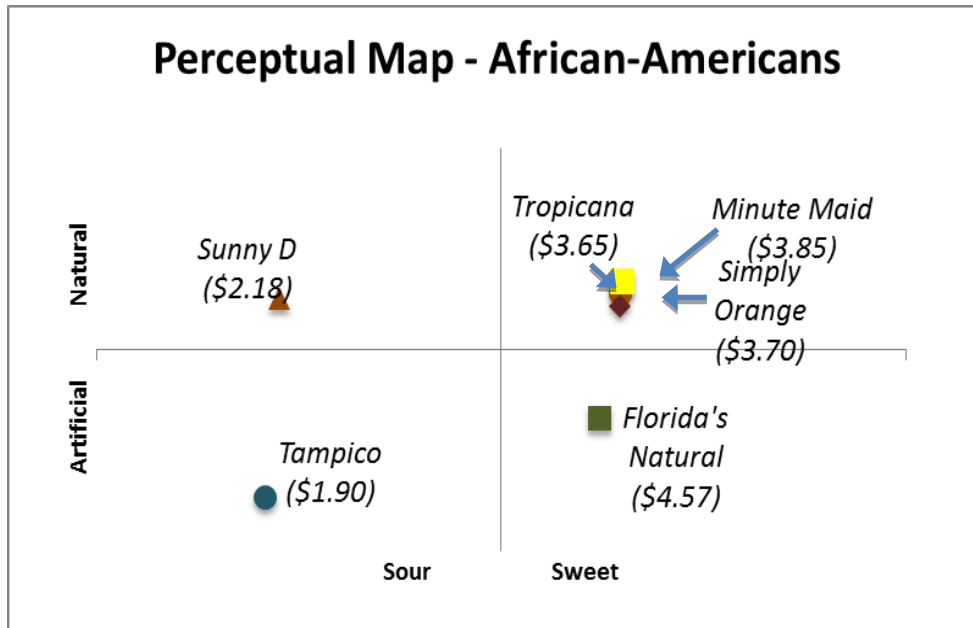
Figure 1-13 Perceptual Map - Hispanic Respondents



An interesting finding from the previous figure is that according to the exploratory study, Hispanic respondents clustered brands in two groups, about dimensions such as flavour (i.e. natural or artificial), taste (sour or sweet), and price. Accordingly, Hispanics rated brands with a low price, such as Sunny D and Tampico, as sour and artificial. Also, Hispanics ranked brands with a relatively high price, such as Simply Orange, Tropicana, Minute Maid, and Florida's Natural, as sweet and natural.

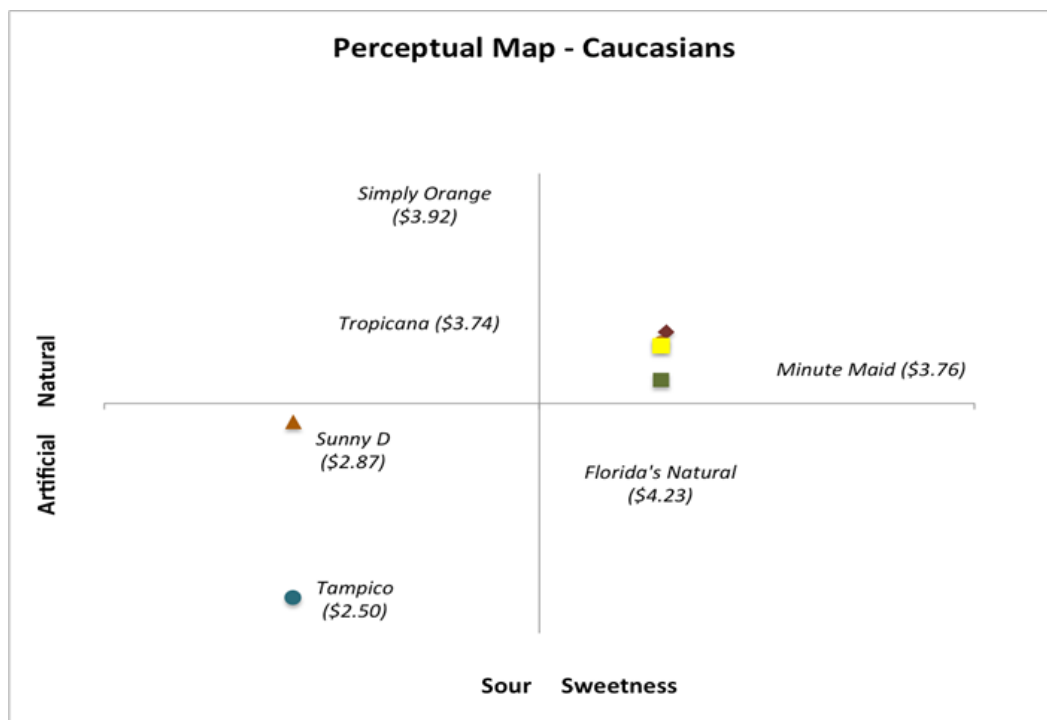
However, African-American respondents clustered the same brands in three different groups. Accordingly, brands with a relatively low price were sour, and brands with a relative higher price were sweet and natural. Furthermore, African-Americans reported the most expensive brand in the category as sweet and artificial. Also, African-Americans seemed to cluster the higher-priced brands together. Figure 1-14 shows the perceptual map obtained from African-American respondents.

Figure 1-14 Perceptual Map - African-American Respondents



Also, according to the study, Caucasian respondents clustered the brands in two groups, on the one hand, the inexpensive brands were sour and artificial, whereas the higher price brands were natural and sweet. Figure 1-15 shows the perceptual map obtained from Caucasian respondents.

Figure 1-15 Perceptual Map - Caucasian Respondents



The perceptual maps derived from the exploratory study make a significant contribution to marketing since it is possible to relate the price assigned by respondents to the brand, regarding key constructs, which are elicited from the respondents. In general terms, higher-priced brands were associated with constructs such as natural and sweet, whereas lower-priced brands were related more to a sour taste and an artificial flavour.

Accordingly, marketing practitioners could use the notion that a group of respondents associated higher price brands with constructs such as natural and sweet, to adequate their communication programmes depending on the price perceived in each product.

The next section will elaborate on the third and last study, including the main contributions produced by such research.

1.5.3 Quantitative Study

First of all, the quantitative study consisted of a choice-based conjoint study and the Price Perception Scale (Lichtenstein et al., 1993). The perception scale allowed us to make comparisons between ethnic groups about the constructs of value consciousness, price consciousness, coupon proneness, sale proneness, price-quality schema, and prestige sensitivity. These constructs are further explained in section 4. The choice-based conjoint study allowed us to make comparisons between ethnic groups about specific attributes such as brand, price, sweetness, and flavour. The quantitative study reported statistically significant differences in price consciousness, coupon proneness, and price-quality schema. These are constructs from the price perception scale (Lichtenstein et al., 1993) and are covered in detail in section 4.

In the next findings, it is important to note that due to the sampling characteristics of this study (i.e. convenience sampling) and the strength of the statistical relationship (i.e. there were statistical significances, but they were not strong), the findings and conclusion cannot be extrapolated to the general population in the United States. Rather, they provide a sense of direction in the way that price perception is developed among ethnic groups.

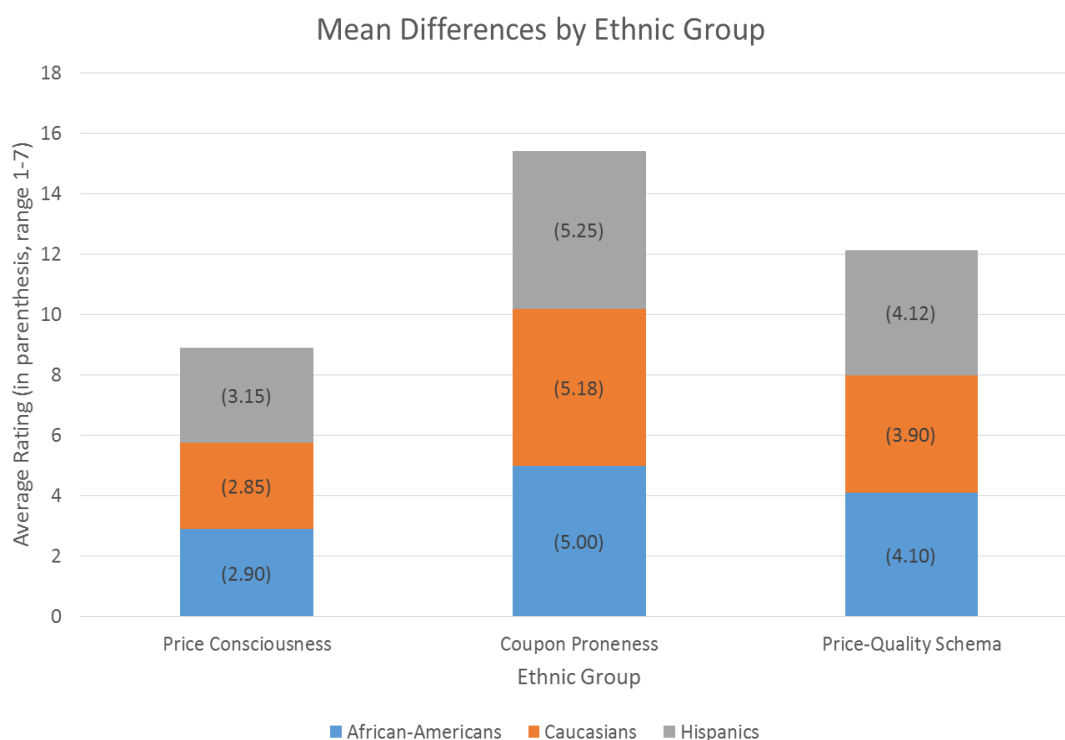
1.5.3.1 Finding: Hispanics are More Price Conscious and Coupon-prone than Caucasians and African-Americans

Accordingly, Hispanics were more price conscious than Caucasians and African-Americans. Also, it was found that Hispanics and Caucasians were more coupon-prone than African-Americans.

1.5.3.2 Finding: Hispanics and African-Americans had a Higher Price-Quality Schema than Caucasians

Moreover, it was also found that Hispanics and African-Americans had a higher price-quality schema than Caucasians. Figure 1-16 shows the differences by ethnic group (average differences by each group are in parenthesis, the range of each difference goes from 1 to 7).

Figure 1-16 Mean Differences by Ethnic Group



1.5.3.3 Finding: Hispanics are more price-sensitive, while African-Americans are lower price-sensitive, for the same constructs.

The findings summarised in Figure 1-16 are thought-provoking. Firstly, the differences are statistically significant.¹³ Secondly, it shows how every ethnic group ranked in the study. For example, Hispanics have the highest rankings in the constructs of price consciousness, coupon proneness, and price-quality schema, and this might suggest greater price sensitivity for the Hispanics group (i.e. the higher the ranking, the more importance is assigned to the construct). Next, the African-American group had lower rankings for the same three constructs. This might suggest a lower price sensitivity for the African-American group.

¹³ However, the study also revealed there were constructs such as value consciousness, price maven, prestige sensitivity, and sale proneness, where no statistical significance was reported.

1.5.3.4 Finding: Respondents Were More Sensitive to Coupons

Furthermore, it seems like the respondents in the group ranked the construct of coupon proneness higher than other constructs. This finding might suggest that those surveyed were more sensitive to coupons. Coupons are a form of discount, like a promotion or a sale (Green, 1996).

These findings have fascinating implications for the marketing practice. On the one hand, it shows that ethnic groups perceive prices differently, and this support the notion of a multi-cultural pricing and even a multi-ethnic pricing. In fact, the literature revealed studies in the area of multi-ethnic marketing (Jafari and Visconti, 2015).

So far, this research has presented evidence, using different research methods, such as a systematic review, an exploratory study, and a quantitative study, that there are differences in how ethnic groups perceive prices. Moreover, there is a framework for the formation of consumer price perception (see Figure 1-1), that is partially explored throughout this research.

The next sections present a detailed account of the systematic review (section 2), exploratory study (section 3), and quantitative study (section 4), that were undertaken as part of this research project.

1.6 Managerial Implications

So far, this research work has presented some interesting findings, at every stage of this research process. However, these results have some managerial implications, as described in the next sections.

1.6.1 The Perceptual Process

As a marketing practitioner, the author has experience with the interchangeable use of willingness to pay, purchase intent, and purchase behaviour, in marketing. For example, it seems to be an assumption that a higher willingness to pay will result in a higher purchase behaviour while ignoring other steps in the purchasing process. For example, a positive price perception might lead to a better willingness to pay. Moreover, there might be factors in the purchasing process that mean despite a higher willingness to pay; there might not be higher purchase behaviour (i.e. an actual sale).

So, the framework on the formation of price perception (see Figure 1-1) suggests that there are different steps in the purchasing process that marketers should be aware. Moreover, the same framework shows factors (see Figure 1-7), that influence each step in the process. Consequently, marketers should look at these factors to improve steps such as purchase behaviour.

Moreover, the framework on the formation of price perception suggests that price perception is a cyclical process, that regenerates it after a purchase behaviour (occurs). This suggestion is interesting since, for example, when a customer purchases a product at a heavy discount, the discounted price will be the next reference price that will be used on a new purchase occasion, therefore making the consumer perceive purchasing at the original price, as a loss. So, as a consequence, marketers should seek to incorporate this perceptual process in the setting of discounting and promotions so that it will minimise the effect of a lower perception of prices that might result in consumers seeking to purchase at a discounted price rather than a regular price.

1.6.2 Reference Prices and Retail Pricing

The notion that reference prices affect the formation of price perception is also interesting for marketing. For example, consumers that are exposed to low prices in the form of promotions, coupons, sale, and discounting, are expected to search for low prices in the store (Burman and Biswas, 2004). Moreover, the consumer can be segmented in marketing by their recollection of reference prices (Erdem et al., 2001). There is evidence that consumers can be segmented by their reaction to price endings (Harris and Bray, 2007).

Moreover, consumers expect to pay different prices depending on the store format (Tang et al., 2001). Furthermore, ethnicity plays a role in the store format and the perceived price (Mulhern et al., 1998). So, this is important for marketing as it allows us to make precise changes in how prices are presented to the consumer (i.e. price endings), and the store format.

This contribution is important for researchers in areas such as retail marketing, virtual stores, and neuromarketing.

1.6.3 Hypothetical versus Real Prices

Some research studies in the literature use hypothetical prices when studying pricing. When using hypothetical prices in a research study, the respondent might be reporting a willingness to pay, since the respondent is not actually buying the product. So, marketing practitioners should be aware of what is reported. In other words, there is a question about whether purchase intentions predict purchase behaviour (Chandon et al., 2005).

On the contrary, by using real prices, and incentives, as presented in the systematic review, marketers can have a glimpse of an actual purchasing process. Some current researchers use real prices, in both simulated and actual purchasing scenarios. For example, the work on eye-tracking and pricing allows us to understand what consumers are looking at when they are purchasing a product. An example of an application of eye-tracking in pricing is presented by Meißner and Decker (2010). Also, there are applications of integrating emotions in the analysis of retail prices. For example, Zielke (2011) studied this approach.

Moreover, the author has experience of conducting eye-tracking studies and pricing, in a practitioner's setting.

1.6.4 Multi-ethnic Pricing

So far, in marketing, there are two areas that consider cultural diversity for the development of marketing programmes; multi-cultural marketing (Jamal, 2003), and multi-ethnic marketing (Cui, 1997)¹⁴. In the United States, multi-cultural marketing focuses on adapting the marketing mix to a particular set of consumers, such as Hispanics (Campbell, 2013) or American-Jewish (Podoshen, 2006). On the other hand, multi-ethnic pricing seems to be concerned not just with Hispanics (Peñaloza and Gilly, 1999), but also with other ethnic groups, such as African-Americans (Green, 1995).

However, this research brings up the suggestion of the existence of a price construct, namely, multi-ethnic pricing, where ethnic groups perceive prices differently, and therefore marketers adapt their marketing strategies accordingly. Nonetheless, this research is not suggesting in any sense to promote price discrimination among ethnic groups, but rather to understand that there are differences in how ethnic groups perceive prices. Yet, this research is also distancing itself from practices such as redlining, where price is treated differently based on ethnic zones (D'Rozario and Williams, 2005). An example of a pricing practice that uses the learning on ethnic groups and prices presented in this research is the use of coupons. Accordingly, Hispanics and Caucasians are more prone to coupons whereas African-Americans seem to prefer upfront discounts. So, deciding whether to offer coupons (that is a form of discounts) or upfront discounts might be an example of an application of multi-ethnic pricing.

¹⁴ Additionally, there are marketing strategies aimed at cultural groups such as the LGBT community, senior citizens, war veterans, millennials and more. But these groups were not considered in this study although they do present an interesting opportunity for further research.

1.6.5 Contextual Pricing

The notion that the price perception of consumers might be affected by contextual variables, such as time, location, store format, reference group, and more, is supported by this research. As such, there is a wealth of research and practice in the field of mobile marketing. Moreover, this notion seems to be extended with the advent of the Internet of Things (IOT), where consumers are connected via smartwatches and wired-clothes. Thus, there is an opportunity for practitioners to understand that location is a factor that might affect the perception of prices. Accordingly, a consumer browsing for clothes on a smartphone might have a different price sensitivity towards clothes than a consumer who is browsing for clothes while commuting on the train.

The increasing use of mobile technologies for shopping might bring up the need for the development of contextual price strategies. So far, this research summarises how different contextual factors influence price perception, and this might help in the development of a contextual price strategy.

1.6.6 Bridging Online and Offline Pricing

The author is particularly interested in the topic of dynamic prices in the retail environment (see section 1.2). Accordingly, there is a wealth of work on the subject of dynamic prices using mobile and Internet technologies. However, it seems like the brick-and-mortar retail might be lagging behind. From the author's perspective, the brick-and-mortar retail should integrate with online retail, and provide an omnichannel experience, where the shopping experience is transparent among multiple channels.

The increased use of retail beacons that allow for tracking of the customer experience in the store¹⁵, memory mirrors that allow consumers to try on different outfits in the store, but with an online shopping experience, and virtual stores, permits the integration of the offline and online retail experience. The

¹⁵ To prevent privacy issues, the author's proposal on the use of retail beacons in the store requires the customer's consent. For example, by using store apps that are downloaded by the consumer.

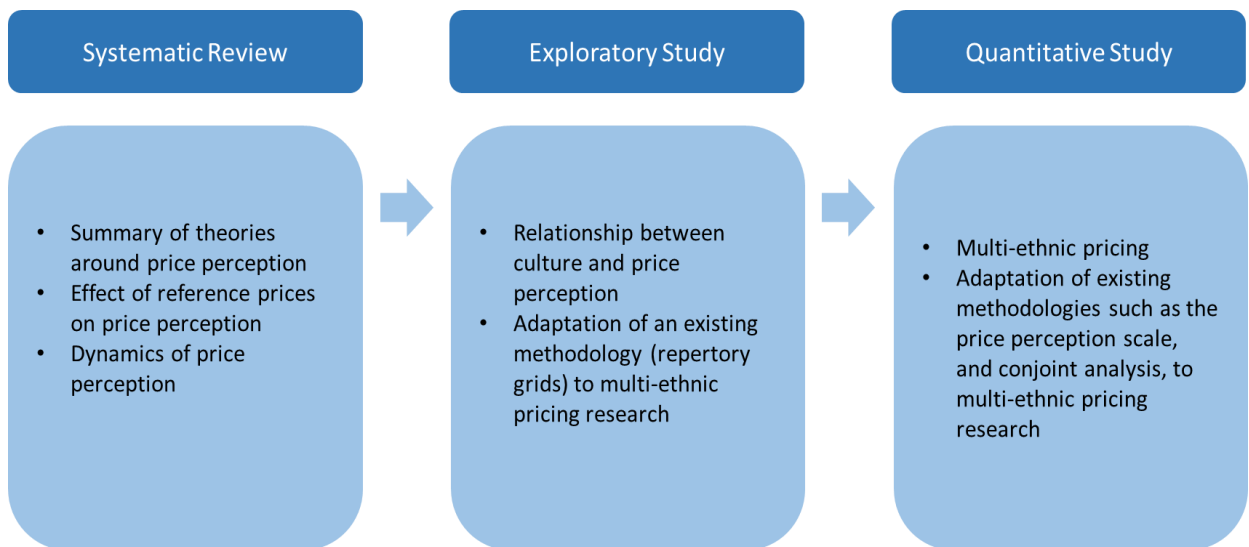
literature shows differences in the perception of prices in online versus offline environments (Dixit et al., 2014). Thus this research offers a contribution to management by suggesting how price perception varies in different environments or contexts (see Figure 1-1), and this can be incorporated in pricing models that cross offline and online shopping environments.

So far, this research has presented some findings and managerial implications. However, the next section will introduce limitations and directions for further studies.

1.7 Theoretical contributions

This research project presents some interesting theoretical contributions, as result of the three projects undertaken as part of this thesis. A summary of the theoretical contributions, explained in the preceding sections of this linking document, are presented in Figure 1-17.

Figure 1-17 Summary of theoretical contributions



Among the key theoretical contributions introduced in this research, there is:

- Summarising disparate theories around the formation of consumer price perception (see Figure 1-3).
- Describing the effect of reference prices on consumer price perception.
- Describing the temporal dynamics of price perception.
- Testing the relationship between cultural factors and price.
- Adapting existing methods to multi-ethnic pricing research.

These theoretical contributions are described in the following sections.

1.7.1 Summarised disparate theories on price perception formation

The systematic review of the literature reconciled a number of theories that explain the formation of consumer price perception, as shown in figure 1.3. For example, Thaler (1983) presents a model that starts with the mental coding of combinations of gains and losses. Moreover, Thaler (1983) models the evaluation of purchases using the concept of transaction utility. As explained in the systematic review, the work of Thaler is rooted in the prospect theory. Prospect theory (Kahneman and Tversky, 1979) is a model of decision making under uncertainty in where gains and losses have a different weight on decision making.

On the other hand, the adaptation-level theory (Helson, 1964) provides an interesting relationship with frames of reference, such as reference prices. This is further explained by Hardie et al. (1993) as anchoring. According to Kopalle et al. (1996, p.60), “a reference price is an anchoring level formed by customers based on the pricing environment”, and this reference price it is evaluated in terms of gains (i.e. when the actual price is lower than the reference price) or losses (i.e. when the actual price is higher than the reference price).

Interestingly, Kopalle et al. (1996) set an interesting relationship between reference prices and theories such as anchoring, mental accounting, adaptation-level theory, and prospect theory. Moreover, the evaluation of reference prices can be explained by theories such as range-frequency theory (Parducci, 1965) and range theory (Volkman, 1951). According to Niedrich et al. (2009, p. 693), “consumers compare a focal price with one of more reference prices,” according to the range-frequency theory presented by Parducci (1965).

The relationship set by Niedrich et al. (2009) set several implications for pricing theory, brand choice, and pricing strategy. For example, according to Niedrich et al. (2009, p. 693), “the range effects are stronger for coupon users.”

In summary, the systematic review of the literature synthesised the research around theories that, in one way or another, explained the formation of consumer price perception.

1.7.2 The role of reference prices

Undoubtedly, reference prices are regarded in this research as a key construct in the formation of consumer price perception. On the one hand, there are different interpretations of reference prices (see Figure 1-5):

- Developed by stimulus of observation

The consumer randomly selects a brand available and uses this price as a reference.

- Based on current prices

The consumer uses the current price of a brand to compare with another.

- As result of past prices (memory of prices)

The consumer uses the price of previously purchased brands to compare prices of other brands. There is an assumption that customers weigh the past prices of the range of brands available.

- Related to specific brands

The consumer uses the price of specifically purchased brands (as opposite as the range of brands available) to compare prices of other brands.¹⁶

The different belvederes around reference prices are summarised in the systematic review undertaken as part of this research work. However, it is also important to consider the finding that reference prices are just one factor (albeit an important one) that influence the formation of price perception (see Figure 1-7).

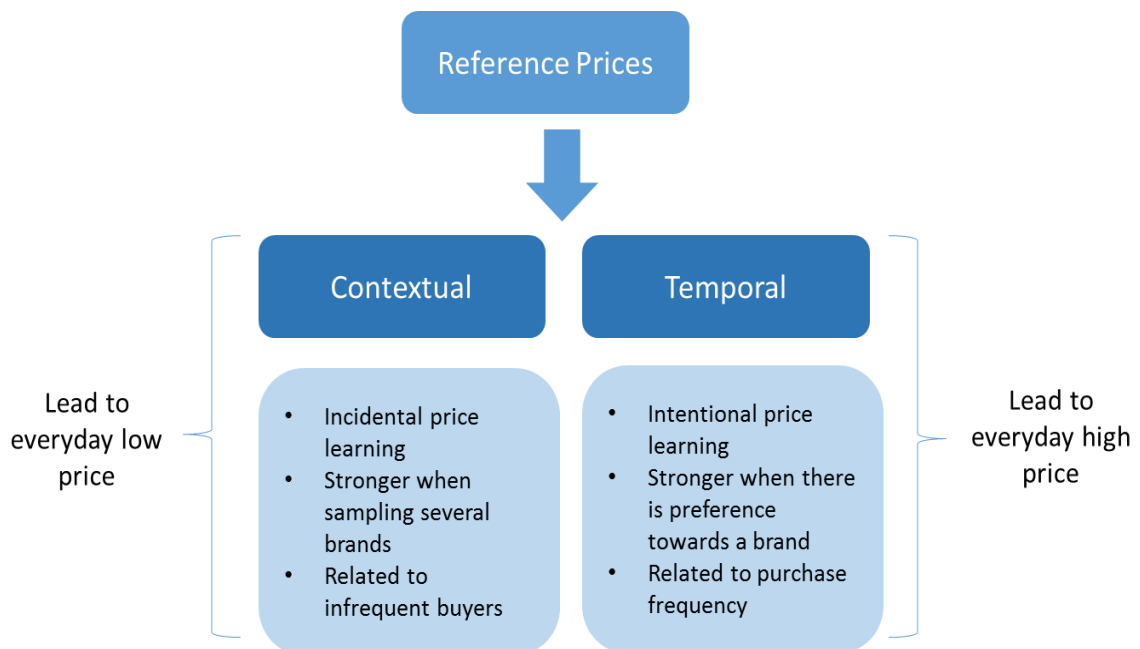
In other words, despite that there is a wealth of research around reference prices, it is interesting to acknowledge that this construct does not single-handedly affect the formation of consumer price perception.

¹⁶ For example, a consumer might recall paying around \$3 for a gallon of refrigerated juice (past prices) versus paying \$3.25 for a gallon of Tropicana juice (related to a specific brand).

1.7.3 The temporal dynamics of price perception

The framework for the formation of consumer price perception, presented in Figure 1-1, exposes price perception as a dynamic construct that is affected by contextual and temporal components (Rajendran and Tellis, 1994). For example, Rajendran and Tellis (1994) argued that reference prices have contextual and temporal components with managerial implications that might affect the pricing strategy (see Figure 1-18). Accordingly, a focus on contextual components might lead to everyday low prices, whereas a focus on temporal components might lead to everyday high prices (Rajendran and Tellis, 1994).

Figure 1-18 Components of reference prices



Source: Adapted from Rajendran and Tellis, 1994

The temporal dynamics of price perception might be explained by the short-term memory of prices, as explained by Vanuelhe and Dreze (2002). Accordingly, consumers encode prices using verbal, visual, and magnitude codes, which result in differences in performance recalling prices (Vanuelhe and Dreze, 2002). Furthermore, the difference in performance recalling prices will have an effect on expected prices, willingness to pay, and purchase intent (Chandrashekar, 2011).

Accordingly, the understanding of price perception as a dynamic construct brings an interesting contribution as it might lead to different price strategies, as shown in Figure 1-18.

1.7.4 Relationship between cultural factors and price

This research sets up a considerable effort studying the relationship between cultural factors, such as ethnicity, and price (see Figure 1-10). For example, the systematic review posed that cultural factors (i.e. ethnicity) influence the formation of consumer price perception.

Moreover, this research revealed how ethnic groups such as Caucasian, Hispanics, and African-Americans, in the United States, have different perception towards price. This relationship was studied using two different approaches:

- An exploratory approach that revealed how different ethnic groups elicited different constructs¹⁷, on the same set of brands, around different prices (see Figures 1-11 and 1-12).
- A quantitative approach, that evidenced that different ethnic groups have statistically significant differences in the perception towards prices.

The use of an exploratory and a quantitative approach in cross-ethnic pricing research is novel, as the literature shows that the study of the relationship between cultural groups (i.e. ethnic groups) and the price is conducted either from an exploratory approach or from a quantitative approach, but not both. Moreover, the exploratory study presented a contribution by adapting an existing method, such as the repertory grid technique, to the study of multi-ethnic pricing. Also, the quantitative study contributed by adapting existing methods, such as the price perception scale (Lichtenstein et al., 1993) and conjoint analysis, to the research of multi-ethnic pricing.

¹⁷ The constructs elicited by ethnic group were presented in Figure 1-12.

Furthermore, the relationship between cultural factors, such as ethnicity, is interesting because it sets an antecedent that further cultural factors (i.e. religion, social status, gender affiliation, and more) might also have different perceptions towards prices, thus bringing further important contributions to theory and practice.

Moreover, although this research was centred on a region within the United States, it opens up the discussion on whether there are further relationships between cultural groups and price, in other geographies (i.e. United Kingdom, Europe, and more). This discussion is enticing since it brings up a global relevance to the contributions set up in this research.

1.7.5 Contributing to multi-ethnic pricing

As explained in section 1.6.4, the exploratory and the quantitative studies, presented evidence of the existence of multi-ethnic pricing, in where ethnicity might account for differences in price perception. For example, the quantitative study found significant differences in some price perception constructs, such as price consciousness, coupon proneness, and price-quality schema. Moreover, the exploratory study found that different ethnic groups elicited the same brands with different constructs, and different average prices.

The relationship between ethnicity and pricing is interesting, as it might expand the current work around multi-cultural marketing (Mich and Keillor, 2011). Furthermore, as explained in the following section, the studies in this research also adapted existing methodologies to the study of multi-ethnic price perception.

1.7.6 Adapting existing methodologies

The exploratory study presented an interesting contribution by adapting an existing method (the repertory grid technique) to the study of price perception among different ethnic groups. This extends the current research around the understanding of cultural differences by using repertory grids (Tomico et al., 2009).

Moreover, the quantitative study adapted existing methodologies, such as the price perception scale (Lichtenstein et al., 1993), and conjoint analysis, to the research of differences in consumer price perception between ethnic groups. Although the price perception scales has been used to measure cross-cultural price perception (Meng and Nasco, 2009), the cultural groups were from different nationalities (i.e. Chinese, Japanese, and American) rather than ethnic groups from within a country (i.e. Caucasians, African Americans, and Hispanics).

1.8 Practical Contributions

Whereas the previous section presented key theoretical contributions as result of this research work, this section will focus on practical contributions to marketing.

First, at all, pricing is regarded in both practice and theory as one of the most important variables in the marketing mix (Roy and Green, 1995). Moreover, with the advent of Internet and mobile shopping, it seems like pricing is becoming even more relevant, for example, with the introduction of comparison shopping sites, shopping agents, and more.

However, the marketing practice focuses the study of consumer pricing around two areas:

- Explore willingness to pay
- Measure the purchase behaviour

In other words, as evidenced in the systematic review (see Figure 1-9 for a summary of pricing research methods), marketers seems to measure willingness to pay, when this research evidenced that the willingness to pay is a mediator between reference prices and purchase behaviour. Moreover, there are factors that influence the relationship between willingness to pay and purchase behaviour (see Figure 1-1). So, for example, practitioners should be aware that measuring a positive willingness to pay does not necessarily means to have a positive purchase behaviour.

As such, the next sections will present clear, practical contributions that are the result of this research work.

1.8.1 What to measure

This research introduced the importance of the consumer price perception in the purchasing process. In other words, the consumer price perception affect the purchasing behaviour, and in turn, the purchasing behaviour affect the consumer price perception (see Figure 1-1). Moreover, there are a number of factors that influence the relationship between price perception and purchasing behaviour.

However, measuring mediating factors, such as a willingness to pay, might not improve the purchase behaviour. Rather, marketers should follow any of these approaches in their marketing research effort:

- Measure customers' responses to prices as close to the purchase behaviour as possible, this might require to measure purchase intent and to research using real prices versus hypothetical prices.
- Take into an account the temporal dynamics of prices (see section 1.7.3), in the sense that price perceptions are not static, and might change between pricing researches and marketing campaigns.

Some examples of measuring consumer's reactions to prices, taking into an account this research work, include:

- Incorporate new research technologies into pricing research, which measures consumer's reactions to prices in a real purchasing scenario¹⁸.
- Bridge the online and offline divide, so it is possible to measure what customers buy in online, and offline channels since purchases in both channels contribute to the development of consumer price perception.

¹⁸ The researcher has practical experience implementing such researches around eye-tracking and virtual stores, and has presented at several international conferences

- Measure the effect of contextual variables, such as location, in the development of consumer price perception. This can be done with integrating existing mobile technologies to track mobile consumer purchases and to explore the shopping path.

1.8.2 Strategic pricing

Whereas the previous section introduced practical examples, there is also a strategic pricing opportunity as result of this research work.

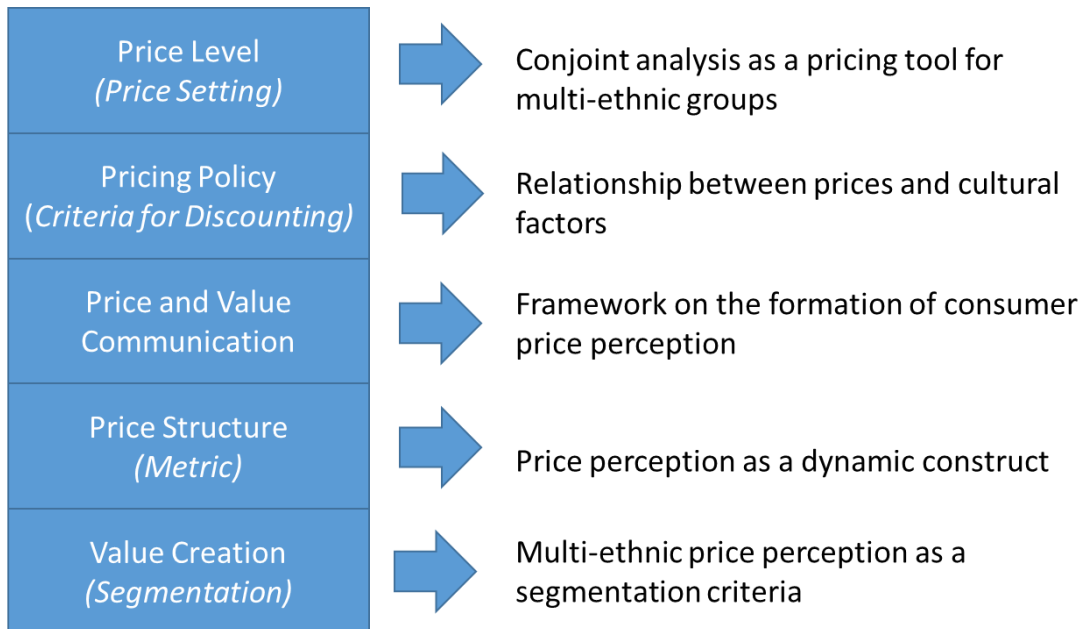
According to Nagle and Hogan (2010), the objective of strategic pricing is to achieve overall business profitability. So, companies should embody principles such as value-based, proactive, and profit-driven (Nagle and Hogan, 2010). Value-based is related to differences in pricing across customers, proactive implies that companies develop strategies that anticipate disruptive events (i.e. new competitive threat), and profit-driven suggests that pricing strategies must be focused on overall profitability (Nagle and Hogan, 2010).

Thus, this research work presents many contributions to the practice of strategic pricing, as explained by Nagle and Hogan (2010). For example, the work around ethnic groups and pricing recognise that ethnic groups might perceive prices differently so practitioners can improve the price and value communication to ethnic groups.

Moreover, the quantitative project found statistically significant differences in coupon proneness among ethnic groups. So, this finding might support the implementation of pricing policies and pricing levels in regards to coupons. Nagle and Hogan (2010), describe pricing policies and pricing levels as foundations of a good pricing strategy.

Nagle and Hogan (2010:6) posited that “a good pricing strategy involves five distinct but different sets of choices that build upon one another”. Figure 1-19 illustrates the choices referred by Nagle and Hogan (2010) and the corresponding contribution made by this research study.

Figure 1-19 Contributions to pricing strategy



The quantitative study used conjoint analysis as a pricing tool in the study of multi-ethnic pricing. Conjoint analysis is among the tools used in the setting of strategic prices (Nagle and Hogan, 2010). Also, the exploratory study explained the relationship between culture and prices, where culture can be criteria for discounting. Moreover, the framework on the formation of consumer price perception (see Figure 1-1), can help practitioners to improve their price and value communication. For example, practitioners should aim to influence price perception as well as the willingness to pay. Furthermore, the idea that price perception is a dynamic construct supports the idea of using time and locations as price fences. Price fences are “fixed criteria that customers must meet to qualify for a lower price” (Nagle and Hogan, 2010, p. 63).

So, in this section, there are examples of how this research work brings a contribution to strategic pricing.

1.9 Limitations of the study

There are certain limitations reported in each project that was undertaken as part of this research work. These limitations can be summarised as:

- Sampling

This research work used convenience sampling for the quantitative study. As such, it is not possible to extrapolate the findings to the general population. Also, this research worked with a single product category, refrigerated orange juice, and the findings might be distinct for different product categories.

Also, this study worked with respondents from the metropolitan area of Chicago, and they might not be representative of the entire population in the United States. So, it could be possible that there might be different findings when considering other geographies.

Moreover, this is a study that was focused in the United States, so the ethnic groups might not be relevant in other geographies, such as in the United Kingdom.

- Timing

This research spans a little over six years (October 2009 – June 2016), so the original systematic review might be influenced by recent studies. For example, the systematic review was completed in November 2012, and some research studies have been done in the area of pricing since that date.

- Statistical significances

The quantitative study found weak statistical significances in price consciousness, coupon proneness, and price-quality schema. This weak significance might be due to the sample size or due to other factors. However, there is a suggestion that by working with larger sample sizes, there might be a better group comparison. For example, Hair et al. (2010)

suggest a rule-of-thumb of 200 participants per group, but some other authors suggest a rule-of-thumb as low as 150 respondents per group.

- Methods

Even though this study presented a justification of the methods used, along with a consideration of alternate methods, there is still a question of whether a different method might be better. As such, this research is not concerned with explaining which method is superior but rather with understanding the differences in the perception of prices among ethnic groups. Notwithstanding, there is always the possibility that this research can be undertaken using different methods.

The limitations considered before as not the only ones reported in this research, in a detailed description of every project (sections 2, 3, and 4), there is a section outlining the limitations of the project under consideration.

1.10 Areas for Further Research

As result of this study, there are some areas for further research. These areas are very much related to the managerial implications presented in section 1.6. For example, there is a need for more studies in the areas of multi-ethnic pricing and contextual pricing. Moreover, there is also need to continue the validation of the framework on the formation of price perception (see Figure 1-1) by exploring the influence of other factors presented in the framework.

From a methodological perspective, the systematic review presented research studies on prices using real prices, however, this research found few studies using real prices (i.e. some studies used hypothetical prices). Hence, there is an opportunity for further exploring the impact of using hypothetical prices versus real prices, in both practice and research. For example, new researches on eye-tracking and retail use a real shopping environment (Chandon et al., 2009), including real prices, but however, the research literature is deficient on the topic of whether using real prices outweighs the use of hypothetical prices.

Also, the exploratory study used repertory grids that elicited some constructs for a set of brands, about their perceived prices. However, there is a paucity of research on the use of repertory grids, as a technique, for pricing research. The Repertory Grid Technique has been proved as a robust exploratory technique in marketing research (Marsden and Littler, 2000b, Hair et al., 2009, Baxter et al., 2014), but has yet to be adopted in the field of pricing research.

Moreover, the quantitative study revealed the existence of some differences in price perception among consumer groups. Hence, this provides an opportunity for further research both with different consumer groups (i.e. groups based on religion, gender identity, country of origin, cultural assimilation, and more) or with various product categories (i.e. services, durable goods, premium brands, and more).

From the theoretical perspective, there are areas to expand the inquiry. For example, there is evidence that different steps in the purchasing process (see Figure 1-1) but it is thought-provoking to delve further into steps such as

purchasing intent as a precursor of purchasing behaviour. For example, the research literature is dearth on the distinction between the two steps, whereas it might be equally important to understand the rationale behind non-purchasing even in the presence of a positive purchasing intent.

Also, as explained by Jaccard and Jacoby (2010), the systematic review conducted on the literature around the formation and measurement of consumer price perception might support the generation of a theory or a model around such consumer price perception. Accordingly, the development of a framework, as presented in figure 1-1, and partially tested in this research, will contribute to grounded and emergent theory, in where theory emerge from data (Jaccard and Jacoby, 2010). The evolution of the framework into a theory or a model will prove a considerable theoretical contribution from this research.

In the following sections, there is a detailed presentation of every project that was undertaken as part of this research work. Section 2 will present the systematic review of the literature. Also, section 3 will elaborate on the exploratory study, and section 4 expands on the quantitative study.

1.11 Personal Reflections

Pursuing this doctoral degree has been my biggest academic undertaking so far, and not just from academic rigour, but because of the difficult balance of work and life events that are normal at a middle stage of life. As such, the combination of academic, professional, and personal priorities was draining and exhausting, yet rewarding.

However, despite the reputation of the PhD programs in academia, my pursuing of a DBA degree was centred on the professional nature of the DBA, which is paradoxically closer to the earlier doctoral degrees granted in Europe in the twelfth century, that had an explicit professional orientation (Kot and Hendel, 2012). However, as a professional living in the United States, I have found that my employers had somehow a secondary consideration for a DBA versus a more traditional PhD degree. For example, in the industry, there is a perception that the DBA degree is more of an advanced MBA, whereas, in academia, the DBA seems to be regarded as a weak substitute for a PhD. This perception is consistent with studies on the topic of doctorates in the United States (Grandon and Hoppe, 2009, Stoten, 2016). The state of the current perception towards a DBA degree might be explained by the dearth of research on business doctorate degrees in the United States (Kot and Hendel, 2012).

Hopefully, in the upcoming future, there will be more recognition in the United States for DBA degrees, other than the ones from Harvard or Boston University (Grandon and Hoppe, 2009), as it is in countries such as the United Kingdom and Australia (Kot and Hendel, 2012). Nonetheless, as an Assistant Professor in the United States, I am still questioning about the choice of a DBA versus a PhD. Nevertheless, I am grateful to have started this journey, which allowed me to pursue an academic career.

PROJECT 1

TOWARDS THE FORMATION AND MEASUREMENT OF ETHNIC
PRICE PERCEPTION

A SYSTEMATIC REVIEW

2 Systematic Review

2.1 Introduction

The aim of this systematic review is to bring together several diverse strands of literature around how consumers perceive prices and how these perceptions are currently being measured, to understand better the factors shaping the buyers' responses to prices and the prospective use of measures of price perception as part of a marketing strategy.¹⁹

This systematic review attempts to bring together these different theoretical perspectives around the formation of consumer price perceptions. Also, the study also considers the different methods used to measure price perceptions. As an output, this study seeks to provide a theoretical model to explain the formation of price perception and its measurement. Furthermore, this study aims to give an understanding of the difference between perceived prices and actual prices (i.e. the prices paid by the consumer which might differ from perceived prices²⁰).

The structure of this review is as follows:

Section 2-2 explains the literature domains, maps the literature and sets out the review questions guiding this systematic review. Also, the theoretical approaches used in the formation of price perception are discussed.

Section 2-3 presents the systematic review protocol, the aims of the study and the tools utilised for this systematic review.

Section 2-4 provides a descriptive analysis of the field resulting from the examination of the evidence. It shows the analysis of the evidence sorted by journals, date, and even codes (undertaken using an automated tool

¹⁹ The scope of this systematic review, in regards to consumer price perception, as suggested by the panel, is explained in more detail in the methodology located in section 2.9.

²⁰ Price perceptions are elastic in the sense that they can be altered by external factors, and this might explain why perceived prices and even prices that consumers are willing to pay are often different from the prices that are actually paid.

for clustering text documents, see Section 2-4). A description of the evidence is also shown in Appendix D.

Section 2-5 synthesises the evidence base according to the review questions and provides a theoretical model to explain the formation of price perceptions and related measurement methods, based on a narrative synthesis of the literature.

Section 2-6 provides directions for further research.

Section 2-7 completes the review, assesses the limitations of the study design and puts forward some learning points taken from the development of this systematic review.

2.2 Research Domains

This systematic review sets its foundations in an inductive, interpretive method. Inductive research allows for a rigorous analysis of the data, with the aim of producing new theories while minimising personal bias (Blaikie, 2007). The interpretive methodology permits the study of social phenomena by understanding the social actions through which interventions occur, thus concerning itself more with understanding the phenomena rather than explaining them (Blaikie, 2007).

Blaikie (2007, p.6) said: “*all social enquiry needs to address a research problem,*” and the research problem attended to in this review relates to the diverse viewpoints around the topic of consumer price perceptions and how they are formed. A preliminary literature review on the subject of price perception, part of the original scoping study leading to this systematic review, unearthed the fact that two main factors are affecting how consumers perceive prices. These factors include:

1. Internal factors: formed before the purchasing experience, due to previous experiences with similar products, brand familiarity, reference prices, perceptions of fairness (Xia et al., 2004)²¹, perceptions of product or brand quality, price signalling (Alpert et al., 1993)²², self-beliefs or lack of information. There are also factors such as race, country of origin, country of residence, gender and language that also influence a consumer’s perception of prices.
2. External factors, formed during the purchasing experience as a result of the purchasing context (e.g. location, store design, store format, timing),

²¹ According to Xia (2004), the buyer’s perception of whether the price for a product is fair plays an important role in the purchase decision.

²² Price signalling, as described by Alpert *et al.* (1993), is a way to signal a higher quality by means of a higher price, even when the level of superior quality cannot be demonstrated.

packaging influence, price discounts, price endings²³, price bundling (Gilbride et al., 2008a, Harris and Bray, 2007)²⁴, association with status, a brand's country of origin, conspicuous consumption (O'Cass and McEwen, 2004)²⁵ or state of the economy.

A *prima facie* observation of these diverse factors illustrates the challenge of describing a universal method for measuring how consumers perceive prices. This discussion of price perception will, therefore, focus on the following dimensions:

- Reconciling the different strands of literature on how consumers view prices.
- Understanding the psychological factors that influence price perception by investigating the domain of the psychology of pricing.
- Discerning how price perceptions are being measured currently, according to which theoretical approach is being adopted.
- Identifying whether there is a discernible difference between the consumer's willingness to pay and actual prices (what the consumer actually pays for the product or service), which would serve to elucidate the strength of the connection between price perception and purchase intention.

²³ Harris (2007) suggests that the use of odd or round endings has an effect on how consumers perceive prices.

²⁴ Price bundling is explained in the glossary of terms, at the end of this document.

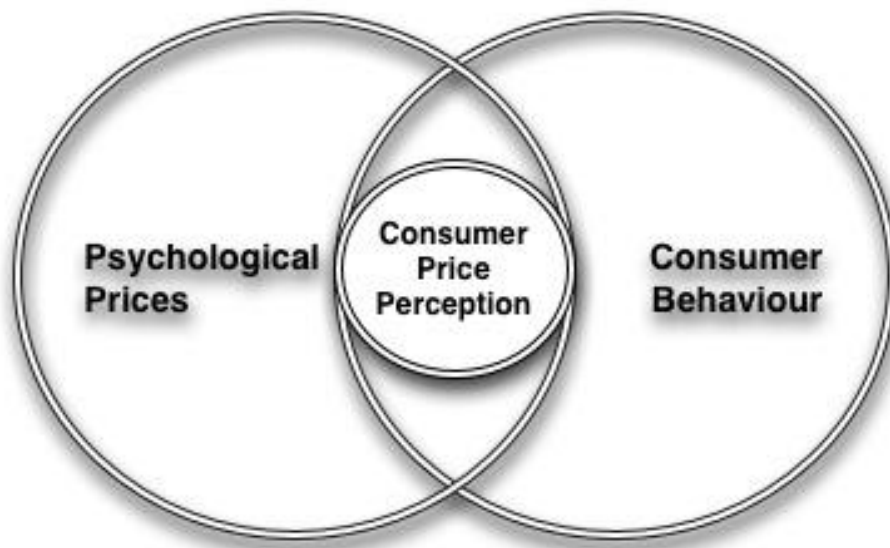
²⁵ Conspicuous consumption, as presented by O'Cass and McEwen (2004), is a form of consumption directly affected by interpersonal influences with different tendencies based on gender.

2.3 Mapping the field

Consumer price perception is a concept covering many facets, depending on the diverse factors affecting such perceptions. An overview of the literature on the different perspectives revealed different ways of looking at how consumers perceive prices, which in turn affects how price perceptions are estimated (measured). The measurement of price perceptions under different approaches is a critical consideration in this review.

The main literature areas considered in this study are presented in Figure 2-1.

Figure 2-1 Mapping the Field



2.4 Why Consumer Price Perception?

Consumer price perception is interlinked with consumers' purchase intentions (Monroe, 1973) and is consequently a very relevant subject matter for both researchers in the academic marketing field and marketers in the practitioner field. Since pricing is central to a company's profitability (Marn and Rosiello, 1992), it is of primary importance the understanding of pricing.

Interestingly, price perception affects the consumer's willingness to pay (Adaval et al., 2011), and this is reflected in the purchase intention of a product or brand. Also, internal factors such as brand familiarity, consumer beliefs, attitudes and prior experiences (Biswas, 1992, Alford and Biswas, 2002) affect price perception. This dual phenomenon (price perceptions affecting both the willingness to pay and being influenced by internal factors) indicates that price perception is, in fact, a mediating factor.

Furthermore, the literature presents evidence that external factors (Sinha and Prasad, 2004, Tang et al., 2001, Zielke, 2011) also affect price perception formation. This implies that the perception of prices is elastic and, despite the existence of current perceptions formed from prior beliefs, attitudes, and experiences, it can be altered by the context. This might explain why there is a discrepancy between willingness to pay (influenced by price perception) and purchase intention (or even the actual purchase). Authors have explained this difference in the form of external reference prices (Erdem et al., 2001, Sinha and Prasad, 2004, Moon and Voss, 2009), where certain external factors (such as a stock out situation) will result in actual prices being different from internal reference prices (those related to price perception). In other words, in some cases, consumers pay the price (the actual price) that is different from its internal reference price. Still, when researching the causes of this *elasticity* or *price tolerance*²⁶ (Gwynne et al., 2000) between actual prices and the internal

²⁶ There is no agreement in the literature on defining the difference between actual prices and perceived prices. Authors often refer to it as price elasticity although the concept is more closely

reference price, there is evidence suggesting that consumers recall internal reference prices only for a particular set of brands (Nedungadi, 1990, Chandrashekar, 2011) and not for the entire set of brands available²⁷.

Also, the literature presents evidence linking brand loyalty to price perceptions, in the sense that loyal consumers are more likely to have a positive perception of the brand price than non-loyal consumers. In fact, (Huang et al., 2014) found that loyal consumers are willing to pay more for their brands when the price is higher than expected than non-loyal consumers (and this was also true in conditions of time-pressure). Also, Casielles and Álvarez (2007) presented an interesting finding linking consumer loyalty with consumption levels, outlining that loyal consumers are more likely to consume a company's products and will even be willing to pay a higher price for their preferred brand. Furthermore, there is evidence linking price perceptions to expected quality. For example, Kopalle and Winer (1996) describe two possible outcomes about consumers' assessments of price-quality, as follows:

- Gain: The purchase price is lower than the reference price, and the product quality is higher than the expected quality
- Loss: The purchase price is higher than the reference price, and the product quality is lower than the expected quality.

A third outcome is also possible, which is that the purchase price is exactly equal to reference price and the product quality received is exactly equal to expected quality. Accordingly, both price and quality are interlinked when consumers assess gains and losses. Also, Alpert et al. (1993) found that price is often used to signal quality (a higher price will signal a higher quality) along with other variables of the marketing mix. Despite the fact that price is a key variable to signal quality, it has been demonstrated that price alone is not

related to the notion of zones of tolerance used in service quality research. Zone of Tolerance is defined in the glossary of terms.

²⁷ This is explained in the literature as *consideration sets*, where consumers only recall internal reference prices for a specific set of brands (considered by the consumer as relevant) rather than from all the reference prices available.

sufficient and that other variables of the marketing mix, such as product, place, and promotion, should also signal quality accordingly.

It is also important to state that the evidence base on price perception formation is very broad. It covers research undertaken in the field of psychology (Esch et al., 2009), economics (Carter and Curry, 2010) and marketing. So, this research will consider consumer price perception from the marketing (business and management) and psychology perspectives only, rather than open the discourse on the whole concept of price perception (e.g. incorporating other academic fields such as economics).

2.5 Theoretical Approaches to Consumer Price Perception

The concept of consumer price perception is deeply rooted in the field of consumer behaviour that, in turn, is concerned with the area of psychology. This systematic review relies on the prior understanding of how certain theories explain the formation of price perception. Although most of the theories of pricing discussed in this systematic review are briefly explained in the glossary of terms, a thorough discussion is also presented in this section to help the reader understand the whole topic better.

2.5.1 Why are these theories relevant?

The discussion of price perception around the theories covered in this section is necessary, as it shows how the consumer's perception of prices can be viewed from many different theoretical perspectives. Also, this discussion suggests how difficult it might be to devise a single construct for the formation of price perceptions or even attempt to establish a single measurement method for investigating such price perceptions.

However, a study by Niedrich et al. (2001) presented behavioural experiments in which it is possible to determine in which cases these theories best explain behaviour, and this is useful because it provides evidence that price perception can be measured. This study establishes different measurement methods according to the theory used.

On the other hand, the number of theories used to explain the formation of consumers' price perceptions demonstrates the complexity of the topic. Firstly, these theories take for granted the notion that the formation of price perception occurs before the purchase occasion. So, accordingly, consumers use different price formation strategies based on some internal factors and develop a particular perception toward prices before the purchase occasion takes place.

Secondly, each theory considers the consumer from different perspectives, and this might be necessary since there is an assumption in the literature that there

is consumer heterogeneity²⁸ in which consumers use different price formation strategies (Moon & Voss 2009). However, this assumption of heterogeneity also poses a challenge when it comes to measuring price perception formation.

2.5.2 Adaptation-Level Theory

Adaptation-Level Theory (Helson, 1964)²⁹ has been used to explain how price perception is formed. According to this theory, consumers use historical prices as a reference, but then adapt this reference based on different stimuli that can be focal (related to the brand in consideration) or contextual (related peripherally to the brand considered) (Chandrashekar, 2011). Thus, suggesting that price perception is not a static construct but rather can be influenced by internal and external factors. For the purpose of this systematic review, this is important, as this viewpoint supports the argument presented here that price perception is a dynamic construct, and this should be accounted for when trying to measure such price perceptions.

2.5.3 Range Theory

Range Theory was proposed by Volkman (1951) and suggests that consumers assess prices according to a range of prices available. In an experiment, Janiszewski and Lichtenstein (1999) were able to prove that Range Theory could explain differences in price judgment when manipulating different ranges of prices while maintaining the mean price constant. This could not be explained using Adaptation-Level Theory. From understanding the formation of price perception, this is important since it supports the notion that consumers use a range of prices in the construction of an internal reference price. Moreover, the literature on Range Theory suggests that consumers use the two ends of continuum prices that define the range.

²⁸ This is explained in the way that consumers are not equal, and therefore their approaches to prices, perceptions and purchase characteristics are heterogeneous.

²⁹ Adaptation-level Theory is also explained in the Glossary of Terms of this document.

2.5.4 Range-Frequency Theory

Range-frequency theory was proposed by Parducci (1965) as a model of psychological judgment in which the formation of price perception includes all prices in a contextual set. Accordingly, this contextual set is composed by selected prices (for example, only prices of brands that are of interest to the consumer) rather than the entire set of prices available to the consumer. Niedrich et al. (2001) support this line of thinking by demonstrating that some consumers compare prices with specific brands of the category rather than with a range of brands. This view seems more appropriate to explain the formation of reference prices. A comparison of the theories of Adaptation-Level, Range, and Range-Frequency about the formation of reference prices is presented in Table 2-1.

Table 2-1 Comparison of Theories

Author	Theory	Proposition
Volkmann (1951)	Range Theory	Consumers compare prices against the two reference prices that form the ends of the range of prices available in their contextual set (defined as the brands that are relevant to the consumer).
Helson (1964)	Adaptation-Level Theory	Consumers compare prices against the mean of prices available in their contextual set.
Parducci (1965)	Range-Frequency Theory	Consumers compare prices against all prices available in their contextual set.

Source: Adapted by the author from Niedrich et al. (2001)

2.5.5 Prospect Theory

Prospect Theory (Kahneman and Tversky, 1979)³⁰ enriches the discussion on the formation of price perception by distinguishing between how a person

³⁰ Prospect Theory, as presented by Kahneman and Tversky (1979), is explained in the Glossary of Terms.

perceives losses (when the actual price is higher than the consumer's reference price) and gains (when the actual price is lower than the consumer's reference price). Thus, extending the understanding of the effect of reference prices on price perceptions (Hardie et al., 1993). The work of Kahneman and Tversky (1979) on Prospect Theory is cited extensively in the literature when discussing reference prices.

2.5.6 Mental Accounting and Consumer Choice

Thaler (1983; 2008) extended the work on Prospect Theory by introducing the concept of transaction utility as a two-stage process where consumers evaluate potential transactions and then analyse these transactions according to their coding of gains and losses. This work on Mental Accounting is based on the mental coding of combinations of gains and losses, as proposed in Prospect Theory. Hence, according to the theory, there are four mental accounting principles (Heath et al., 1995):

1. Evaluate multiple gains segregated (two or more gains).
2. Evaluate mixed gains such as gain with a smaller loss.
3. Integrate multiple losses.
4. Evaluate mixed losses (a loss with a smaller gain)

These mental accounting principles have been used extensively in the literature. For example, Mazumdar and Jun (1993) researched the differences between segregation and integration of gains and losses when explaining price perception from consumer evaluations of multiple price changes; they found that multiple price decreases are perceived more favourably than a single price decrease. On the other hand, multiple price increases are evaluated more unfavourable than a single price increase.

Heath et al. (1995) also demonstrated the robustness of the mental accounting principles in the explanation of the formation of price perception. According to

their study, consumers typically prefer to segregate price discounts and integrate price increases. This is in concordance with Mazumdar and Jun (2005) and provides evidence of the use of Mental Accounting in the understanding of the formation of price perception.

2.5.7 Reference Prices

The theories explained in this section also serve as foundation stones for the work done on reference prices which suggests that consumers compare actual prices with an existing set of prices (Kalyanaram and Winer, 1995) that can be either internal reference prices (formed from past prices paid) (Winer, 1986) or external reference prices (when customers compare against actual prices of relevant brands) (Hardie et al., 1993).

The role of price memory in the setting of reference prices is also fundamental, as consumers often do not have complete information about prices and might form internal reference prices based on memories of past prices, memories of past purchases or even on prices of brands that are available (in those cases where no prices are recalled) (Vanhuele and Dreze, 2002). Kalyanaram and Winer (1995) also supported this by demonstrating that consumers rely on past prices in the formation of price perceptions but also are more sensitive to losses (when the actual price is higher than the expected price) than gains. Figure 2-2 shows a synthesis of reference price models used in past research, as presented by Casielles and Álvarez (2007, p.123), that is centred on the role of price memory when defining the different reference price models.

Figure 2-2 Reference Price Models used in Past Research

Table 1: Reference prices models used in past research

Model descriptions	Models and variables
<p><i>Reference prices by stimulus or observation</i> Random brand's current price The consumer not only has no knowledge of brand prices but also is unable to determine which brand's current price should be used to compare price of other brands. The consumer may randomly select a brand available on the current purchase occasion and use this price as a reference point for price judgments.</p>	$RP_{ht} = SP_{h(cb[t])t}$ <p>RP_{ht}: the reference price of household h on occasion t; $SP_{h(cb[t])t}$: the self price from the brand select randomly for household h on occasion t.</p>
<p>Reference brand's current Price The consumer cannot remember the paid price but does have a reference brand (eg the brand chosen on last occasion) in memory. When evaluating prices of other brands, the consumer, therefore, uses the current price of this brand for comparing prices of all other brands.</p>	$RP_{ht} = SP_{h(cb[t-1])t}$ <p>RP_{ht}: the reference price of household h on occasion t; $SP_{h(cb[t-1])t}$: the self price of the reference brand for household h on occasion t.</p>
<p><i>Reference prices based on past prices (memory)</i> Prices of previously chosen brands Consumers are believed to have a stronger memory for attribute information of the chosen brand than for the rejected brand. The price of the brand previously chosen, rather than prices of all brands encountered, during past purchase occasions should be readily accessible in consumer memory and used as a common reference point for comparing the current prices.</p>	$RP_{ht} = \alpha RP_{h(t-1)} + (1 - \alpha) SP_{h(cb[t-1])(t-1)}$ <p>RP_{ht}: the reference price of household h on occasion t; $RP_{h(t-1)}$: the reference price of household h on occasion $t-1$; $SP_{h(cb[t-1])(t-1)}$: the price of the reference brands chose for the household h on past occasions; α: carryover weight.</p>
<p>Brand specific past prices Consumers are able to distinguish among the prices of different brands encountered during past purchase occasions. The reference price is unique for each brand and it is the result of the own brand price history. The reference price effect is therefore temporal.</p>	$RP_{hjt} = \alpha RP_{hj(t-1)} + (1 - \alpha) SP_{hj(t-1)}$ <p>RP_{hjt}: the reference price of household h for brand j on occasion t; $RP_{hj(t-1)}$: the reference price of household h for the brand j on occasion $t-1$; $SP_{hj(t-1)}$: the price of brand j on past occasions; α: carryover weight.</p>
<p>Brand specific past prices and other information The consumers not only remember specific prices of each brand but they also use other information such as price trend and frequency of deals for each brand.</p>	$RP_{hjt} = \gamma_0 + \gamma_1 SP_{hj(t-1)} + \gamma_2 TREND_{jt} + \gamma_3 DP_{ht} + \gamma_4 DF_{jt} + \epsilon_{hjt}$ <p>RP_{hjt}: the reference price of household h for brand j on occasion t; $SP_{hj(t-1)}$: the reference price of household h for the brand j on occasion $t-1$; $TREND_{jt}$: price trend of brand j until occasion $t-1$; DP_{ht}: deal proneness of household h until occasion t; DF_{jt}: frequency of promotion of brand j until occasion t.</p>

Source: Casielles and Álvarez, (2007, p. 123)

In addition to the reference price models, the literature contains other classifications of reference prices; for example, Klein and Oglethorpe (1987) proposed three types of reference prices (see Table 2-2). Also, authors such as Winer (1988) found that consumers use multiple reference prices but associate these multiples prices to the effect of external reference prices. The effect of external reference prices in the formation of price perception is covered in the synthesis part of this document.

Table 2-2 Types of Reference Prices

Type	Verbalisation
Aspiration Prices	The price I would like to pay The price I would consider a “good buy.” The most I would ever pay A reasonable price
Market Prices	The average retail price A particular price I’d seen or heard
Historical Prices	The average price I pay The last price I paid The price I usually pay

Source: Adapted from Klein and Oglethorpe (1987, p. 183)

2.5.8 Anchoring

From the perspective of pricing, the concept of anchoring suggests that consumers anchor their reference price in a specific price that can be:

- The weighted average of the lowest and most recent prices, according to the peak-end memory model proposed by Hardie et al. (1993) and demonstrated by Nasiry and Popescu (2008).
- The highest and more recent, in accordance with the peak-end memory model and explained by Nasiry and Popescu (2008).
- The most recent prices, as suggested by Wansink et al. (1998) when exploring the effect of perception of gains and losses against stock out situations, who found an asymmetric effect in consumer response that resulted from the most recent prices being recalled.

- Extreme prices, as evidenced by Niedrich et al. (2001) in an experiment demonstrating the effect of range and frequency in price perception which suggested that consumers anchor on extreme prices for internal reference prices under certain stimulus conditions.
- Lowest price, as explained by Xia et al. (2004), arising from a consideration of the fairness of the price.
- Lowest price, as explained by Rajendran and Tellis (1994) - consumers will anchor in the lowest price as a result of the context (e.g. other prices in the store) where the purchase occasion is taking place. This is often a case of looking at lower prices of competitive products in the store during the purchase occasion, resulting in anchoring the reference price to the lower prices of competitive products.

The concept of anchoring in pricing³¹ has many implications; for example, extensive price promotions might produce a negative effect on price perception since consumers will be likely to anchor their reference prices on the lowest price. However, on the other hand, a policy of high prices (such as is the case with Apple and the iPad, iPhone and laptops) will have the opposite effect and consumers will anchor their reference prices on the highest price.

2.5.9 Assimilation-Contrast Theory

This theory suggests that consumers will be willing to accept moderate attitude changes and will reject changes that are perceived to be too extreme. This theory from the field of psychology was used by Cunha and Shulman (2011) to explain the influence of price variations in price judgments, as moderate changes in prices will be accepted by consumers, but consumers will reject extreme changes (for example, large discounting or considerable price

³¹ Anchoring is extensively covered in the psychology field

increases). According to this theory, changes in prices should be moderate so consumers can adapt their reference prices accordingly and without rejection.

2.6 Facets of consumer price perception

A preliminary review of the literature has revealed that the consumer's perception of prices has many facets, depending upon:

1. The factors affecting how consumers' price perceptions are formed.
2. The marketing implications of a particular theoretical perspective (e.g. prospect theory, range theory, and others) on the formation of price perceptions.

There will also be different marketing implications depending upon the theoretical perspective taken on the formation of price perceptions. For example, there are studies surrounding differences in price perceptions among races and cultures (Agarwal and Teas, 2002, Sternquist et al., 2004, Nguyen et al., 2007, Maxwell et al., 2009, Bolton et al., 2010). This could lead to the development of constructs based on *multicultural or ethnic price perception*³². Likewise, consumers' price perceptions for a product is often influenced by the country of origin of such a product (Nguyen et al., 2007, Ancarani et al., 2009, Tam and Elliott, 2011, Reardon and Miller, 2012, Koschate-Fischer et al., 2012). Thus, providing the opportunity to develop strategies based on *geographic or international pricing*. Similarly, studies around luxury (Yeoman and McMahon-Beattie, 2006, Anselmsson et al., 2007, Parguel et al., 2015) and premium brand equity (Rao and Bergen, 1992, Rao and Monroe, 1996, Cui and Choudhury, 2002, Allsopp, 2005) can help to develop *premium pricing* strategies.

³² The topic of *Multicultural Price Perception* is suggested in section 3.6.2 as part of the directions for further research, since the topic will require a separate review and synthesis than the formation and measurement of price perception as a broader topic.

Understanding the relationship between consumer price perceptions, price strategies, and consumer responses could, therefore, provide the rationale for profound changes in company pricing and value proposition development.

2.7 Perceived prices versus actual prices

It is known from the literature that there is a discernible difference between a consumer's willingness to pay and the actual prices paid, and this difference is often explained in the literature by the consumer's lack of information about real prices (Rao and Bergen, 1992, Lowe and Alpert, 2007), the influence of contextual factors in the purchasing process (Kumar et al., 1998, Miranda, 2001), the effect of price promotions and price advertising on the purchasing decision (Biswas, 1992, Bell and Lattin, 1998, Tang et al., 2001, Yin and Paswan, 2007, Palazón and Delgado, 2009), asymmetries of information³³ (Aval et al., 2011) and memories of prices³⁴ (Vanhuele and Dreze, 2002, Wegener et al., 2010).

An understanding of the variance between actual prices and perceived prices is also important because it adds to the understanding of the relationship between price perceptions and purchase intentions and behaviours.

³³ According to Nicolau (2012), asymmetry of information exists when current consumers are aware of price changes but prospective consumers are not, thus creating differences in price knowledge.

³⁴ According to Vanhuele *et al.* (2006), consumers use different cognitive mechanics to keep prices in short-term memory, and this ability to recall prices varies depends on a number of factors (e.g. verbal length, usualness and the number of prices memorised) and the consumer's own ability to memorise prices.

2.8 Systematic Review questions

The review questions for this study are concerned with investigating what is known about how consumer price perceptions are formed and measured. According to Petticrew and Roberts (2006), methodological questions can be used for such information synthesis, and therefore the questions subject of this systematic study are:

“What do we know about how consumer price perceptions are formed and measured?”

“What internal and external factors affect price perception formation

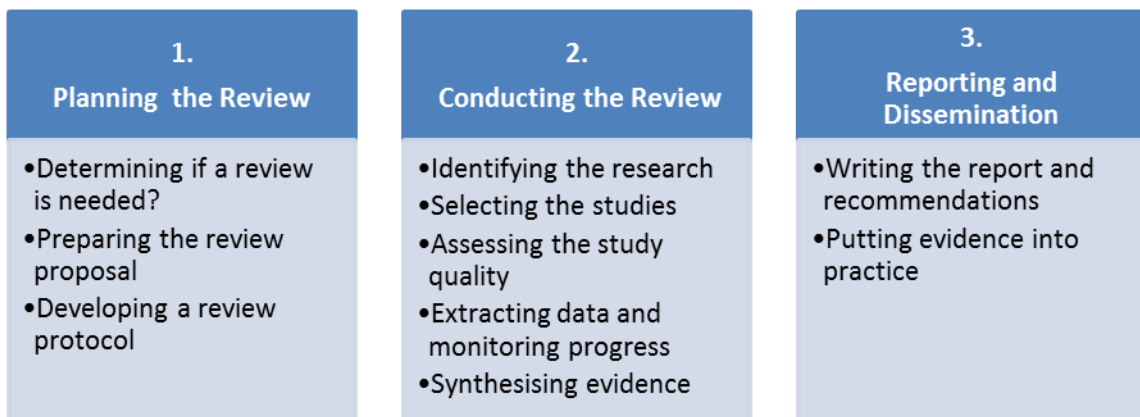
“How can price perception be measured?”

2.9 Methodology

2.9.1 Purpose of the Systematic Review

The systematic review allows the provision of insights by synthesising the evidence with methodological rigour and accumulating knowledge from a range of studies (Tranfield et al., 2003). An interesting characteristic of systematic reviews in the management field is that the procedure allows knowledge transfer between academics and practitioners by synthesising management knowledge (Tranfield et al. 2003) rather than just serving for academic purposes. It is, therefore, an ideal method for the first project in the Cranfield Doctorate in Business administration's thesis production process. The steps of a systematic review are outlined in Figure 2-3.

Figure 2-3 Steps in a Systematic Review



Source: Adapted from Tranfield et al. (2003).

This review adopts an inductive research strategy, starting with the collection of data, data analysis and generalisations (synthesis), as described by Blaikie (2007, p.60), and is found fitter for the purpose of a systematic review than other research strategies.

2.9.2 Search Strategy

This systematic review considers secondary data from academic publications and practitioners' journals, including *Harvard Business Review*, *McKinsey Quarterly* and *MIT Sloan Management Review*, among many others.

The source of the data derives from electronic databases. Also, the search strategy includes recommendations from the panel as well as from previous literature identified when working on the scoping study as a previous step towards undertaking this systematic review.

Since the literature domains of consumer price perception, the psychology of pricing and consumer segmentation are very broad indeed, the search strategy involved several steps to ensure a more manageable dataset (of papers), as follows:

1. Identify a set of preliminary keywords based on the literature map.
2. Configure the keywords into search strings.
3. Validate the search strings in initial searches.
4. Refine the search strings with the support of members of the panel.

Because the number of references obtained with the initial searches was too large, the searches were restricted to the *title and abstract* rather than searching for the full text of the articles.

Outlined in Table 2-3 are the key constructs used for the search, focusing on price perception, the psychology of pricing and asymmetries of information. Table 2-4 provides the translation of those words into text strings for use in searching the relevant journals. Table 2-5 outlines the databases used in the search. Note that aside from traditional business and management databases, the American Psychological Association's PsycINFO database was also consulted, given that it provides a large set of articles in the psychological field.

2.9.3 Keywords

Table 2-3 Construct Keywords

Construct	Keyword(s)
Price perception	Price perception, pricing perception, the perception of prices, consumer price perception, customer price perception, measures of perception, perceptual pricing, attitude to price, attitudes to prices, willingness to pay.
Psychology of prices	Psychology of prices, pricing psychology, pricing issues, the theory of prices, pricing theory, pricing theories.

2.9.4 Search Strings

Table 2-4 Search Strings

Construct	Search Strings
Price perception	"pric* perception" or "perception of pric*" or "measure* of perception" or "perceptual pric*" or "attitude* to pric*" or "willingness to pay" and consumer*
	"pric* perception" or "perception of pric*" or "measure* of perception" or "perceptual pric*" or "attitude* to pric*" or "willingness to pay" and customer*
Psychology of prices	"psycholog* pric*" or "psycholog* of pric*" or "pric* psycholog*."
	"psycholog* aspect*" or "psychology* factor*" and pric*

2.9.5 Databases

Table 2-5 Databases

Database	Description
ABI/Inform (ProQuest)	This is one of the most comprehensive databases for academic research, with the ability to perform complex searches and retrieve the full text. It also has the function of exporting references directly into RefWorks, which is the referencing tool used in the scoping study and the systematic review.
EBSCO – Business Source Complete	This is the leading scholarly business database, covering over 1,300 journals dating back from 1886. It also allows exporting references directly into RefWorks, which is the referencing tool used for the scoping study and the systematic review.
EBSCO – PsycINFO	This is the database of the American Psychological Association (APA) and is considered the largest resource in the peer-reviewed literature in behavioural science and mental health, with over 3 million records dating back to the 1600s, and international material from over 2,500 periodicals in different languages.
Web of Knowledge	This is the most comprehensive database for citation searches and allows searching for references and citations. It will be used for cross-referencing articles from EBSCO Host and ABI/Inform.

Table 2-5 Databases (cont.)

Database	Description
Harvard Business Review ³⁵	This contains important articles, case studies, papers and blogs from the prestigious Harvard Business Review's publication. Some of the content can also be accessed from other electronic databases, but certain case studies and papers are only found in this database.
McKinsey Quarterly ³⁶	Although with content almost exclusively from McKinsey, this is a well-recognised publication for practitioners, with insightful and relevant topics in the areas of marketing, pricing, brand and segmentation.
MIT Sloan Management Review ³⁷	This contains relevant articles, case studies, and papers from the prestigious publication Sloan Management Review.

2.9.6 Other sources

Other sources were only considered and explicitly included when a recommendation was received from the panel. These types of sources included but were not restricted to:

- Conference proceedings.
- Working papers or unpublished papers.
- Theses.

2.9.7 Grey literature

Grey literature, defined by Petticrew and Roberts (2006, p.90) as “literature that is not obtainable through normal publishing channels” was incorporated in this review, especially due to the recommendation of the panel or by surveying the following databases:

³⁵ Relevant documents from *Harvard Business Review* were also found in the EBSCO Host and ABI/Inform databases.

³⁶ Relevant documents from *McKinsey Quarterly* were found in the EBSCO Host and ABI/Inform databases also.

³⁷ Only a few papers were retrieved from the EBSCO Host and ABI/Inform databases.

- COPAC, an online catalogue of major university research libraries
- Public Catalogue of the British Library contains an index of all published conference proceeding
- Web sites of pricing research companies and institutions.

2.9.8 Inclusion/Exclusion Criteria

According to Petticrew and Roberts (2006, p.61), the setting of inclusion and exclusion criteria is part of the review process, and “describes the types of study, intervention, population and outcomes that are eligible for in-depth review, and those that are excluded.” The selection criteria applied to this systematic review is summarised in Table 2-6.

The inclusion/exclusion criteria were encoded into the software EPPI Reviewer 4³⁸ (described later in Section 2.10.1).

³⁸ See section 2.10.1 for an in-depth explanation of the software EPPI Reviewer 4.

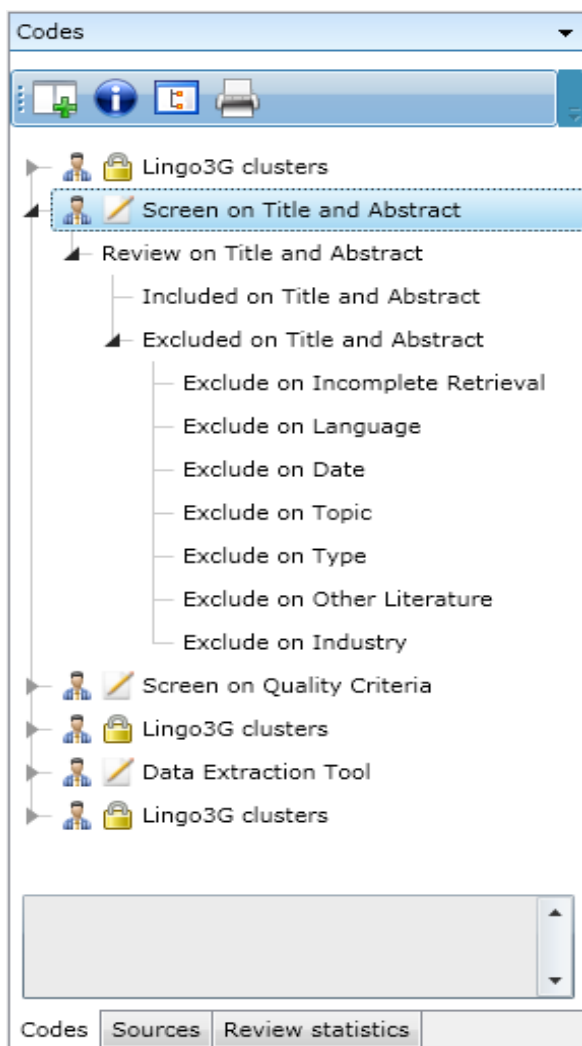
Table 2-6 Inclusion/Exclusion Criteria

Criteria	Detail
Topic	It must be related to the marketing field and in particular with the concepts of pricing and price perceptions. Research from fields such as psychology and economy were considered only in those cases where the study is referencing the marketing field (i.e. psychology of pricing). It purposely excluded all topics from finance, banking, real estate, macroeconomy and other fields.
Type	Academic papers in peer-reviewed journals, working papers, conference proceedings, theses, articles, papers, conferences and cases from Harvard Business Review, McKinsey Quarterly, and MIT Sloan Management Review were explicitly considered. The grey literature was also considered. Books were purposely excluded.
Industry	All business to consumer (B2C) industries such as consumer packaged goods (CPG), retail, telecommunications, banking, auto, The Internet, mobile marketing, and others were considered. All other industries (B2B) were excluded.
Language	Papers were written in English only.
Location	All geographical regions.
Date	Only studies published after 1990 were considered.

The inclusion/exclusion criteria were adapted from Table 2-6 into a format that could be used in the software EPPI Reviewer 4³⁹. The review was executed using the criteria on the title and abstract only since the criteria did not require reading the entire document (for example, language can be easily identified in the title, and date can be obtained without even reading the abstract). Figure 2-4 shows a screenshot of how the criteria were set on the software tool.

³⁹ The software EPPI Reviewer 4 is explained in detail in section 3.10

Figure 2-4 Reviews on Title and Abstract



Source: Adapted by the author from the software EPPI Reviewer 4.

Furthermore, Figure 2-5 shows an example of how an article was evaluated against the criteria.

Figure 2-5 Article Review on Title and Abstract

The screenshot displays the 'Citation details' window in EPPI Reviewer 4. On the left, a 'Codes' panel shows a tree structure with 'Review on Title and Abstract' selected and checked. The main window shows the following details for 'Item 4 / 92':

- Title:** Premium pricing: Understanding the value of premium
- Author(s):** Allsopp Jamie ;
- Item IDs:** Internal: 4770489 Imported:
- Month:** July
- Pub type:** Journal, Article
- Year:** 2005
- Included?:**
- Abstract:** Changing consumer perceptions of luxury are complicating the process by which consumers decide whether or not paying for premium branded goods and services is worth it. This study indicates that consumer behaviour is reflected in changing market conditions and that factors such as personal interest in the spending category are very important in determining whether consumers will pay more. This underlines the importance for companies and organisations of understanding trends in consumer behaviour and lifestyle. The study also explores how the expansion of the price spectrum in specific brands and markets is allowing consumers to shop at the price point which suits them, which creates more entry points for luxury shopping and satisfies demand for low prices. It also suggests that long-term shifts in consumer attitudes are behind the proliferation of intangible attributes that consumers associate with 'premiumness.' [PUBLICATION ABSTRACT]
- Journal title:** Journal of Revenue and Pricing Manag
- Short title:** Allsopp (2005)

Source: Adapted by the author from the software EPPI Reviewer 4.

2.9.9 Quality Appraisal Protocol

Tranfield *et al.* (2003) set the appraisal of the studies' quality as an important step in conducting the systematic review. This is further supported by Petticrew and Roberts (2006, p.125) in the sense that the appraisal aims to determine “*whether the study is adequate for answering the question.*” Furthermore, Petticrew and Roberts (2006, p.154) also indicate that the “*critical appraisal is often carried out as an integral part of the data extraction process.*” Accordingly, for this systematic review, the critical appraisal was undertaken on the review of the full text of the studies, and the resulting analysis was incorporated using the data extraction form. This process of assessing quality appraisal and then using the data extraction process on the resulting studies was described as “*detailed appraisal*” by Gough *et al.* (2012, p.156) when presenting a framework for the appraisal of the quality and relevance of the evidence.

The quality appraisal of the literature was undertaken considering the evidence in relation to a set of pre-defined questions on criteria proposed by Huff (1998) (see Table 2-7) and adapted by the author.

Table 2-7 Quality Appraisals

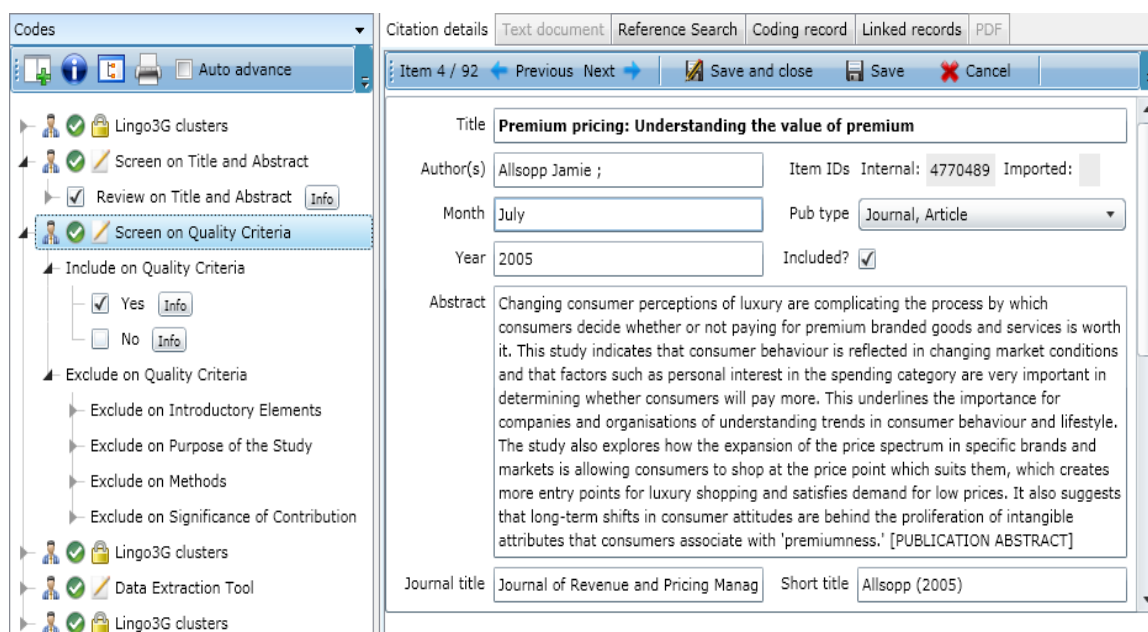
Types of Criteria	Quality Criteria
Introductory elements, discussion, and conclusion	Is the paper adequately summarised? Is the title related to the area of research interest? Is the discussion through the paper coherent and informative? Is the conclusion correctly informing about the results of this research? Is there enough background information?
Purpose of the study	Is the purpose of the study adequately explained? Is this purpose related to the area of research interest?

Table 2-7 Quality Appraisals (cont.)

Types of Criteria	Quality Criteria
Methods	<p>Are the rationales for the research methods adequately explained?</p> <p>Is there sufficient information about the sampling and data collection?</p> <p>Are the methods sufficiently explained?</p> <p>Are the results properly informed?</p>
Significance of contribution	<p>Is there a significant contribution to theory?</p> <p>Is there enough relation to the research questions of this systematic study?</p>

The studies were considered individually against the criteria presented in the previous table (see Figure 2-6).

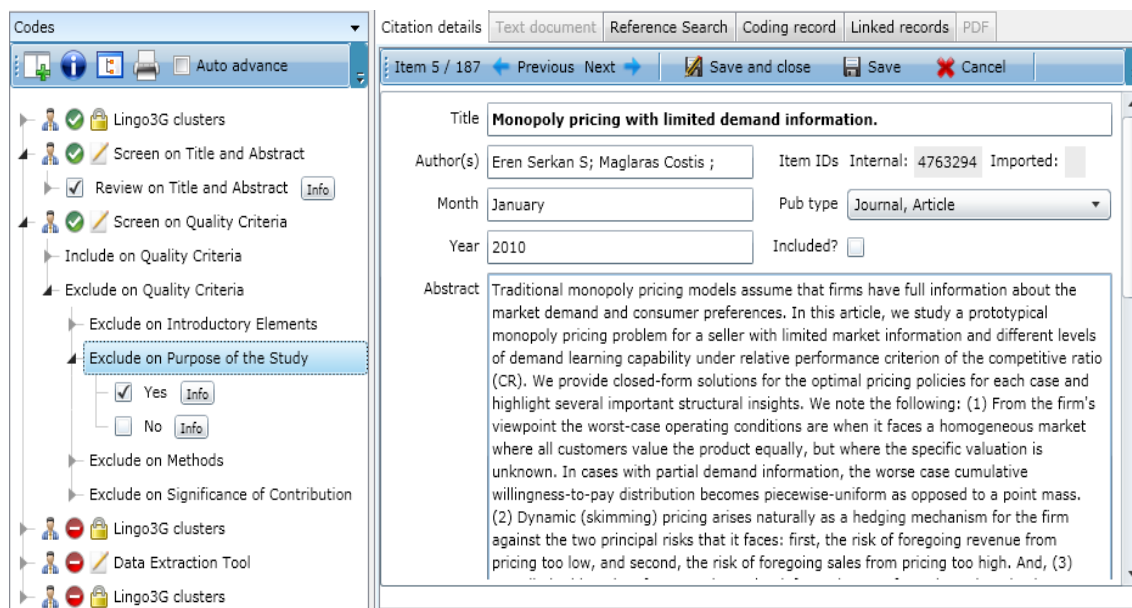
Figure 2-6 Quality Criteria



Source: Adapted by the author from the software EPPI Reviewer 4.

Moreover, the studies were excluded from the review if they failed to satisfy at least one criterion (see Figure 2-7). A particular study could fail to satisfy more than one criterion, and only the studies satisfying all the criteria were marked as included, as shown in Figure 2-6.

Figure 2-7 Study Excluded on Quality Criteria



Source: Adapted by the author from the software EPPI Reviewer 4.

The critical appraisal of the evidence was undertaken by the author, and this may have introduced “*data extraction bias*” (Petticrew and Roberts, 2006, p.155). The use of multiple reviewers or a double extraction process would have minimised the possibility of this bias, but this was not possible in this doctoral study.

2.9.10 Data Extraction

As indicated by Petticrew and Roberts (2006, p.154), “*data extraction is the process of extracting the relevant information from each study, either by copying it onto printed proforma templates or by directly entering it into a database or table.*” However, it seems like there is no agreement in the literature on a specific format for a data extraction form. Gough et al. (2012) pointed out that the choice of a data extraction form depends on a number of factors such as funding, the number, and location of reviewers, data needs, and the complexity of the project. Consequently, there are several guides for data extraction tools available, such as the one proposed by the Centre for Reviews and Dissemination of the University of York (www.york.ac.uk/inst/crd/index_guidance.htm), the Cochrane Handbook (Higgins and Greene, 2008) and the REPOSE guidelines developed by the EPPI-Centre (Newman and Elbourne, 2004). Figure 2-8 shows a comparison of different data extraction tools, as presented by Elamin et al. (2009).

Figure 2-8 Comparisons

Table 1. Comparison between different data-collection tools including RevMan

Tools	Setup cost ^a	Project setup difficulty ^b	Versatility ^c	Training requirement ^d	Portability/accessibility	Ability to manage data ^e	Ability to track progress ^f	Ability to present data ^g	Ability to store and retrieve data
	Lowest → highest	Easiest → toughest	Easiest → toughest	Easiest → toughest	Easiest → toughest	Easiest → toughest	Easiest → toughest	Easiest → toughest	Easiest → toughest
Paper and pencil	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□
E-mail-based forms	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□
Spreadsheet software	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□
Cochrane's RevMan	□□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	□□□□
Database software	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□
Web-based surveys	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□
Web-based specialized applications ^h	■□□□	■□□□	■□□□	■□□□	■□□□	■□□□	□□□□	■□□□	■□□□

^a The cost may include software, computers, Internet access, and others. Personnel time not included.

^b Design the tool to be most compatible with the project to facilitate data management, i.e., setup the data extraction form for different levels.

^c Refers to ability to modify project requirements after initial execution.

^d The time needed for reviewers to get familiar with the tool and use it efficiently to input data.

^e Refers to compiling of all data entered by reviewers after finishing data extraction and conflict/disagreement resolution.

^f To track reviewers' progress. This process is enhanced by sharing the tool (spreadsheet software, database software) over the World Wide Web (www) as shown in the table.

^g Refers to the ability to present data in different formats and to query the database to generate reports for different users (e.g., quantify and resolve disagreements, create letters for original authors to confirm data extracted).

^h Web-based software applications specifically designed to manage systematic reviews.

Source: Elamin et. al. (2009, p. 508)

For the purpose of this review, the data extraction form was adapted from the form proposed by Petticrew and Roberts (2006, p.293) to fit the objectives of this review. The data extraction form (see Table 2-8) was encoded into the software application, EPPI Reviewer 4 (O'Mara-Eves et al., 2015) and adapted from the format proposed by the Centre for Reviews and Dissemination, as suggested by Petticrew and Roberts (2006, p.154). A description of the data extraction tool incorporated in the software EPPI Reviewer 4 is shown in Figure 2-9. An example of the coding done with one document is shown in Figure 2-8. The codes indicated in Appendix B were generated from the evidence when undertaking the quality appraisal.

Table 2-8 Data Extraction Form

Methodology	Type of Study (Empirical, Theoretical)
	Data Collection (Quantitative, Qualitative, No Data Collection)
Outcome data/results	Type of study (empirical, theoretical or empirical)
	Outcomes or conclusions
	Limitations
	Rationale for Inclusion or Exclusion
Core Concept (codes)	Codes derived from the review such as Anchoring, Asymmetries of Information, Brand Equity, False Memories of Prices, Framing of Decisions, Mental Accounting, Price Perception, Psychology of Prices, Reference Price, Contextual Information, Price Evaluations, Willingness to Pay, Price Comparisons, Prior Beliefs, Frequency of Purchase, Magnitude of Purchase, Premium Pricing, Consumer Behaviour and Price Fairness.

Figure 2-9 Data Extraction Form

The screenshot shows a software window titled "Codes" with a toolbar containing icons for a plus sign, information, a document, a printer, and a checkbox labeled "Auto advance". Below the toolbar is a "Data Extraction Tool" section with a tree view structure:

- Methodology
 - Outcome data/Results Info Outcomes
- Contribution
 - Price Perception Influenced Info
 - Price Perception Effect Info
 - Measures Price Perception Info
- Core Concept
 - Anchoring Info
 - Assymetries of Information Info
 - Brand Equity Info
 - False Memories of Prices Info
 - Framing of Decisions Info
 - Mental Accounting Info
 - Price Perception Info
 - Psychology of Prices Info
 - Reference Price Info

Source: Adapted by the author from the software EPPI Reviewer 4. Not all the core concepts (codes) are shown in the picture but are indicated in Appendix B.

Figure 2-10 Core Concepts

The screenshot displays the EPPI Reviewer 4 software interface. On the left, a 'Codes' panel lists 15 core concepts under the heading 'Core Concept'. Each concept has a checkbox and an 'Info' button. The concepts are: Anchoring, Assymetries of Information, Brand Equity, False Memories of Prices, Framing of Decisions, Mental Accounting, Price Perception, Psychology of Prices, Reference Price, Contextual Information, Price Evaluations, Willingness to Pay, Price Comparisons, and Prior Beliefs. The 'Reference Price', 'Price Evaluations', and 'Prior Beliefs' checkboxes are checked. On the right, the 'Citation details' window is open for 'Item 2 / 6'. It shows the title 'The Influence of Prior Beliefs, Frequency Cues, and Magnitude Cues on Consumers' Perceptions of Comparative Price Data.', author(s) 'Alba Joseph W; Broniarczyk Susan M;', item IDs 'Internal: 4763573', month 'September', year '1994', and 'Pub type' 'Journal, Article'. The 'Included?' checkbox is checked. The abstract text is: 'A widespread practice in grocery store advertising is to compare the advertised store's prices to a competitor's prices on multiple items. An important, but largely unexplored, issue is how this information is processed and used in conjunction with prior beliefs to influence price perceptions. In our initial studies we manipulated prior beliefs and two data-based cues-frequency of price advantage and magnitude of price advantage to determine their relative influence on consumer price perceptions. Results indicate that prior beliefs affected price perceptions but that the frequency cue exerted a dominating influence. Several follow-up studies demonstrate the robustness of this phenomenon across a variety of presentational and instructional conditions. [ABSTRACT FROM AUTHOR] Copyright of Journal of Consumer Research is the property of Journal of Consumer Research, Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may'.

Source: Adapted by the author from the software EPPI Reviewer 4. A complete list of core concepts (codes) is shown in Appendix B.

This form, as shown in Figure 2-10, was incorporated into the EPPI Reviewer 4 software tool and piloted with the first 10 records, using the search string on price perception described in Tables 2-3 and 2-4.

2.10 Data Synthesis

According to Cooper (2009, p.8), the principal outcome of a research synthesis is “*expected to provide information on several types of findings relating to the cumulative results of the research it covers*”, and for the purpose of this systematic review, the synthesis will evaluate the evidence base according to the following four components:

1. Based on internal factors, how are price perceptions formed?
2. Based on external factors, how price perceptions formed?
3. How internal factors affected the measurement of price perceptions?
4. How external factors affected the measurement of price perceptions?

There are two main methods available for synthesising literature review data, including 1) meta-analysis and 2) narrative synthesis. However, the argument in favour of using narrative synthesis instead of a meta-analysis is stronger, due to the heterogeneity of the studies found in this review and the lack of availability, and interoperability, of quantitative datasets, contained within these papers.

In the social sciences, studies tend to be heterogeneous, thus posing a challenge for using meta-analyses when synthesising the evidence. Petticrew and Roberts (2006) propose the use of a narrative synthesis in such studies. This is supported by Tranfield et al. (2003), by including narrative synthesis when studies are heterogeneous. In this systematic review, the evidence included qualitative studies, quantitative studies, theoretical researches and articles from grey literature⁴⁰. Moreover, there were articles from the fields of marketing and psychology, so all this helps make a case for using a narrative synthesis given the heterogeneity of these studies.

The data synthesis for this systematic review started with the tabulation of the studies that were included in the quality assessment, followed by the analysis of each study and continuing with a cross-study synthesis as proposed by

⁴⁰ See section 2.9.7 for a definition of grey literature

Petticrew and Roberts (2006, p.170). Finally, the results are summarised and presented in the graphical and narrative form.

2.10.1 Systematic Review Software

It is widely known that the systematic review process is very time-consuming, requiring identifying, appraising and synthesising a large number of studies. This extensive number of studies can result in “*information overload*,” and this is a problem for decision makers and researchers alike (Petticrew and Roberts, 2006, p.22). This view is further supported by Wolfe et al. (1993), in the sense that the volume of data that is often collected can present serious constraints to conducting effective qualitative research and might have an effect on the research process, as researchers can settle for simplified approaches undermining the analysis and summarisation that is key to the systematic review process.

A number of computer software systems are available for undertaking qualitative research and even systematic reviews. There is evidence to suggest that computerised content analysis (through a computer software) is better than manual analysis (Morris, 1994, Evans, 1996, Alexa and Zuell, 2000), with a number of advantages and disadvantages (as explained in Table 2-9).

Table 2-9 Computerised content analysis

Advantages	Disadvantages
Perfect stability of the coding scheme	Lack of natural language processing capabilities
Explicit coding rules yielding formally comparable results	Inability of the software to recognise the communicative intent of word usage
Perfect coder reliability of the computerised approach	Inability of the researcher to provide an exhaustive listing of keywords for a category that is indeterminate by nature
Easy manipulation of texts	Inability of the software to resolve references back and forward to words appearing elsewhere in the text
Ability to process large quantity of qualitative data at lower costs	Inability of the software to analyse quantitative data as strips instead of using its own artificial definitions
	The capabilities of the software can result in 'word crunching,' transforming words into numbers that are meaningless
	Continued reliance on human coders

Source: Adapted from Morris (1994:924-925).

Yet, the advantages of using computerised content analysis outweigh the disadvantages by facilitating the identification, categorisation, and synthesis of studies (Morris, 1994). Furthermore, despite being relatively unknown in the systematic review community, the use of computer software in systematic reviews raises the potential to assist in various phases of the systematic review process (Thomas et al., 2010). However, as pointed out by Petticrew and Roberts (2006, p.21), *'the science of systematic reviewing is still evolving,'* and systematic review software does not escape this evolution process. In fact, most available software is restricted to particular stages of the systematic review process rather than the entire systematic review process. The software generally lacks good reporting facilities, and there is a paucity of features such as tracking literature searches and early phase screening that support the early stages of the systematic review (Brogger, 2007).

Nevertheless, one software package that covers the entire cycle of the systematic review process is the EPPI Reviewer system described by Thomas et al. (2010) and proposed by Brogger (2007) as the best choice of a number of

alternatives evaluated. The Evidence for Policy and Practice Information and Coordinating (EPPI-Centre) at the Institute of Education, University of London is the publisher of the software, which is now in its fourth version. The centre supports evidence-informed policy in the fields of education and health promotion, and in doing so, explores many of the challenges that confront research reviewers in the social sciences, including technical and methodological issues affecting the quality and reporting of primary research (Oakley et al., 2005). Moreover, the EPPI-Centre extends the work done by the Campbell Collaboration by disseminating systematic reviews in the area of education and other areas (Newman and Elbourne, 2004).

The author found that EPPI Reviewer 4⁴¹ allows for a better management of the systematic review process, including the synthesis and meta-analysis phase. In addition, it provides better management of the data extraction phase. So, for the purpose of this systematic review, the software EPPI Reviewer 4, developed by Thomas et al. (2010), from the EPPI-Centre, was used.

2.10.2 Evolution of this Systematic Review

There were many changes made during the development of this systematic review; the panel recommended some changes, whereas others were proposed by the author and accepted by the panel.

Originally, the author's interest was centred on premium pricing and, more specifically, on segmentation models based on premium price perceptions; however, a preliminary attempt to develop a systematic review around premium price perception was abandoned, since there was a paucity of literature on *premium* price perceptions, and the two streams of literature on premium pricing and price perceptions appeared unconnected. This was even more evident when the study of the segmentation was introduced in the review. There were

⁴¹ EPPI Reviewer 4 is published by the EPPI-Centre at the Institute of Education of the University of London, which owns all the respective copyrights.

very few studies (and not a single one from a top-rated journal) covering the topic of segmentation and premium price perceptions.

So, the panel recommended broadening the scope to review the literature on price perceptions (rather than premium price perceptions) and segmentation. An initial search identified a vast number of papers. Accordingly, the literature on segmentation and price perception was so broad that the author suggested focusing the review on price perception and leaving the application of price-based segmentation models for later stages in the DBA process. The panel chair and supervisor accepted this and, as a result, this study focuses only on the formation and measurement of the consumer's price perceptions.

2.10.3 Descriptive Analysis of the Field

2.10.3.1 Overview

Whilst the preceding sections of this paper outline the methods used as part of the systematic review, this section seeks to outline the content analysis. The base of evidence was pre-categorised into three areas - 1) consumer price perceptions, 2) psychology of pricing and 3) the asymmetry of information - and then re-categorised according to the narrative synthesis described further in this review. The systematic review analysis discriminated by different criteria such as the area of evidence, sources, and dates, and adds a complete analysis of the field. It should be noted that this analysis is particular to the period from 1990 until the present day, in order to ensure a manageable dataset.

2.10.3.2 Screening on Inclusion/Exclusion Criteria

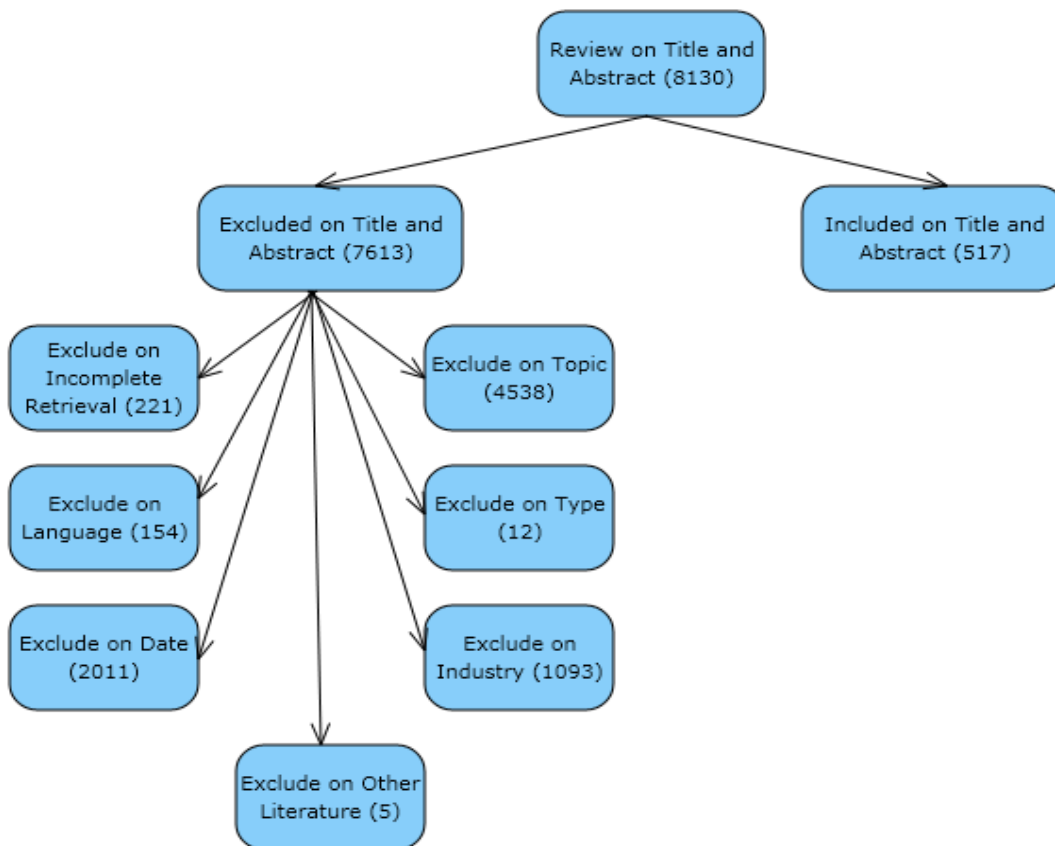
The searches in the areas of consumer price perceptions, the psychology of pricing and asymmetry of information returned a very large number of references. All these references were loaded into the software⁴², and after the removal of duplicates, there were 8,130 references to be reviewed on Title and Abstract. For this purpose, a screening tool was incorporated within the software that matches the inclusion / exclusion criteria (see Section 2.10.1).

⁴² For the purposes of this review, any reference to 'the software' will refer to the software EPPI Reviewer 4 that was used for this systematic review.

After the criteria had been applied, there were 517 references that were included for a further review based on the quality criteria (see Section 20.10.3.3), and 7,613 references were excluded. Figure 2-11 shows the results of the review around title and abstract using the inclusion / exclusion criteria, indicating the number of references excluded due to a main topic other than price perception (4,538 references), incomplete retrieval (for example, missing authors or missing dates, resulted in 221 references being excluded), language (other than English; 154 references excluded), date (prior to 1990, resulted in 2011 references excluded), industry (1093 references excluded), type of documents (mostly book reviews; 12 references excluded) and other literature (mostly article reviews; 5 references excluded) .

Appendix A.3 contains a list of references that were included and excluded on the different criteria shown in Figure 2-11.

Figure 2-11 Screening on Inclusion / Exclusion Criteria

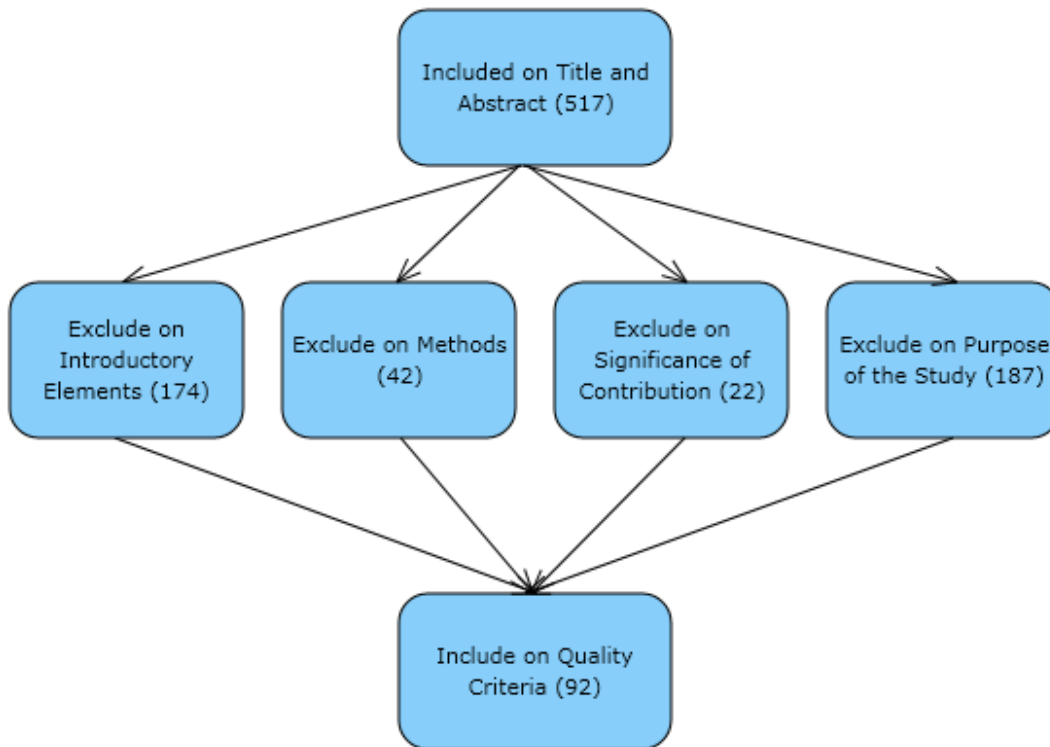


Source: Adapted by the author based on the Inclusion/Exclusion criteria.

2.10.3.3 Screening on Quality Criteria

The total number of references retrieved after the review, using the inclusion / exclusion criteria, was still too large. So, the references were screened using the quality criteria specified in previous sections. This screening was undertaken on the full text, and each reference was marked according to the criterion that was more relevant for inclusion or exclusion. A diagram showing the results of the screening on the full text based on the quality criteria is presented in Figure 2-12.

Figure 2-12 Screening on Quality Criteria



Source: Adapted by the author based on the Quality Criteria.

2.10.3.4 Distribution by Publication

An analysis of frequency on the included evidence shows an adequate distribution of several publications. It is worth noting that there is a balance of evidence coming from psychological journals (*Journal of Applied Psychology* and *Journal of Business and Psychology*), economic journals (*Journal of Socio-Economics* and *Journal of Economic Behaviour and Organisation*) and, of course, marketing journals. Almost all the evidence was retrieved from academic journals, with one exception from Harvard Management Update and eight from *Advances in Consumer Research* that includes conference proceedings.

In addition, Table 2-10 shows a complete list of publications used for both the assessment of the quality criteria and the synthesis. It is worth noting that although most of the publications are related to the field of marketing, there are publications in the fields of Psychology (*Acta Psychologica*, *Journal of Business and Psychology*, *Journal of Applied Psychology*, *Journal of Economic Psychology* and *Psychology and Marketing*) and Economics (*Journal of Behavioural Economics*, *Journal of Economic Behaviour*, *International Journal of Socio-Economics* and *Journal of Socio-Economics*), so evidencing an interesting variety in the literature fields (at least with academic journals, since just one practitioner's journal, Harvard Management Update, was chosen after the initial review was performed on Title and Abstract).

Table 2-10 List of Publications

List of Publications
Academy of Marketing Science
Acta Psychologica
Advances in Consumer Research
Advances in Consumer Research - European Conference Proceedings
Advances in Consumer Research - North American Conference Proceedings
Economics Letters
European Journal of Marketing

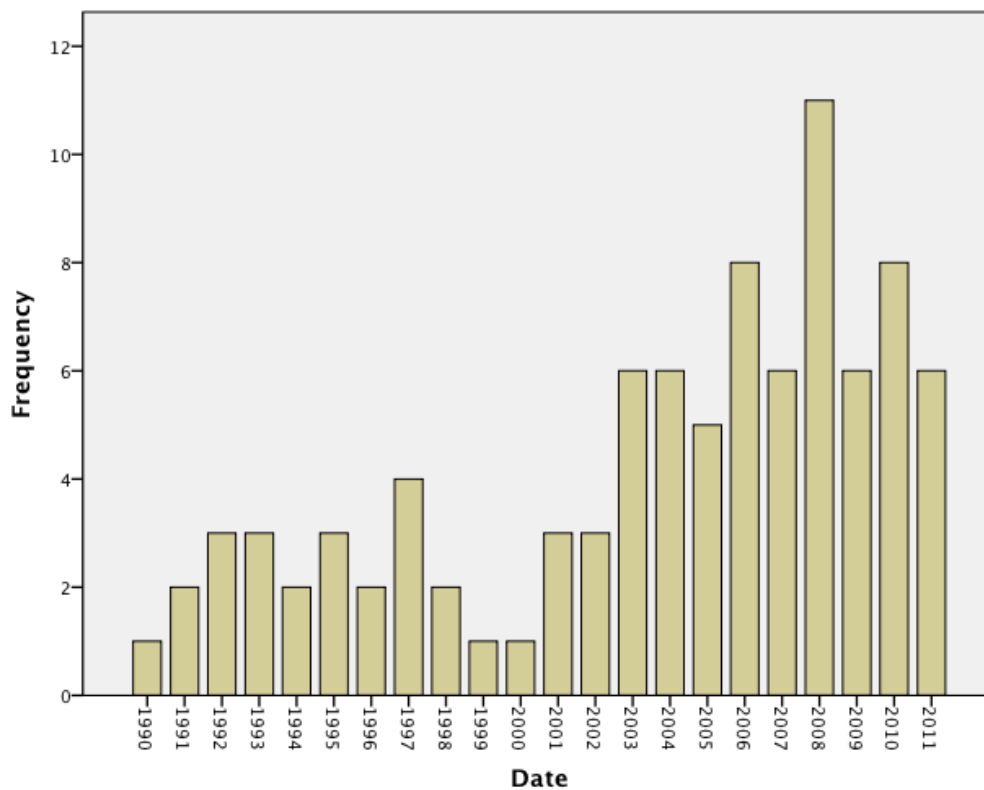
Table 2-11 List of Publications (cont.)

List of Publications (Cont.)
Harvard Management Update
INSEAD Working Papers Collection
International Journal of Research in Marketing
International Journal of Service Industry Management
International Journal of Social Economics
Journal of Applied Psychology
Journal of Behavioural Economics
Journal of Business and Psychology
Journal of Business Research
Journal of Consumer Behaviour
Journal of Consumer Research
Journal of Economic Behaviour & Organization
Journal of Economic Psychology
Journal of Marketing
Journal of Marketing Research
Journal of Marketing Research (JMR)
Journal of Marketing Theory and Practice
Journal of Product & Brand Management
Journal of Retailing
Journal of Retailing & Consumer Services
Journal of Revenue & Pricing Management
Journal of Revenue and Pricing Management
Journal of Service Research
Journal of Socio - Economics
Journal of the Academy of Marketing Science
Marketing Intelligence & Planning
Marketing Letters
Marketing Research
Marketing Science
Milestones in Market Research: Part 2
Pricing Strategy & Practice
Psychology & Marketing
The Journal of Product and Brand Management

2.10.4 Distribution by Date

The inclusion criterion used in the systematic review protocol was set to retrieve articles published after 1990. However, there was a concern that there could be a large number of articles published before this date that would be excluded from the review. However, Figure 2-13 outlines a frequency chart by the date that clearly shows a trend that suggests that more articles in the field were published in the period 2000 onwards than between 1990 and 1999.

Figure 2-13 Distributions by Date



Additional evidence confirming that most publications on the topics of consumer price perception, the psychology of pricing and asymmetry of information were published recently is shown in Table 2-11. In this table of cumulative frequency distribution, more than 75% of the evidence retrieved was published after 2000, and more than 90% of the evidence was published after 1994.

Table 2-12 Cumulative Percentages by Date

		Frequency	Percentage	Cumulative Percentage
Valid	1990	1	1.1	1.1
	1991	2	2.2	3.3
	1992	3	3.3	6.5
	1993	3	3.3	9.8
	1994	2	2.2	12.0
	1995	3	3.3	15.2
	1996	2	2.2	17.4
	1997	4	4.3	21.7
	1998	2	2.2	23.9
	1999	1	1.1	25.0
	<u>2000</u>	<u>1</u>	<u>1.1</u>	<u>26.1</u>
	2001	3	3.3	29.3
	2002	3	3.3	32.6
	2003	6	6.5	39.1
	2004	6	6.5	45.7
	2005	5	5.4	51.1
	2006	8	8.7	59.8
	2007	6	6.5	66.3
	2008	11	12.0	78.3
	2009	6	6.5	84.8
2010	8	8.7	93.5	
2011	6	6.5	100.0	
<u>Total</u>	<u>92</u>	<u>100.0</u>		

2.10.4.1 Distribution by Text Document Clustering

For this systematic review, the author used the Lingo3G document clustering engine⁴³. This engine organises collections of text documents into 'clusters' that are organised thematically. The advantage of using tools like Lingo3G is that it allows the generation of codes automatically from the documents retrieved from the database. These codes were used for the synthesis part of the systematic review and further refined during the synthesis.

Table 2-12 shows a distribution of the evidence base by clusters, as developed using Lingo3G. The majority of the evidence contains clusters related to Consumer Behaviour (61.9%), but there is a considerable number of evidence clusters related to Brand (44.5%), Price Affect (42.3%), Product Categories (39.1%), Price Fairness (35.8%), Price Expectations (35.8%) and Willingness to pay (31.5%).

A detailed analysis of the clusters of Consumer Behaviour reveals that topics such as value perceptions (8 documents), price affect (6 documents), price increase (6 documents), fairness perception (5 documents) and transaction value (4 documents) are the most recurrent themes in the consumer behaviour area.

The use of the clustering engine Lingo3G to automatically generate codes based on document clusters was useful for the purpose of this systematic review, as it allowed the classification of evidence around themes. For example, from Table 2-12, it is possible to observe that in the search around price perception, the psychology of prices and asymmetry of information, there is more evidence towards, for example, brand and price fairness than to economic theory.

⁴³ Lingo3G is a product of Carrot Search (www.carrotsearch.com/lingo3g-overview.html), used by organisations such as the EPPI Centre among others. The version used by the author is part of the software EPPI Reviewer 4, developed by the EPPI Centre.

In addition, these clusters generated by Lingo3G will provide the apriori codes used in the synthesis part. A complete list of codes used during the narrative synthesis can be found in Appendix A-1.

Table 2-13 Distribution by clusters (a-priori codes)

Cluster (Topic)	Documents related ⁴⁴	% of total documents
Consumer Behaviour	57	61.9%
Brand	41	44.5%
Price Affect	39	42.3%
Product Categories	36	39.1%
Price Fairness	33	35.8%
Price Expectations	33	35.8%
Willingness to Pay	29	31.5%
Reference Prices	13	14.1%
Pricing Approach	9	9.7%
Price Sensitivity	6	6.5%
Mental Accounting	4	4.3%
Product Quality	4	4.3%
Economic Theory	4	4.3%
Brand Extensions	3	3.2%
Price Endings	2	2.1%
Other topics	10	10.7%

⁴⁴ Each document can be related to one or more topic, and therefore the numbers of documents related to topics will be greater than the number of documents included in the review after the quality criteria (n = 92)

2.11 Narrative Synthesis

2.11.1 Overview

The systematic review explored the evidence base around price perception, the psychology of pricing and asymmetry of information in order to answer the question:

“What do we know about how price perceptions are formed and measured and what internal and external factors affect price perception formation and measurement?”

With regards to how price perceptions are formed, the review unearthed several theories on how price perceptions are formed. In addition, the review uncovered both internal and external factors that play a role in the formation of price perceptions. Furthermore, the review found that there is a dual role for price perception in the sense that it is affected by internal and external factors but also affected by consumer’s willingness to pay (i.e. it acts as a mediator between these variables). In addition, the review found evidence of measures of price perception under different factors, but at the same time, these measures were very specific to a particular context/situation. There was no common method for measuring price perceptions found in the literature. We consider each of these above areas in more detail below.

2.11.2 Theories Supporting the Formation of Price Perception

Table 2-14 illustrates a frequency table outlining the number of times a particular theory was used in the literature in papers discussing price perception formation since 1990. During the systematic review process, codes were assigned to the evidence depending on whether or not the discussion centred around one of these theories or the argument was rooted in any of these theories.

Table 2-14 Theories Supporting Formation of Price Perceptions

Theories	Articles using the Theory
Adaptation-Level Theory	7
Anchoring	9
Assimilation/Contrast Theory	1
Mental Accounting	33
Prospect Theory	10
Range Theory	3
Range-Frequency Theory	2
Selective Accessibility	1

Source: Adapted by the author from EPPI Reviewer 4.

Accordingly, the majority of the evidence dealing with formation of price perceptions grounded their arguments on the model proposed by Thaler (2008) on Mental Accounting that suggests consumers mentally code combinations of gains and losses in accordance with price (Kahneman and Tversky, 1979) using Prospect Theory, but also introduces the concept of Transaction Utility as a two-stage process where individuals first evaluate potential transactions and then approve or disapprove each individual transaction (Thaler, 1983). However, some researchers initiated a discussion of the formation of price perceptions based on Prospect Theory itself rather than on Mental Accounting thus focusing only on the combination of gains and losses as a way to explain the formation of price perceptions and excluding the use of the Transaction Utility proposed by Thaler (1983).

Another theory that is used in the literature to explain the formation of price perception is based on the Adaptation-Level Theory proposed by Helson (1964) that states that past experiences characterise our perceptions forming judgments that are context sensitive. However, the use of Adaptation-Level Theory in the literature was almost exclusively used to explain the formation of reference prices as proposed by Niedrich et al. (2001) and in one case to explain the concept of Range Theory (Niedrich et al., 2001) in which consumers' assessments of the attractiveness of a given price depends on the

comparison of the endpoints of a price range and not just on the evaluation of an internal reference price.

The discussion of the formation of price perceptions around Adaptation-Level Theory and theories derived from it such as Assimilation-Contrast Theory (Cunha and Shulman, 2011) suggest that consumers are likely to accept only moderate attitude changes (used to explain the effect of price promotions). Range Theory and Range-Frequency Theory proposed by Parducci (1965), concerned with category judgments⁴⁵, is a useful concept because it provides an explanation of the effect of internal factors in the formation of price perceptions. For example, Range Theory supports the notion that consumers develop internal reference prices.

Table 2-15 summarises which theories different authors grounded their arguments in, in discussing the formation of price perceptions.

⁴⁵ According to Moon and Voss (2009) and Cunha et al. (2011), consumers form their price perception (price judgment) in relation to prices within the same category.

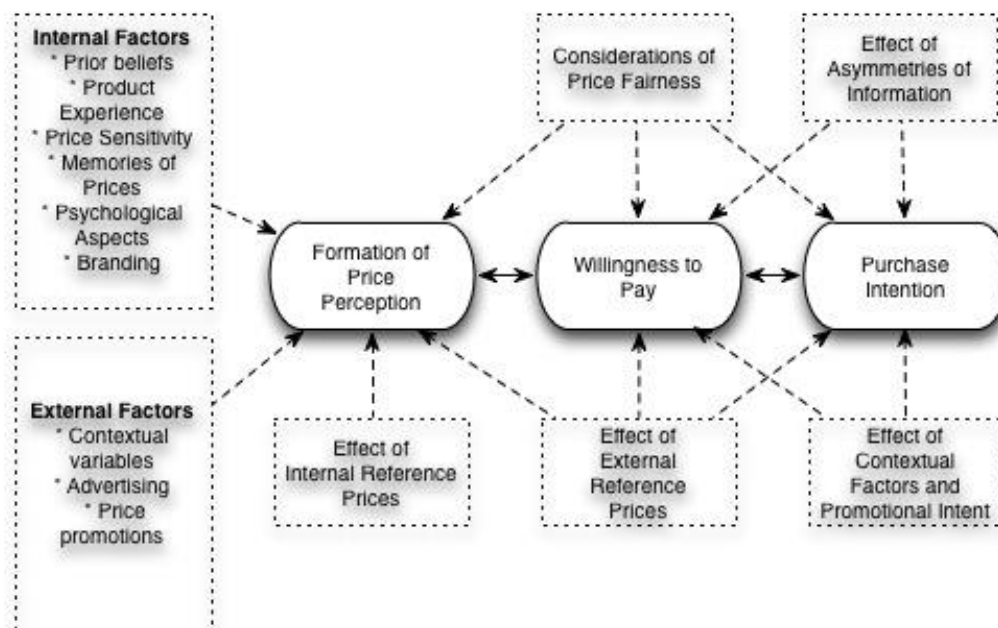
Table 2-15 What Theories Support the Formation of Price Perceptions?

Reference	Theories
Gotlieb (1991), Campo (2007), Moon (2009),	Adaptation-Level Theory
Estelami (1997), Simonson (2004), Adaval (2011), Park (2011)	Anchoring
Putler (1992), Rao (1992), Frey (1993), Lichtenstein (1993), Ranyard (1993), Alba (1994), Chandrashekar (1995), Heath (1995), Kumar (1998), Ranyard (2001), Krishna (2002), Chernev (2003), Hansen (2005), Mazumdar (2005), Rao (2005), Ha (2006), Hyeong (2006), Daskalopoulou (2008), Diller (2008), Rajneesh (2008), Völckner (2008), Nasiry (2009), Peine (2009), Carter (2010), Kurtuluş (2010), Chandrashekar (2011)	Mental Accounting
Urbany (1990), Kopalle (1996), Kristensen (1997), Jun (2004), Shoemaker (2005), Haws (2006), Biswas (2008), Thaler (2008), Bechwati (2009), Bergman (2010)	Prospect Theory
Janiszewski (1999), Niedrich (2001), Moon (2009)	Range Theory [Adaptation-Level Theory]
Niedrich (2009)	Range-Frequency Theory

2.11.3 A Theoretical Framework of Price Perception Formation

The evidence around the formation of price perceptions can be summarised in a theoretical framework, developed by the author, and show previously in Figure 1-1 and reproduced for convenience in Figure 2-14. In this model, internal and external factors affect the formation of price perceptions, which in turn affect consumers' willingness to pay. The internal factors are discussed in the following section and are related to consumer's prior beliefs, previous experiences with the product (or the product category), consumers' price sensitivities, memories of prices, other psychological aspects (including behavioural intent) and brand (more specifically, the effect of brand equity).

Figure 2-14 A Framework of Price Perception Formation



According to the literature, the external factors are contextual variables (such as store format, location, timing, and others), advertising (including how prices are presented to the consumer) and promotions (which also produce an effect on willingness to pay and purchase intention).

In addition, reference prices also influence the formation of price perceptions. In the literature, there is no debate over whether reference prices shape the formation of price perceptions or vice versa (that they are the outcomes of such price perception formations). However, there is evidence in the literature that price perception formation is dynamic and consumers continuously update their price perceptions based on internal reference prices and external reference prices.

Furthermore, considerations of price fairness play an important role in the model, as according to the literature, they produce an effect not just in the formation of price perceptions but also on the willingness to pay and even on purchase intention. Accordingly, a negative association of price fairness (i.e. perceived price unfairness) will affect consumer's willingness to pay and purchase intention. Similarly, the asymmetries of information (in which some consumers know of price changes but others do not) have an effect on willingness to pay and purchase intention as consumers will perceive prices that are different from the actual price which might have a positive or negative reaction to purchase behaviour (depending upon if the actual price is perceived as gain or a loss by the consumer).

In this theoretical framework, it is assumed that the formation of price perceptions is dynamic, and the consumer constantly updates their perceptions, therefore, there are reciprocal relationships between price perception, willingness to pay and purchase intention.

2.11.4 Role of Internal Factors

As indicated in the previous section, the formation of price perceptions is explained in the literature using the concept of Reference Prices, i.e. prices against which the offered prices are compared (Monroe, 1973), and that can be Internal Reference Prices (that are formed prior to the occurrence of the purchase occasion) or External Reference Prices (that are formed during the occurrence of the willingness to pay). Therefore, according to the literature, the formation of price perceptions depends on previous experiences and beliefs in concordance with Adaptation-Level Theory but is influenced by a number of factors that can either be internal (constructed by the consumer in agreement with the Mental Accounting theory) or external (affected by contextual factors). In other words, according to the literature reviewed, Price Perceptions are not static but are dynamic and affected by numerous factors. This finding provides evidence that supports the development of marketing strategies aimed at understanding consumers' current price perceptions over time in order to influence their purchase intentions.

However, as explained by Chandrashekar (2011), consumers do not use the same mechanism for forming internal reference prices. This is due to consumer heterogeneity (Briesch et al., 1997, Taher and El Basha, 2006) in the sense that consumers have different experiences, beliefs and interests towards the brand (or brand category) in consideration. This makes entirely possible the idea that consumers can be segmented by their price perceptions, a notion we will consider in later projects in the DBA process.

The many factors affecting the formation of internal reference prices poses a challenge when it comes to measuring price perceptions. A different measurement method or scale might be required depending on the formation process of such prices.

2.11.5 Role of External Factors

A study by Chandrashekar (2011) introduces an interesting perspective in which focal and contextual components of price history are determinants in the formation of reference prices. This is supported in the literature by the work undertaken by Burman and Biswas (2004) where the effect of retail advertisements is measured providing evidence that external factors adjust existing price perceptions⁴⁶. This view is also supported by Campo & Yagüe (2007) who studied the effect of internal and external reference prices on price discounts (that are also advertised) and found that consumers perceive prices differently based their demographic characteristics, accordingly, consumers will perceive price differently, have different price tolerances and will react differently to price discounts, based on their demographic characteristics.

A number of authors also take into account the effect of external factors on the formation of price perceptions in the form of how the price is presented to consumers. For example, Gendall et al. (1997) studied the effect of odd pricing on demand, Harris and Bray (2007) focused on price endings (that includes odd prices) and Estelami (1997) made an emphasis on multi-dimensional prices⁴⁷. These studies have in common the assumption that the consumer's price perception is affected by how the price is presented (i.e. framed) arguing that the consumer's mental process perceives some forms of prices (for example, odd prices) as better than others.

In addition, there is a deal of research on contextual variables such as location and shopping experience (including store design). For example, work undertaken by Suri et al. (2008) studied the effect of spatial location of price information on price perceptions and Kerin et al. (1992) researched the effect of

⁴⁶ Gotlieb and Sarel (1991) listed comparative price advertisements and store information as external factors but also studied the effect of credibility [in the advertised price] on purchase intention.

⁴⁷ A multi-dimensional price will have several pieces of information, for example, a new mobile phone subscription will have a down payment (for the phone), a connection charge (for the phone line), a monthly payment, taxes and fees, and a penalty (in case of an early contract termination).

the store shopping experience and its effect on perception, providing evidence that contextual factors can produce an influence on how consumers perceive price.

So, according to the literature, there is evidence that external factors also influence and shape how consumers perceive prices (Meng and Nasco, 2009). This is important because it indicates that despite the initial formation of price perceptions; there is evidence to indicate that price perceptions can be altered by manipulation of certain external factors.

2.11.6 Role of Brand in Price Perception

The review found strong connections between the consumer's attitude towards brands and consumer's perception of prices. Research on the topic of reference prices took into account the effect of the brand in the formation of reference prices (Kopalle and Winer, 1996, Yin and Paswan, 2007, Lowe and Alpert, 2007, Lowe and Alpert, 2010). In addition, the review found evidence that suggests that a positive attitude towards brands (brand loyalty) will result in a positive perception towards prices. Furthermore, when studying the asymmetry of information and false memories of prices (in order to understand the differences between the internal reference price and the actual price), it was found that the consumer-brand connection could explain the reason why some consumers move to an external reference price that is significantly different from their internal reference price. This is explained in the literature as *price tolerance* (Herrmann et al., 2004) in which consumers have an implicit threshold where prices can fluctuate without affecting the purchase decision and accordingly, a strong consumer-brand connection will have a bigger price tolerance than a weak one (Vázquez-Casielles et al., 2009). The concept of price tolerance is rooted in the studies around Zones of Tolerance⁴⁸ that is used mostly in the service industry to define the upper and lower limits of a consumer's acceptance of services. However, in the literature, price tolerance is

⁴⁸ Zones of Tolerance is explained in the Glossary of Terms

also explained as *latitude of price acceptance*⁴⁹ that defines the implicit threshold of price tolerance as a region of price insensitivity (Monroe, 1973, Kalyanaram and Little, 1994) but in fact, both price tolerance and price acceptance describe the same phenomenon (the existence of an implicit threshold where prices can fluctuate without affecting the purchase decision) in different terms. Moreover, a positive relationship between consumers and brands will result in a better perception of gains (as explained by the concept of mental accounting) versus losses thus resulting in a positive price perception.

2.11.7 How is Price Perception Measured?

The review found different methods in use for measuring price perception that can be grouped into three different measurement methods described in the following sections.

- Choice-based conjoint analysis
- Gabor-Granger
- Questionnaires and scales

2.11.7.1 Choice-Based Conjoint analysis

Choice-Based Conjoint analysis (or CBC) is a sophisticated research technique with many applications in consumer research (Green and Srinivasan, 1978). This method uses an indirect approach to interrogate consumers by calculating the price that the consumer is willing to pay for a number of consumer's choices drawn from a series of attributes (Miller et al., 2011). According to Voelckner (2006) and Backhaus et al. (2005), this method takes into account that price is a context-sensitive construct and is in agreement with Thaler (2008), and therefore this method is more suitable for price decisions that involve a more extensive decision process⁵⁰. However, Orme (2002) argues that this method is

⁴⁹ Latitude of Price Acceptance is further explained in the Glossary of Terms.

⁵⁰ There is an assumption that the purchasing context (store format, competitive prices, advertising, among others) will produce a bigger effect with purchase occasions that involves a more extensive decision process.

subjected to a hypothetical bias in the sense that consumers are answering to hypothetical situations (in fact, real price decisions are not measured in this type of study), and therefore there is the possibility that the consumer will react differently on the real purchasing occasion. Nevertheless, another research indicates that the effect of this hypothetical bias is not statistically significant and could still lead to accurate pricing decisions regardless (Miller et al., 2011).

Jedidi and Zhang (2002) found applications of choice-based conjoint analysis in pricing research in:

- Measuring the consumer switching effect based on a price change (from one brand to another).
- Measuring the cannibalisation effect produced by a price change⁵¹.
- Measuring the market expansion effect (how price changes will result in a better purchase intention and consequently a better market share for the brand).

According to Table 2-16, Choice-based Conjoint Analysis (CBC) was frequently used in the literature for measuring price perception.

Table 2-16 Measures of Price Perception

Reference	How was it measured?
Urbany (1990)	Questionnaires
Putler (1992)	Questionnaires
Lichtenstein et al. (1993)	Questionnaires
Ranyard (1993), (2001)	Questionnaires
Chandrashekar (1995)	Choice-Based Conjoint
Noel (1996)	Questionnaires
Blamires (1997)	Choice-Based Conjoint
Estelami (1997)	Questionnaires

⁵¹ The cannibalisation effect occurs when there is a price change and the consumer switches from a higher-priced product to a lower-priced product of the same brand.

Table 2-16 Measures of Price Perception (cont.)

Reference	How was it measured?
Gendall (1997)	Gabor Granger
Burton (1998)	Choice-Based Conjoint
Vaidyanathan (2000)	Questionnaires
Niedrich (2001)	Questionnaires
Kopalle (2003)	Questionnaires
Burman (2004)	Choice-Based Conjoint
Hansen (2005)	Questionnaires
Rao (2005)	Questionnaires
Voelckner (2006), (2008)	Choice-Based Conjoint
Munnukka (2006)	Questionnaires
Harris (2007)	Gabor Granger
Lowe (2007)	Questionnaires
Munnukka (2008)	Questionnaires
Peine (2009)	Questionnaires
Kurtuluş (2010)	Questionnaires
Bornemann (2011)	Choice-Based Conjoint

2.11.8 Gabor-Granger

Gabor-Granger is a survey-based method named after the economists who developed it. The survey contains closed-ended questions (for example, what is the price level in which the consumer should buy a product) and is used for measuring the effect of psychological prices and estimating demand curves (Wedel and Leeflang, 1998).

According to Wedel and Leeflang (1998), the main advantages of the Gabor-Granger method is that it:

- Provides additional support that consumers use price as an indicator of quality.
- Incorporates the effect of loss aversion as indicated by Kahneman and Tversky (1979) by relying less on price as an indicator of quality when quality is perceived as a loss (quality is perceived to be inferior)

- Accounts for the effect of psychological prices in the sense that a reduction in price will not necessarily result in an increase in demand (due to psychological factors).

On the other hand, Tinn (1982) questions the use of Gabor-Granger as a method for pricing research arguing that the use of surveys (with specific mention of the Gabor-Granger method) raises questions about the validity of the method itself. For example, consumers might indicate a willingness to pay the price in a survey setting that will be different from the real setting and therefore provides false results.

2.11.9 Questionnaires and Scales

Some price researchers favour the use of surveys (questionnaires and scales) as they can state direct questions about a perceived price (Miller et al., 2011). In the survey of the literature, it was found that it was the most common method for measuring price perception (see Table 2-15). The use of questionnaires was primarily done to understand how prices are formed (for example, which attributes are relevant to the formation of such prices) but the methodology used in each study could incorporate other types of questions including closed-ended questions.

One disadvantage of using questionnaires and scales is that is based on a hypothetical situation and might not reflect the actual behaviour at the purchase occasion (Miller et al., 2011). An alternative is presented in the following section.

2.11.10 Other measurement methods

There are proposals for alternative methods that incorporate real prices rather than hypothetical situations such as the Becker, DeGroot, and Marschak's (BDM) incentive-compatible mechanism and the Incentive-Aligned Choice-Based Conjoint (IBC) analysis but the literature surveyed did not use any of these methods.

The BDM method was proposed by (Becker et al., 1964) and measures the actual willingness to pay by asking participants actually to buy the product if the price drawn randomly is less than or equal to his or her stated price (Miller et al., 2011). According to studies undertaken by various authors (Voelckner, 2006, Ding, 2007), the use of real prices versus hypothetical prices eliminates the *hypothesis bias*⁵² and will result in more accurate results.

Similarly, the ICBC method (Incentive Choice-Based Conjoint) uses real prices and is an extension of the choice-based conjoint analysis approach outlined above. With the ICBC method, participants are rewarded in a real purchase situation if the actual price is lower than their stated price. In an experiment by Ding (2007), it was found that the ICBC method was the most robust in explaining willingness to pay (the study compared four methods, open-ended questions, BDM, CBC, and ICBC).

2.11.11 What is not measured?

The evidence base demonstrated that the use of hypothetical situations for measuring price perception was preferred. This is despite the criticism brought by authors such as Miller et al. (2011) and Ding (2007) that the testing of hypothetical situations is unreliable and less accurate than methods that use real data (such as BDM and ICBC). Table 2-16 shows a comparison of price measurement methods found in the literature.

In addition, it was found that the literature assumed price to be a static construct when measuring it (despite understanding that the formation of price perceptions is a dynamic process). For example, the evidence-based failed to measure the changes of price perception accurately after the purchase occasion⁵³. There is enough evidence in the synthesis part of this review that supports the argument that price is a dynamic construct and consumers constantly adjust their price perception, but this was not accounted for when

⁵² Miller *et al.* (2011: 173) defines *hypothesis bias* as the bias resulting of measuring consumer's hypothetical willingness to pay rather than the actual one.

⁵³ The effect of the price perception after the purchase occasion is not covered in the scope of this systematic review. This is a topic for further research.

measuring price perception. The measurement of such changing price perceptions is an important topic for further research.

Table 2-17 Comparisons among methods for measuring price perception

	Measurement	
Context	Direct ⁵⁴	Indirect
Hypothetical	Questionnaires	Choice-Based Conjoint Analysis
Real	BDM Method ⁵⁵	Incentive Choice-Based Conjoint Analysis ³⁸

Source: Miller et al. (2011)

2.12 Directions for Further Research

There were several areas uncovered that demand further research. Depending on the academic perspective taken on how price perceptions are formed, new constructs might be investigated such as how different ethnic groups develop *price perceptions*⁵⁶ (so-called multi-ethnic pricing) or even how different regional peoples develop price perceptions.

Similarly, there were strong arguments in the literature supporting the relationship between brand equity and price perception formation suggesting that a theory of premium pricing or value-based pricing could be developed⁵⁷. The review question explicitly did not include premium prices as part of the study (because it had been ruled out as part of the panel review process), but there is an opportunity for further research to consider how price perceptions are formed for products with premium prices.

⁵⁴ The literature differentiates direct methods (that are survey-driven and ask direct questions to consumers about their price preferences) versus indirect methods (where the consumer is exposed to different combinations of prices and product attributes and price preferences are calculated from the responses).

⁵⁵ These methods that deal with real situations, rather than hypothetical ones, were not found in the literature surveyed.

⁵⁶ The literature suggests that differences among culture, races, country of birth and country of residence also accounts for the formation of price perceptions, however, after the quality criteria, there were only two references covering the topic so it was deemed appropriate to suggest multicultural pricing as a topic of further research rather than consider it further here.

⁵⁷ As per the recommendation of the panel, the scope of the systematic review was made broader, including all forms of consumer price perception and not just premium perception.

Moreover, in the literature there is evidence of price-based segmentation models (Allenby et al., 2005, Harris and Bray, 2007, Kurtuluş and Okumuş, 2010, Masiero and Nicolau, 2012); however, the scope of this systematic review did not include a review of segmentation models. The entire construct of consumer segmentation is very broad, but research applying these measures of price perception in consumer segmentation models will bring an architectural innovation by enhancing what is currently being undertaken around segmentation models⁵⁸.

In the topic of measurement of price perception, the literature assumes pricing as a static construct despite the evidence in the synthesis part of this review that pricing is a dynamic construct. Moreover, there are methods that take into account the use of real prices and in real purchase scenarios that seem to overcome the weaknesses of methods using a hypothetical scenario. In addition, it was found that the literature adapted the methods explained in this study to fit a specific research need thus bringing the issue of describing a common measurement method of price perception.

The measurement of price perception under real conditions is consequently an area that needs further research. Finally, research should be undertaken to validate the framework of price perception formation outlined in Figure 1-1. This would need to be quantitatively tested to determine whether or not the network of relationships identified in the model actually operate as indicated. Do price perceptions really mediate internal factors and willingness to pay for example? Or does it only mediate external factors and purchase intention? These and other questions could be validated through an analysis using structural equation modelling.

⁵⁸ Consumer segmentation was originally considered as part of the systematic review but after consulting with the review panel chair and supervisor, it was deemed appropriate to focus on consumer segmentation models based on price perception only in further stages of the DBA program not in this systematic review.

2.13 Limitations of the research

There were many limitations affecting the study during this systematic review process. Firstly, the initial search strings used were too broad, and a search of electronic databases resulted in many duplicate records. In addition, the research was conducted using academic journals thereby excluding many practitioner journals that might have contained relevant material.

In addition, important databases sources such as Google Scholar were not used, but there is the question of whether searches in this database would have resulted in an even a larger number of duplicate articles rather than bringing fresh literature into question.

Although it was evidenced in this study that most of the literature on the topic of price perception formation is recent (according to Table 2-13, 90% of the relevant literature between 1990 and 2011 was published after 1994), some key literature was published in the 70s and 80s and these serve as foundation stones for understanding price perception formation. For example, Gabor and Granger (1979) made theoretical and empirical contributions to understanding consumers' price perceptions. Similarly, Gabor and Granger presented findings on the price-quality connection (Gabor and Granger, 1966), the effect of price on choice (Sowter et al., 1979), the effect of price on brand switching (Sowter et al., 1979), and the price sensitivity of consumers (Gabor and Granger, 1964) . All these studies are relevant to this systematic review but were excluded based on the inclusion/exclusion criteria (that specifies that only studies published after 1990 were considered for the review). However, there is an assumption that such articles (e.g. those by Gabor and Granger) are incorporated in the thinking in newer literature, and this is certainly the case for some of these pre-1990 articles.

Considering only literature published after 1990 does not seem to have affected the work around price perception formation theories⁵⁹ as explained in Section 2.3 since the work done on Transaction Utility theory (Thaler, 1983), Rational Choice and Framing of Decisions (Tversky and Kahneman, 1986), Prospect Theory (Kahneman and Tversky, 1979) and Adaptation-Level Theory (Helson, 1964) were all published prior to 1990 and are all well covered in the recent literature.

⁵⁹ These theories were introduced earlier in this section. In addition, they are also presented in the Glossary of Terms

2.14 Conclusion

The review of the evidence provides some understanding of how price perceptions are formed. The formation of price perceptions was considered from different theoretical angles. The dual role of price perception indicates that price perceptions act as a mediator in the relationship between internal/external factors and willingness to pay/purchase intention. Furthermore, the literature put forward evidence that price perception is a dynamic construct that is affected by internal and external factors and that there can be a discrepancy between perceived prices and actual prices as explained by the research done in asymmetries of information and memories of prices. The literature also provided the evidence necessary to draw up a theoretical model of Price Perception Formation.

In addition, three different methods for measuring price perception were found although each method differs in its application and particularity to a specific situation, so there was a lack of a common method or methodology for measuring price perceptions. Moreover, these three measuring methods assumed price perception to be a static construct in contradiction to the literature that explains the formation of price perception to be dynamic. It is, therefore, important to understand how price perceptions can be measured in a dynamic environment (an area of academic knowledge still to be developed or recorded).

PROJECT 2

PRICE PERCEPTION: AN EXPLORATORY STUDY OF HOW
CONSUMER PRICE PERCEPTION DIFFERS BY ETHNIC
BACKGROUND

3 Qualitative Study

3.1 Introduction

This study is a continuation of the research undertaken on the measurement and formation of consumer price perception (Mendoza and Baines, 2012)⁶⁰. In that research, it was found that there were antecedents to the formation of consumer perception, and a framework was presented on the formation of such perception. In this framework, there is a relation between price perception, willingness to pay and purchase behaviour. In addition, price perception is considered a process that regenerates itself by incorporating the new price information obtained during the purchasing process (Ene Özkaya, 2013). Furthermore, cultural factors, such as ethnicity, were amongst the antecedents to the formation of price perception. For example, the study undertaken by Mendoza and Baines (2012) argued that different cultural factors (i.e. ethnicity) might lead to different perceptions towards prices. Therefore, this study seeks to examine the following research questions:

1. Does perception towards prices differ by ethnic group?
2. How can such perceptions be identified and measured?
3. What are the main attributes (i.e. key constructs) among ethnic groups that define perceptions towards prices?

In order to address the research questions, this study will survey the literature (Section 3-2) and examine the evidence around the formation of consumer price perception (Section 3-3). The study relies heavily on the use of the repertory grid technique (RGT), and this technique is explained in detail and justified in Section 3-4.

⁶⁰ Discussed in detail in P1 of this thesis.

Next, the study will present the methodology (Section 3-5) and the findings of applying the methodology to different ethnic groups (Section 3-6). As part of the findings, this research presents a perceptual map and the key constructs elicited per ethnic group. This is one of the main contributions of this study, as these key constructs and price perceptions by the ethnic group can be used in further studies.

A comparison of perceived prices by ethnic group in relation to the same stimulus (i.e. the same brands were shown to the different ethnic groups in the study) complements this section.

Finally, this study will address its own limitations, provide recommendations for further research (Section 3-7) and provide conclusions.

3.2 Understanding Consumer Price Perceptions

3.2.1 What is Consumer Price Perception?

An understanding of the basic definition of 'perception' is necessary when studying consumer price perceptions. The definition of perception is rooted in the field of psychology. According to Schwartz and Krantz (2015, p.5), perception can be defined as the *“the process of creating a conscious perceptual experience from sensory input”* where this experience is in response to a stimulus. John and Gupta (2012, p.43) defined perception as *“a process by which individuals select, organize and interpret stimuli into a coherent picture of the world. Stimuli are any message which will trigger a response”*. Varki and Colgate (2001) suggests that perception is a conscious process, presented to us in a physical form. This sets up a clear distinction with sensation, defined as a *“subjective experience or feeling”* (Goldstein, 2013, p.560).

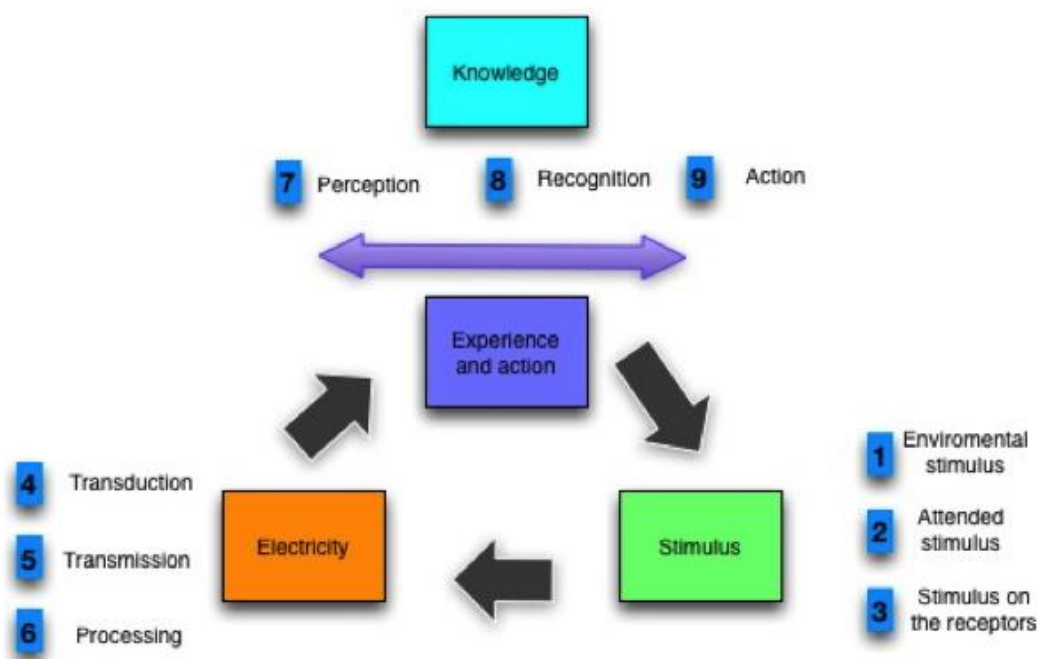
Perception towards something (in this case, the price of an offering) is a response to interpreting a physical stimulus (i.e. a reference price). Therefore, consumer price perception could be defined as follows:

Consumer price perception is the mental process by which a consumer becomes aware or gains knowledge of the price of an offering.

In other words, the formation of consumer price perception is a mental process whose occurrence is not spontaneous nor due to a feeling but occurs as a response to external stimuli (i.e. an advertised price). This definition is reinforced by the work of Goldstein (Goldstein, 2013, p.5) who presents a perceptual process that is dynamic and in which there is a series of steps (i.e. stimulus, electricity⁶¹, experience, action, and knowledge) originating from a stimuli that lead to experience and action through the mediation of our knowledge and our ability to process and transmit this information (see Figure 3-1).

⁶¹ Goldstein (2013, p.5) refers to electricity as the electrical signals that are converted from light, as it occurs in the human eye. Goldstein (2013) uses this description to explain how we perceive images through our eyes.

Figure 3-1 The Perceptual Process



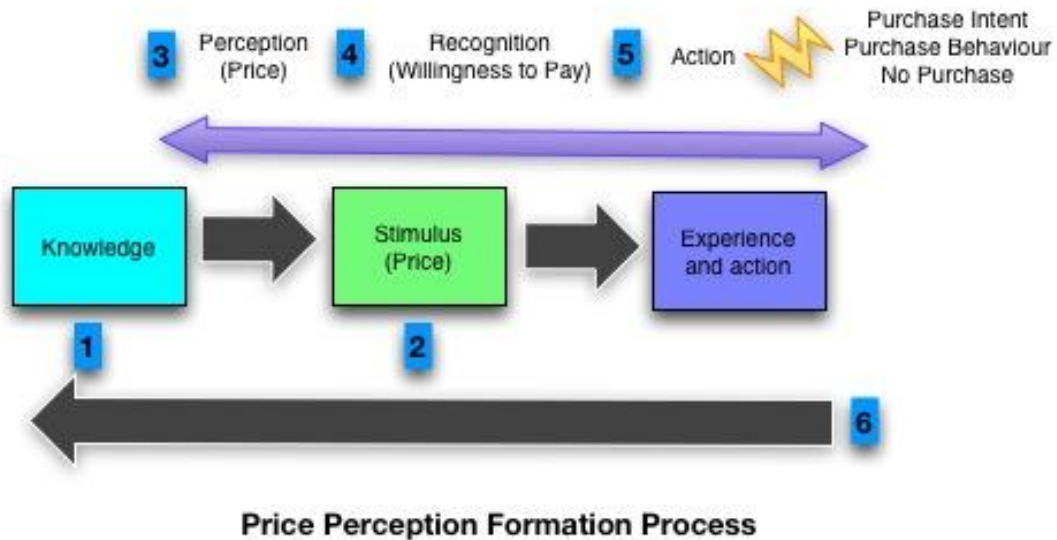
Source: Goldstein (2013)

A framework detailing the formation of consumer price perception, proposed by Mendoza and Baines (2012) (developed for the systematic review), incorporates the notion of consumer knowledge⁶², presented by Goldstein (2013, p.5), as part of the perception formation process. In this case, the process is explained as part of the antecedents to the formation of price perception. In other words, for Goldstein (2013, p.5), knowledge is a mediating factor between stimulus and action, whereas, for Mendoza and Baines (2012), knowledge is an antecedent to the stimulus (price) and action (see Figure 3-2). Moreover, an action in the context of the formation of consumer price perception might constitute purchasing intent, purchasing behaviour, or no purchase at all. The latter is interesting since, according to Goldstein (2013, p.9), “perception often leads to an action” and we acknowledge that ‘non-purchasing’ is also an action that can result from the price perception process (i.e. people make an active choice not to buy based on price perceptions).

⁶² This concept of consumer knowledge differs in the definition of ‘consumer savvy’ (Macdonald and Uncles, 2007), because that only refers to knowledge acquired from past consumer experiences, whereas consumer savvy is a more complex construct with broad characteristics, as defined by Macdonald and Uncles (2007).

3.2.2 Measuring Consumer Price Perception

Figure 3-2 Price Perception Process



By understanding the processes involved, we seek to identify and measure these perceptions. In the field of psychology, there are a good number of research studies that have been conducted on the topic of measuring perception. A review of tests and measures of perception in the PsycINFO database revealed up to 798 peer-reviewed studies classified in 10 different methodologies (see Table 3-1), with a strong preference for interviews, longitudinal studies and qualitative studies.

Table 3-1 Type of Methodologies for Measuring Perception – PsycINFO

Methodological Approach	Number of studies
Interview ⁶³	78
Longitudinal study ⁶⁴	65
Qualitative study ⁶⁵	43
Brain imaging ⁶⁶	11
Focus group	9
Experimental Replication	5
Others ⁶⁷	54

On the other hand, a systematic review of the literature performed by the author revealed just three primary methods for measuring consumer price perception (see Table 3-2). These methods involve choice-based conjoint analysis and surveys (both with open-ended and closed-ended questions). This finding reveals an opportunity to use methodologies from the field of psychology in measuring consumer price perception.

⁶³ The majorities of the interviews were qualitative in nature (in-depth interviews) rather than based on survey questionnaires.

⁶⁴ Longitudinal studies consisted of qualitative studies presented over time.

⁶⁵ These studies were reported from purely qualitative studies but generally included in-depth interviews and different qualitative scales.

⁶⁶ The presentation of images of the brain for the purpose of studying perception can be characterised as qualitative, since it requires a visual interpretation of the images.

⁶⁷ Other studies were primarily a combination of methodologies and pre- and post-clinical studies and the Repertory Grid Technique (RGT).

Table 3-2 Measures of Consumer Price Perception

Method	Description
Choice-based conjoint analysis	Uses an indirect approach to interrogate consumers by calculating the price that the consumer is willing to pay.
Surveys with closed-ended questions	It was mainly used for estimating the effect of psychological prices.
Surveys with open-ended questions	In spite of the fact that it was found to be the preferred method for measuring perception, it is based on interrogating the participant on a hypothetical situation. In addition, studies were also combined with closed-ended questions.
Other methods	These are methods that are basically variations of the choice-based conjoint analysis with the use of incentives in order to simulate a more realistic experience.

3.2.3 Why should we measure consumer price perceptions?

Consumer perception of prices is one of the pivotal determinants of shopping behaviour, along with perceptions of quality and value (Varki and Colgate, 2001, Boyle and Lathrop, 2009). Accordingly, price perception is influenced by factors like price consciousness, value consciousness, and price-quality perceptions. Price consciousness is defined as a measure of how aware consumers are of prices (Palazón and Delgado, 2009). Similarly, Lichtenstein et al. (1993, p.235) defined value consciousness as “a concern for lower prices subject to some quality constraints.”

Although originally regarded as an area of consumer behaviour that garnered little attention, the study of consumer price perception has evolved (Simmons and Weiserbs, 1992). A systematic review of the literature undertaken by the author on the formation and measurement of consumer price perceptions revealed a complex construct supported by different theoretical approaches⁶⁸ and influenced by a number of factors. Moreover, consumer price perception is described as a process that is dynamically regenerated (Ene Özkaya, 2013).

In addition, consumer price perception is interlinked with consumers' purchase intentions (Monroe, 1973) and is consequently a very relevant subject matter for both researchers in the academic marketing field and marketers in the practitioner field. Pricing is also central to a company's profitability (Marn and Rosiello, 1992, Doyle, 2000). Consumer price perception also affects the consumer's willingness to pay (Adaval et al., 2011) and this is reflected in the purchase intention of a product or brand. Developing an understanding of pricing is therefore of central importance.

⁶⁸ A synthesis of the theories supporting the formation of price perception can be found in the conference paper presented by Mendoza and Baines (2012).

3.2.4 Cross-Cultural Price Perception

There has been widespread interest in the question of whether or not culture⁶⁹ affects purchase behaviour and prices (Ackennan and Tellis, 2001, Bolton et al., 2010, Meng, 2011). A study by Meng (2011) explained that there are cross-cultural consumer behavioural differences in relation to prices. This study argued that factors such as internal reference prices have a persistent effect on prices between different cultural groups. Internal reference prices have also been identified as an antecedent in the formation of price perception (Kumar et al., 1998, Janiszewski and Lichtenstein, 1999, Niedrich et al., 2001, Thomas and Menon, 2007).

The existence of cross-cultural effects on prices has also been studied from the perspective of differences in brand perception among cultural groups (Maxwell, 2001). Accordingly, purchase intent will be affected because different cultural groups perceive brands and prices differently. However, it has also been argued that the social context in different cultural groups might be relevant to the consumer decision process and their perception of prices⁷⁰ (Boza and Diamond, 1998).

Further cultural factors, such as risk aversion and shopping environment, have been attributed to differences in price perception amongst cultural groups (Zhou and Nakamoto, 2001). This is interesting because the authors argue that cultural groups have different attitudes towards risk⁷¹, and this will affect how they perceive prices in different shopping environments (i.e. face to face versus online). This is in agreement with Boza and Diamond (1998) who consider the context in which shopping takes place as a determinant of price perception amongst different cultural groups.

⁶⁹ This research already introduced the notion that ethnic groups are a form of cultural groups. Furthermore, the goal of this study was set upfront as a study on multi-ethnic pricing. However, in this section, this research refers to multi-cultural groups to be consistent with the research literature.

⁷⁰ It is also argued that different social contexts have an effect on the consideration of transaction utility, as defined by Thaler (1983).

⁷¹ Risk aversion is considered a fundamental part of the Prospect Theory (Kahneman and Tversky, 1979, Tversky and Kahneman, 1986) that explains how price perception is formed.

The effect of the shopping environment on the perception of prices among different cultural groups is interesting because it suggests the need to account for cultural factors in the study of price perception. For example, Ackennan and Tellis (2001) argue that the shopping environment is responsible for differences in price perception. In addition, they assert that because of such differences, ethnic stores adapt their pricing practices to their particular cultural group.

The existence of a cross-cultural price perception as a construct has been evidenced in further studies. For example, different price fairness perceptions⁷² can explain different shopping practices between cultural groups (Bolton et al., 2010). In addition, different family structures amongst cultural groups account for differences in shopping behaviour (Moschis et al., 1986, Rindfleisch et al., 1997). Among the examples of different family structures are large families (i.e. Hispanic families) versus small families (i.e. Caucasian families); single working parent versus working couples; single parent (i.e. as a result of a divorce) versus both parents (i.e. in some cultural groups divorce is not even considered); and others. Table 3-3 presents a non-exhaustive description of studies undertaken about the relationship between culture and price perception.

The relatively small number of studies in Table 3-3 evidences the importance of understanding further the relationship between cultural groups and price perception. Existing research studies apparently agree that there are differences in price perception based on cultural factors. However, there is a gap in the literature in regards to how such perceptions are formed and how they ought to be measured. The following section will present a discussion on the formation of consumer price perception in a multicultural context alongside with an argument on the challenges of multicultural consumer research.

⁷² Bolton et al. (2010) identify price fairness as influencing price perception.

Table 3-3 Studies on culture and price perception

Author(s)	Topic	Implications
Long-Tolbert and Raj (2006); Shukla (2012)	Value perceptions	Posed a different construct of value perceptions based on social, personal and functional factors in Western and Eastern cultures.
Meng (2011)	Cultural influence	Explains how culture accounts for differences in shopping behaviour.
Herrmann and Wricke (1998); Hooman, 1999; Kurt et al. (2007)	Price dimensions	Argued that dimensions of price ⁷³ reflect similarities and differences amongst cultural groups.
Weber and Hsee (1998); Zhou and Nakamoto (2001)	Risk aversion	Argued that shopping environment produces different effects in cultural groups (i.e. face to face shopping versus online shopping) ⁷⁴ .
Boza and Diamond (1998)	Social context	Suggested that social context influences shopping behaviour of different cultural groups ⁷⁵ .

⁷³ Lichtenstein (1990) defined price dimensions as price-quality schema, prestige sensitivity, value consciousness, and sale proneness and price havens.

⁷⁴ An interesting finding is the “fear of rejection” in some Eastern cultures which prejudices the bargaining effect for fear of being rejected, as opposed to Middle-Eastern cultures where bargaining is expected.

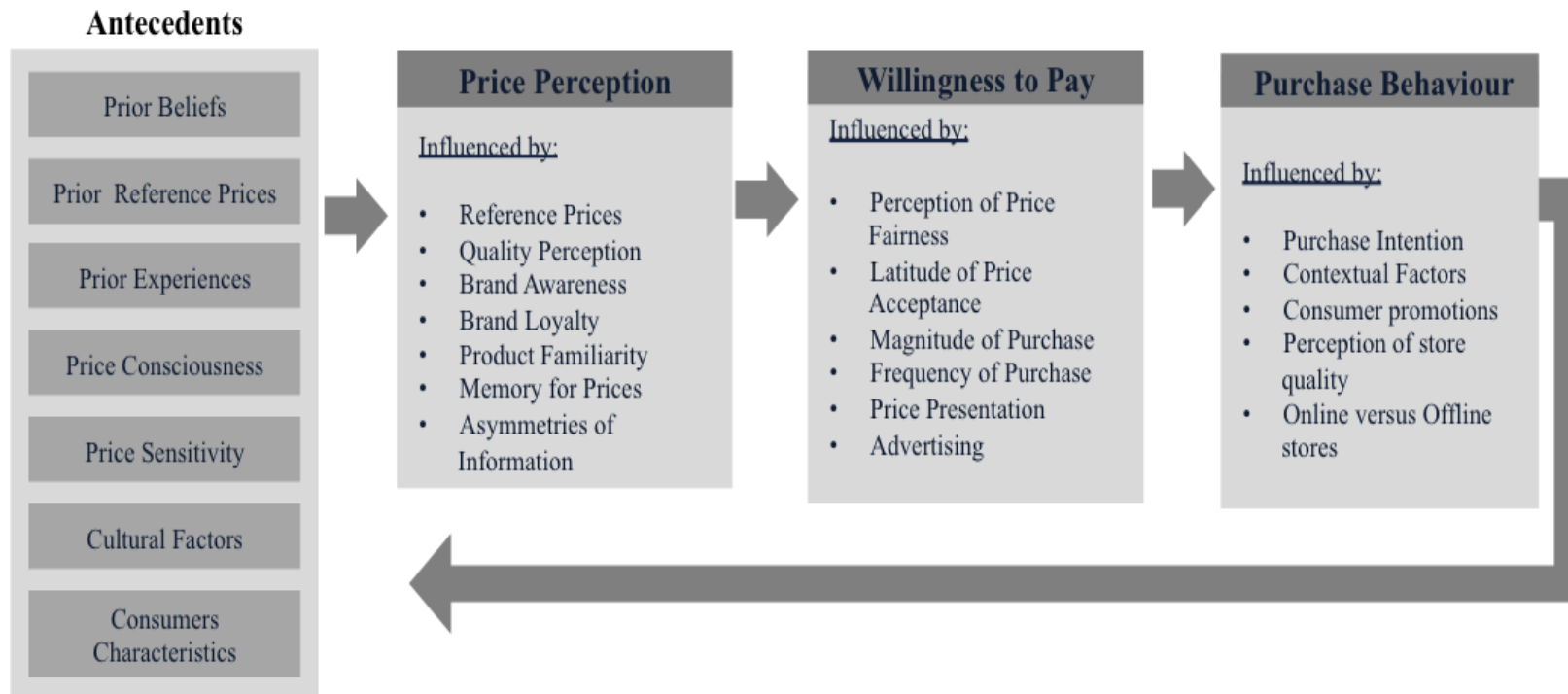
⁷⁵ For example, in certain cultures, buying from friends lowers the perceived risk (Alaniz and Gilly, 1986)

3.2.5 Price Perception Formation

There is evidence that a relationship exists between price perceptions and purchase behaviour (Monroe, 1973, Chandon et al., 2005, Suk et al., 2012). In addition, price perceptions influence willingness to pay (Aval et al., 2011). A systematic review on the formation and measurement of consumer price perception⁷⁶, explained that the price perception formation process is cyclical (Mendoza and Baines, 2012), starting with antecedents that include prior beliefs, reference prices, past purchasing experiences, price consciousness, price sensitivity, cultural factors and consumers' characteristics. Furthermore, the purchasing process moves sequentially from price perception to willingness to pay and purchase behaviour, affected by a number of internal and external factors. A representation of the Price Perception framework proposed by Mendoza and Baines (2012) was previously presented but is reproduced for convenience in Figure 3-3.

⁷⁶ The systematic review was developed as part of the first project (P1).

Figure 3-3 Framework on the formation of Consumer Price Perception



Source: Mendoza and Baines (2012)

3.2.6 Price perception formation in a multicultural context

The price perception formation framework presented in Figure 4-1 accounts for cultural factors as an antecedent to the formation of price perceptions. However, the framework provides no detail as to exactly how cultural groupings might affect price perception. This recognises the evidence in the literature that price perception does indeed differ between cultures. This, in turn, draws into question whether steps in the purchasing process - such as price perception, willingness to pay and purchase behaviour - will also differ amongst cultures. A systematic review of the literature (Mendoza and Baines, 2012) found that there was a gap in the literature on how price perception, willingness to pay and purchase behaviour differ among cultures. For example, research has shown that cultural factors account for differences in brand loyalty (see Table 3-4), while there is also awareness that brand loyalty influences price perception (Kalyanaram and Winer, 1995, Iyer and Muncy, 2005) in the sense that the greater the loyalty towards a brand, the greater the latitude of price acceptance⁷⁷ (Kalyanaram and Little, 1994). However, there was a gap when coming to explain the differences in price perception among cultures.

⁷⁷ The latitude of price acceptance relates to the tolerance to price fluctuations among consumers.

Table 3-4 Studies of cultural factors and brand loyalty

Author(s)	Summary
Saegert et al. (1985)	Studied variables such as brand loyalty, store preference and price consciousness among Hispanics (Mexican-Americans) and non-Hispanics, supporting the hypothesis that Mexican-Americans are more store-loyal and more price-conscious but rejected the hypothesis that Hispanics were more brand-loyal than non-Hispanics.
Peñaloza and Gilly (1999)	Explained in an ethnographic study the purchasing processes of Hispanic families in Southern California, concluding that different levels of acculturation between retailers and consumers influenced purchasing behaviour and store loyalty (i.e. Spanish-speaking consumers preferred stores where their language was spoken).
Podoshen (2006)	Looked at the effect of ethnicity and acculturation on brand loyalty by studying the purchasing behaviour of American Jewish consumers.
Malhotra et al. (2010)	Found a positive association between ethnicity and dimensions such as brand loyalty, customer satisfaction, and compliant behaviour.

This discussion around changes in the purchasing process depending on the level of acculturation brings up an interesting question when it comes to measuring price perceptions in a multicultural environment. For example, the different acceptance of product attributes, depending on the level of acculturation, implies that even consumers from a similar cultural group, but with different levels of acculturation, might have different perceptions towards price.

3.2.7 The challenge of multicultural consumer research

According to McCracken's work on cultural categories⁷⁸ (McCracken, 1986, Applbaum and Jordt, 1996), the use of interpretivist, hermeneutic and naturalistic approaches to multicultural (or cross-cultural) consumer research belies the complexity of cultural diversity by collecting aggregate data from consumers on a limited number of attributes (e.g. high/low context cultures, individualist/collectivist, masculine/feminine) and thus ignores the existence of cultural categories. McCracken (1986) proposed an approach that works by studying the relationship between consumer goods and consumers in a cultural context, thus distinguishing the inquiry from the offering, in order to conduct research with the cultural group.

This approach contradicts the widely used model (based on the dimensions of power distance, individualism/collectivism, masculinity/femininity, uncertainty/avoidance and long/short term orientation) explained by de Mooij and Hofstede (2011). Applbaum and Jordt (1996) recognise consumer behaviour as being rooted in sociocultural circumstances. They propose an understanding of the consumer as a cultural being that is part of a cultural group, rather than simply a buyer. Consequently, Applbaum and Jordt (1996) argue that understanding consumers in their cultural context is more appropriate in the case of consumer behaviour.

This study set its foundations in the work of Applbaum and Jordt (1996) by studying groups of consumers belonging to a cultural group. Consumers are clustered in three groups; White/Caucasians, African Americans, and Hispanics with the purpose of comparing their perceptions towards prices but recognising that there are more ways of clustering consumers according to their cultural groups. For example, Hispanics can be grouped by the degree of acculturation

⁷⁸ McCracken (1986) identified cultural categories of time, space, nature and person to create a system of difference in a phenomenal world.

and African Americans by the regional differences in where they live (for example, North or South of the United States)⁷⁹.

The next section will explain the use of repertory grids for measuring perception as presented by Baxter et al. (Baxter et al., 2014) and for developing cross-cultural research as proposed by Hunter (2006) and Tomico et al. (2009).

3.3 Repertory Grids

3.3.1 Using Repertory Grids for perception measurement

This research uses an interpretive research paradigm in which social phenomena are studied from the inside of the group and requires an understanding of the social world that people have constructed (Blaikie, 2007). The repertory grid technique is based on Kelly's theory of personal constructs (Fransella et al., 2003, Jankowicz, 2005, Bell, 2005). It can be used to obtain a rich understanding of multicultural (or cross-cultural) analysis in consumer behaviour research (Hunter, 2006; Tomico et al., 2009), including qualitative market research (Jankowicz, 2005, Hair et al., 2009, Baxter et al., 2014). Moreover, the repertory grid technique has previously been used in the study of consumer perceptions (Baxter et al., 2014), though not in the case of different cultural groups' perceptions of prices.

3.3.2 Personal Construct Psychology

The Psychology of Personal Constructs, also referred in the literature as Personal Construct Psychology (PCP) was proposed by George Kelly (1955) and is based on the idea that each individual builds for himself a set of 'constructs' in order to describe his phenomenological world (Katz, 1984). As explained by Katz (1984, p.315), "an individual behaviour is governed by the ways in which he anticipates events and gives meanings to his world." Kelly (1955) provides a concise expression of his psychology of constructs through a Fundamental Postulate and a set of Corollaries as shown in Table 3-5. It is

⁷⁹ In fact, consumers can be clustered according to the cultural categories but studying the differences in price perception of each cluster will be out of the scope of this study

through this postulate and these corollaries that the Psychology of Personal Constructs is seen as a theory of knowledge⁸⁰ but also a theory of personality. This is synthesised by Sechrest (1963, p.206) who claims that the Psychology of Personal Constructs is a theory that “has within its intended range of convenience an exceptional variety of behaviour.” The theory is also known as Personal Construct Theory or PCT (Sechrest, 1963; Katz, 1984).

⁸⁰ According to Katz (1984), personal knowledge exists in this theory as personal constructs.

Table 3-5 An Expression of the Psychology of Constructs

Postulate Type	Explanation
Fundamental Postulate	A person's processes are psychologically channelized by the ways in which the way in he anticipates events
Construction Corollary	A person anticipates events by construing their replications
Individuality Corollary	Persons differ from each other by construing their replications.
Organization Corollary	Each person characteristically evolves for his convenience in anticipating events.
Dichotomy Corollary	A person's construction system is composed of a finite number of dichotomous constructs.
Choice Corollary	A person chooses for himself that alternative in a dichotomous construct through which he anticipates the greater possibility for definition and extension of his system.
Range Corollary	A construct is convenient for the anticipation of a finite range of events only.
Experience Corollary	A person's construction system varies as he successively construes the replication of events.
Modulation Corollary	The variation in a person's construction system is limited by the permeability of the constructs.
Fragmentation Corollary	A person may successfully employ a variety of construction subsystems that are inferentially incompatible.
Commonality Corollary	To the extent that one person employs a construction of experience, which is similar to, that employed by another, his psychological processes are similar to those of the other person.
Sociality Corollary	To the extent that one person construes the construction processes of another, he may play a role in a social process.

Personal Construct Psychology (PCP) is seen as a phenomenological approach to the person and its methods by investigating the experience of individuals (Butt, 2003). In addition, Personal Construct Psychology is considered to draw its roots in pragmatism and existential phenomenology to promote its status as a relational approach to personality (Stojnov and Butt, 2002). This approach is a constructive concept with practical applications in the fields of psychological theory and practice.

According to Burr et al. (2014), there are different PCP methods such as the Role Construct Repertory Test, the Pictor Technique, the Perceiver-Element Grid (PEG), The Salmon Line and The Repertory Grid Technique (RGT). A brief description of each of these methods according to Burr et al. (2014) is presented in Table 3-6.

Table 3-6 Main PCP Methods

Measurement Approaches	Detail
Role Construct Repertory Test	It is a qualitative method (despite being called a test) that encourages reflection on experience by using a different kind of interviewing focusing on important aspects of experiences. It was originally used by Kelly (1955)
Pictor Technique	It was derived from a method used in family therapy and allows representing relationships between family members. These relationships are represented in Pictor charts.
Perceiver-Element Grid	It is used to help people to explain how they see other people. It allows participants to explain the nature of their relationship with others.
The Salmon Line	It was originally devised to investigate the teaching of design and technology in UK schools using constructs such as "low ability" versus "high ability"

Adapted from Burr et al. (2014)

The list of the methods explained in Table 3-6 are exclusively qualitative in nature, and it is not an exhaustive account of all the qualitative methods available using PCP⁸¹. Accordingly, these methods have potential advantages over other techniques such as interviews, photo-elicitation and audio diaries in that they are:

1. Intrinsically participant-led but with collaboration from the researcher.
2. Less reliant on the verbal fluency of participants.
3. Efficient, by allowing participants to carry out required tasks in a relatively short period of time.

It was found that PCP methods have a number of advantages over more widely known qualitative methods (Burr et al., 2014). For example, according to Burr et al. (2014), these methods allow participants:

1. To focus on key issues through the use of complete examples.
2. To articulate their construing where limited communication skills are present. This is particularly important when researching different cultures as some cultures (i.e. foreign-born Hispanics) might have limitations communicating in the same language as a native speaker.

In addition, these methods allow researchers to handle data from larger samples than with usual qualitative research and determine how a person or group of people perceive things, peoples, and events.

⁸¹ Burr et al. (2014) describe the Repertory Grid Technique (RGT) as predominantly quantitative although Marsden and Littler (2000b) explained the use of qualitative repertory grids with its implications on market research.

3.3.3 The Repertory Grid Technique (RGT)

The repertory grid technique is based on the Personal Construct Theory (PCT) in which grids are regarded as a map of the mental construct system of an individual (Fransella et al., 2003). Such constructs are regarded as “a way in which two or more things are alike and thereby different from a third or more things” (Fransella et al., 2003, p.7). Constructs are also the basic unit of description and analysis so “we construe things by means of constructs.” In other words, according to Jankowicz (2005), there are ways of viewing the world that is bipolar⁸² and elicited from the respondents.

This technique has been used in consumer research since the 1970s, including multicultural consumer research (Tomico et al., 2009), and is coherent with the interpretive paradigm presented by Blaikie (2007, p.124) of using an “understanding of the social world that people have constructed” and exploring the psychological processes that people use to make sense of their social environments.

Jankowicz (2005, p.14) defines repertory grids as “a form of structured interviewing, with ratings or without, which arrives at a precise description uncontaminated by the interviewer’s own viewpoint.”

According to Neimeyer and Tolliver (2002), the main contribution of personal construct psychology is to offer a more holistic understanding of the process of meaning construction. Marsden and Littler (2000a) offer an understanding of the personally meaningful distinctions through which a view of the world is constructed while focusing on the individual’s subjective consciousness. This is important when studying cultural differences because, according to Tomico et al. (2009) and Hunter (2006), it allows the study of idiosyncratic views of individuals with regard to existing products.

⁸² Examples of bipolar constructs are past/future, good/bad, honest/dishonest, warm/cold, and so forth.

In addition, Marsden and Littler (2000a) argue that the repertory grid technique allows a focus to be placed upon the process of meaning construction, the structure of the individual and shared meanings (bipolar construct systems).

3.3.4 Components of a Repertory Grid

According to Jankowicz (2005) and Fransella et al. (2003), the components of a repertory grid are topic, elements and constructs. The topic of the grid represents the purpose of the study and is common among the grids. The constructs and elements can be elicited from the repertory grid interview, or they can be pre-determined by the researcher (Fransella et al., 2003). Regardless of whether they are elicited or pre-determined, both constructs and elements are rated according to a scale selected by the researcher.

3.3.4.1 Topic

The topic of the grid is related to the purpose of the study. It “is what the grid is to be about” Jankowicz (2005, p.27) and was presented for the approval of the participant as a preliminary step in the elicitation process. According to Jankowicz (2005), the purpose of defining a topic for a grid is to elicit precisely those constructs which the person uses in making sense of the area of interest.

3.3.4.2 Elements

As defined by Kelly, elements are “the things or events which are abstracted by a construct” Kelly (1955, p. 200). In a grid, Fransella et al. (2003, p.18) state that elements should be “within the range of convenience of the constructs used” and “representative of the area being investigated.” Elements can be used in the elicitation of constructs using dyads or triads of elements. Presenting opposite or different elements can then make the elicitation. Fransella et al. (2003, p.29) describe four main types of dyadic and triadic approaches, used to measure perceptions (see Table 3-7 for more detail).

Table 3-7 Dyadic vs. Triadic Approaches to Perception Measurement⁸³

Questioning Type	Detail
Triadic difference	Presents three elements at a time and asks, "How are two alike in some way, but different from the third?"
Triadic opposite	Presents three elements at a time and asks, "How are two of these alike in some way?" followed by "What is the opposite of that?"
Dyadic difference	Presents two elements and asks, "How are these two alike or different?" If a difference is given, this difference is taken to be the contrasting pole of the construct. If a similarity is given, the person is asked to look at the remaining elements to see whether one represents a difference.
Dyadic opposite	Presents two elements and asks "How are these two alike or different?" If a difference is reported, this specifies the two poles of a construct. If a similarity is reported, the person is asked for the opposite of that similarity.

3.3.4.3 Constructs

Constructs are defined as "a way in which two or more things are alike and thereby different from a third or more things" (Fransella et al., 2003, p.7). In the repertory grid technique, "a construct is a basic unit of description" (Jankowicz, 2005, p.10). Personal Construct Theory, Kelly (1955) establishes that a person's construct system is composed of a finite number of dichotomous constructs. So, constructs are bipolar (i.e. pleasant-rude) rather than negative or unipolar (i.e. pleasant-not pleasant), and this represents the way in which reality is construed.

3.3.4.4 Ratings

Ratings of elements on constructs provide a mental map that describes how individuals think in relation to a particular topic (Jankowicz, 2005, p.13). Ratings are set on a scale (i.e. a five-point scale) with a general convention that the left pole of the construct represents "1" on a 5-point scale, and the right end of the

⁸³ This classification was obtained from Fransella et al. (2004)

construct represents a “5” on a 5-point scale. Ratings describe what a person thinks about a certain topic (Jankowicz, 2005, p.19).

3.3.5 Repertory grids for measuring perception

As it was presented in Table 3-1, the topic of measuring perception has been covered through different methodologies such as interviews, focus groups, longitudinal studies, and others. In addition, as shown in Table 3-2, the consumer price perception has been measured through different methods, most notably conjoint analysis, and open-ended and closed-ended surveys. A characteristic of these methods is that they are based on developing a response from a self-perception point of view (how we perceive ourselves), but this is not the only way to measure perception (Kenny and West, 2010)⁸⁴.

When considering the use of interviews or focus groups, it was not clear for the purpose of this study how participants from different cultural backgrounds were to react to an open-ended question in either interviews or focus groups. A study from Houghton et al. (2006) on measuring cross-cultural perceptions concluded that the use of the Repertory Grid Technique was adequate in these cases. More, the use of the Repertory Grid Technique allowed the use of a visual stimulus as an aid in the interview process. The use of a visual stimulus such as images of brands was valuable for this study (see section 3-5).

In addition, Table 3-8 shows a summary of studies that have used the Repertory Grid Technique for measuring perception.

⁸⁴ For example, Kenny and West (2010) conducted a meta-analysis on twenty-four studies of perception that presented differences in how perception is measured.

Table 3-8 Use of repertory grids for measuring perception

Author	Description
Cron et al. (2014)	How top-level executives use mental models of sales force performance.
Veinand et al. (2011)	Analysed the relationship between consumer perceptions and product characteristics.
Hair et al. (2009)	Studied the perception of the online consumer experience through qualitative repertory grids.
Houghton et al. (2006)	A cross-cultural study on the perception of consumers towards food management risk.
Wright (2004)	Measured differences of perception in appraisal research.

3.3.6 Repertory grids for measuring price perception

This research developed a series of repertory grids conducted about the general topic of ‘price perceptions’ in which consumers from different cultural groups made sense of their price perceptions of a specific product category in different scenarios. Each respondent is represented by one grid, and this produces the need to develop a multiple grid analysis that accounts for responses within the same cultural group and responses between separate cultural groups.

However, as pointed out by Jankowicz (2005), the repertory grid technique is highly focused, and the topic should be set forth clearly in advance. Thus, the general topic of price perception could be too broad for a respondent and could result in an unmanageable number of constructs. This brings up the need to focus on a specific product category that is common in multicultural environments. For example, refrigerated orange juices⁸⁵ have been found by the author to be common amongst target respondents during preliminary in-depth interviews. In addition, the author has over 10 years of experience in the beverage industry; most recently marketing refrigerated orange juices.

⁸⁵ Non-refrigerated orange juices (i.e. Tetra-Pak) were not included in the study because, in the beverage industry, the non-refrigerated juices are located in different sections of a grocery store and they even command different prices.

However, for future research purposes, any other consumer goods category could be used in a similar research design.

Therefore, the topic of the study is 'price perception of refrigerated orange juices.' This topic is focused sufficiently to produce a manageable number of constructs and to allow the provision of evidence for further research into price perceptions of other product categories.

3.4 Methodology

3.4.1 Sampling

This study of multicultural price perception will include understanding price perceptions towards a specific product category (in this case, refrigerated orange juices) by the following three groups:

1. Caucasians (Whites)
2. Hispanics
3. African-Americans.

In order to minimise the effect of different levels of acculturation⁸⁶, most of the respondents were second-generation Hispanics (Hispanics born in the US from foreign-born parents) however some respondents were foreign-born Hispanics (and some respondents were not fluent in English). This requirement for acculturation was not necessary for Caucasians or African-Americans, as they were all fluent in English and there was no evidence that they were foreign-born.

The respondents were recruited between June 2014 and October 2014 in the city of Chicago, Illinois. The city of Chicago is located in the Midwest of the United States, a region that has the lowest foreign-born population of the United States (Lollock, 2001). However, most of the Hispanic population in the area is

⁸⁶ Berry et al (2011) define acculturation as changes in original cultural patterns in the sense that different degrees of acculturation produce different outcomes in consumer behaviour and this might pose a challenge for this research (i.e. Hispanics with different levels of acculturation might perceive prices differently depending on the degree of acculturation).

foreign-born. This fact presented a challenge for the purpose of minimising the effect of acculturation, as most of the Hispanics contacted were born abroad (Lollock, 2001).

Nevertheless, the Midwest region of the United States can be considered as a single cultural zone⁸⁷ as explained by Matsumoto and Vivjer (2011) and supported by Lollock (2001) in her report for the US Census.

The sample size was made of 15 respondents each from the three ethnic groups, for a total of 45 different respondents, split as follows:

- 15 Caucasians (White)
- 15 African Americans
- 15 Hispanics.

The interviews lasted approximately 60 minutes, and participants were compensated with \$30 per interview. They were originally offered a gift card or a shopping coupon worth more, but all participants preferred cash. Drawing a purposive sample in this way was consistent with the suggested approach for sampling cultures in cross-cultural research made by Matsumoto and Vivjer (2011, p.121) namely that:

- Samples should be drawn from cultural zones.
- Purposive sampling should be employed.⁸⁸
- The research goal should guide the sampling strategy.
- More than just two cultures should be studied.⁸⁹

At the end of the (repertory grid) interview, participants were asked to indicate the prices of each brand (element) so that their grids could be related to the relevant prices. For this research, as we were interested in price perceptions among cultural groups and not individuals, the average price from all

⁸⁷ Matsumoto and Vivjer (2011) give several examples of cultural zones such as English-speaking countries, Latin America and Africa, thus suggesting that sampling from one cultural zone (i.e. different cultures within an English speaking country versus different cultures in different cultural zones) will be acceptable.

⁸⁸ (Matsumoto and Vivjer, 2011:121) found it acceptable to use convenience sampling within cultural zones because the fact of "using a cultural-zones approach already establishes a purposive sampling frame".

⁸⁹ This is consistent with the goal of this research to study three different cultural groups.

respondents of a single cultural group was used. Prices were given in US\$ per bottle of 59 ounces as this is the common unit of measure in the USA for juices and most beverages (i.e. gallons or 128 ounces, half gallons or 64 ounces, 59 ounces, pints, 20 ounces, 16 ounces and 8 ounces). There were two exceptions with the brands Sunny D and Tampico as they are only available in the gallon size (128 ounces). However, the price per gallon of Sunny D and Tampico is lower than the price per bottle of 59 ounces of every other brand.

3.4.2 Design of the Repertory Grids

As indicated in Section 3-3, this study analysed the repertory grids based on ethnic group. Each respondent completed one grid for a total of 15 grids per ethnic group and a total of 45 grids. Appendix B contains an example of one grid per ethnic group.

3.4.2.1 Elements

For the purpose of the research design, the aim was to present the same stimulus (elements)⁹⁰ to groups of participants (i.e. Hispanics vs. African Americans vs. White/Caucasians) and obtain the constructs that were elicited by the stimulus. As the intent of this research is to compare and contrast the results among cultural groups, the elements were the same for each respondent. In this way, the variations among cultural groups will be just constructs and ratings rather than entire grids. Otherwise, by using different stimuli (elements), we would end up with different grids (elements, constructs, and ratings) at the respondent level, thus making it difficult to make comparisons among cultural groups.

It could be argued that constructs could also be fixed (in this case, both the elements and the construct will be the same per each respondent) but it was found during a preliminary test that the constructs used by the Hispanic group were different from the constructs used by the African American and the White/Caucasian groups (in particular, the Hispanic group used constructs

⁹⁰ In this research we use the term 'stimulus' to refer to the elements of a repertory grid, since they were used for construct elicitation and the elements were presented to the participants as printed cards with images of the juices.

translated from Spanish, such as ‘punch’, to describe a juice blend or used words with a different meaning). For example, ‘sweet’ had a negative connotation in the Hispanic group – too much sugar, linked to diabetes – but a positive connotation in the White/Caucasian group. Therefore, the elements (stimuli) were the same per respondent and the constructs were elicited and ranked from these elements.

In preparation for the grid, a total of three interviews per cultural group (Hispanics, African-Americans, and Caucasians) were undertaken. The objective of these preliminary interviews was to select the common elements to be used in the grids for all participants. A total of nine interviews (three per cultural group), each lasting up to 60 minutes, resulted in the following elements to be selected, being that all three cultural groups recognised them⁹¹:

- Tropicana
- Minute Maid
- Florida’s Natural
- Simply Orange
- Tampico (Orange flavour)
- Sunny D (Orange flavour)

It is important to note that private labels and imported brands were excluded, as it was found that some groups knew about these brands (because they were purchasing them in a specific supermarket chain) but the other groups did not. For example, Safeway Select 100% Orange Juice, available in the Dominick’s supermarket chain, was recognised by all the White/Caucasian respondents but not by a single Hispanic respondent. Likewise, a brand such as Jumex – an imported brand from Mexico – was recognised by all Hispanics respondents but by almost no African-American respondents.

⁹¹ A total of nine respondents were interviewed on the brands of orange juice with which they were familiar. Printed cards with images of the juices were presented and the brands with consensus among the nine respondents were chosen as elements of the repertory grid.

Interestingly, brands such as Tampico and Sunny D are not real orange juice drinks, but rather flavoured drinks. However, the group referred to them as orange juices.

During the preliminary nine interviews (three per ethnic group), the participants were asked about their knowledge of brands of refrigerated orange juice in the following way:

“In a grocery store such as Dominick’s, Jewel-Osco or at your local grocery store, there are two types of orange juices. Refrigerated orange juices that are located in the refrigerated section and generally contain a higher percentage of orange juice and non-refrigerated orange juices that do not require refrigeration that is generally located with the sodas and colas. The refrigerated orange juices might contain different amounts of orange juice, for example, 100% orange juice, 50% orange juice or even 5% orange juice; in addition, they might contain pulp and/or vitamins. For the purpose of this study, we are only interested in learning about the brand name of the refrigerated orange juice and not in the specifics such as juice content, pulp content or vitamins.”⁹²

Next, the interviewee was asked about brands of refrigerated fruit juices:

Could you please name the brands of refrigerated fruit juice that you know?

Their responses were recorded as an unaided response⁹³. As a next step, participants were presented with images of the brands of orange juices that they had selected⁹⁴.

By eliciting the elements from an initial panel of interviewees, the researcher was able to select elements that were common amongst different cultural

⁹² A visual survey of grocery stores found too many variations of orange juices (100% juice, not from concentrate, organic, with calcium, etc.) at different price points, even within a single brand. Therefore, participants were advised not to take into account these differences in naming the orange juice brands (for example, one participant described Tropicana and Tropicana 50 as two different brands).

⁹³ For the purpose of the study, no distinction was made between unaided and aided responses in the selection of elements.

⁹⁴ The author had access to a database containing images of every brand of orange juice available nationwide using the Item Master service (available at <https://www.itemmaster.com/index.htm>).

groups. Accordingly, this was an important and necessary first step in the research process.

3.4.2.2 Constructs

As explained by Fransella et al. (2003), constructs were elicited from the interviewees according to the following assumptions:

- Communicability

Constructs are to be communicated from the interviewee to be interviewed as part of the elicitation process; in other words, constructs are not an interpretation of what the interviewer assumes is the understanding of the interviewee in relation to a specific topic.

- Representative of the subject

Constructs must be a representation of the subject's understanding in its own words rather than an interpretation obtained by the interviewer.

- Association with elements

According to Fransella et al. (2003, p. 23), "people should not dissociate themselves entirely from the elements or the constructs elicited. They must be able to see themselves somewhere along the construct dimensions".

- Explicitly bipolar

People interpret their experiences throughout a system of bipolar constructs in the sense that when saying what something is, one is also saying what is not (Fransella et al., 2003).

The author worked with the interviewees to ensure that the constructs were elicited according to these assumptions. For example, participants were asked for clarification when constructs did not meet these assumptions. For example,

Hispanic respondents' use of the construct 'sweet' had an opposite connotation to that of the White/Caucasian respondents as mentioned earlier⁹⁵.

In addition, the constructs were elicited from triads of elements (triadic difference) according to the first way of eliciting construct described by Kelly (1955) and summarised by Fransella et al. (2003). Other methods of eliciting constructs from elements were presented in Table 3-8. However, a study by Neimeyer and Tolliver (2002) found it useful to work with the triadic difference as it provides more meaningful and independent constructs than with other methods. This is further supported by Caputi and Reddy (1999, p.261) in an experiment that showed that triadic method of elicitation seems to produce constructs that "are less functionally independent, more meaningful in that they are able to discriminate among elements" and that "elicit construct sets that are more cognitively complex."

Therefore, this study will use the triadic method of elicitation as indicated by Fransella et al. (2003) and supported by Neimeyer and Tolliver (2002) and Caputi and Reddy (1999).

3.4.2.3 Ratings

According to Fransella et al. (2003), using rankings in grids is useful in some contexts, but they are too restrictive. The original method suggested by Kelly is a two-point scale (Kelly, 1955), but it is common to use a scale from 1 to 7 (Fransella et al., 2003, p.61). Metzler et al. (2002) have proved in a study that using rating scales from 1 to 7 and 1 to 13 was more effective than using rating scales from 1 to 3⁹⁶.

The direction of the rating scale was also positive (i.e. 1 to 7) rather than negative (i.e. from -3 to +3). This was done according to the findings of Metzler et al. (2002), who argue that rating scales in a positive direction (i.e. 1 to 7) offers greater reliability (measured by the authors as the number of zeros, or missing values, in the responses). In addition, the author rated each construct

⁹⁵ For example, the construct Sweet meant "with real sugar/good taste" for Hispanics and had a positive connotation.

⁹⁶ For example, Metzler et al (2002) found that rating scales from 1 to 7 and 1 to 13 produced less neutral ratings than smaller scales such as 1 to 3.

for all elements before moving to the next construct as - according to Fransella et al. (2003, p.64) - “there is no consistent evidence that the direction of ratings affects grid measures” and “we should, therefore, continue to use Kelly’s way of rating each construct on all elements before moving to the next construct”.

Therefore, for this research, we used a rating scale from 1 to 7 and each construct was rated on all elements before moving on to the next construct.

3.4.3 Data Analysis Approach

This study requires the analysis of multiple repertory grids, used to ascertain deeply held perceptions about brand attributes and price perceptions. A single grid represents each participant in the study (Fransella et al., 2003, Bell, 2005). There are two main approaches in the literature for analysing multiple repertory grids; a content analysis and a multidimensional scaling. One approach by Jankowicz (2005, p.148) proposes the use of content analysis that is a “technique in which the constructs of all the interviewees are pooled, then categorised according to the meaning they express.” However, this approach is not suitable for analysis of cross-cultural research since it involves pooling constructs from participants from different ethnic groups⁹⁷.

According to Nezelek (2011, p. 299), relationships at “the two levels of analysis are mathematically independent” in the sense that it is “inappropriate to draw conclusions about within-culture relationships from between-culture relationships.” In fact, pooling constructs, as suggested by Jankowicz (2005), in the context of multicultural research, will result in merging within-culture relationships with between-culture relationships, thus challenging the ability to draw appropriate conclusions. (Nezelek, 2011).

A second approach for analysing multiple repertory grids is proposed by Fransella et al. (2003) and Bell (1997) and requires the use of multidimensional scaling. In this approach, constructs from different cultural groups are

⁹⁷ Nezelek (2011) advised against the use of elements from one cultural group in another cultural as it will assume the existence of a relationship between elements in different cultural groups, and according his research, this cannot be proved.

independent. For example, a grid, that is also a matrix, represents a participant, and a three-mode matrix represents multiple participants from the same ethnic group. This is relevant because the analysis of a three-mode matrix requires a robust method of statistical analysis.

In the case of a three-mode matrix (the grids containing responses from participants from the same cultural group), Fransella et al. (2003) proposes the use of multidimensional scaling but felt short of explaining the process to analyse grids with one aspect in common⁹⁸ (for example, elements).

However, Bell (1997, p. 2005) gave a thorough description on how to use multidimensional scaling to work with multiple data grids. In particular, Bell (1997) provided examples of how to use SPSS®⁹⁹ to analyse the grid depending on the type of grid and also how to use the PROXSCAL and ALSCAL procedures that are in SPSS® to conduct multidimensional scaling.

Moreover, according to Bell (1997), the data structure for the multiple grid analysis of this study corresponds to a Type II grid. This structure has the same number of elements and a varying number of different constructs. A description of the different multiple grids data structures handled by SPSS, as presented by Bell (1997) is shown in Appendix B. In addition, the commands used in SPSS to run the multidimensional scaling analysis are also shown in Appendix B.

Leach et al. (2001) present a more in-depth explanation of the methods that are useful for analysing multiple repertory grids depending on the level of detail desired. The authors present a classification of the methods according to the desired level of analysis. This is, from a very detailed analysis (referred as level 1) to a more general analysis (referred as level 5). A list of the methods explained by Leach et al. (2001) is shown in Table 3-9.

An in-depth explanation of the use of multi-dimensional scaling for analysing multiple repertory grids is shown in the next section.

⁹⁸ Fransella et al. (2004) mentioned the use of the GRIDSCAL algorithm and the SYSTAT statistical package but refer to Leach et al. (2001) for an example.

⁹⁹ The author used the version of SPSS® 20 with the SPSS® Categories module that allowed running multidimensional scaling procedures.

Table 3-9 Analyses of Repertory Grid Data

Level	Data	Type of Analysis
1 (Maximum Detail)	Original grid	Clinical skill
2	Similarities/dissimilarities measures for elements and constructs	Euclidean distances for elements, product-moment correlations for constructs
3	Analysis of elements and constructs separately	Principal components analysis, hierarchical cluster analysis, multidimensional scaling (MDS)
4	Joint analysis of elements and construct	Bi-plot, hierarchical cluster analysis, unfolding analysis, correspondence analysis
5 (Broad picture)	Combined analysis of several grids	Individual differences scaling (INDSCAL) ¹⁰⁰ , unfolding analysis

3.4.4 Multidimensional Scaling for Analysing Repertory Grids

As described in previous sections, Multidimensional Scaling (MDS)¹⁰¹ refers to a series of techniques that enables researchers to determine the perceived relative image of a set of objects (Hair et al., 2010). This is accomplished by comparing objects¹⁰² based on consumer judgments of overall similarity of preference and representing these judgments in multidimensional space (Hair et al., 2010).

Moreover, the objectives of MDS seem consistent with the goal of using repertory grids for measuring perception; for example, Hair et al. (2010, p.573) identified the use of MDS to identify “unrecognised dimensions affecting behaviour,” and this is done using a perceptual map. This perceptual map is estimated from an assessment of similarities or dissimilarities, and this is compatible with the use of bipolar constructs in repertory grids.

Hair et al. (2010, p. 570) described the procedure used in MDS to transform similarity judgments into corresponding spatial positions as follows:

¹⁰⁰ This method is also suggested by Bell (1997) for analysing multiple repertory grids

¹⁰¹ According to Hair et al. (2010:568), MDS is also known as “Perceptual Mapping”

¹⁰² Hair et al. (2010) defined objects as products, services, persons or other items associated with commonly held perceptions, than can be used on comparisons of preference.

1. Gather similarity judgments

First, perceptions of overall similarities or dissimilarities are obtained. The data are usually gathered by measuring responses to statements such as “rate the similarity of brands X and Y in a scale of 1 to 10.”

2. Create a perceptual map

This second step draws the data in a multidimensional space based on the degree of similarity obtained in the previous step. This is generally undertaken in a two-dimension space although Sackur (2013) presented examples of perceptual maps drawn in a three-dimensional space.

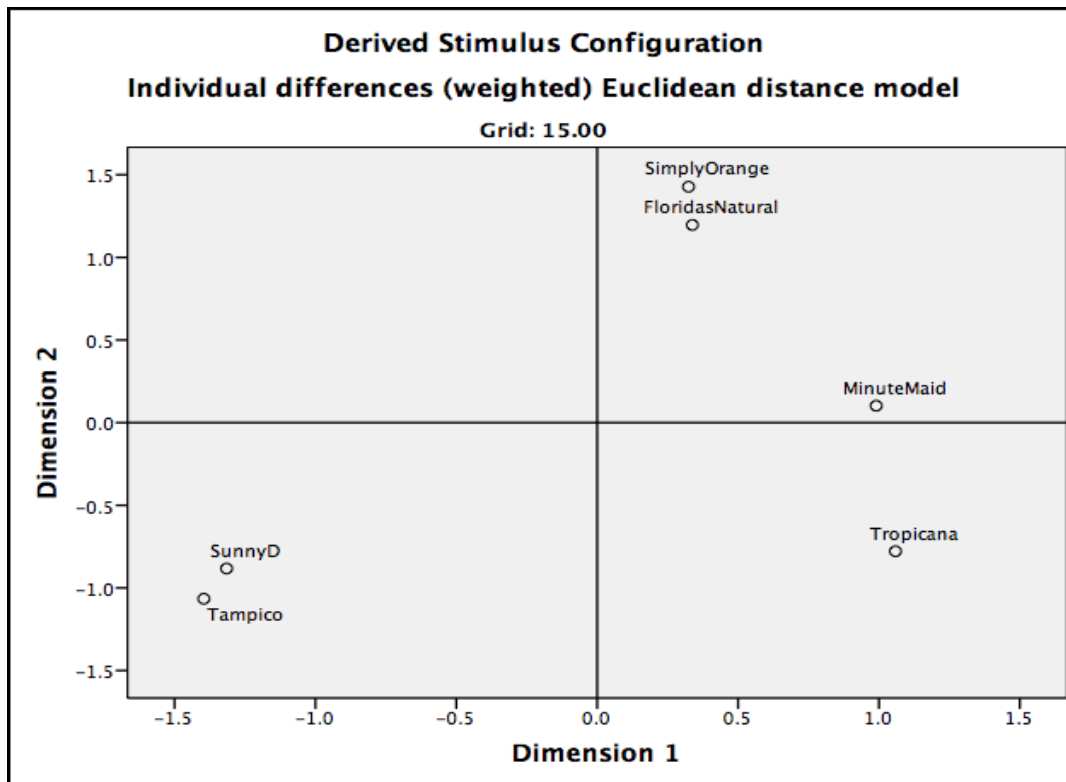
3. Interpret the axes

As explained by Hair et al. (Hair et al., 2009), the perceptual maps are drawn in an n-dimensional space without information about the dimensions¹⁰³. However, Hair et al. (2010, p. 587) suggested a “subjective evaluation” of the perceptual map. This subjective evaluation is done by a visual inspection of the perceptual maps, and this approach is regarded as the best available when the dimensions are believed to be highly intangible, affective or emotional (Hair et al., 2010).

An example of a perceptual map derived using MDS in this study is illustrated in Figure 3-4.

¹⁰³ Dimensions are usually labelled as Dimension 1 and Dimension 2 (Hair et al., 2010:571).

Figure 3-4 A perceptual map of a repertory grid



In Figure 3-4 it is possible to appreciate how the perceptual map is presented in two dimensions, and they are labelled “Dimension 1” and “Dimension 2.” However, such labelling does not allow for a good interpretation and therefore the axes must be explained using a subjective evaluation. This is explained in detail in the next section. An example in this context might be labelling the dimension 1 continuum “sweet to sour” and dimension 2 “natural to artificial.”

3.4.5 SPSS[®] to perform Multidimensional Scaling

The use of multidimensional scaling (MDS) or perceptual maps for analysing multiple repertory grids, in SPSS[®], requires following a series of steps as proposed by Bell (1997):

- 1) Treat constructs as cases

Every grid is a participant and is represented in SPSS[®] as a set of rows and columns. Every construct is considered by SPSS[®] as a single case,

and there will be as many cases as elicited constructs from participants. In this case, columns will represent elements and rows will represent constructs. A dummy variable is added to differentiate the construct from one grid to constructs from a different grid. Table 3-10 shows an example of how a repertory grid is coded (see appendix B for examples of repertory grids as completed by participants).

Table 3-10 An example of a grid coded in SPSS®

Population	Grid	Left Construct	Simply Orange	Tampico	Minute Maid	Florida's Natural	Sunny D	Tropicana	Right Construct
Caucasians	1	Slender Bottle	1	7	2	6	3	2	Large Bottle

2) Estimate individual differences by grid

The method suggested by Bell (1997) uses the ALSCAL procedure. ALSCAL is a multidimensional scaling program developed by Young et al. (1978) that uses the least squares approach to scaling¹⁰⁴. One characteristic of ASCAL is that it obtains data contained in a single square matrix; with data representing the relation between the objects (rows and columns) and that can be symmetric or asymmetric. Moreover, there might be missing elements in the matrix.

The process of estimating individual differences using ASCAL in SPSS® is detailed in Appendix B. However, the steps in the process are:

- (a) Sort cases by grid (each case represents a construct)

¹⁰⁴ Young et al. (1978) defined ALSCAL as an Alternate Least Square Approach to Scaling and is available in statistical packages such as SPSS®

- (b) Analyse each grid separately (this requires extracting a single grid from the data file)
- (c) Estimate proximities between elements. This will result in a matrix of proximities.
- (d) Run the ALSCAL procedure to obtain the individual differences.
- (e) Plot the results in Euclidean space

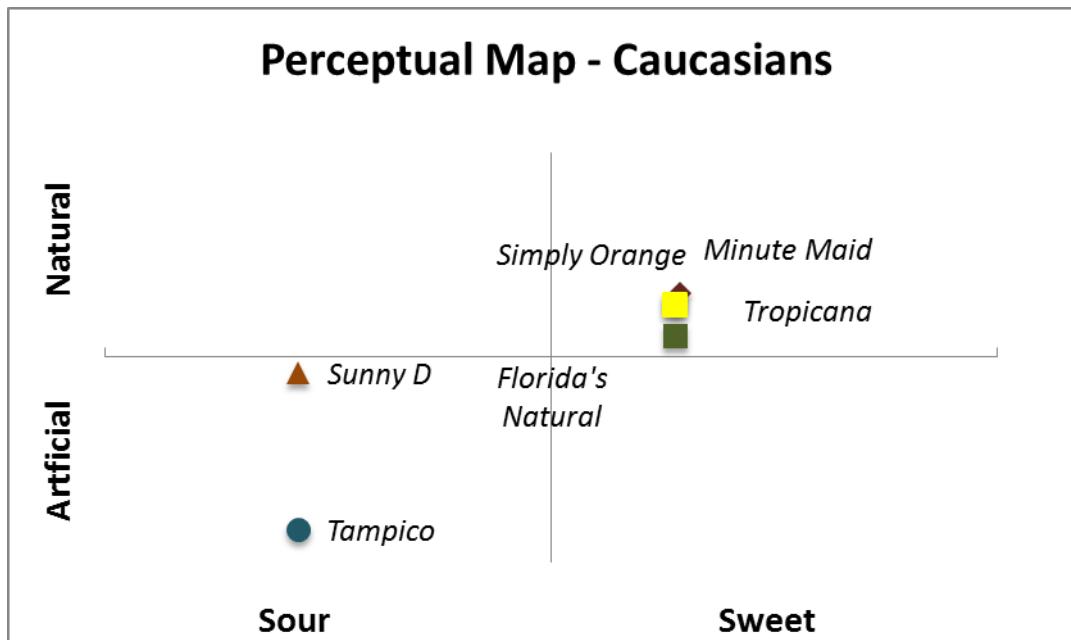
3) Interpret the resulting perceptual map.

The output of the ALSCAL procedure is a perceptual map as shown in Figure 3-5. However, the resulting map is plotted in two dimensions, and the dimensions are not labelled. This presents an important shortcoming when it comes to interpreting the results.

Yet, Hair et al. (2010) presented an alternative to the standard labelling in the perceptual map by means of a visual inspection of the dimensionality of the perceptual map. This is a subjective evaluation, and it is more suitable in this case than the other alternatives presented by Hair et al. (2010) such as Stress Measures and Index of Fit. This is because, according to Bell (1997), the stress measures and the Index of Fit correspond to the goodness-of-fit or the measure of variance of the grids but does not give information on what each dimension means.

An example of a re-interpreted perceptual map is shown in Figure 3-5.

Figure 3-5 Example of a re-interpreted perceptual map



4) Individual representations of respondents

A useful graphic representation of the method proposed by Bell (1997) is the individual representation of respondents. In this case, a single plot in a Euclidean space will show how close or far were the responses of the participants. This will bring some insight into whether there is interdependence in the responses to participants of a cultural group. In other words, the more grouped the participants are shown in the plot; the less interdependence was among participants.

An example of a single plot of the respondents per cultural group is shown in Figure 3-6. This analysis indicates how internally consistent the perceptions are as if they are similar there will be little difference in the individual positions in Euclidean space.

However, this representation is not used with the same intent as with the perceptual map. Rather, the objective of this single plot is to assess whether the responses in each grid were consistent among themselves. In other words, numbers that are too close together mean more

homogeneous responses. Conversely, numbers that are too spaced means more heterogeneous responses.

Figure 3-6 Individual Differences (Flattened Subject Weights)

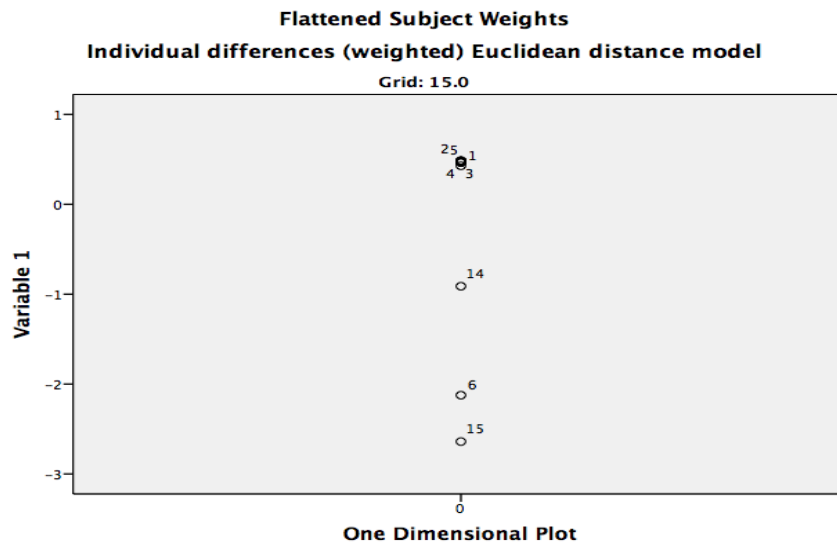


Figure 3-6 shows a degree of “agreement” among respondents. In the example above, participants 6, 14 and 15 had different responses from the rest of participants¹⁰⁵. Notwithstanding, there is not a ‘right’ or ‘wrong’ degree of agreement among responses; rather, this degree of agreement might be due to the intrinsic characteristics of the sample. Although it is expected that the responses are not all clustered or scattered together but rather balanced in the plot, there are difficulties to achieve this due to the relatively small sample size of 15 respondents per cultural group.

5) Average prices versus real prices per cultural group

An extension to the method proposed by Bell (1997) is to compare the average prices given per respondents of a particular ethnic group to the real prices. This way, it will be possible to relate how participants make associations among brands with the prices given by the participants. This

¹⁰⁵ In this study, there were 15 participants per cultural group and a grid represents each participant. In this case, there were 15 participants (or grids) in the Caucasian group.

step is very important since it what will bring insights on why participants of a particular cultural group gave certain prices to the brands that were part of the study.

3.4.6 Analysis of Key Constructs

There are different approaches to the analysis of key constructs for multiple repertory grids. For example, Jankowicz (2005) proposes Content Analysis, which is a technique that pools and categorizes all the constructs from the participants. In this approach, the constructs are grouped into categories based on connections among constructs (Lemke et al., 2011). Goffin et al. (2006) and Lemke et al. (2003) present a methodology that consists of the standardisation of the construct names, categorisation of constructs and the identification of key constructs. This methodology uses a measure of variability among constructs called “Average Normalised Variability” (ANV).

However, one of the drawbacks of the approach presented by Jankowicz (2005) and detailed by Goffin et al. (2006) and Lemke et al. (2003) is that they make an assumption that the constructs from all the participants can be pooled. Actually, Nezlek (2011) presents an argument against this assumption that constructs from one cultural group can be transferred to another cultural group. One solution might be to develop the approach suggested by Lemke et al. (2011) for each cultural group (i.e. three different times, one per cultural group)¹⁰⁶, but not by pooling all the constructs from all the participants.

Another approach is presented by Fransella et al. (2003) and requires the use of multivariate techniques. This approach is also supported by Bell (1997) when analysing multiple repertory grid data. Specifically, Bell (1997) suggests the use of multidimensional scaling (MDS) that is a multivariate technique that identifies key dimensions of the respondent’s evaluation of objects (Hair et al., 2010). For the analysis of key constructs, Bell (1997) suggests the use of Principal Component Analysis (PCA) for construct analysis.

¹⁰⁶ According to Lemke et al. (2011), the process for just one set of constructs was a very time-consuming process, requiring days of qualitative work by three researchers. So, it is to expect that repeating this process three times (or for as many cultural groups are to be studied) it will be a very slow and time-consuming process.

Principal Component Analysis (PCA) is a multivariate technique that can be used to analyse interrelationships among variables and explain these variables in terms of their common dimensions or factors (Hair et al., 2010).

To analyse key constructs, Bell (1997) suggests the use of Principal Component Analysis (PCA), that is another multivariate technique, as Multidimensional Scaling (Field, 2009), that is also suggested by Fransella et al. (2003). One of the advantages of using principal component analysis in analysing key constructs is that the entire construct list, from a single ethnic group, is reduced to key components. This is accomplished as the analysis reduces the data into a set of linear variables or components (Field, 2009). These components can be labelled as key constructs and compared among different ethnic groups.

The technique proposed by Bell (1997) and Fransella et al. (2003) also requires studying the population groups separately. This is, to determine the key constructs per ethnic group as including constructs from different cultural groups in a single analysis will contradict the argument presented by Nezlek (2011) in that constructs from different cultural groups cannot be treated as interrelated. However, the technique proposed by Bell (1997) requires assigning elicited constructs to key constructs by their degree of statistical inter-correlation, and this process is regarded as easier¹⁰⁷.

The next section will present an overview of the methods used in the data analysis of the repertory grids followed by an explanation of the findings per ethnic group, including key constructs. Furthermore, since the analysis of individual constructs produces a lengthy output, the correlations tables used to select the key constructs are set in the appendices C and D¹⁰⁸.

¹⁰⁷ In fact, the output of the principal component analysis shows how each component (i.e. an elicited construct) is inter-correlated to a specific key component (i.e. key constructs) and this make easier to allocated constructs to key constructs.

¹⁰⁸ Each section covering key constructs will refer to the proper appendix that has the correlation tables.

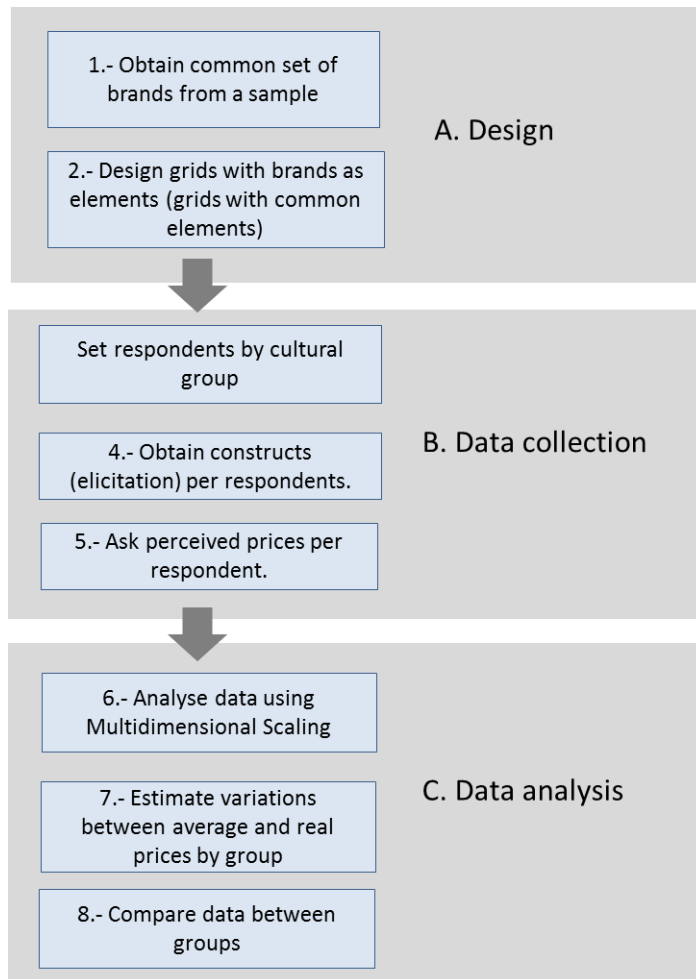
3.4.7 Method for Data Analysis

The previous section dealt with the approach to use multidimensional scaling to analyse repertory grids. This section will present the method used to measure price perception between cultural groups, as shown in Figure 3-7. The process started with the selection of a group of brands that was common to respondents from different cultural groups. These brands became common elements to all the grids used in the study.

The data collection started by aggregating respondents by cultural group. Next, one grid was completed by the participant by construct elicitation using images of brands as visual aids. At the end of each interview, each participant was asked to give the perceived price per brand.

Next, the data analysis consisted of grouping all the grids from each cultural group into a single file. Each element was placed in a column, and each construct was placed in a row. This resulted in a matrix with as many columns as common brands were obtained and as many constructs as were elicited from the interviews of a particular cultural group. A dummy variable was added to relate constructs and grids. Then, the matrix was organised by clusters and analysed using Multidimensional Scaling. Finally, average prices obtained by respondents of a single cultural group were compared against real prices.

Figure 3-7 Method for measuring price perception between cultural groups



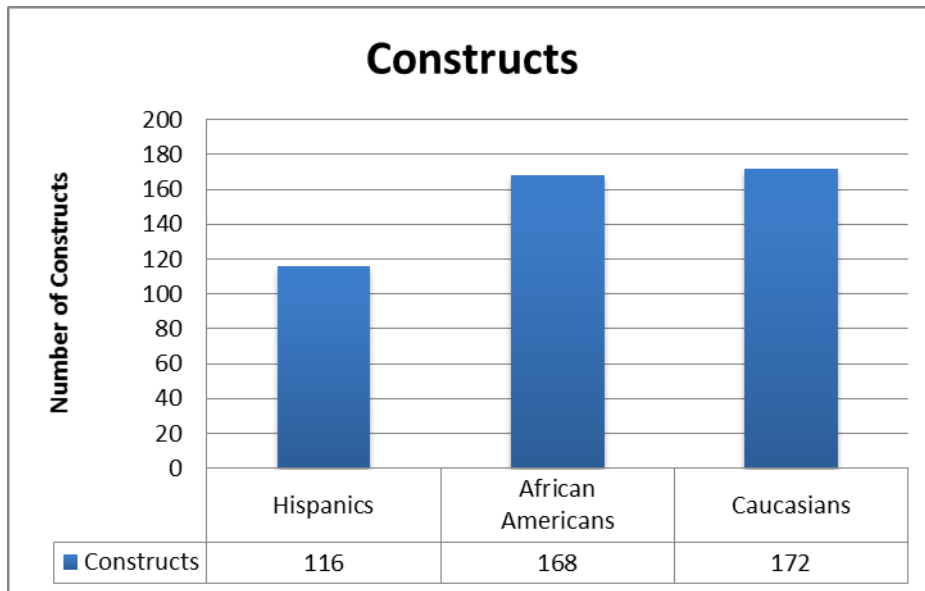
The following section will present an in-depth discussion on the constructs elicited by ethnic group followed by the analytical process used in this study.

3.4.8 Price Perceptions by Ethnic Groups

The use of the Repertory Grid Technique on different ethnic groups resulted in between 118 and 172 constructs per ethnic group. Figure 3-8 shows the number of constructs that were elicited from the ethnic groups. It is possible to observe that Hispanics produced the lowest numbers of different constructs to rate the same brands in comparison to African Americans and Caucasians. On the other hand, Caucasians produced the highest number of different constructs. The number of constructs shows the depth of description that any particular group uses to explain their perceptions. A small number indicates a

narrow range of attribute perceptions and a large, a broader group of attribute perceptions.

Figure 3-8 Constructs per Ethnic Group



In addition, Appendix B shows the different constructs and the rating given per brand in the case of Hispanic respondents. Likewise, Appendix B shows the responses given by the ethnic group and the different constructs given by Caucasian, African-American and Hispanics respondents.

3.5 Price Perception Measurement

The analysis of price perceptions per ethnic group in this study has followed the structure outlined in further detail below:

1. First, there was an analysis of the constructs per ethnic group. This provides an understanding of how each ethnic group makes sense of the different elements (brands) presented and assigns a price to it.
2. Secondly, there was a perceptual map generated for each ethnic group. This map was constructed using the procedure explained in section in the previous section and shown in Figure 3-5. The perceptual map allows the visualisation of how an ethnic group represents the brands according to the dimensions of sour-sweetness and natural-artificial.
3. Next, respondents (each respondent is represented in a grid) are plotted in a one-dimensional plot. According to Bell (1997, p.23), the configuration of the points in this plot is important as this enables us to see how the responses between participants are related. This is presented in a plot similar to the one shown in Figure 3-6.
4. Lastly, there is a comparison of real prices and average prices as given by the respondents. This allows us to establish an association between the responses in the repertory grids and the actual prices. In other words, the analysis of price perceptions by Hispanics, African Americans, and Caucasians, which is presented in the following sub-sections, shows how the individual references given by each ethnic group by brand relate to the actual prices of these brands.

3.5.1 Price Perceptions: Hispanics

The use of the Repertory Grid Technique for Hispanics resulted in a total of 118 constructs along 15 different grids (one grid per respondent). As indicated in section 3-3, the elements were common among the grids. Table 3-11 shows the summary of the 15 grids and the number of constructs elicited per participant.

Table 3-11 Hispanics Grids Summary

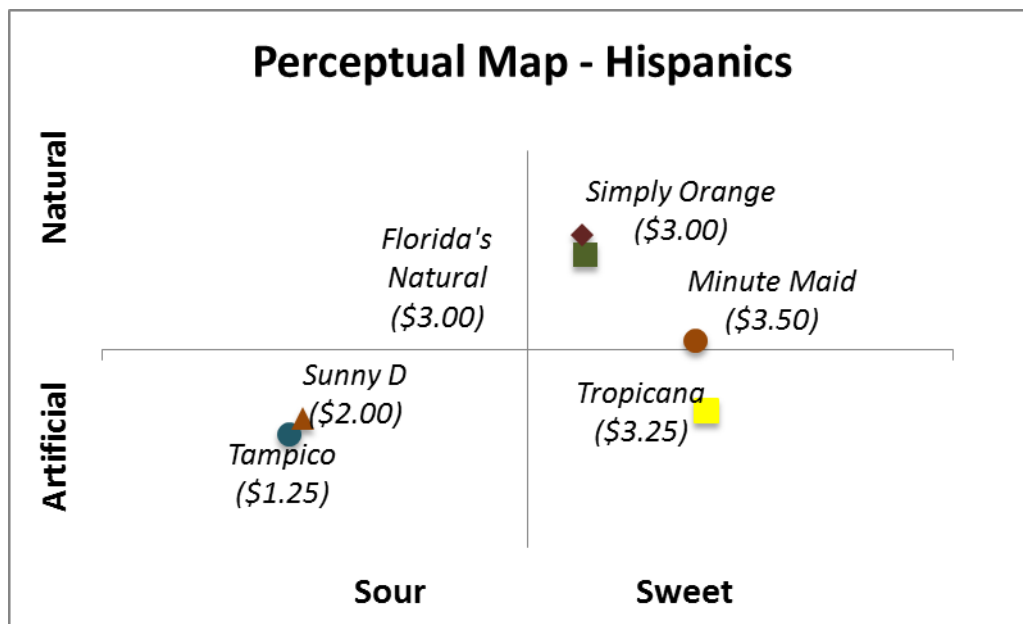
Participant	Number of Constructs
1	7
2	10
3	7
4	8
5	6
6	8
7	10
8	8
9	8
10	8
11	7
12	7
13	7
14	9
15	8
Average no. of constructs	8 per person

In the above summary, it is possible to observe that each participant elicited between 6 and 10 constructs. These numbers are consistent with most examples drawn from the literature (Fransella et al., 2003; Jankowicz, 2005), in the sense that we should not expect fixed numbers of constructs from the elicitation (Fransella et al., 2003) but rather a variable number of constructs per grid.

3.5.1.1 Perceptual Map: Hispanics

The plot in Figure 3-9 shows the perceptual map of Hispanic respondents. In this map, it is possible to observe how brands such as Sunny D and Tampico are perceived as sour and artificial amongst Hispanics respondents, and this can be explained by the fact that Hispanic respondents accurately described that brands such as Sunny D and Tampico were not juices but juice punches (i.e. artificial juices). On the other hand, brands such as Tropicana and Minute Maid are perceived as sweeter but less natural than brands such as Florida's Natural and Simply Orange. For the Hispanic group, it seems like brands that are perceived as sweeter, or naturally sour, fetch a higher price point¹⁰⁹.

Figure 3-9 Perceptual Map – Hispanics respondents



In addition, the perceptual map shown in Figure 3-9 has the average price given to the brands by Hispanic respondents. It is possible to note that the brands are grouped into three price tiers. Tampico (\$1.25) and Sunny D (\$2.00) represent the lower price tier. These brands are perceived as artificial and sour¹¹⁰. Simply Orange (\$3.00) and Florida's Natural (\$3.00) represent the middle price tier and

¹⁰⁹ Hispanic respondents assigned an average price of \$3.00 to brands such as Florida's Natural and Simply Orange that are perceived more natural but less sweet than brands with a price higher than \$3.00 like Tropicana and Minute Maid.

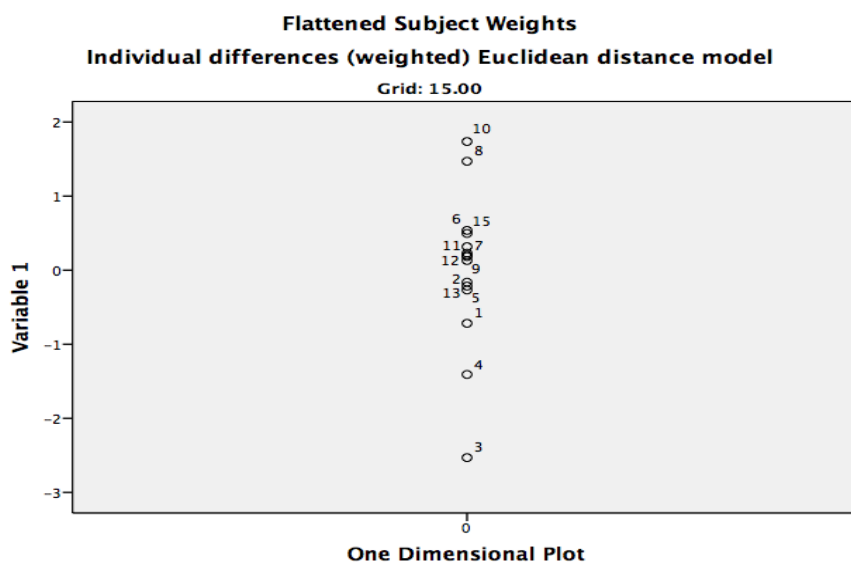
¹¹⁰ The lower degree of familiarity might be explained because Hispanics accurately reported that neither Sunny D nor Tampico is not an orange juice but a juice punches (juice drinks) and the question posed in the study was related to orange juices.

are perceived as more natural than the rest of the brands. This is thought to provoke since it shows that for this ethnic group, the sweet attribute might be an indicator of preference.

In this map, it is also important to note how brands such as Sunny D and Tampico were ranked as sour and artificial. This might be because the fact that the question posed in the study was related to orange juices and Hispanics accurately identified both brands as juice punches. However, this was not the case with African American and Caucasian respondents as will be explained in the following sections.

Figure 3-10 shows correspondence among constructs of Hispanic respondents. It is worth noting that the responses are heterogeneous. In other words, the respondents are not clustered, and this is an indication that the ratings given by one participant are not necessarily similar to the ratings given by another participant. For example, in Figure 10 it is possible to observe how distant the rankings of participant 3 versus participant 10 were. This is interesting since it might indicate a greater variety of perception among the Hispanic respondents with the same stimuli.

Figure 3-10 Individual Differences by Hispanics respondents



The analysis of individual respondents shown in Figure 3-10 might convey that Hispanic consumers appear to disagree among themselves on how to rate the brands (i.e. their selection of construct was different), but according to Figure 3-8, they seem to agree on how brands are rated.

Next, in Table 3-12, we look at the prices given by the respondents in terms of making comparisons of the actual prices (as collected by the author in the grocery store) with the price reported by the participants.

Table 3-12 Average prices by Hispanics

Brand	Real Price (Grocery) ¹¹¹	Average Perceived Price	Difference
Minute Maid	\$2.89	\$3.50	\$0.61
Tropicana	\$3.00	\$3.25	\$0.25
Florida's Natural	\$3.79	\$3.00	\$0.79
Simply Orange	\$4.19	\$3.00	\$1.19
Tampico	\$1.50	\$1.25	\$0.25
Sunny D	\$2.29	\$2.00	\$0.29
Average			\$0.56

It is interesting to note that the prices shown in Table 3-12 follow a pattern in prices that is similar to the individual differences shown in the perceptual map (Figure 3-9). That is, more expensive brands such as Minute Maid and Tropicana were placed closer together than inexpensive brands such as Tampico and Sunny D. In other words, as brands were placed closer in the perceptual map of brand attributes (such as sour sweet and artificial natural), they were also closer in price in Table 3-12. This finding is interesting because it shows a relationship between how a brand was rated using the repertory grid and the average price as perceived by the cultural group. It is important to note that the average prices given by respondents were not the same as the real prices. This can be explained by the fact that Hispanics reported that they bought their orange juices in local grocery stores rather than in supermarket

¹¹¹ Retail prices were obtained from the Jewel-Osco grocery stores.

chains (such as Jewel-Osco); therefore, the price differences are likely to be different at least partly because of channel preference differences.

Moreover, the real prices reported in Table 3-12 do not include a promotional price. For example, brands such as Tampico and Sunny D can be sold under \$2 in stores such as Wal-Mart and Costco. Therefore, it is important to consider how the prices were grouped together rather than how the perceived prices deviate from the real prices.

3.5.2 Key Constructs: Hispanics

An analysis of the key constructs reported by Hispanic respondents follows the method suggested by Bell (1997) where the grids are analysed using principal component analysis. The commands used in SPSS to conduct this analysis are shown in Appendix B. The output of the analysis is rather voluminous, and the data of interest is the commonality of each construct to the components derived from the analysis (Bell, 1997; Field, 2009). Field (2009) offers a thorough explanation of how to conduct and interpret a principal component analysis in SPSS, and this was used as a reference for this study.

From this analysis, it is possible to observe how the entire list of 118 constructs can be explained in terms of five components or key constructs¹¹². The top components are shown in Table 3-13¹¹³ and present the components with a higher eigenvalue¹¹⁴. According to Field (2009), eigenvalues represent the substantive importance of a component and therefore it only makes sense to retain components with large eigenvalues. This cut-off number is referred as “Kaiser’s criterion” and is equivalent to an eigenvalue greater than 1 (Field, 2009). In addition, it is important to note, that in Table 3-13, all the components with an eigenvalue greater than one, represent 100% of the variance in the analysis.

¹¹²The output of the principal component analysis speak of components, but they will be labeled as key constructs, as suggested by Fransella et al. (2004) and Bell (1997).

¹¹³ The original output consists of 118 components, with eigenvalues lower than 1 and that cannot be considered in the analysis (Field, 2009). So, only eigenvalues greater than 1 are shown.

¹¹⁴ Field (2009) offers a complete explanation of Eigenvalues and how they are determined in a Principal Component Analysis.

Table 3-13 Total Variance Hispanic Constructs

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	72.321	61.289	61.289	72.321	61.289
2	18.431	15.620	76.909	18.431	15.620	76.909
3	11.627	9.853	86.762	11.627	9.853	86.762
4	8.389	7.109	93.872	8.389	7.109	93.872
5	7.231	6.128	100.000	7.231	6.128	100.000

Extraction Method: Principal Component Analysis.

In the analysis five key components was found that were labelled as key constructs as follow¹¹⁵:

1. High-Quality Brand

This is the key construct that groups the largest number of individual elicited constructs (shown in Appendix B). It is related to individual constructs such as Natural, Best Brand, Best Flavour, Pure Juice, Best Packaging and more. In other groups, given the degree of commonality expressed as a result of the principal components analysis, these individual and elicited constructs can be grouped as a key construct labelled “High-Quality Brand.”

2. Traditional Brand

This key construct Traditional Brand represents individual and elicited constructs such as Family, Family Size, Popular and Traditional.

¹¹⁵ Since the principal component analysis (PCP) orders the components by the number of eigenvalues, with the one with most eigenvalues first, the key constructs are also ordered by the number of individual constructs associated.

3. Large and Sweet Juice

This key construct encompasses individual and elicited constructs such as Big, Sweet, and Popular, Much Sugar, High Sugar and few other constructs.

4. Natural Flavour

The individual and elicited constructs such as Like Juice (i.e. looks like juice), Natural Flavour, More Vitamins, Sweet and I Like, represents this key construct.

5. Good Taste

This key construct is represented by fewer individual constructs (5 out of 118 constructs) with Good Taste and Thin (or watery) as the main representative individual constructs.

These key constructs represent an interesting finding since it is possible to summarise a large number of individual and elicited constructs into a concise set of meaningful key constructs. In the following sections, the key constructs will also be estimated for African Americans and Caucasians in order to draw comparisons and this use of key constructs will be explained in the directions for further research, at the end of this study.

3.5.3 Price Perceptions by African-Americans

The use of the Repertory Grid Technique on African Americans resulted in a total of 168 constructs along 15 different grids (one grid per respondent). As indicated in section 3, the elements were common among the grids in a similar way as for the group of Hispanics. Table 3-14 shows the summary¹¹⁶ of the 15 grids and the number of constructs elicited per respondent.

Table 3-14 African-Americans Grids Summary

Participant	Number of Constructs
1	12
2	10
3	10
4	11
5	11
6	10
7	11
8	11
9	12
10	12
11	11
12	12
13	12
14	11
15	12
Average	11 constructs per person

In the above summary, it is possible to observe that each participant elicited between 10 and 12 constructs whereas the Hispanics group (see Table 3-11) elicited between 6 and 10 constructs. This difference means that one group (African-Americans) described the same elements using a richer number of constructs than the other group (Hispanics). This might be explained by the fact

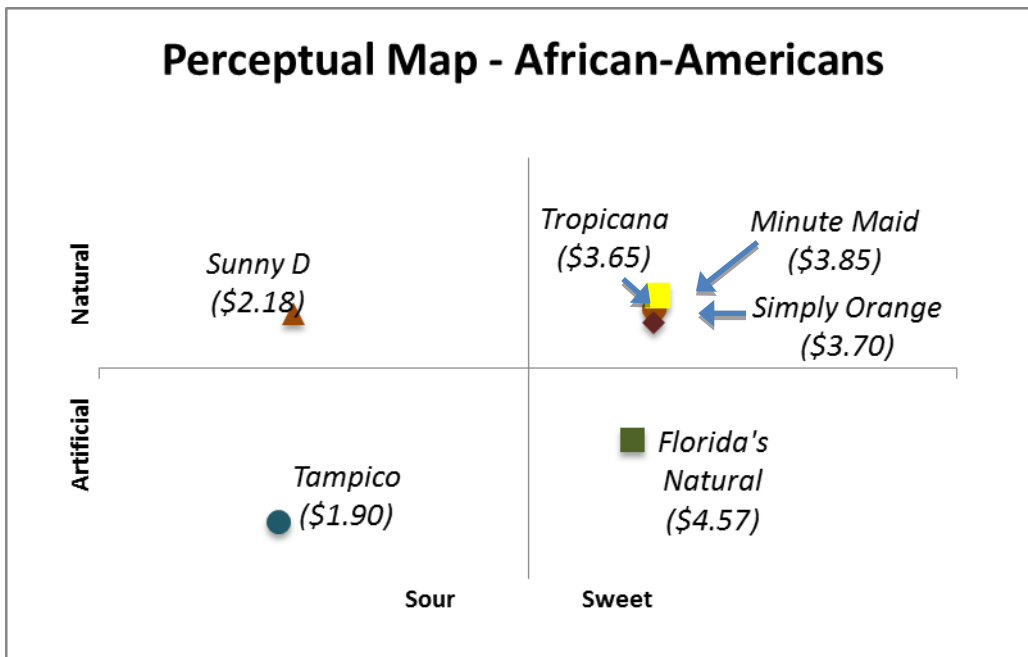
¹¹⁶ Each grid is represented as a case when analysed using the SPSS statistical software.

that native English speakers composed the sample of African American respondents and that was not precisely the case with Hispanic respondents.

3.5.4 Perceptual Map: African-Americans

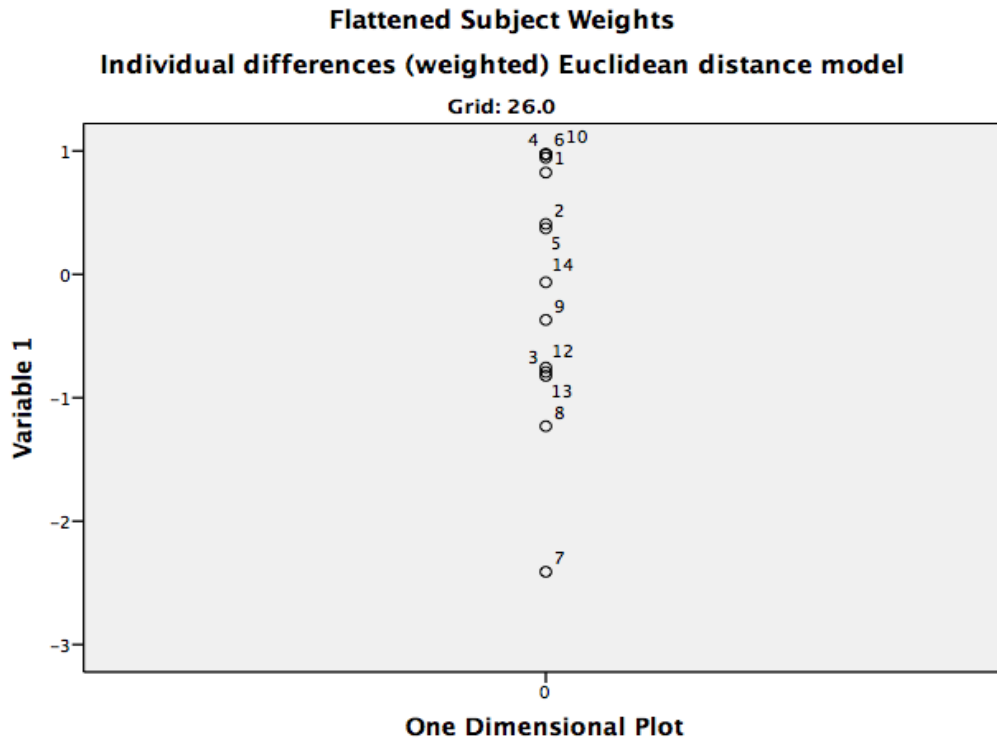
Figure 3-11 shows the analysis of the perceptual map for African American respondents. In this map, there is a higher familiarity with brands such as Tropicana, Minute Maid, and Simply Orange in the sense that they are closely ranked as natural and sweet. On the other hand, brands such as Sunny D, Tampico, and Florida's Natural were scattered in terms of sweet and natural attributes. For example, Florida's Natural is perceived as sweet but not as preferred as natural as other brands. They also assign a higher price to Florida's Natural, perhaps because of their perception of a sweet and artificial brand. Also, Tampico was ranked with a lower price perhaps because of the perception of it as an artificial and sour product.

Figure 3-11 Perceptual Map - African American respondents



The analysis of individual respondents is presented in Figure 3-12. This study of the individual differences presents an interesting summary for African American respondents. Similar to the plot shown in Figure 3-9 for Hispanic respondents, there is evidence that the responses of this ethnic group were heterogeneous.

Figure 3-12 Individual Differences by African American respondents



Next, in Table 3-15, we compare the prices given by the respondents in terms of comparing the actual prices (as collected by the author in a grocery store) with the price reported by the participants.

Table 3-15 Average prices by African Americans

Brand	Real Price (Grocery) ¹¹⁷	Average Perceived Price	Difference
Minute Maid	\$2.89	\$3.85	\$0.96
Tropicana	\$3.00	\$3.65	\$0.65
Florida's Natural	\$3.79	\$4.57	\$0.78
Simply Orange	\$4.19	\$3.70	(\$0.49)
Tampico	\$1.50	\$1.90	\$0.40
Sunny D	\$2.29	\$2.18	\$0.11
Average	\$2.94	\$3.31	\$0.40

It is interesting to note that the prices are shown in Table 3-15 also follow a pattern of prices that is similar to the individual differences shown in Figure 3-11.

¹¹⁷ Retail prices were obtained from the Jewel-Osco grocery stores.

That is, brands such as Minute Maid (\$3.85), Tropicana (\$3.65) and Simply Orange (\$3.70) have an average perceived price closer to brands such as Florida's Natural (\$4.57), Sunny D (\$2.18) and Tampico (\$1.90). This finding is interesting and consistent with the one found with Hispanics because it also shows a relationship between how a brand was rated using the repertory grid and the average price as perceived by African Americans. Additionally, respondents assigned higher average prices (\$3.11) when compared with average real prices (\$2.94), resulting in an average difference of \$0.40. This mean that respondents perceive prices higher, but differences were not tested for statistical significance.

3.5.5 Key Constructs: African-Americans

As explained in sections 5.4 and 6.2.2, the selection of key constructs is accomplished with principal component analysis. The command in SPSS used for the analysis is shown in Appendix B.

As with the Hispanics' key constructs, it was possible to obtain key components for African Americans that account for all the variability in the elicited constructs (see Table 3-16).

Table 3-16 Total Variance African American Constructs

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	106.29	63.27	63.27	106.29	63.27	63.27
2	24.42	14.53	77.81	24.42	14.53	77.81
3	18.07	10.76	88.57	18.07	10.76	88.57
4	11.41	6.79	95.36	11.41	6.79	95.36
5	7.78	4.63	100.000	7.78	4.63	100.00

Extraction Method: Principal Component Analysis

Appendix B shows how individual constructs are assigned to key components that will be labelled as key constructs.

These key constructs are summarised as:

1) Natural Healthy Juice

It represents juice that is free of artificial ingredients and is regarded as healthy because of the vitamin C content.

2) Inexpensive Juice

This ethnic group placed an emphasis thru the individual constructs of describing the brands in terms of low price and value for the money.

3) Large Juice

In addition, this ethnic group placed an emphasis, via the individual constructs on large versus small juices.

4) Convenient Packaging

A convenient package is regarded as one that is comfortable, is easy to grab and has the right size (i.e. fits in the fridge).

5) Good Packaging

Whereas a convenient package is related to functionality, a good package is related to form. In this case, it is a visually attractive packaging.

It is possible inferring from the key constructs for African Americans that their focus on a natural but inexpensive juice and with a strong interest in juice with convenient (i.e. easy to handle) and good (i.e. good looking) packaging attributes. They also seem to prefer a larger packaging size, which may or not may be reflected by differences in relative average family size for these ethnic groups.

This finding is interesting because it allows establishing differences among the key constructs found for the Hispanics.

3.5.6 Price Perceptions by Caucasians

The use of the Repertory Grid Technique on Caucasians resulted in a total of 172 constructs along 15 different grids (one grid per respondent). As indicated in section 3, the elements were common amongst the grids in a similar way as groups of Hispanics and African Americans. Table 3-17 gives a summary¹¹⁸ of the 15 grids and the number of constructs elicited per grid (N).

Table 3-17 Caucasians Grids Summary

Participant	Number of Constructs
1	14
2	12
3	12
4	12
5	10
6	10
7	11
8	11
9	11
10	12
11	12
12	12
13	11
14	10
15	12
Average	11 constructs per person

In the above summary, it is possible to observe that each participant from the group of Caucasians elicited between 10 and 12 constructs just as the African American group did, whereas the Hispanics group elicited between 6 and 10 constructs. This difference means that both Caucasians and African-Americans used a similar number of constructs (albeit they were different constructs) and described the same elements using a richer number of constructs than the

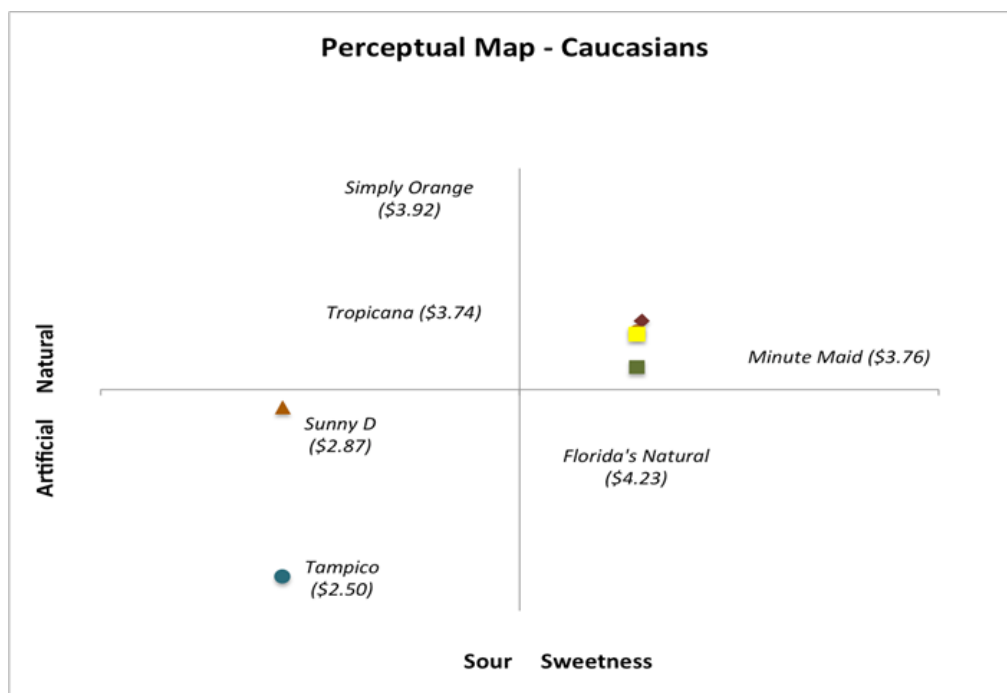
¹¹⁸ Each grid is represented as a case when analysed using the SPSS statistical software.

group of Hispanics. The slightly lower number of constructs with Hispanics might be due to the fact that some of them preferred responding in Spanish, did not have a strong mastery of English as a second language or had only recently come to the US.

3.5.7 Perceptual Map: Caucasians

Figure 3-13 shows the perceptual map for Caucasian respondents¹¹⁹. In this map, it is interesting to note how Caucasian respondents ranked almost uniformly brands such as Minute Maid, Simply Orange, Tropicana and Florida's Natural versus brands such as Sunny D and Tampico. From this perceptual map, it seems like respondents ranked brands in terms of natural and sweet versus artificial and sour. The natural and sweet brands had a higher perceived price than brands that were ranked as artificial and sour. This pattern was not observed with Hispanics (Figure 3-9) or African-Americans (Figure 3-11)¹²⁰.

Figure 3-13 Perceptual Map – Caucasian respondents

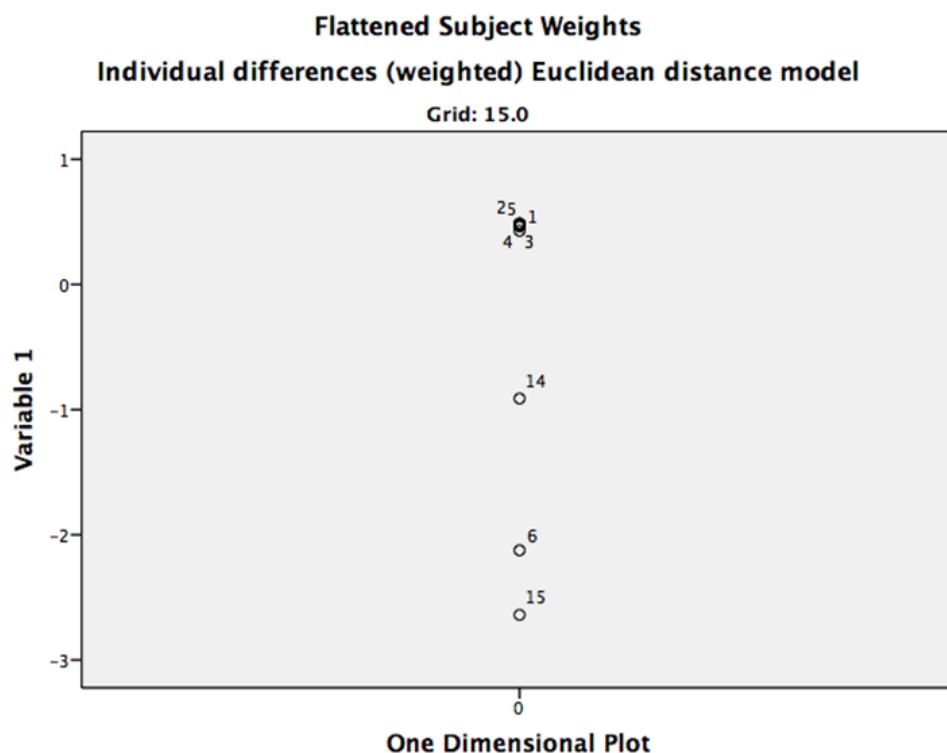


¹¹⁹ To maintain consistency with the perceptual maps of Hispanics and African Americans, the Perceptual Map for Caucasian is expressed in the same dimensions as Artificial-Natural and Sour-Sweet. The original data was received as Natural/Artificial and Sweet/Sour, thus changing the arrangement of the plot.

¹²⁰ In other words, Hispanic and African Americans ranked the brands in three groups whereas Caucasians ranked them in two groups.

The study of the individual differences in the group of Caucasian respondents shown in Figure 14 shows that Caucasian respondents were more homogeneous in their responses than Hispanics (Figure 3-10) or African American (Figure 3-12) respondents. This homogeneity in responses as shown in Figure 3-14 might explain the clustering of brands in the perceptual map.

Figure 3-14 Individual Differences for Caucasians by Elements



According to the perceptual maps by ethnic group, Hispanics (see Figure 3-9) ranked the brands in three groups while African Americans (see Figure 3-11) and Caucasians (see Figure 3-13) ranked the same brands in two groups.

This is important since it seems as if Caucasians ranked brands in terms of orange juices that were natural and sweet (Simply Orange, Minute Maid, Tropicana and Florida's Natural) and non-orange juices that were artificial and sour (Sunny D and Tampico) and this an accurate distinction between the two set of brands.

Next, in Table 3-18 we compare the prices given by the respondents in terms of the actual prices versus the price reported by the participants. It is interesting to note that the prices are shown in Table 3-18 also follow a pattern in prices that is similar to the individual differences shown in Figure 3-13. That is, brands such as Minute Maid (\$3.76), Tropicana (\$3.74), Florida's Natural (\$4.23) and Simply Orange (\$3.70) are closer in average price than brands such as Sunny D (\$2.87) and Tampico (\$2.50). This might be due to the fact that the last two brands, Sunny D, and Tampico, are fruit punches and not juices, and therefore have a lower real price.

Table 3-18 Average prices by Caucasians

Brand	Real Price (Grocery) ¹²¹	Average Perceived Price	Difference
Minute Maid	\$2.89	\$3.76	\$0.87
Tropicana	\$3.00	\$3.74	\$0.74
Florida's Natural	\$3.79	\$4.23	\$0.44
Simply Orange	\$4.19	\$3.92	(\$0.27)
Tampico	\$1.50	\$2.50	\$1.00
Sunny D	\$2.29	\$2.87	\$0.58
Average	\$2.94	\$3.50	\$0.56

3.5.8 Key Constructs: Caucasians

The key constructs for Caucasians are determined in a similar manner as the key constructs for Hispanics and African Americans. This is achieved by using principal component analysis as explained in previous sections.

As the Caucasian group elicited a larger number of constructs, the SPSS command is slightly larger than with Hispanics and African Americans. This is because as part of the principal component analysis, each construct is treated as a variable. In this case, there were 172 constructs (or variables) used in the principal component analysis. The SPSS command used is described in Appendix B. Table 3-19 shows the total variance found in Caucasian constructs.

¹²¹ Retail prices were obtained from the Jewel-Osco grocery stores.

As with the Hispanics and African American groups, this variance shows that five key components (key constructs) explain the variance of every elicited construct. Appendix B shows how each individual and elicited construct is assigned to each key construct.

Table 3-19 Total Variance Caucasians Constructs

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	120.24	69.90	69.90	120.24	69.90	69.90
2	19.22	11.17	81.08	19.22	11.17	81.08
3	13.46	7.82	88.91	13.46	7.82	88.91
4	11.13	6.47	95.38	11.13	6.47	95.38
5	7.93	4.61	100.00	7.93	4.61	100.00

The key constructs for the Caucasian group can be summarised as follows:

1) Natural Juice Brand

This key construct is correlated with the majority of the individual and elicited constructs¹²². In this case, 127 out of 176 individual constructs were correlated with this key constructs. However, in the list shown in Appendix B.6.13, there are constructs such as Orange Juice, Real Juice, Lightly Sweetened, Natural Ingredients, Less Preservatives and more that send an indication that this ethnic group is referencing to a natural brand with a good juice taste.

2) Flavourful Bottled Brand

This key construct is also built out of individual constructs that make a reference to taste, like the previous key construct, but the difference lies

¹²² Appendix B.6.11 contains a detailed list of every elicited construct and its correlation index with the key construct.

on packaging cues (slim bottle, attractive label), flavour and a known brand with advertising.

3) Fresh Juice

This key construct is mostly built out of individual constructs such as fresh juice, naturally sweet, real juice and more. Like the two previous key constructs, this key construct refers to juice rather than to a juice brand.

4) Popular and Convenient

This key construct represents individual constructs that relate to conveniences, such as easy to pour, handle (i.e. convenient handle), bottle-shaped, but also indicates a known brand, as it has associated constructs such as high loyalty, high advertising, adult brand and more.

5) Good Juice Labelling

This key construct is mostly associated with labels and packaging, such as quart size, visible seal, but it is also associated with a good juice, with constructs such as fresh ingredients and adult juice. Here, the information on the label seems more important.

A discussion on the key constructs summarised in this study per ethnic group alongside with the price perceived by ethnic group is elaborated in the following two sections where price perception by ethnic group and key constructs by ethnic group are compared.

3.5.9 Price Comparison by Ethnic Group

Table 3-20 shows a comparison of average perceived prices given by our sample of respondents of different ethnic groups. It is possible to observe how Hispanics appear to attach a lower average price to every brand presented compared with our sample of African Americans and Caucasians. Likewise, our sample of African Americans attached a lower average price to most brands than our sample of Caucasians with the exceptions of Minute Maid and Florida's Natural.

Table 3-20 Average Pricing by Ethnic Group

Brand	Real Price	Hispanics	African Americans	Caucasians
Minute Maid	\$2.89	\$3.50	\$3.85	\$3.76
Tropicana	\$3.00	\$3.25	\$3.65	\$3.74
Florida's Natural	\$3.79	\$3.00	\$4.57	\$4.23
Simply Orange	\$4.19	\$3.00	\$3.70	\$3.92
Tampico	\$1.50	\$1.25	\$1.90	\$2.50
Sunny D	\$2.29	\$2.00	\$2.18	\$2.87

However, it is important to see how the average perceived prices given by each ethnic group differs from the real price. For example, Table 3-21 shows the differences between real and averages prices per ethnic group.

Table 3-21 Differences from the Real Price by Ethnic Group

Brand	Hispanics	African Americans	Caucasians
Minute Maid	\$0.61	\$0.96	\$0.87
Tropicana	\$0.25	\$0.65	\$0.74
Florida's Natural	-\$0.79	\$0.78	\$0.44
Simply Orange	-\$1.19	-\$0.49	-\$0.27
Tampico	-\$0.25	\$0.40	\$1.00
Sunny D	-\$0.29	-\$0.11	\$0.58
Min	-\$1.19	-\$0.49	-\$0.27
Max	\$0.61	\$0.96	\$1.00

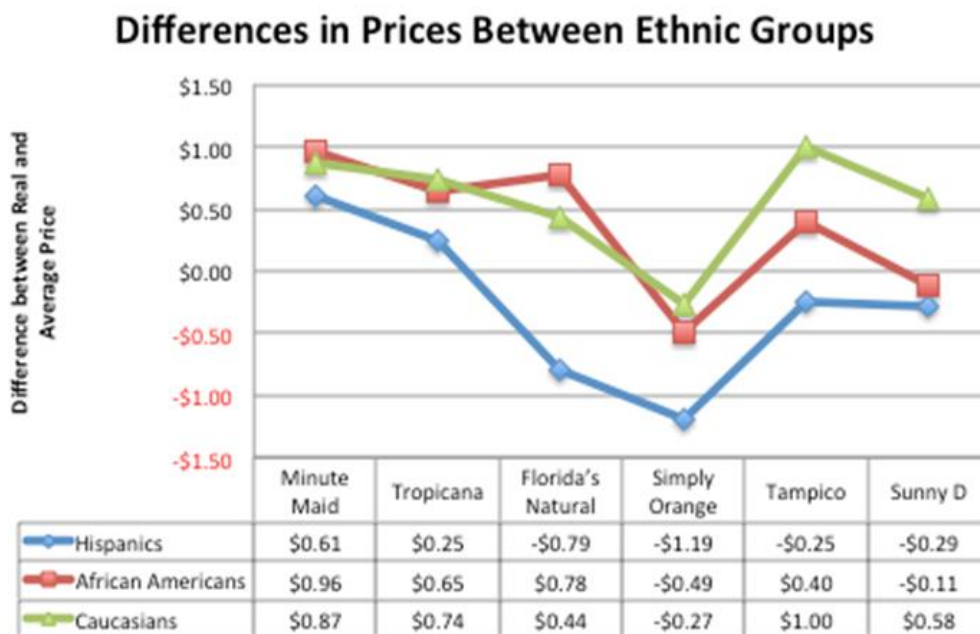
It is possible to note that most of the average perceived prices from our sample of Hispanics were lower than the real prices, with the exception of Minute Maid and Tropicana. For this ethnic group, both Tropicana and Minute Maid were

thought to be more expensive while the rest of the brands were thought to be cheaper. For the sample of African Americans, almost all the brands were thought to be more expensive, with the exceptions of Simply Orange and Sunny D. However, the sample of Caucasians thought that almost all the brands were more expensive, with the exception only of Simply Orange.

In addition, Table 3-21 shows the minimum and maximum differences in prices given per ethnic group. For example, Hispanics have the lowest difference (-\$1.19) with the brand Simply Orange, while Caucasians indicate the highest difference (\$1.00) with the brand Tampico.

Figure 3-15 shows the differences in prices in graphical form. Here, it is possible to see how the biggest differences in real versus average perceived prices were with the Florida's Natural brand. For every other brand, our sample of Caucasians thought the brands to be more expensive than the actual price, while our sample of Hispanics thought the brands to be cheaper than the real price.

Figure 3-15 Differences in prices between ethnic groups



3.5.10 Key Constructs by Ethnic Group

In the previous sections, the different price perceptions and key constructs by ethnic group were compared. The goal of this section is to summarise the key constructs by ethnic group, as it this finding alongside the different prices perceived, which represent the main contribution of this study. A combination of how key constructs by ethnic group are linked to perceived prices can set the foundation stone for further research, with important implications for marketing practitioners.

Table 3-22 shows a comparison of the different key constructs summarised by ethnic group. This comparison is enticing since it is possible to observe differences in the perception by ethnic group. Hispanics seem to focus more on a high quality and traditional brand as the top two key constructs¹²³, whereas African Americas seem to place more focus on a natural and healthy, yet inexpensive, juice. Caucasians also seem to place focus on a natural juice brand (i.e. not just any juice, but a known juice brand) that is also flavourful, but they do not seem to make references to an inexpensive brand. Also, both African American and Caucasians offered key constructs related to packaging whereas, in the case of Hispanics, it was more about flavour and taste.

Table 3-22 Comparison of key constructs

Key Construct	Hispanics	African American	Caucasians
1	High Quality	Natural Healthy Juice	Natural Juice Brand
2	Traditional Brand	Inexpensive Juice	Flavourful Bottled Brand
3	Big Sweet Juice	Big Juice	Fresh Juice
4	Natural Flavour	Convenient Packaging	Convenient Packaging
5	Good Taste	Good Packaging	Good Juice Packaging

¹²³ As shown in the correlation tables located in Appendixes B.6, the key constructs located in the top were the ones with more individual constructs correlated to it. In other words, the number of individual constructs associated orders the key constructs.

3.6 Limitations and Further Research

3.6.1 Limitations

In order to ascertain how further research might be designed¹²⁴ it is necessary first to consider some of the limitations of the research undertaken in this study. First, the sample size of 15 respondents per ethnic group is clearly not representative of the US populations (nor was it ever intended to be) and therefore, the results are indicative rather than inferential. Also, there is a sample bias; the respondents were selected from the Midwest region of the United States, and this might not be representative of other regions of the country.

Furthermore, there is a limitation on linking the measurements of perceptions to a particular price. At most, the relationships are indicative, for example, brands that are perceived as sweet and natural appear to be capable of fetching a higher price than brands that are perceived to be artificial and sour, but there is a limitation on determining a specific price point for a brand, and these findings require quantitative testing with a representative sample. This limitation was explained by Marsden and Littler (2000b, p.143) in the sense that the repertory grid technique can explain broad patterns in qualitative market research but will require “further elaboration and refinement at both the theoretical and methodological levels” in order to achieve its full potential. This was explained by Marsden and Littler (2000b, p.143) as a result of a “weakness” in the technique that focuses on the individual as a “self-contained decision maker” rather than someone that can also be influenced by the environment¹²⁵.

Moreover, the repertory grid technique described by Fransella (2003) and Jankowicz (2005) is very time-consuming, and this reflects the sample size used in the studies (Hallsworth, 1988). For example, each grid requires an hour-long interview with each participant making it difficult to work with a large number of

¹²⁴ In particular, we refer here to the research design for P3.

¹²⁵ According to Marsden and Littler (2000a), it is necessary to understand that the individual, from a market research point of view, is indeed influenced by others and it does not take decision in isolation.

participants. One of the reasons for the long time required to use the repertory grid technique is because it is necessary to elicit constructs from each participant and this is time-consuming. On the other hand, previous research into the use of repertory grids (Fransella et al., 2003, Bell, 2005, Baxter et al., 2014) indicates that the numbers of new constructs elicited from participants will be greater with the first participants but will decrease with further participants (i.e. with a fixed number of elements, the number of new constructs that will appear from every new participant will be smaller as some constructs were already elicited).

Accordingly, it might be possible to elicit a representative set of constructs from a group of participants and then use a grid structure of the same elements (brands) and the same constructs for all the participants in the group¹²⁶. This approach would be faster to implement with a larger number of participants, and a larger sample size might, therefore, be achievable. Such a sample might then also be selected using a quota sampling approach to improving the representativeness (but note the method would still not be representative and still only be indicative).

3.6.2 Directions for Further Research

In order to address the limitations of the research, it would be interesting to see whether a larger sample would yield similar results for these population groups. Also, it would be interesting to see whether or not the findings of this study were replicated in similar studies with the same cultural groups in other regions of the United States of America; for example, will the Hispanics from Texas have the same perception as the Hispanics from New York or Florida?

Moreover, it would be interesting to expand the use of the method proposed in this research to the study of price and brand perceptions of other ethnic groups. For example, are differences in price perceptions also present in other cultural groups such as American Jewish and American Muslims? Also, how will the price perceptions change with ethnic groups with different levels of

¹²⁶ This is defined by Bell (1997) as a type III grid.

acculturation? For example, there is some limited evidence of an apparent distinction between the purchasing behaviour of US-born Hispanics and foreign-born Hispanics (Alaniz and Gilly, 1986) where the former group has a higher level of acculturation.

In addition, this method can be used with other sets of brands with different levels of purchase involvement. For example, there might a question on whether the same behaviour applies to brands of cars (where high involvement choice processing is more likely) versus brands of soft drinks (where low involvement choice processing is the norm).

Finally, this study can set a foundation stone for P3 as providing the base for the conduct of a quantitative study, with a larger sample, which could validate whether or not different price perceptions exist among cultural groups, by manipulating sweet-sour and natural-artificial dimensions of a range of fictional juices to determine how these factors impact on price.

3.7 Conclusions

Repertory grids are used extensively in market research (Fransella et al., 2003). However, in a review of the literature, there was no evidence for the use of repertory grids for measuring price perception. The central contribution of this research is to have developed the use of repertory grids as a qualitative tool to assess how brand attributes and price perceptions might be linked. Such findings can then be validated in further quantitative studies. The development of the method, based on brand-price perception derivation, incorporated learning around the use of repertory grids as a method of consumer insight proposed by Baxter et al. (2014) and as a method of cross-cultural research proposed by Tomico et al. (2009). In addition, this research relied heavily on the techniques presented by Bell (1997) in using SPSS (i.e. multidimensional scaling, the principal component analysis in particular) for analysing repertory grids.

This study helped to answer the research questions in a sense that:

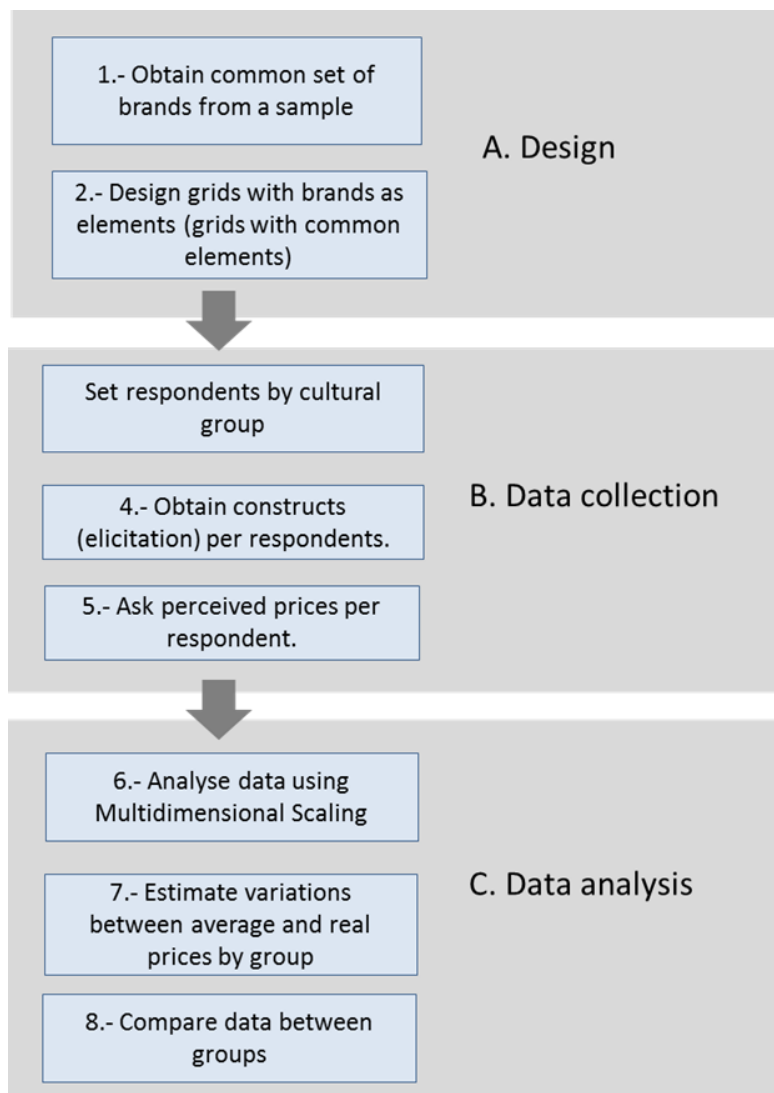
1. It was found that perception towards prices does indeed appear to differ significantly by cultural group.
2. The repertory grid technique can be used to describe price perceptions and suggested a method for measuring qualitatively relative price perceptions of cultural groups.
3. By eliciting constructs as part of the repertory grid technique, it was possible to see how specific brand attributes were considered as part of the perceptual process and some related can then be drawn to how these attributes are linked to price for the purposes of further research.

As an outcome of this research, this research provides a method that uses repertory grids to rate brands in relation to price estimates provided by different ethnic groups. Such an exercise could be the first phase prior to a quantitative study of brand price perceptions. This method described herein can, therefore, be used to identify the consumers' perceptual branding and pricing constructs, including the links between the two sets of perceptions. This is useful because

an initial set of constructs is elicited from respondents in relation to the price of each brand. These constructs can then be tested in a quantitative pricing study (using for example survey questionnaires, semantic differential rating scales, and multi-dimensional scaling analysis approaches for a more definitive understanding of consumer perceptions.

A summary of the method used in this research is presented again in Figure 3-16. An important outcome of using this method is the ability to relate constructs that represent the dimensions through which an individual interprets her experiences of the world (Fransella et al., 2003, p.16) in relation to perceived prices.

Figure 3-16 Exploring price perceptions among cultural groups



The method presented herein could be applied to different sets of brands (e.g. not just juices) and to different groups of participants (e.g. not solely Hispanics, African Americans, and Caucasians). This work herein, therefore, makes a contribution to the literature by outlining, for the first time, a process to determine how price perceptions can be measured among different ethnic groups (but also among any groups, be they ethnic segments or otherwise). Moreover, this research uses the learning obtained in a previous systematic review (P1) on the measurement and formation of consumer price perceptions where it was found that cultural factors were an antecedent in the formation of consumer price perception. As such, this study seems to indicate that price perception is indeed affected by cultural factors, although further research is necessary to validate this finding formally.

PROJECT 3

AN APPROACH TO THE MEASUREMENT OF MULTI-ETHNIC
CONSUMER PRICE PERCEPTION

A QUANTITATIVE STUDY

4 Quantitative Study

4.1 Introduction

This study is a continuation of the exploratory research undertaken previously on the formation of consumer price perceptions¹²⁷ (P2). In the previous analysis, it was determined that different ethnic groups, including African-Americans, Caucasians, and Hispanics, reported different reference price for similar brands and suggested different key constructs when considering the brand and their associated prices. However, in this exploratory research, it was not possible to draw significant comparisons for price perception between the various population groups statistically. The main reason was that the results within population groups (for example, key constructs) were not directly comparable. In the present study, we seek to build on the previous research by testing whether or not ethnic groups do form different price perceptions and, if they do, how these perceptions might be different from each other.

Moreover, in the previous study, the terms culture and ethnicity were used interchangeably as proposed by Worrell (2016, p.263) who concluded, from research, that:

“Culture = ethnicity = ethnic identity = race = racial identity”

Worrell (2016) acknowledges different definitions for constructs such as culture, ethnicity, and race, suggesting that culture is an overarching construct which includes ethnicity and race. Table 4-1 shows different definitions for culture, ethnicity, and race as summarised by Worrell (2016, p.252).

¹²⁷ This study is also referred in this paper as P2 or Project 2.

Table 4-1 Culture, Ethnicity and Race

Construct	Definition	References
Culture	“The characteristics, attitudes and behaviours of a particular group of society, such as a profession, social class or age group.” “Culture means shared and transferable perceptions, values or practices.”	Vanden Bos (2007, p. 250) Hofstede (2015, p. 546)
Ethnicity	“A sense of peoplehood or commonality derived from kinship patterns, a shared historical past, common experiences, religious affiliations, language or linguistic commonalities, shared values, attitudes, perceptions, modes of expression and identity.”	King (2002, p.33)
Race	“A label that is commonly ascribed to individuals in certain societies based on their affiliations with a group of people. Members of a racial group typically share common characteristics in physical appearance or phenotype, but more significantly, they share a common stature within society. The race is a social construct.”	Thompson (2008, p. 1279)

In this study, we will work with ethnic groups rather than around cultural groups in order to be consistent with the literature on ethnic marketing (Cui, 1997, Burton, 2000, Cui and Choudhury, 2002, Pires et al., 2011), and based on the fact that only ethnic groups are included in this study.

The goal of this research is therefore to answer the following research questions:

R1. Do price perceptions differ significantly by ethnic group?

R2. If so, what are the differences in price perceptions among ethnic groups about a product category?¹²⁸

Although the first research question explores a potentially significant academic contribution (there is little if any research on ethnic pricing), it is the second research question that links with the previous research conducted for P2 which also brings important managerial implications. In other words, by applying the measurement of price perception to a product category (especially separate groups), this study has a significant potential impact for marketing practitioners in the area of segmented pricing but specifically ethnic pricing. These research questions are further developed in section 3 alongside the hypotheses to be tested in this research.

Furthermore, this research uses existing marketing scales for price perception measurement (Lichtenstein et al., 1993) and choice-based conjoint analysis to draw direct comparisons between population groups. The use of these two methods allows the research questions suggested above to be addressed. These methods are explained in detail in the Methodology section (Section 4) of this study, alongside an evaluation of the alternative methods that could have been used but were not for one reason or another.

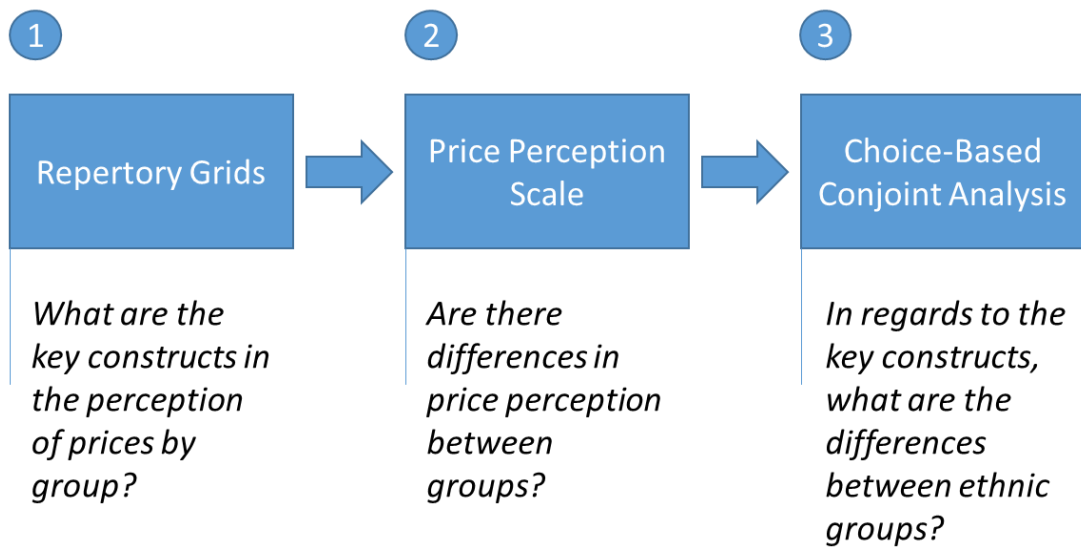
¹²⁸ The P2 study elicited constructs from participants in relation to the refrigerated orange juice product category. As this study is a continuation of P2, it does make sense to work around the same product category.

Moreover, the two approaches; i) price perception scales and ii) choice-based conjoint analysis, complement each other. On the one hand, the price perception scale is a robust survey instrument (Bearden et al., 2011). The perception scale has been used in cross-cultural studies to measure differences in price perception previously (McGowan and Sternquist, 1998, Zhou and Nakamoto, 2001, Zhou et al., 2002, Moore et al., 2003, Meng and Nasco, 2009) but importantly not amongst different ethnic groups. On the other hand, the choice-based conjoint analysis is also a technique used in pricing research. Additionally, it has been employed in cross-cultural studies to assess differences in price perception between cultural groups (Weber and Hsee, 1998, Jones et al., 2008, Szűcs et al., 2014). Whereas the price perception scale will identify whether there are differences in price perception among groups, choice-based conjoint analysis expands on are those differences, if any, regarding price perception.

The potential for a direct comparison between ethnic groups is potential of use because this enables us to suggest a new methodological framework for assessing cross-ethnic price perception differences and designing segmented marketing programmes accordingly. Moreover, this framework could allow the researcher greater flexibility in whether it should be used to look to measure differences in price perception across ethnic groups at the ethnic group level (marketing scales) or rather at the brand level (choice-based conjoint analysis).

Such a methodological framework would need to include findings from the previous research work done as P2 (the qualitative research); that helped to identify key brand and price attributes between ethnic groups. Next, the use of marketing scales, such as the one for price perception presented by Lichtenstein et al. (1993), allows testing for differences in price perception among ethnic groups (are there really differences in price perception?). Finally, the choice-based conjoint analysis allows us to develop a quantitative understanding of price differences at the attribute level for each ethnic group (what are the differences, if any, in price perception amongst ethnic groups?). A representation of the methodological framework is shown in Figure 4-1.

Figure 4-1 Measuring Differences in Price Perception between Groups



The structure of the research conducted in this study is as follows:

1. The literature on cross-cultural research methods is examined with a particular focus on the study of consumer price perception (section 4-2). An important part of this discussion is to understand the differences and similarities between cross-cultural and cross-ethnic research and how such differences and similarities are measured.

In the context of the literature review, section 4-2 examines cross-cultural pricing research methods including the Price Perception Scale (Lichtenstein et al. 1993) and choice-based conjoint analysis (CBC). In addition, there is an examination of the statistical methods used to analyse the perception scales by ethnic group.

2. The research questions along with the hypothesis to be tested, are addressed in section 4-3.

Next, there is a thorough discussion of the methods used, including the use of Price Perception Scale (Lichtenstein et al., 1993) to measure differences in price perception between ethnic groups. The Price Perception Scale was developed by Lichtenstein et al. (1993) and used in

the literature as a marketing scale oriented towards comparing price perception between groups (Bearden et al., 2011). Also, there follows a discussion of choice-based conjoint analysis used to measure differences in the perception of key constructs between ethnic groups. A detailed description of these methods including the alternative methods considered for this study is shown in section 4-10.

3. Then, this research study presents the findings (section 4-5) along with a thorough discussion of the findings and how they compare with extant literature on the same topic (section 4-6).
4. Finally, this study addresses its own limitations and provides recommendations for further research (Section 4-8) and provides conclusions (Section 4-9).

4.2 Literature Review: Measuring the Price Perceptions of Ethnic Groups

The review of the literature presented in this section seeks to explain current knowledge in the measurement of ethnic price perception and to identify existing research methods (Hart, 1998, Fink, 2010). As such, this section will move from a general overview of what constitutes ethnic groups and their price perceptions to an exploration of cross-ethnic pricing research. Next, this literature review will present a discussion of the research methods used in ethnic price perception with an emphasis on the methods eventually selected in this research before moving to an explanation of the theory underpinning this study and the hypotheses selected for further investigation (Section 4-3). In the next section, we introduce a general discussion of price perception and ethnic groups in the United States.

4.2.1 Ethnic Groups and Price Perception

According to the United States Census Bureau, the United States is a racially and ethnically diverse nation (Humes et al., 2011). As of April 1st, 2010, 308.7 million people were residing in the United States, and this is a 9.7% growth in population since the last census (Humes et al., 2011). Table 4-2 shows the race distribution in the United States as per the last census including those with dual or multiple racial identities¹²⁹.

Table 4-2 Race allocation in the United States

		Population	Share (%)	Growth 2000-2010 (%)
One Race		299,736,645	97.1	9.2
	White	211,460,626	72.4	5.7
	Black or African American	38,929,319	12.6	12.3
	American Indian and Alaskan Native	2,932,248	0.9	18.4
	Asian	14,674,252	4.8	43.3
	Native Hawaiian	540,013	0.2	35.4
	Other Race	19,107,368	6.2	24.4
Two (dual) or more races		9,009,073	2.9	32.0
Total		308,745,538	100.0	9.7

Source Adapted from Humes et al. (2011)

Hispanics¹³⁰ have been considered to potentially belonging to any race (Humes et al., 2011). As a result, the latest census made a distinction between Hispanics and non-Hispanics (Pollard and O'Hare, 1999). The distribution of Hispanics in the US population is shown in Table 4-3.

¹²⁹ For the purpose of this research, the latest census is the one conducted in 2010 and reported by Humes et al. (2011).

¹³⁰ Hispanics or Latinos are related to an ethnic identification (heritage, country of origin, lineage, ancestry or nationality) rather to a race (Pollard & O'Hare 1999).

Table 4-3 Hispanics in the United States

	Population	Share (%)	Growth 2000-2010 (%)
Hispanic or Latino	50,477,594	16.3	43.0
Not Hispanic or Latino	258,267,944	83.7	4.9
Total	308,745,738	100.0	9.7

The population totals reported in Tables 4-2 and 4-3 are interesting because they show the relative importance of large ethnic population subgroups such as African Americans (12.6% of the total population) and Hispanics (16.3% of the total population). Alongside the population identified as White or Caucasian, these groups are said to represent 92.6% of all the people in the United States¹³¹.

Moreover, ethnic groups reported as minority groups¹³² are an important part of the population. For example, in regards to minority groups, according to Pollard and O’Hare (1999, p.12):

“If all these Americans lived in an independent country, it would be the 15th largest in the world—more populous than Great Britain, France, Italy, or Spain.”

In other words, the sheer size of these ethnic groups¹³³ in aggregate provides significant justification for the study of such groups. They represent a very large market opportunity.

Furthermore, the vast majority of the population growth came from increases in ethnic groups other than White (Pollard and O’Hare, 1999). The increases are reflected not just in the economic performance of an ethnic group (Darity et al., 1996) but in the economy as a whole (Cui and Choudhury, 2002, Pires et al., 2011). In other words, as shown in Tables 4-1 and 4-2, it is not just that the

¹³¹ According to the United States Census Bureau, 63.7% of the population is White or Caucasian but not Hispanic (Humes et al., 2011).

¹³² According to the United States Census Bureau, minority groups are those groups other than White or Caucasians. This includes Hispanics or Latino groups regardless of their race identification (Humes et al., 2011).

¹³³ According to Table 4-1, the size of the minority groups is over 97 million habitants as reported by the latest census.

ethnic minority groups are a sizeable part of the population, but they are also the fastest growing ethnic groups¹³⁴.

Additionally, there is evidence of ethnicity acting as an independent variable in the perception of prices (Mulhern and Williams, 1994, Webster, 1990, Mulhern et al., 1998). The literature presents evidence that ethnic groups in the United States perceive prices differently (Green, 1995, Green, 1996, Mulhern et al., 1998, Emslie et al., 2007, Mich and Keillor, 2011). The evidence brings up the need to adapt marketing strategies, including pricing, to the ethnic marketplace (Webster, 1990, Jamal, 2003, Goldman and Hino, 2005, Jafari and Visconti, 2015).

However, the consideration of different prices depending on ethnicity could take either a positive or a negative form. On the downside, there is evidence of price discrimination based on ethnic origin. This discrimination can occur in the form of 'red-lining', which is a spatially discriminatory practice by retailers, of not serving certain areas based on ethnic composition (D'Rozario and Williams, 2005), or in the form of price discrimination (particularly charging more) based on income and race (Graddy, 1997).

On the positive side, there are opportunities for understanding how different ethnic groups perceive prices, leading to the development of ethnic-oriented marketing strategies (Cui, 1997, Burton, 2000, Cui and Choudhury, 2002). This present an attractive opportunity for the ethnic minority groups¹³⁵ in the United States which comprised 36.4% of the total population in 2010 and is growing at the rate of 28.8%, according to the United States Census Bureau (Humes et al., 2011).

So far, the literature shows up evidence of the relative importance of ethnic minority groups, regarding their size and growth (see Tables 4-1 and 4-2).

¹³⁴ As an example, Tables 4-2 and 4-3 show a 43.3% growth in Asians, 43.0% growth in Hispanics, 12.3% growth in African Americans, compared with 9.7% growth in the general population.

Moreover, there is also evidence that these ethnic groups perceive prices differently, as stated by Green (1995; 1996).

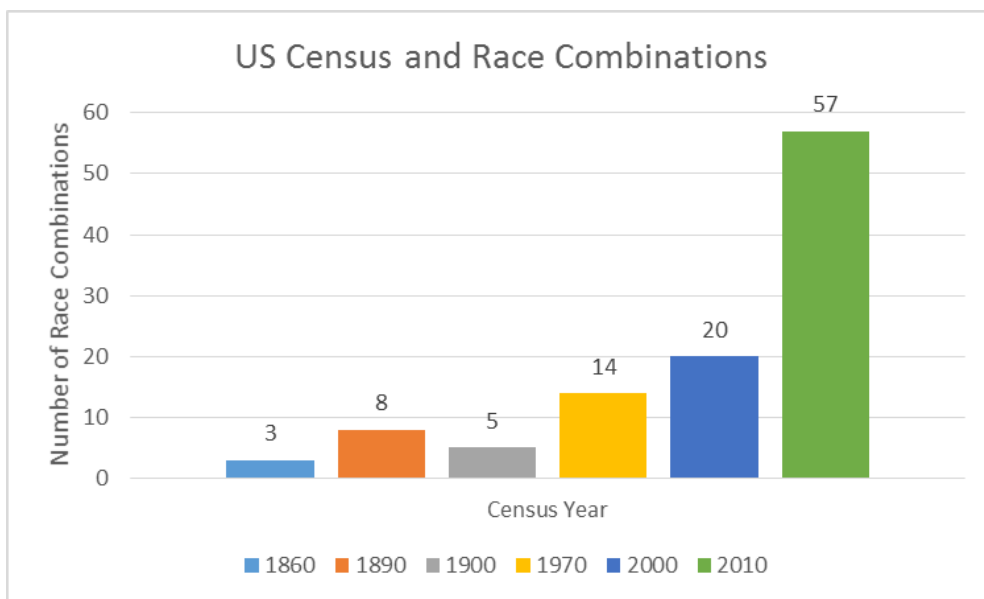
However, the ethnic diversity of the United States presents some challenges as there are as many as fifty-seven different ethnic combinations measured by the census in 2010 (Humes et al., 2011). The following section delves into the challenges of researching such ethnic diversity.

4.2.2 Challenges of ethnic price research

When it comes to researching ethnicity in the United States, it is important to scope the sheer number of ethnicities that could come under research. According to the United States Census Bureau, in the census of 2010, there were fifty-seven different ethnic groups. However, three ethnic groups (Whites or Caucasians, African Americans or Blacks, Hispanics or Latinos) made up 92.6% of the total population (Humes et al., 2011).

The growth in racial diversity might be due to a couple of factors; (i) immigration and (ii) measurement changes in the census data (Pollard and O'Hare, 1999). Whereas immigration has increased the size of existing ethnic groups, changes in how the census recorded race and ethnicity are the principle reason for why we now see such race complexity in the general population (Pollard & O'Hare, 1999). For example, Figure 4-2 shows the number of race combinations indicated by the US Census Bureau as described by Pollard & O'Hare (1999) and Humes et al. (2011).

Figure 4-2 US Census and Race Combinations



The increase in the number of race combinations in 2010 was due to changes in how the United States Census Bureau recorded data. For example, for the first time, respondents were allowed to self-report a specific racial group rather than reporting it as 'other,' as with previous censuses (Humes et al., 2011). The number of combinations presented in Figure 4-1 shows the challenge of researching every ethnic group and brings up the need for scoping the number of ethnicities used in this study.

For the purpose of this study, the fact that White Caucasians and African Americans and Hispanics comprise 92.6% of the population, offers a justification for working on these three ethnic groups. In the next section, the literature on how cross-cultural groups¹³⁶ are currently researched is considered, elaborating further on both how cross-cultural research is undertaken and with what research methods.

¹³⁶ We use the term cross-cultural instead of cross-ethnic to be consistent with the literature found on cross-cultural research. As pointed out by Worrell (2016, p. 251), the literature use the terms culture and ethnicity interchangeability.

4.2.3 A Taxonomy of Cross-Cultural Research

To understand whether or not different cultures perceive price differently, we should first consider how cross-cultural research has been previously undertaken. In this section, we consider the key types of cross-cultural research to explain the methods adopted in this study. This consideration will help us understand the study's limitation and interpret the findings accordingly.

An analysis of the literature on cross-cultural research methods is important in this study because we seek to investigate potential cross-cultural differences in price perceptions. This analysis reveals a variety of qualitative and quantitative approaches have been used previously (Wagner et al., 2014). However, as explained by Matsumoto and Vivjer (2011), there are some methodological issues when attempting to conduct cross-cultural studies depending on the type of research. For example, Matsumoto and Vivjer (2011) presented a taxonomy of cross-cultural research studies according to three dimensions: (i) the study of contextual factors; (ii) exploratory versus hypothesis testing studies, and (iii) structured versus level-oriented studies. Despite the fact that this study relies on contextual factors such as ethnicity to explain differences in price perception, there is also a focus on testing theories about similarities and differences in the perception of prices. Therefore, this study is closer to the exploratory dimension as explained by Matsumoto and Vivjer (2010). Table 4-4 describes this taxonomy of cross-cultural studies in more detail.

Table 4-4 Taxonomy of Cross-Cultural Research

Dimension	Description
Contextual factors	Whether characteristics of the participant such as socio-economic status, education, age, and religion and economic development, explain differences in cross-cultural differences.
Exploratory versus hypothesis testing	Exploratory studies focus on documenting similarities and differences between cross-cultural groups, whereas hypothesis-testing studies concentrate on making inferences and testing theories about similarities and differences.
Structured versus level-oriented	Formal studies involve comparison of constructs, their structure and their relationship to other constructs. On the other hand, level-oriented studies include comparisons of scores between cross-cultural groups (for example, whether individuals of different cultures show varying levels of the variables in consideration).

However, there is also need to address bias and equivalence in cross-cultural research studies (Vijver and Leung, 2011). According to Vijver and Leung (2011, p. 18), bias and equivalence “are key terms in the methodology of cross-cultural studies.” Bias occurs when differences in measurement instruments are not equivalent between cross-cultural groups. “Equivalence” refers to the “level of comparability of measurement outcomes” (Vijver and Leung, 2011, p. 19). Ideally, measurement results between cross-cultural groups are equivalent and comparable. Bias affects cross-cultural equivalence and “threatens the equivalence of measurement outcomes” (Vijver and Leung, 2011, p. 19). One approach to reducing the bias in cross-cultural studies is the use of a “cultural metric” to draw comparisons between cultural groups (Wagner et al., 2014, p.422). As such, we consider next the topic of price as a cultural metric.

4.2.4 Price as a Cultural Metric

To understand whether or not the price is really a cultural metric suitable for comparison among cultural groups, we should first define what a cultural metric is. According to Wagner et al. (2014, p. 422),

1. “A cultural metric is a set of notions, items, symbols, or words that are inter-related and that mutually specify each other’s social meaning in a culture or language group.

2. Each element's meaning is set by its relationship to the other elements forming a pattern of interdependencies.”

The use of social metrics to draw comparisons between cultural groups has been successfully implemented in the fields of psychology (Nishimoto, 1986) and marketing (Millan et al., 2013, Coffey, 2014). The operationalisation of social metrics is explained through different approaches such as cultural categories (McCracken, 1986). For example, McCracken (1986, p. 2.) defined cultural categories as:

“Fundamental coordinates of meaning, representing the basic distinctions that a culture uses to divide up the phenomenal world.”

Among examples of cultural categories used in marketing, there are ‘teenager,’ ‘yuppie,’ ‘millennial,’ and others (McCracken, 1986).

However, Wagner et al. (2014) point out that such operationalisation is dependent on the research approach. For example, qualitative approaches to cross-cultural research require semantic (qualitative) interpretation whereas quantitative methods require comparison of measurements (Wagner et al., 2014). The point of our study here is to explore the notion that price is a cultural metric, and has been considered as such in previous cross-cultural studies (Szűcs et al., 2014). The following section elaborates further on the role of price as a comparison variable in cross-cultural research.

4.2.5 Price as a Comparison Variable

Having considered the types of cross-cultural studies in the previous section, and with the notion that price is a cultural metric, we next consider the measurement of price perceptions and how the price is used in cross-cultural research.

There is evidence in the literature reviewing cross-cultural research methods (Vijver and Leung, 1997, Ember, 2009, Berry et al., 2011, Matsumoto and Vijver, 2011, Nezlek, 2011) regarding the importance of a comparison variable in cross-cultural research. For example, Ember (2009) argues the necessity for using

variables that can measure similarities and differences between cultures. These variables are cultural metrics as proposed by Wagner et al. (2014) and explained in the previous section. The need for these variables to compare cultural groups is also suggested by Matsumoto and Vijver (2011), Berry et al. (2011) and Nezlek (2011). Price, as a cultural metric, can, therefore, serve as a variable for comparing similarities and differences among cultures.

Although Ember (2009) argues that worldwide, cross-cultural comparisons using secondary data are more frequent, this study is focused on a particular geographical area (United States) and makes use of primary data (i.e. obtained from quantitative research for the purposes of this study). This approach is deemed appropriate for drawing cross-cultural comparisons (Ember 2009) and was also employed by Vijver and Leung (1997) when carrying out a study comparing African American and Caucasian populations in the United States. An alternate approach would be to rely on secondary data (i.e. obtained from literature or databases), but that approach has already been considered in P1 and offers limited insight into cross-cultural price perception differences. Consequently, the approach used in this study of studying ethnic groups in the United States is consistent with the literature, as presented by Ember (2009) and Vijver and Leung (1997).

4.2.6 Nature of Cross-Cultural Studies

When it comes to comparing cultures, Vijver and Leung (1997) define cross-cultural studies as quasi-experiments that differ from traditional experimental research in the degree of control exercised over the independent variables. According to Vijver and Leung (1997), culture can be considered to be an independent variable in research studies (i.e. of primary interest in how it is constituted). Furthermore, based on the definitions set by Worrell (2016) and shown in Table 4-1, ethnicity can also be seen as an independent variable, a perspective we adopt in this study. A thorough discussion of the relationship between cross-cultural and cross-ethnic studies is shown in Section 4-5.

Moreover, we considered earlier how Vijver and Leung (1997) classified different types of cross-cultural studies depending on whether or not there is a

consideration of contextual factors including demographics and psychological variables, and whether or not there is more emphasis on hypothesis testing or external validation. Table 4-5 shows a two by two classification of cross-cultural studies according to Vijver and Leung (1997, p.20).

Table 4-5 Types of Cross-Cultural Studies

Study Type	Hypothesis-Testing orientation	Exploration orientation
Without consideration of contextual factors	Generalisability	Psychological differences
With consideration of contextual factors	Theory-driven	External validation

According to Vijver and Leung (1997), generisability studies attempt to compare and contrast (i.e. western cultures vs. non-western cultures). Whereas theory-driven studies focus on specific attributes of a culture or particular cultural habits, and cultural variation is sought as a way to validate a theoretical framework. Both generisability and theory-driven studies are centred in testing *prior* predictions.

On the other hand, in psychological differences studies, an instrument is applied to two or more populations and the researcher looks for cross-cultural differences in the populations using statistical methods. Contextual variables are not typically included in these studies. Lastly, external validation studies attempt to explain the meaning and causes of cross-cultural differences between populations with the aid of contextual variables.

This research seeks to investigate whether or not there are cross-cultural differences in price perceptions between three population (ethnic) sub-groups and, therefore, corresponds most closely to the psychological differences type of study. This kind of study with an exploration orientation is widely used with quantitative techniques such as questionnaires (Brislin, 1976) and multivariate analysis (Ember, 2009).

An additional consideration in the study of psychological differences is the nature of sampling. Some studies in the literature have used convenience sampling to draw inferences, despite the 'gold standard' study for inference-

making typically using random sampling methods. We consider the nature of sampling in cross-cultural studies and how this should be addressed in the next section.

4.2.7 Sampling in Cross-Cultural Studies

Sin (1999) argues that sampling method and the nature of sample vary notably among cross-cultural comparisons. For example, Sin (1999, p. 86) shows in a critical review that “69.8% of the studies used convenience sampling and the majority of the cross-cultural studies used students rather than the general population”. On this basis, we might, therefore, question some of the findings of previous cross-cultural research studies.

In order to address the concern of using students for cross-cultural studies rather than the general population (Sin, 1999), this study will draw a sample from the general population. By working with specific population sub-groups, unrelated to the academic setting, this study seeks to provide results which are more representative of the general population and therefore of greater value to practitioners. The size, method and nature of the sample for this study is explained in greater detail in the methodology section (see Section 4-4).

4.2.8 Cross-Ethnic Research

The literature review presented so far has dealt with cross-cultural studies. However, it is important to determine whether it is possible to extend the concepts developed in this field, to cross-ethnic research. If we take Worrell’s view (2016, p. 250), “culture can be used interchangeably with race and ethnicity.”

However, cross-cultural research tends to consider and compare cultural groups from different countries (Sin et al., 1999, Minkov and Hofstede, 2011, Manrai and Manrai, 2011, de Mooij and Hofstede, 2011, Hofstede, 2015). Conversely, cross-ethnic studies (Tan et al., 1987, Azevedo et al., 2001, Michon and Chebat, 2004, Mich and Keillor, 2011) consider different cultural groups within a country. Our study can be defined as a cross-ethnic study or, more technically, an intra-country cross-cultural study.

Also, ethnicity refers to the relationship between social categories that perceive themselves as culturally different from each other (Eriksen, 2012). In the strict sense, ethnicity is one cultural category among others such as religion and education (Jafari and Visconti, 2015). This view that cultural is an overarching construct that includes ethnicity is shared by several authors (Burton, 2000, Mich and Keillor, 2011, Eriksen, 2012, Worrell, 2016). However, ethnicity is a complex construct and does not refer to a uniform phenomenon (Ålund, 1999).

As such, it is important to agree on an interpretation of the ethnicity construct for the purpose of this study. On the one hand, Ålund (1999, p.107) introduces ethnicity from the perspective of 'us' versus 'others,' where others are foreign, diverse groups coming to a specific culture (i.e. through immigration). This discussion revolves around the theme of immigration and acculturation that by itself is a complex topic and outside the scope of this study. For example, some studies in marketing suggest that acculturation – or the learning, translation and adaptation strategies that occur between cultures – must be taken into account as part of multicultural learning in marketing (Alaniz and Gilly, 1986, Peñaloza and Gilly, 1999, Podoshen, 2006).

On the other hand, the literature on multicultural marketing sees ethnicity as a separate variable from acculturation (Webster 1990; Burton 2000; Mich and Keillor 2011) that brings up the need for marketing to ethnic consumers (Cui 1997). This research study focuses on ethnicity as a variable within cultures (i.e. Hispanics versus Caucasians versus African Americans in the United States) rather than between cultures (i.e. Indians in the United Kingdom versus Indians in the United States) as per Sin (1997), who adopted this perspective in the review and critical assessment of cross-cultural consumer research.

The next section explores how price perceptions among different ethnic groups have been researched in the literature previously.

4.2.9 Cross-Ethnic Price Perceptions

In previous sections, the focus on researching among ethnic groups within a culture was considered. Also, it was discussed how culture and ethnicity can be used interchangeably (Worrell 2016). This discussion is relevant since the literature mostly considers studies in cross-cultural price perception rather than cross-ethnic price perception.

While it might seem obvious that, for example, Caucasians and Hispanics in the US might share cultural differences, (e.g. TV viewing habits, restaurant preference) is it also likely that they also display different price perceptions? For example, do they have different reference prices (i.e. the prices stored in their memory for a particular item) for the same items? Do different ethnic groups construct their knowledge of prices differently and value products differently? These are some of the topics that we consider in this research study.

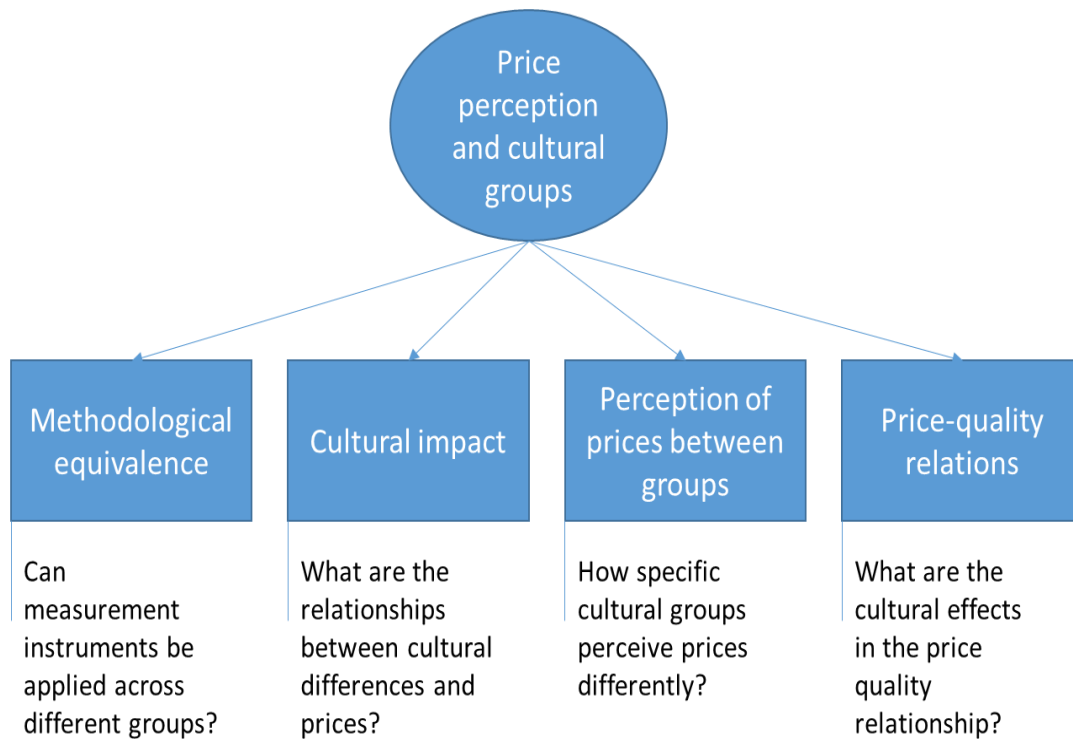
The field of cross-cultural research is of particular interest for both academics and marketing managers. For several authors, there is a belief that culture has an influence on managerial behaviour and performance in where there is a need to find constructive solutions to organizational problems (Lim and Firkola, 2000, Manrai and Manrai, 2011, Minkov and Hofstede, 2011, de Mooij and Hofstede, 2011, Hofstede, 2015). It follows that cultural considerations may also, therefore, affect how consumers perceive and behave. And so it turns out to be. In a review of the literature on cross-cultural research by Sin (1999), a significant number of papers on the topic of cross-cultural consumer research in major marketing journals identify cross-cultural differences in consumer behaviour.

The interest in cross-cultural research is relevant to the field of pricing as it is critical in consumer markets to understand “*how consumers perceive the concept of pricing*” (Meng and Nasco, 2009, p.506). A survey of the literature on price perception across cultural group revealed that studies are related to several dimensions depending on the topic researched. These dimensions include:

1. Whether one measurement instrument (i.e. a price perception scale) is valid for cultural groups (methodological equivalence)
2. The impact of cultural differences in the assessment of prices (cultural impact on price perception)
3. How cultural groups perceive prices (cross-cultural price perceptions)
4. How cultural factors influence the price-quality relationship, including the perception of prices (price-quality relations).

The dimensions are shown in Figure 4-3.

Figure 4-3 Dimension of Studies in Cross-Cultural Price Perception



A summary of the various studies focused on the impact of culture and price perception is presented in Table 4-6.

Table 4-6 Cross-Cultural Studies in Pricing

Dimensions	Description	Studies
Methodological Equivalence	Focuses on the application of cross-cultural studies on pricing, from one cultural group to another rather than just studying how culture affect prices.	Sing (1995), Maxwell (2001), Sternquist et al. (2004), Hunter (2006), Watchravesringkan et al. (2008), Meng and Nasco (2009), Bolton et al. (2010)
Cultural Impact	Examines the impact of cultural differences in consumers' responses to prices. This dimension is not unique to price perception but to constructs such as willingness to pay, price-quality perceptions, prestige sensitivity, among others.	McGowan (1998), Ackennan and Tellis (2001), Shirai et al. (2004), Nguyen et al. (2007), Jones et al. (2008), Maxwell et al. (2009), Shukla (2012), Chapuis (2013)
Perception of Prices	Emphasises differences in the perception of prices among different cultural groups from various perspectives such as cultural influences and price search.	Zhou and Nakamoto (2001), Watchravesringkan et al. (2005), Meng (2011)
Price-Quality Relationship	Looks at cross-cultural effects in the price-quality relationship	Sjolander (1992), Agarwal and Teas (2002), Moore et al. (2003), Leo et al. (2005), Myung-Soo and Sarigollu (2007)

The dimensions presented in Table 4-6 are interesting since they show the study of prices from the perspectives of different cultural groups. However, although ethnic groups and cultural groups are related (Eriksen, 2012), the studies shown in Table 4-6 are mostly related to particular cultural groups such as Asian consumers or are related to constructs such as how consumers search for prices in different cultures, but do not deal with ethnic groups per se. For example, the studies presented in Table 4-6, compare *between* countries rather than *within* countries (i.e. the United States), and this presents an opportunity for this study to make a unique contribution. As such, this study contributes to a gap in the literature by comparing the perception of prices among the three major ethnic groups in the United States.

Next, the following sections deal with cross-cultural research methods used in pricing research alongside a thorough description of the research methods proposed for this research.

4.2.10 Cross-cultural Pricing Research Methods

4.2.10.1 Price perception scale

Some studies on the measurement of consumer perception rely on the use of the Price Perception Scales (Lichtenstein et al. 1993). In fact, it is the only marketing scale related to price perception (Bearden et al., 2011). This scale was developed in some relevant research on consumer pricing (Bujisic et al., 2014, Campbell, 2013, Lichtenstein et al., 1993, Zielke, 2011). The scale has also been used in cross-cultural pricing research (Meng et al., 2007, Meng and Nasco, 2009, Meng, 2011, Zielke and Komor, 2015).

A thorough description of the Price Perception Scales is provided by Bearden et al. (2011, p.378–379) and presented in Table 4-7. Appendix C shows the complete Price Perception Scales as originally proposed by Lichtenstein et al., (1993).

Table 4-7 Price Perception Scales

Role of Price	Scales	Description (Lichtenstein et al., 1993 p. 235)
Negative Role of Price	Value Consciousness	“Reflects a concern for the price paid about quality received.”
	Price Consciousness	“Degree to which the consumer focuses exclusively on paying low prices.”
	Coupon Proneness	“Propensity to respond to a purchase offer because the coupon form of the purchase offer positively affects purchase evaluations.”
	Sale Proneness	“An increased propensity to respond to a purchase offer because the sale form in which the price is presented positively affects purchase evaluations.”
	Price Mavens	“Degree to which an individual is a source of price information for many kinds of procures and places to shop for the lowest prices initiates discussions with consumers, and responds to requests from consumers for marketplace price information.”
Positive Role of Price	Price-Quality Schema	“The generalised belief across product categories that the level of the price cue is related positively to the quality standards of the product.”
	Prestige Sensitivity	“Favourable perceptions of the price cue based on feelings of prominence and status that higher prices signal to other people about the purchaser.”

Bearden et al. (2011, p. 379), score the items on a seven-point Likert scale, from *strongly disagree* to *strongly agree*. There is an exception when measuring price consciousness, as shown in Appendix C, where some items are scored in reverse (from strongly agree to strongly disagree). Appendix C shows the total items used in the Price Perception Scales.

However, the Price Perception Scale does not account for the key constructs identified in P2 as these key constructs are not part of the scale proposed by Lichtenstein et al. (1993). In other words, this study is a continuation of a qualitative study (P2), and it is important to elaborate on the findings of the previous study (P2) and to fulfil the gaps found previously.

Moreover, the literature identifies different ways to analyse the perception scale developed by Lichtenstein et al. (1993). The next section discusses these approaches in more detail.

4.2.10.2 Methods to Analyse the Perception Scales

According to the literature, the analysis of the Price Perception Scale proposed by Lichtenstein et al. (1993) has been accomplished following two primary research streams (Meng & Nasco 2009). On the one hand, there is a stream of research that compared mean differences across cultural groups (Jin and Sternquist, 2003, Sternquist et al., 2004, Meng and Nasco, 2009, Zielke and Komor, 2015). For example, by comparing means of samples of US and Chinese consumers on dimensions such as price-quality schema, prestige sensitivity, price consciousness and coupon proneness¹³⁷ (Sternquist et al., 2004). Similarly, Jin and Sternquist (2003) compared the means of samples of the US and Korean consumers and found differences in prestige sensitivity, price mavenism, value consciousness, sale proneness, and price consciousness (see Table 4-6).

On the other hand, there is a stream of research that involves tests of measurement invariance – i.e. a statistical property indicating the same thing is

¹³⁷ The dimensions were introduced in the Table 4-6.

being measured - across different cultures (McGowan and Sternquist, 1998, Zhou and Nakamoto, 2001, Moore et al., 2003). Accordingly, the tests were undertaken sought to check for measurement equivalence and generisability across cultural groups (Meng and Nasco, 2009) by testing scale variables loadings, correlations of errors, correlations between variables and variance between variables. Figure 4-4 shows a summary of the two research streams used to analyse the price perception scale.

Figure 4-4 Streams on analysis of price perception scales

Streams on the analysis of the Price Perception Scale		
	1. Analysis of mean differences	2. Tests of measurement invariance
Definition (Durvasula et al., 1993)	Compare models across all dimensions by assessing the mean differences of each group.	Uses multi-group analysis to assess the model invariance and to model relationships across groups
Used by:	Jin and Sternquist (2003) Sternquist et al. (2004) Meng and Nasco (2009) Zielke and Komor (2015)	Zhou and Nakamoto (2001) McGowan and Sternquist (1998) Moore et al. (2003)

However, the studies that tested for measurement invariance (McGowan and Sternquist, 1998, Zhou and Nakamoto, 2001, Moore et al., 2003) were oriented to the development of similar price perception scales across cultural groups. One disadvantage of this approach identified by Meng and Nasco (2009) was that the results were informative but far from sufficient to apply in the marketplace. In this study, we look to identify managerial implications of cross-ethnic price perceptions, assuming they exist, so will rely more on comparisons of mean differences as undertaken in other studies.

However, a review of the literature also found that the analysis of the perception scale utilised different statistical methods for comparing means, which can be summarised as including confirmatory factor analysis techniques (CFA)¹³⁸ and analysis of variance techniques (i.e. three-way ANOVA and MANOVA). Several researchers also combined these techniques using a confirmatory factor analysis (CFA) for model validation, followed by MANOVA for analysis of mean differences (Jin and Sternquist, 2003; Meng and Nasco, 2009; Zielke and Komor, 2015).

MANOVA or Multivariate Analysis of Variance is a multivariate technique that uses two or more dependent variables and two or more groups and is used to assess the statistical significance between groups (Hair et al., 2010). Similarly, ANOVA or Analysis of Variance is a univariate technique that uses one dependent variable with two or more groups (Hair et al., 2010). Similarly, a three-way ANOVA is an Analysis of Variance that has three independent variables (Hair et al., 2010).

Confirmatory Factor Analysis (CFA) can be defined as “a way of testing how well variables measured represent a smaller number of constructs” (Hair et al., 2010, p.693). Hence, Moore et al. (2003, p.273) describe the appropriateness of CFA for analysing price perception scales as the “most rigorous and appropriate test of factorial invariance.” Moreover, several authors (Durvasula et al., 1993, Marsh, 1994, Byrne, 2001) considered CFA as a more robust method than the traditional ANOVA/MANOVA, as it incorporates measurement errors in the analysis.

CFA is a multivariate technique used to develop structural equation models (SEM) (Blunch, 2013, Byrne, 2001, Kline, 2016, Marsh, 1994, Schumacker and Lomax, 2010). Structural equation modelling is a multivariate technique combining both factor analysis and path analysis (Hair et al., 2010, Ho, 2014). Path analysis uses multiple regression with the aim of describing the entire

¹³⁸ For clarification purposes, the researcher is not suggesting that CFA is used to compare means, but is rather suggesting that ANOVA and MANOVA are used to compare means, after a CFA analysis (Hair et al. 2010).

structure of linkages between independent and dependent variables. We consider CFA and SEM in more detail in the following sections given that it is one of the methods we propose to adopt in this study.

4.2.10.3 Structural Equation Modelling (SEM)

Structural equation modelling (SEM) tests theoretical models hypothesised by a researcher using a quantitative approach (Schumacker and Lomax, 2010). Accordingly, the goal of SEM is to “determine the extent to which the theoretical model fits the data” (Schumacker and Lomax, 2010, p.2). Consequently, SEM is a tool for verifying theories (Blunch, 2013) and does not designate a single statistical technique but rather a family of related procedures (Hair et al., 2010, Kline, 2016).

SEM takes a confirmatory approach (i.e. hypothesis-testing) to data analysis as opposed to an exploratory approach. In a confirmatory analysis, the researcher tests (confirms) a pre-specified relationship hypothesised to exist between variables whereas, in an exploratory analysis, the researcher tests for whether the observed variables are linked, without looking to confirm any relationship (Hair et al., 2010). According to Hair et al. (2010, p.635), all SEM models have the following three characteristics:

1. “Estimation of multiple and interrelated dependence variables.”

SEM uses a structural model to estimate a series of separate but interdependent relations simultaneously.

2. “Ability to represent unobserved concepts in these relationships and account for measurement error in the estimation process.”

SEM incorporates the measurement error into the statistical estimation to improve the dependence model.

3. “Defining a model to explain the entire set of relationships.”

SEM uses a model which specifies the rules between measured and latent variables. A latent variable (or latent construct) is “a hypothesised and unobserved concept that can be represented by observable or measurable variables” (Hair et al., 2010, p.635).

According to Gallagher and Brown (2013, p.289), a case of SEM is confirmatory factor analysis (CFA). In a CFA model, the researcher seeks to test (confirm) the significance of the hypothesised model. The hypothesised model has been defined a priori by the investigator (Kline, 2016). Moreover, several investigators (Jin and Sternquist, 2003; Sternquist et al., 2004; Moore, 2004; Meng and Nasco, 2009; Zielke and Komor, 2015) have used CFA in the analysis of the Price Perception Scale developed by Lichtenstein et al. (1993). The next section introduces confirmatory factor analysis in more detail.

4.2.10.4 Confirmatory Factor Analysis (CFA)

The term confirmatory factor analysis was fully developed in 1963 to test the existence of theoretical constructs (Schumacker and Lomax, 2010). Moreover, as mentioned in Section 2.10.2, the analysis of the price perception marketing scales has been conducted using confirmatory factor analysis (CFA) as proposed by several authors (McGowan and Sternquist, 1998; Moore et al., 2003; Meng and Nasco, 2009; Zielke and Komor, 2015).

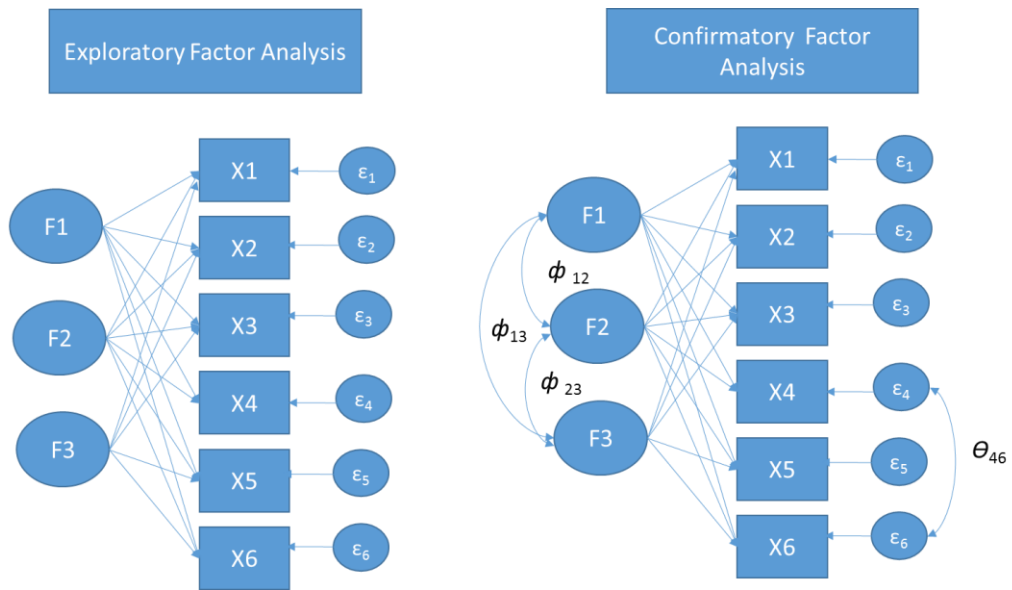
In general, “Factor analysis attempts to determine which sets of observed variables share common variance-covariance characteristics that define theoretical constructs or factors (latent variables) (Schumacker and Lomax, 2010, p.164). Moreover, factor analysis can be exploratory or confirmatory (Hair et al., 2010). According to Blunch (2013, p. 130), there are some significant differences between exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) as shown in Table 4-8.

Table 4-8 Factor Analysis: Exploratory vs. Confirmatory

Exploratory factor analysis (EFA)	Confirmatory factor analysis (CFA)
Every measurable (manifest) variable is connected with every latent variable	Measurable (manifest) variables are only related to some pre-specified latent variables
Error terms are uncorrelated	Some errors may be allowed to correlate
All parameters are estimated from data	Some of the parameters might be constrained

The differences between EFA and CFA as presented by Blunch (2013, p. 130) are also illustrated graphically in Figure 4-5.

Figure 4-5 Factor Analysis: EFA vs. CFA



Source: Blunch (2013, p. 131)

F Latent (factors)
 X Manifest variables
 ε Error on measured variable
 ϕ Covariance between predetermined variables
 θ Covariance between errors

There are advantages of using structural equation modelling methods (SEM) as it “is considered advantageous to the traditional ANOVA/MANOVA approach because it incorporates errors in construct measurement while examining mean differences” (Durvasula et al., 1993, p.634). This method is also supported by Zhou and Nakamoto (2001) when considering using structural equation methods over MANOVA in their cross-national study of Chinese and American consumers. Accordingly, this study will use the method of comparing means as presented by Durvasula et al. (1993) and employed in similar researches (Jin and Sternquist, 2003, Sternquist et al., 2004, Zhou and Nakamoto, 2001, Zielke and Komor, 2015).

4.2.10.5 CFA after EFA

As explained in the previous section, there are differences in exploratory factor analysis (EFA) versus confirmatory factor analysis (CFA) (see Table 4-7 and Figure 4-4). However, the literature reviewed on structural equation modelling (Byrne, 2001; Hair et al., 2010; Schumacker and Lomax, 2010; Blunch, 2013; Ho, 2014; Kline, 2016) does not conclude whether a study should be analysed using both an exploratory factor analysis (EFA) and a confirmatory factor analysis (CFA). As pointed by Schumacker and Lomax (2010), the primary rationale for an EFA is to find a model that fits the data. Similarly, the primary rationale for a CFA is “to statistically test the significance of a hypothesised factor model” (Schumacker and Lomax, 2010, p.164). However, Kline (2016) advises against conducting a CFA as a follow-up analysis to an EFA. Accordingly, “it can happen that the specification of CFA model based on EFA outcomes and analysed with the same data will lead to the rejection of the CFA model” (Kline, 2016, p. 198). Moreover, the review of the literature on uses of the price perception scale (McGowan and Sternquist, 1998; Moore et al., 2003; Jin and Sternquist, 2003; Sternquist et al., 2004; Meng and Nasco, 2009; Zielke and Komor, 2015) only focused on the application of the CFA model. Therefore, this study will not use an Exploratory Factor Analysis (EFA) but will instead apply a Confirmatory Factor Analysis (CFA), using an a priori structural model devised from the literature and the qualitative research undertaken in the exploratory study.

So far, this section dealt with the utilisation of the price perception scale developed by Lichtenstein et al. (1993) and the methods used in the literature to analyse the price perception scale. We have also presented an argument for the use of confirmatory factor analysis (CFA) only rather than using exploratory factor analysis (EFA) only or before a confirmatory factor analysis (CFA). As previously noted, analysis of the completed answers to price perception scale helps to answer the research questions:

R1. Do price perceptions differ by ethnic group?

However, in relation to the second research question:

R2. If so, what are the differences in the perception of prices among ethnic groups about a product category?

The P2 study could not conclude whether or not there were statistically significant differences between the key constructs elicited by respondents about refrigerated brands of orange juice (because it was a qualitative study). Moreover, the use of the Price Perception Scale (Lichtenstein et al., 1993) does not incorporate the key constructs elicited in P2 and therefore previous research using this scale cannot be used to answer the second research question. So, to respond to the second research question, this study uses choice-based conjoint analysis to develop comparisons using the key constructs elicited in P2. A discussion of conjoint analysis is therefore considered in further detail next.

4.2.10.6 Conjoint Analysis

Conjoint analyses have been widely used to predict consumers' responses to prices (Klein et al., 2010). In conjoint analysis, respondents are asked to trade off attributes such as perceived quality and price and by isolating the individual effects of essential proposition attributes (Zicha and Roy, 1986)¹³⁹. As a marketing research technique, conjoint analysis was first used by Green and Rao (1971). According to Green and Srinivasan (1978, p.104), conjoint analysis is *“any decompositional method that estimates the structure of consumers' preferences and does so by decomposing the total evaluation into component scores, imputable to each attribute level or a combination of attribute levels.”*

The primary purpose of the conjoint analysis is to model human behaviour, e.g. purchase behaviour, by forcing respondents to trade-off values and needs (McCullough, 2002). According to McCullough (2002), there are three branches of conjoint analysis including (i) ratings-based conjoint; (ii) choice-based conjoint and (iii) hybrid techniques.

According to Hair et al. (2010, p.276), the objectives of conjoint analysis are related to:

- “Determining the contributions of predictor variables and their levels in the determination of consumer preferences.”
- “Establishing a valid model of consumer judgments.”

Moreover, to achieve this, the research question should describe all the attributes that give utility or value and select the key attributes involved in the choice process (Hair et al., 2010).

¹³⁹ There is a strong relationship between perceptions of quality and prices as presented by Gabor and Granger, Zeithaml and Rao (1966; 1988; 2005) and this is explained in greater detail in the Systematic Review or P1, written by the author.

Table 4-9 shows the main differences between these types of conjoint analysis according to McCullough (2002)¹⁴⁰ together with an indication of the purpose of each type of conjoint analysis.

Table 4-9 Branches of Conjoint Analysis

Type	Description	Function
Ratings-based conjoint	Involves rating alternatives using a monadic or a pairwise approach. Individual choices are simulated and aggregate to predict choice shares. It is hard to include the no-buy option. ¹⁴¹	Most appropriate for buying markets without competition such as monopolies or oligopolies.
Choice-based conjoint	Offers respondents a series of choice sets including the no-buy choice and uses choice responses to estimate models and predict choice shares.	Mimics real-life buying environments in markets where there is a degree of competition.
Hybrid approaches ¹⁴²	They combine self-explicated scaling with either ratings-based conjoint or choice-based conjoint models.	Most appropriate when testing a large number of product attributes

Ratings-based conjoint (RB) and choice-based conjoint (CB) analyses differ in the sense that they use different experimental designs and choice responses (Karniouchina et al., 2009). According to Karniouchina et al. (2009), despite the fact that both RB and CB models produce similar estimates of the relative importance of various attributes, there is a preference towards choice-based (CB) conjoint models. This view is shared by Moore (2004) when making a cross-validity comparison of both models by suggesting that choice-based conjoint analysis has a greater external validity by using Hierarchical Bayes statistical modelling compared with other statistical models (Moore, 2004; Karniouchina et al., 2009)¹⁴³. In fact, Moore (2004) assesses that choice-based

¹⁴⁰ McCullough (2002:3) acknowledged the existence of another type of conjoint analysis using self-explicated scaling but since it does not requires respondents to make a trade-off; as a result it was not considered as an standalone conjoint analysis but rather part of a hybrid conjoint analysis.

¹⁴¹ In markets with competition, buyers can buy any of the alternatives presented but they can also opt to not buy any of the alternatives. This 'not-buy' or 'no-choice' option is important when mimicking buying markets.

¹⁴² Adaptive Choice-Based Conjoint Analysis (ACBC) is a type of hybrid conjoint analysis (McCullough, 2002) that is suitable for testing a large number of attributes. Orme (2002) presents an argument on the use of the ACBC analysis.

¹⁴³ Hierarchical Bayes (HB), Ordinary Least Square Regression (OLS) and Latest Class segmentation are statistical models used in conjoint analysis to measure preferences and predict choice probabilities.

tasks (used in choice-based conjoint models) are easier for participants to undertake than rating-based tasks.

Table 4-10 shows a comparison between ratings-based conjoint and choice-based conjoint models with preferences towards choice-based studies according to Moore (2004) and Karniouchina et al. (2009). Table 4-9 also shows different reasons for choosing choice-based studies (such as choice-based conjoint analysis) over rating-based research approaches.

Table 4-10 Ratings-based vs. Choice-based Conjoint

Ratings-based	Choice-based	Comment
Uses judgments (preference ratings) to elicit preferences	Use choice sets to elicit preferences	When using judgments in complex scenarios, participants might use simplification strategies (i.e. focusing only on essential attributes) thus leading to a systematic variation of the estimates.
Some corresponding attributes tend to be more important	Perform better than ratings-based models in when measuring the same level of aggregation	Karniouchina et al. (2009:342) presented a review of the literature measuring both RB and CB methods and concluded that CB methods performed better with models having the same level of aggregation.
Uses a 'Max Utility' rule to estimate choice-shares	Uses a Logit function to calculate choice-shares	Moore (2004) found a greater prominence effect in RB models than in CB models ¹⁴⁴
Greater loss aversion in models with more than two levels	Lower loss aversion in models with more than two levels	Loss aversion (Kahneman & Tversky 1979) occurs when respondents focus on some levels of an attribute more than others,

¹⁴⁴ According to Moore (2004) and Karnouchina et al. (2009) a prominence effect is the tendency to give more weight to some attributes than other thus generating a systematic variation across studies.

A further classification of conjoint analyses is offered by Rao (2014) who suggests that there are four types of conjoint analysis as outlined and explained further in Table 4-11.

Table 4-11 Types of Conjoint Analysis

Conjoint	Description
Traditional conjoint analysis (CA)	Collects preferences (judgments) for profiles described on the entire set of attributes. Uses a smaller set of full profiles ¹⁴⁵ . Preferences are decomposed into different utility values using regression-based methods. The resulting preference is deemed as an indirect utility function.
Choice-Based Conjoint analysis (CBC)	It uses data on particular choices that are elicited under hypothetical scenarios that mimic the marketplace. Uses multinomial logit methods for estimating part-worth functions to estimate utility values.
Adaptive conjoint analysis (ACA)	Allows the handling of a large number of attributes. Uses a hybrid model approach with a self-explicated task to elicit data on attribute importance and preference, followed by preference ratings.
Self-explicated conjoint analysis	Estimates preference from judged values of the components that contribute to preference. It is the only compositional approach in conjoint analyses and is based on multiattribute attitude models.

Furthermore, the literature reveals conjoint analysis as a method suitable for pricing research (Zicha and Roy, 1986, Johnson and Olberts, 1992, Jedidi and Zhang, 2002, Baumgartner and Steiner, 2007, Iyengar et al., 2008, Sichtmann et al., 2011). The next section explores in detail how conjoint analysis is used as a pricing research method.

4.2.10.7 Conjoint analysis as a Pricing Research Method

There is evidence in the literature of the use of conjoint analysis to help marketers make pricing decisions. The evidence ranges from studies of pricing in competitive environments to studies in multi-part pricing (i.e. such as airline prices, cable TV prices, mobile phone prices, and more). Table 4-12 shows a non-exhaustive list of studies using conjoint analysis in pricing decision-making.

¹⁴⁵ Full profiles are also called full factorial designs that are experiments that have two or more factors, in where all the possible combinations of attributes and values are used (Rao, 2014).

Table 4-12 Use of conjoint analysis for pricing decisions

Authors	Type	Description
Zicha & Roy (1986)	Conjoint analysis	Evaluates the trade-off between the main attributes such as quality and price.
Choi & DeSarbo (1994)	Choice-based conjoint	New product design incorporating price competition
Yoo & Ohta (1995)	Conjoint analysis	Estimates the optimal pricing for new multi-attributes products
Jedidi & Zhang (2002)	Conjoint analysis	Estimates consumer reservation prices using traditional conjoint analysis
Iyengar, Jedid, & Kohll (2008)	Choice-based conjoint	Applications of Conjoint analysis in multipart pricing, estimating choice probabilities and usage levels
Sichtmann, Wilken & Diamantopoulos (2011)	Choice-based conjoint	Estimates the willingness to pay by explaining variations in consumer characteristics.
Szűcs et al. (2014)	Choice-based conjoint	Cross-cultural consumer preferences including pricing among different attributes

According to Rao (2014), conjoint methods are used primarily in the following applications:

1. Determining price elasticities using brand/price trade-off
2. Estimating responses to competitor's price changes by using the competitor reaction elasticity¹⁴⁶
3. Determining the distribution of reservation prices for a new product
4. Measurement of price effects using:
 - a. A ratings-effect approach.
 - b. A choice-based approach.

In the rating effect method, the researcher collects data *on two preference measurements* on the set of choice alternatives – called unconstrained and constrained choices - respectively obtained under no budget constraint and achieved under budget constraints (Rao, 2014).

¹⁴⁶ This method is used with firm's internal managers as opposed to with consumers.

The choice-based approach extends the reach of the ratings-based approach by separating the impact and the allocative effect. This method was proposed by Völckner and Sattler (2005) and used a 'no choice' option, so the respondent is not forced to select an option. This approach mimics real-life pricing scenarios where consumers do not have to buy any of the choices presented (Völckner and Sattler, 2005).

In addition to studies on pricing, conjoint analyses have been used in cross-cultural research (Carroll and Green, 1995, Bontempo et al., 1997, Knight, 1999, Jaeger et al., 2001, Tsalikis et al., 2002, Jones et al., 2008, Szűcs et al., 2014). The following section discusses the uses of conjoint analysis in cross-cultural research.

4.2.10.8 Conjoint Analysis as a Cross-Cultural Research Method

The previous section presented evidence of the use of conjoint analysis in pricing research. Furthermore, according to Rao (2014), conjoint analysis is regarded as one of the most significant developments in market research, with applications in the market analysis (Bakken and Frazier, 2006). Conjoint analysis refers to “any decomposition method that estimates the structure of a consumer’s preferences regarding the levels of the attributes of the alternatives” (Rao, 2014, p. 4), and is suitable for marketing studies including pricing research (Sichtmann et al., 2011).

However, conjoint analysis is not only applied in marketing research (such as pricing) but has also been applied in cross-cultural studies (Szűcs et al., 2014) – see Table 4-13 for a non-exhaustive list of conjoint analysis studies used in previous cross-cultural studies.

Table 4-13 Conjoint Analysis in Cross-Cultural Research

Study Authors	Study Explanation
Bontempo, Bottom and Weber (1997)	Analysed risk perception across different cultural groups.
Knight (1999)	Studied consumer preferences in the home country of domestic and foreign auto manufacturers.
Shepherd, Tsalikis and Seaton (2002)	Compared ethical perceptions of Hispanics vs. Caucasians in the United States.
Jones et al. (2008)	Studied consumer perceptions of soy and dairy products across different cultural groups.

As shown in Table 4-13, choice-based conjoint is a type of conjoint analysis often used in pricing research (Damaraju et al., 2011, Jervis et al., 2012). The next section explores in detail the use of choice-based conjoint analysis in pricing research studies.

4.2.10.9 Choice-Based Conjoint Analysis

Choice-Based Conjoint Analysis - also known as Discrete Choice Experimentation (DCE) - is a study technique developed to make inferences about particular choices (Caldwell, 2015). It is widely used in marketing (Desarbo et al., 1995, Jaeger et al., 2001, Sichtmann et al., 2011, Meißner and Decker, 2010).

There are many applications of CBC analysis in marketing such as marketing segmentation (Desarbo et al., 1995), market share estimation (Gilbride et al., 2008b), pricing (Baumgartner and Steiner, 2007) and determination of willingness to pay (Dixit et al., 2014). Furthermore, there is research using CBC on measuring consumer price perception (Etgar and Malhotra, 1981), and even in cross-cultural studies (Szűcs et al. 2014). Both Orme (2002) and Rao (2014) support the use of choice-based conjoint analysis over traditional conjoint methods. Moreover, there is evidence in the literature of using choice-based conjoint analysis for pricing research (Yoo and Ohta, 1995, Jedidi and Zhang, 2002, Völckner and Sattler, 2005, Völckner, 2011, Jervis et al., 2012). Furthermore, there is also evidence of using choice-based conjoint in cross-cultural research (Sriram and Forman, 1993, Bontempo et al., 1997, Tsalikis et

al., 2002, Jones et al., 2008, Matsumoto and Vijver, 2010, Szűcs et al., 2014, Kraus et al., 2016).

However, choice-based conjoint analysis often requires the use of computers (Orme, 2002; Allenby et al., 2005; Hair et al., 2010; Rao, 2014). The use of computers in choice-based conjoint analysis is necessary both for the choice design (Rao, 2014) and the data collection (Klein et al., 2010). Furthermore, there is evidence of choice-based conjoint analyses being conducted online (Sethuraman et al., 2005; Klein et al., 2010). Therefore, the next section explores the use of online choice-based conjoint analysis.

4.2.10.10 Online Choice-Based Conjoint Analysis

There is evidence in the literature supporting the use of online (i.e. web-based) choice-based conjoint analysis (Zicha and Roy, 1986; Deal, 2002; Orme, 2002; Sethuraman et al., 2005; Orme, 2010; Klein et al., 2010; Wang et al., 2016). For example, Klein et al. (2010) assessed the validity of interviewer-based and online choice-based conjoint analysis and found a higher reliability in the online version. This evidence is further supported by Sethuraman et al. (2005) in a field study which found a higher internal consistency and predictive validity in the web-based choice-based conjoint analysis versus a paper-based conjoint analysis.

The preference of online choice-based conjoint analysis over paper-based conjoint analysis is further considered by Orme (2010) who argues that the complexity of conjoint analysis and the higher effort required for respondents versus a standard questionnaire, call up the need to use computer-based conjoint analysis. An extra advantage of using online choice-based conjoint analysis versus computer-based choice-based conjoint analysis is that it is possible to reach respondents in a fast and cost-efficient manner. This study will use the online approach to choice-based conjoint analysis as opposed to using a paper version as an alternative given the advantages presented by using online choice-based conjoint over paper-based choice-based conjoint (Deal, 2002, Sethuraman et al., 2005, Wang et al., 2016).

4.3 Theory and Hypotheses

So far, the previous section presented a thorough review of the literature in terms of price perception measurement and ethnic groups and their perceptions of price. Moreover, the literature review introduced to research methods used in the research of cross-cultural price perception such as; Price Perception Scales (Lichtenstein et al., 1993) and choice-based conjoint analysis (CBC). Hence, the next section states the research objectives along with the hypotheses addressed in this study.

4.3.1 Research Objectives

The goal of this study is twofold. Firstly, this study looks to find whether there are differences in the perception of prices among the three major ethnic groups in the United States (specifically amongst groups of these ethnicities in Chicago). Secondly, this study looks into identifying what are the differences in price perception among these ethnic groups, towards a particular product category. Accordingly, this study extends the work undertaken in P2¹⁴⁷ by statistically comparing differences in price perception among cultural groups using the key constructs found in P2 as attributes for the analysis. Moreover, to maintain consistency with P2, this study uses the refrigerated orange juice category as the stimulus to measure differences in perception of prices.

As pointed in the first section, the research questions that this study seeks to answer are related to:

- R1. Do price perceptions differ by ethnic group?
- R2. If so, what are the differences in the price perceptions among ethnic groups about a product category?

A preliminary survey of the literature on measures of consumer price perception, undertaken through a systematic review (P1) identified the Price Perception Scale proposed by Lichtenstein et al. (1993) in the study of price perception

¹⁴⁷ For purposes of this study, any references to P2 or P2 study is related to the research undertaken by Mendoza and Baines (2012).

among the group. The use of the Price Perception Scale is also reported by Bearden et al. (2011) in their book of Marketing Scales, and it is the only marketing scale related to price perception. Moreover, the Price Perception Scale has also been applied to the study of cross-cultural price perception (Meng et al., 2007; Meng and Nasco, 2009; Meng, 2011; Zielke and Komor, 2015).

Consequently, the Perception Scale (Lichtenstein et al., 1993) allows us to answer the research question regarding whether or not differences in price perception among ethnic group exist. A discussion of the Price Perception Scale (Lichtenstein et al., 1993) was presented in the previous section. However, the next section presents the hypotheses developed for testing in this study.

4.3.2 Hypothesis Definition

As explained in the preceding section, to answer the two research questions related to differences in price perception among ethnic groups, it is necessary to define the hypotheses for testing. The next section presents a discussion of the hypotheses and any underlying assumptions.

4.3.2.1 Value Consciousness

According to Lichtenstein et al. (1993, p. 235), value consciousness is defined as “the concern for the price paid for the quantity received.” This definition goes according to the definition of value as a ratio of quality received from pricing paid, as suggested by several researchers (Lichtenstein et al., 1990, Aaker, 1992, Zeithaml, 1988, Thaler, 2008, Watchravesringkan, 2005, Codini et al., 2012). Accordingly, “value conscious consumers perceive acquisition utility as an important factor for product purchase” (Khare et al. 2014, p.277). Furthermore, value consciousness is regarded as a dimension with a negative role in the literature on price consciousness (Moore et al., 2003). In other words, the negative role is associated with the assumption that consumers “perceive high prices as an economic sacrifice which negatively impacts purchase probability” (Moore et al. 2003, p.270). In this sense, consumers demand greater quality for lower prices in competitive retail markets (Zeithaml, 1988). To

address whether or not the three ethnic groups in this study have the same value consciousness, we hypothesise that:

H1: Scores on the dimension of value consciousness (Lichtenstein et al., 1993) will be different among African-Americans, Caucasians, and Hispanics.

In other words, we are proposing that we will reject the following null hypothesis:

H1₀: There is no difference in scores on the dimension of value consciousness among African-Americans, Caucasians, and Hispanics.

And we will, therefore, accept the alternate hypothesis:

H1_a: There is a difference in scores on the dimension of value consciousness among African-Americans, Caucasians, and Hispanics.

In the definition of further hypotheses, we assume that we will reject the above null hypothesis. However, value and price are closely related as “price perception is the central antecedent of value perceptions” (Zielke and Komor, 2015, p.163). Moreover, according to Lichtenstein et al. (1993) and Zielke and Komor (2015), the constructs of value consciousness and price consciousness show the highest correlations between any combinations of roles in the scale proposed by Lichtenstein et al. (1993). Consequently, it is expected that a higher price consciousness also results in a higher value consciousness (Zielke and Komor, 2015). As such, the hypothesis for price consciousness in the context of this study is defined next.

4.3.2.2 Price Consciousness

Price consciousness refers to a variety of price-related cognitions such as price knowledge, price recall, price acceptability and price importance among others (Zeithaml, 1988). However, the literature also refers to price consciousness in a narrower sense (Moore et al., 2003), defined as the “degree in which the consumer focuses exclusively on paying low prices” (Lichtenstein et al., 1993). As mentioned in the previous section, price consciousness and value consciousness are more likely to occur in competitive retail markets (Zeithaml, 1988) due to changes in buyer behaviour¹⁴⁸ (Moore et al., 2003).

Hence, as we hypothesised in the previous section with the value consciousness construct, we propose that:

H2: Scores on the dimension of price consciousness (Lichtenstein et al., 1993) will be different among African-Americans, Caucasians, and Hispanics.

Both price consciousness and value consciousness are related with low price-seeking behaviour (Moore et al. 2003). In other words, according to a classic economic theory which, suggests that “price represents the amount of economic outlay that must be sacrificed to engage in purchasing” (Moore et al. 2003, p.269), consumers weigh potential benefits against price. This consideration results in consumers seeking to pay lower prices (McGowan & Sternquist 1998). However, there is another construct in the Price Perception Scale (Lichtenstein et al. 1993) that is closely related to price consciousness and value consciousness. This construct is defined as sale proneness, and it represents the “increased propensity to response to a purchase offer when the price is presented in a sale form” (Moore et al. 2003, p.271). Sale proneness is discussed in the next section.

¹⁴⁸ Moore et al. (2003, p. 271) argue that the conditions of economic recession (in the early 1990s) caused a low price-seeking behavior. However, the authors also predicted that “this low price-seeking behavior among consumers endures beyond recessionary conditions”

4.3.2.3 Sale Proneness

According to Lichtenstein et al. (1993), sale proneness is another dimension of the Price Perception Scale (Lichtenstein et al. 1993) that has a negative role in price. The negative role occurs as “some consumers view a high price negatively, signifying a decrease in their monetary resources” (McGowan and Sternquist 1998, p.50). The existence of this role is further explained by Dickson and Sawyer (1990, p.51) who argued that “shoppers are heterogeneous regarding their attention and reaction to price and price promotions” and therefore, price acceptability might be different across consumers. Moreover, the propensity to view price and price promotions different, as discussed by Dickson and Sawyer (1990), justifies the existence of the concept of sale proneness. Accordingly, sale proneness is “an increased propensity to respond to a purchase offer because the sale form in which the price is presented positively affects purchase evaluations” (Lichtenstein et al. 1993, p.235).

Hence, we hypothesise that sale proneness might occur in the three ethnic groups:

H3: Scores on the dimension of sale proneness (Lichtenstein et al., 1993) will be different among African-Americans, Caucasians, and Hispanics.

However, there are more dimensions in the Price Perception Scale (Lichtenstein et al. 1993) that have a negative role in price. These include coupon proneness and price mavenism (Lichtenstein et al. 1993). Some authors have recognised that these two dimensions might not occur with every population group. For example, McGowan and Sternquist (1998) did not compare American and Japanese respondents regarding coupon proneness and price maven behaviour.

Similarly, Moore et al. (2003) did not consider coupon proneness in their comparison of American and Polish consumers. Moreover, Meng and Nasco (2009) concluded that coupon proneness and price mavenism would not translate well with Japanese and Chinese respondents. However, the authors (McGowan & Sternquist 1998; Moore et al. 2003; Meng & Nasco 2009) assume

that coupon proneness and price mavenism do exist with American respondents.

The hypotheses for coupon proneness and price mavenism are discussed in the following sections.

4.3.2.4 Coupon Proneness

Coupon proneness is defined as “an increased propensity to respond to a purchase offer because the coupon form of the purchase offer positively affects purchase evaluations” (Lichtenstein et al. 1993, p.235). In other words, coupons represent opportunities for consumers to obtain products at reduced prices and therefore there is a relationship between price perception and response to this type of price promotion (Lichtenstein et al., 1993).

However, coupon proneness does not translate well with some cultural groups, such as Polish (Moore et al., 2003; Zielke and Komor, 2015), Chinese (Zhou and Nakamoto, 2001; Meng et al., 2007; Meng and Nasco, 2009), Japanese (McGowan and Sternquist, 1998; Meng and Nasco, 2009) and Indians (Khare et al., 2014). However, there is an assumption that coupon proneness translates well with Americans respondents (Lichtenstein et al., 1993, Watchravesringkan et al., 2008). Unfortunately, extant literature does not specifically address whether there might be differences between ethnic groups, within the same culture. This gap, therefore, presents a unique opportunity to develop a contribution to this study by understanding whether or not there are differences in coupon proneness.

We, therefore, hypothesise that:

H4: Scores on the dimension of coupon proneness (Lichtenstein et al., 1993) will be different among African-Americans, Caucasians, and Hispanics.

Moreover, another dimension of the Price Perception Scale (Lichtenstein et al. 1993) that does not translate well with some cultural groups is price mavenism. The following section presents a hypothesis for this dimension.

4.3.2.5 Price Mavenism

There is a notion that some consumers like to be informed about marketplace prices and to relay such information to other people (Lichtenstein et al. 1993). Accordingly, the desire to be informed about prices (i.e. price mavenism) might reflect a desire to be a source of low price information for other people. Consequently, price mavenism is defined as “the degree in which an individual is a source of price information for many kinds of products and places to shop for the lowest prices, initiates discussions with consumers, and responds to requests from consumers for marketplace price information” (Lichtenstein et al. 1993, p.235).

As with coupon proneness, price mavenism might not translate well among cultures (see Section 3.3.4), but there is the assumption that it does translate well among Americans (Lichtenstein et al. 1993). So, we, therefore, hypothesise that:

H5: Scores on the dimension of price mavenism (Lichtenstein et al., 1993) will be different among African-Americans, Caucasians, and Hispanics.

Now, so far we have presented hypotheses for dimensions of the Price Perception Scale that have a negative role in the perception of prices (Lichtenstein et al. 1993; Moore et al. 2003). However, two more dimensions have a positive role in the perception of prices. The positive role is defined in the way that a higher price signals either a higher quality or a higher prestige (Lichtenstein et al. 1993; McGowan & Sternquist 1998; Moore et al. 2003; Meng & Nasco 2009). Conversely, a negative role is associated with concern that higher price results in an economic sacrifice (Moore et al. 2003). The following sections present a discussion of the hypotheses for the price-quality schema and the prestige sensitivity constructs.

4.3.2.6 Price-Quality Schema

As presented in the previous section, the price-quality schema is associated with a positive role in the perception of prices (Lichtenstein et al. 1993). This association is consistent with the relation price and quality described in the literature, where a higher price signals a higher quality (Rao 2005). The Price Quality schema is defined as the “generalised belief across product categories that the level of the price cue is related positively to the quality standards of the product” (Lichtenstein et al. 1993, p.236). Moreover, the behaviour of paying higher prices as a result of the perception of higher quality is referred to as “price seeking” (Teltis and Gaeth, 1990, p.36).

Therefore, we hypothesise that:

H6: Scores on the dimension of price-quality schema (Lichtenstein et al., 1993) will be different among African-Americans, Caucasians, and Hispanics.

Moreover, there is another dimension in the Price Perception Scale (Lichtenstein et al., 1993) associated with a positive role on prices. The hypothesis for prestige sensitivity is therefore presented in the next section.

4.3.2.7 Prestige Sensitivity

Similar to the perception that a higher price signals a higher quality, as explained in the previous section, prestige sensitivity is associated with an active role in the perception of prices (McGowan & Sternquist, 1998). Prestige sensitivity is defined as “favourable perceptions of the price cue based on feelings of prominence and status that higher prices signal to other people about the purchaser” (Lichtenstein et al. 1993, p.236). Prestige sensitivity is related to the concept of conspicuous consumption; that refers to “the signalling of wealth and status (Scott et al. 2013, p.2). In other words, consumers might purchase products at a higher price because such a high price conveys signals of prestige, wealth, and status (Moore et al., 2003, Scott et al., 2013).

We, therefore, hypothesise that:

H7: Scores on the dimension of prestige sensitivity (Lichtenstein et al., 1993) will be different among African-Americans, Caucasians, and Hispanics.

So far, the hypotheses deal with the Price Perception Scale (Lichtenstein et al., 1993) and hypotheses 1-7 seek to answer the first research question:

R1. Do price perceptions differ by ethnic group?

However, it is also necessary to include a discussion of hypotheses that can help to answer the second research question:

R2. If so, what are the differences in price perceptions among ethnic groups about a product category?

The next section, therefore, presents a discussion of the relevant hypotheses associated with the second research question.

4.3.3 Hypotheses for the Choice-Based Conjoint Analysis

The general hypothesis for the choice-based conjoint analysis can be expressed as follows:

H8₀: There are no differences in the importance allocated to proposition attributes between African-Americans, Caucasians, and Hispanics

H8_a: There are differences in the importance allocated to proposition attributes between African-Americans, Caucasians, and Hispanics.

The hypothesis is set in terms of proposition attributes (i.e. Brand, Price, Flavour, and Sweetness) that are part of the conjoint analysis, and importances, that are obtained from the operationalisation of the choice-based conjoint analysis. The operationalisation is discussed in the next section.

4.4 Methodology

So far, the previous section introduced the hypotheses to be tested in this study. The hypotheses are described in terms of answering the two research questions presented in Section 3. Accordingly, a set of hypotheses (H1 to H7) tests the first research question, and the rest of the hypotheses (H8) tests the second research question.

Thus, this study used the Price Perception Scale developed by Lichtenstein et al. (1993) and a choice-based conjoint analysis to answer the research questions presented previously. The advantages of this approach are that by using the perception scales across cross-cultural groups, as explained by Meng and Nasco (2009), it is possible to draw comparisons between target population groups using several dimensions of the scale. Also, a choice-based conjoint analysis allows for the study of price levels and key constructs.

The model applied in this research to measure differences in price perception was proposed by Lichtenstein et al. (1993) and presented by Bearden et al. (2011) as a reliable and valid marketing scale. The marketing scale described by Bearden et al. (2011) has 40 questions divided into several factors or dimensions:

1. Value consciousness
2. Price consciousness
3. Coupon Proneness
4. Sale proneness
5. Price maven
6. Price-quality scheme
7. Prestige sensitivity

These factors (or dimensions) were previously introduced in Section 3.2. However, the operationalisation of the Price Perception Scale (Lichtenstein et al., 1993) has been undertaken in the literature according to two research streams as discussed in Section 2.10. The next section presents the operationalisation of the perception scale in this study.

4.4.1 Operationalisation of the Price Perception Scale

Some studies using the marketing scale developed by Lichtenstein et al. (1993) using only some of the seven dimensions presented by Bearden et al. (2011). For example, Meng and Nasco (2009) used five factors and 21 questions in their study of American, Chinese, and Japanese consumers. Their rationale was that constructs such as coupons and price mavenism were not translating well with Chinese and Japanese consumers. However, Sternquist et al. (2004) used six out of seven dimensions in their comparison of Korean and Chinese consumers.

However, this research uses the seven dimensions as the ethnic groups are within a single geographical area (i.e. the Metropolitan area of Chicago, in the United States) and therefore it is assumed that all the constructs can translate among ethnic groups. Moreover, this assumption is supported by the work of Lichtenstein et al. (1993) who developed the perception scale with American respondents.

Table 4-14 shows a summary of the studies that have used the perception scale developed by Litchenstein et al. (1993) along with the methods applied in each study.

Table 4-14 Perception Scales and Cross-Cultural Groups¹⁴⁹

Authors	Research Stream	Method ¹⁵⁰	Dimensions	Description
McGowan and Sternquist (1998)	Tests of measurement invariance	CFA	3	Compared American and Japanese consumers on three dimensions (price-quality schema, prestige sensitivity, and value consciousness). The study found different correlations between the three dimensions.
Zhou and Nakamoto (2001)	Mean differences	CFA	6	Compared price perception among the USA and Chinese youth consumers using six dimensions of the perception scale. The study found a weaker price-quality relationship, higher prestige sensitivity, lower price consciousness and lower coupon proneness in the Chinese sample. The study also revealed no differences on value consciousness between the two cultural groups.
Moore et al. (2003)	Tests of measurement invariance	CFA	6	Tested a model with six factors or dimensions (excluding coupon proneness) between American and Polish consumers, and found that there were differences among cultures based on the correlation among factors and variances of factors.
Sternquist et al. (2004)	Mean differences	CFA	6	Compared the means of six price perception constructs between the US and Chinese consumers but tested whether the constructs were associated with a positive role or a negative role. The study found that in the Chinese sample, value consciousness, price consciousness, sale proneness and price mavenism were related to a negative role.
Meng and Nasco (2009)	Tests of measurement invariance	CFA and MANOVA	5	Used a 21-item version of the scale (Lichtenstein et al., 1993) to test measurement equivalence across American, Chinese and Japanese cultures. In addition to testing for measurement equivalence, it tested for mean differences across cultures. It found significant disagreements on price consciousness, prestige sensitivity, and sales proneness. It found no disputes over value consciousness or price-quality schemas.

¹⁴⁹ All these studies used the model developed by Lichtenstein et al. (1993) but without using all seven constructs proposed in the perception model.

¹⁵⁰ A discussion of the methods used in the studies is shown in the following section.

Table 4-15 Perception Scales and Cross-Cultural Groups (cont.)

Zielke and Komor (2015)	Mean differences	CFA and Three-way ANOVA	4	<p>The study used four dimensions (price consciousness, value consciousness, price-quality schema, prestige sensitivity) of the price perception scale (Lichtenstein et al., 1993) along with three additional dimensions (store brand preference, discounter preference, and hypermarket preference). The study focused on price-role orientations among German and Polish respondents across four product categories (groceries, electronics, cosmetics, and clothes). The study found a significant effect of the country on price consciousness, value consciousness, price-quality schema, prestige sensitivity, and store format and store brand preference. However, the nature of the differences depended on the product type (i.e. cosmetics and clothes)</p>
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The majority of researchers that explore mean differences (according to Table 4-15) used CFA to test the scales and to assess for model invariance among population groups. MANOVA analysis was used in the studies in this stream of research to test for differences among population groups.

So far, this section has dealt with the operationalisation of the perception scale developed by Lichtenstein et al. (1993) according to the different research streams found by Meng and Nasco (2009). The next section will deal with the operationalisation of the choice-based conjoint analysis for further studying price perceptions across ethnic groups.

4.4.2 Operationalisation of the Choice-Based Conjoint Analysis

The goal of comparing differences among ethnic groups using the key constructs identified in P2 can be accomplished with the use of multivariate methods such as conjoint methods. In fact, these methods allow the studying of pricing decisions (Iyengar et al., 2008, Johnson and Olberts, 1992, Rao, 2014, Sichtmann et al., 2011). Table 4-16 shows the key constructs per ethnic group as reported in this study.

Table 4-16 Key Constructs per Ethnic Group

Key Construct	Hispanics	African American	Caucasians
1	High Quality	Natural Healthy Juice	Natural Juice Brand
2	Traditional Brand	Inexpensive Juice	Flavourful Bottled Brand
3	Big Sweet Juice	Big Juice	Fresh Juice
4	Natural Flavour	Convenient Packaging	Convenient Packaging
5	Good Taste	Good Packaging	Good Juice Packaging

An interesting characteristic of conjoint methods is their ability to determine the importance of the price variable when assessing consumer preferences (Orme, 2002; Hair et al., 2010; Rao, 2014). In particular, choice-based conjoint methods are preferred over other conjoint methods for studying pricing decisions (Allenby et al., 2005; Orme, 2002, 2010; Rao, 2014), hence, why they were used in this study.

Moreover, a choice-based conjoint approach uses existing profiles in a choice set and allows the respondent to select one profile per comparison (Hair et al., 2010). The design for a choice-based conjoint analysis contains attributes (or factors), alternatives (categories), profiles and choice sets (Hair et al., 2010). Each of these elements is discussed further in the next sections.

4.4.2.1 Attributes

The attributes of this research are drawn from the research study that was previously undertaken in P2, and that correspond to the key characteristics found in that study and presented in Table 4-1. Since these attributes are not the same for every population group¹⁵¹, the attributes chosen from Table 4-2 are:

- Brand
- Sweetness
- Flavour
- Price

Brand, Sweetness, and Flavour are all key constructs found in the research previously undertaken in P2. However, Price was not an essential construct obtained from the study. Rather, the goal of the previous research was to obtain measurements of price perception among cultural groups. A study by Johnson and Olberts (1992) suggested the use of discrete prices (i.e. discrete values as different as continuous values) when conducting pricing studies using choice-based conjoint analysis. Accordingly, the study by Mendoza and Baines (2012) revealed that respondents assigned prices to the orange juices, in discrete values¹⁵², in the range of \$2.00 to \$4.50.

¹⁵¹ The comparison of three population groups using one-way ANOVA requires common dependent and independent variables.

¹⁵² Examples of discrete values for prices are \$2.00, \$2.50, \$3.00, \$3.50, \$4.00, and \$4.50.

4.4.2.2 Categories (Levels)

Another step in the design of the choice-based conjoint analysis is the description of the categories or alternatives (Orme, 2010). The categories or alternatives are also referred as levels (Hair et al. 2010). In a choice-based conjoint design, every attribute has more than one category. For the purpose of this study, the categories were also obtained from the key constructs reported in P2, and they are presented in Table 4-17.

Table 4-17 Categories

Attribute	Number of Categories	Categories
Brand	6	Tropicana
		Minute Maid
		Simply Orange
		Florida's Natural
		Tampico
		Sunny D
Sweetness	3	Sweet
		Unsweet
		Very sweet
Flavour	2	Natural
		Artificial
Price	6	\$2.00
		\$2.50
		\$3.00
		\$3.50
		\$4.00
		\$4.50

As discussed before, a profile in a choice set contains attributes and levels (Hair et al., 2010). An overview of the profiles is presented in the next section.

4.4.2.3 Profiles and Choice Sets

The number of profiles for this choice-based conjoint analysis follows the recommendations of Johnson and Orme (1996) and Orme (2010) in the sense that the number of profiles has to be large enough to ensure reliability and validity but without causing fatigue to the respondent. A study by Johnson and Orme (1996) found some 20 profiles to be ideal. The profiles are used to construct the choice cards required for the choice design. The number of comparisons per choice set is also important as is the number of choice sets. A large number of comparisons per choice set will cause respondent fatigue (Orme, 2010) but a small number of alternatives will need a large number of questions per respondent. According to Johnson and Orme (1996), about three comparisons per choice set is adequate. The attributes and categories are presented in Table 4-18.

Table 4-18 Design for Choice-Based Conjoint

Attributes	4	
		Brand
		Sweetness
		Flavour
		Price
Number of profiles	20	
Maximum number of comparisons	20	
Number of profiles per comparison	3	

The following section presents the output of a choice-based conjoint analysis in terms of importance and utilities.

4.4.2.4 Importance and Utilities

The analysis of a choice-based conjoint analysis is performed using a multinomial logit model. A multinomial logit model is a type of generalised linear model used to study multinomial distributions (Liao, 1994). Accordingly, a multinomial distribution is generated by the outcome of more than two choices, such as a three-candidate presidential election (Liao, 1994). In a choice-based conjoint analysis, a multinomial logit model is used to analyse choices (i.e. the

choices of a choice-based conjoint analysis) in terms of importance per attributes and utilities or estimates per categories (Allenby et al., 2005, Rao, 2014). In a choice-based conjoint analysis, the importance per attribute is related to the respondents' preferences. For example, Table 4-19 shows an example of the importance assigned to each attribute in a conjoint analysis¹⁵³. The sum of importances will add up to 100%.

Table 4-19 Importances per Attribute

Brand	36.576
Sweetness	12.383
Flavour	15.218
Price	35.823

Moreover, another output of the choice-based conjoint analysis is the utilities (or estimates). The utilities represent the respondents' preferences at the category level. An example of the utilities for the brand category is shown in Table 4-20. A utility function will contain a combination of importances per attributes and utilities per category (Rao, 2014).

Table 4-20 Utilities per Brand

Category	Utilities	Standard deviation
Brand-Florida's Natural	-0.034	0.073
Brand-Minute Maid	0.342	0.069
Brand-Simply Orange	0.593	0.060
Brand-Sunny D	-0.657	0.069
Brand-Tampico	-0.671	0.072
Brand-Tropicana	0.427	0.058

¹⁵³ The results are actual output from Hispanics respondents but used in this section for purposes of the explanation. A full discussion on the results of the choice-based conjoint analysis per ethnic group is presented in the Findings section.

The next section presents a discussion on how cross-cultural comparisons are made using a choice-based conjoint analysis.

4.4.3 Cross-Cultural Comparisons using CBC

The literature that examines choice-based conjoint analysis do not explore in detail the methodology for multi-group comparison. For example, Hair et al. (2010), Orme (2010) and Rao (2014) do not cover multi-group comparisons. However, a review of papers on cross-cultural studies using conjoint analysis (Knight, 1999, Tsalikis et al., 2002, Jones et al., 2008, Meghani et al., 2013, Szűcs et al., 2014) revealed the use of parametric tests such as ANOVA (Szűcs et al. 2014) and non-parametric tests such as Kruskal-Wallis (Meghani et al., 2013).

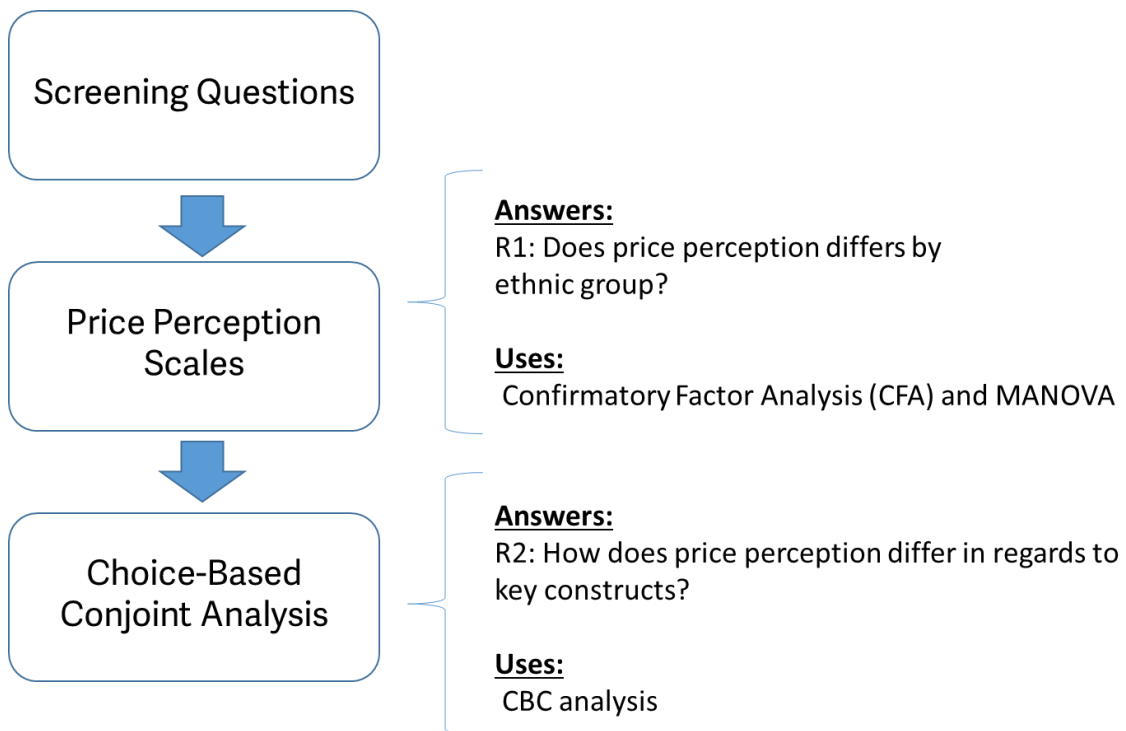
Nevertheless, the use of parametric tests such as ANOVA requires meeting assumptions about the population, such as whether or not the data are normal (Hair et al., 2010). Yet, cross-cultural comparisons on a choice-based conjoint analysis involve a very limited sample size. Therefore, for the purpose of this research, a non-parametric test such as Kruskal-Wallis is preferred over a parametric test such as ANOVA. Moreover, Hair et al. (2010) recommend using Kruskal-Wallis over ANOVA when the assumptions about the population are not met.

The next section presents the resulting study design as per the discussion of the operationalisation of the perception scale and the choice-based conjoint analysis.

4.4.4 Study Design

As discussed at the start of Section 4, this study uses two methods to examine the price perception across ethnic groups. These methods are the Price Perception Scale (Lichtenstein et al., 1993) and a choice-based conjoint analysis. The research design chosen in this study was set as shown in Figure 4-6. Consequently, the design used for this study started with screening questions including self-reported ethnicity (African American, Caucasians, and Hispanics), followed by the perception scale and a choice-based conjoint analysis. However, when collecting data for these methods, it is necessary to ensure that the chosen sample suits both approaches. In the following section, there is a discussion about the sampling method used in the research.

Figure 4-6 Study Design



4.4.5 Sampling

The previous sections dealt with the operationalisation of the perception scale and the choice-based conjoint analysis. However, the sampling method discussed in this section needs to fit both research methods. In this study, we adopted a convenience sampling approach since participants were recruited from an online panel provided by Qualtrics[®] Panel Management (Qualtrics, 2016) according to the sample criteria provided, which included an aspirational quota of 200 women per ethnic sub-group. The survey was restricted to women because they are more frequently the chief shopper in the household (Maxwell et al., 2009). Participants were asked to answer a survey with the Price Perception Scales followed by an online choice-based conjoint analysis. The questionnaire was piloted with an initial sample of five participants per population group, and this test resulted in changes in the wording of the questionnaire and the use of attention filters that prevented respondents from answering questions without paying attention to them. The research instrument was developed using the Qualtrics[®] (Qualtrics, 2016) survey platform.

The sampling criteria used for each cultural group was as follows:

- Household moms (with at least one child)
- 25 to 45 years old
- Living in the Chicago metropolitan area¹⁵⁴
- Self-identified as African American, Hispanic or Caucasian¹⁵⁵.
- The buyer of refrigerated orange juices¹⁵⁶.

Participants were compensated by Qualtrics[®] Panel (Qualtrics 2016). The cost per interview was \$30 per participant, and this amount included the recruitment and compensation.

The compensation criteria were as follows:

¹⁵⁴ P2 also considered respondents living in the Chicago metropolitan area.

¹⁵⁵ Participants' ethnicity is self-reported using standard questions in accordance to the Chapter VII of the Civil Rights Act of 1964.

¹⁵⁶ This is to maintain consistency with P2 where the stimuli included refrigerated orange juices.

1. Only completed responses were compensated and counted towards the sample size
2. Participants could complete their answers in more than one session as long as the survey was still available¹⁵⁷
3. Participants did not receive a cash compensation but rather an incentive such as an online gift card, offered and administered by Qualtrics® Panel (Qualtrics 2016).

Also, to keep the required ethical standards, there was no personal information from participants used in this study. Moreover, participants could withdraw from the survey at any time (although in that case, the response was not considered completed for purposes of compensation). Next, we examine how we determined sample size in more detail.

4.4.5.1 Sample size

The sample size for this study needed to fit both a confirmatory factor analysis (CFA) used for the discussion of the perception scale and a choice-based conjoint analysis. The suggested sample sizes for both types of methods are covered well in the literature (Byrne 2001; Hair et al. 2010; Orme 2010; Ho 2014; Kline 2016). For example, Hair et al. (2010, p. 662) suggests minimum samples sizes between 100 and 500, per population group, and based on model complexities and model characteristics (see Table 4-21).

Table 4-21 Recommended Sample Sizes for SEM Studies

Minimum Sample Size	Criteria
100	“Models containing five or fewer constructs, each with more than three items (observed variables), and with high item communalities (0.6 or greater)”
150	“Models with seven or fewer constructs, more commonalities (0.5), and no under identified constructs.”
300	“Models with seven or fewer constructs, lower commonalities (below 0.45), and/or multiple under identified (fewer than three items) constructs.”
500	“Models with a large number of constructs, some with lower commonalities, and/or having fewer than three measured items.”

¹⁵⁷ The survey was available online until the quota (sample size) was reached. Once the quota was reached, the survey was closed and no more responses were allowed.

Therefore, as presented in the discussion on the operationalisation of the perception scale, this research considered seven constructs (dimensions) of the price perception scale (Lichtenstein et al., 1993), and according to the samples sizes recommended by Hair et al. (2010), and shown in Table 4-19, the minimum sample size is 150 respondents per population (ethnic) group. This criterion for a minimum sample size seems supported by a review of the literature that shows studies using the perception scale among cultural groups with sample sizes generally greater than 150 respondents per group. Table 4-22 shows the studies and the sample sizes per population group.

Table 4-22 Sample sizes in cross-cultural pricing studies

Study	Sample Population A	Sample Population B	Sample Population C	Total Sample
McGowan and Sternquist (1998)	135	132	N/A	267
Zhou and Nakamoto (2001)	106	120	N/A	226
Moore et al. (2003)	342	335	N/A	677
Jin and Sternquist (2004)	243	163	N/A	406
Meng and Nasco (2009)	172	236	158	566
Zielke and Komor (2015)	157	166	N/A	323

Furthermore, in addition to the sample criteria for analysing the perception scale, there is a need to ensure that the sample size also meets the criteria for a choice-based conjoint analysis. For example, Orme (2010) who suggests using samples sizes as large as practically possible but also offers a rule-of-thumb for studies comparing groups of respondents. Accordingly, Orme (2010, p. 65) suggests that in determining sample size, a minimum number of interviewees per population group is necessary when comparing groups of respondents:

“If the purpose of your research is to compare groups of respondents and detect significant differences, you should use a large enough sample size to accommodate a minimum of about 200 per team.”

This “rule-of-thumb” sample size for the choice-based conjoint analysis is also supported by Hair et al. (2010). Furthermore, according to Orme (2010), choice-

based conjoint analysis requires larger sample sizes than traditional conjoint analysis with a rule-of-thumb minimum of 300 respondents when “there is no intent to compare subgroups” (Orme, 2010, p. 65).

Therefore, when considering the suggested samples for measuring the perception scale (see Table 4-20) and the suggested samples for a choice-based conjoint analysis, then the minimum sample size for this study has a goal of:

- Caucasian respondents: 150-200
- Hispanic respondents: 150-200
- African American respondents: 150-200

In sum, the total goal was to obtain a minimum of 450-600 completed responses from the three different ethnic groups (150-200 completed responses per ethnic group). The following section discusses the data collection method used in this study.

4.5 Data Collection

Although data collection for the perception, the scale could be accomplished using a paper questionnaire, the tasks involved in a choice-based conjoint analysis work best with a computer based approach (Orme 2010). There are several mentions of suitable software candidates in the literature such as Sawtooth Software®, R®, SPSS® and Qualtrics® (Meißner and Decker, 2010, Orme, 2010, Damaraju et al., 2011, Jervis et al., 2012). The author has experience working with conjoint designs in the area of pricing using Qualtrics®¹⁵⁸ as it allows the integration of online panel data with the features required for a choice-based conjoint analysis.

The choice-based conjoint analysis in a Qualtrics® platform takes the form of a survey where each question contains a choice task. Participants select one option out of the choices presented for every choice task. There are different methods of performing the choice tasks including full profile (i.e. showing all the

¹⁵⁸ Qualtrics® is an online survey platform available at <http://www.qualtrics.com>

possible options) and balanced design (Hair et al., 2010). This research uses the method proposed by Orme (2010) by using a fractional factorial design; that is an optimal and balanced design.

A fractional factorial design selects a fraction of the profiles estimated in a full-factorial design (Rao, 2014). A full factorial design contains all the possible combinations of the attribute levels, but this is deemed impractical when the total number of combinations is large (Hair et al., 2010; Rao, 2014).

4.5.1 Sample Test

The use of online research methods requires a careful monitoring of the length of the study per participant (Klein et al., 2010). In this regards, the study aimed to last no more than 25 minutes per participant. This research used a small test sample of five participants per cultural group. These responses were not included in the final analysis but instead were used to ensure the reliability and validity of the study (Wagner et al., 2014). As a result of this test, there were changes in the questionnaire in regards to form (i.e. wording of the conjoint questions and screening questions) while keeping the integrity of the issues related to the price perception scale and the conjoint analysis. Moreover, the nature of the study required the use of a computer system (Orme, 2010). This is explained in the next section.

4.6 Data Analysis

The use of the Price Perception Scales to measure differences in price perception among cultures along with a Choice-Based Conjoint analysis that measures price and constructs differences requires a thorough data analysis. A number of authors (McGowan and Sternquist, 1998; Moore et al., 2003; Jin and Sternquist, 2003; Sternquist et al., 2004; Meng and Nasco, 2009; Zielke and Komor, 2015) tested the hypotheses related to Price Perception Scales via confirmatory factor analysis (CFA), and we undertake the same approach here. The differences among cultural groups using the Price Perception Scales are estimated using mean differences as suggested by Meng and Nasco (Meng and Nasco, 2009).

The Choice-Based Conjoint Analysis is undertaken using the software XLSTAT¹⁵⁹ (Addinsoft 2015) using the procedure proposed by Orme (2010) and Rao (2014). Accordingly, each conjoint question contains a value from one to three as explained in the next section.

4.6.1 Design for Choice-Based Conjoint Analysis

According to Orme (2010), design for a choice-based conjoint analysis can be fixed or randomised. A solid model offers a single version of a questionnaire to all the respondents whereas a randomised design offers a different interview to each respondent. Randomised designs require the use of a computer platform and can be very efficient (Orme, 2010). The optimal number of questions to include in a choice-based conjoint analysis was determined by Johnson and Orme (1996) to be around 20 questions. According to Johnson and Orme (1996, p. 7):

“The gain from respondents learning how to answer choice tasks seems to outweigh loss from fatigue and boredom, even for studies with up to 20 tasks.”

So, this study will ask 20 questions of each participant. The questions are obtained from a CBC design. According to Orme (2010), the calculation of CBC designs is undertaken using computer software such as Sawtooth Software, but authors such as Rao (2014) suggest IBM[®] SPSS. However, there are other statistical tools available such as R and XLSTAT[®] (Addinsoft 2015). The author used XLSTAT[®] as it provides an intuitive and familiar interface with Microsoft Excel while providing the statistical rigour required for CBC studies (Addinsoft 2015).

The design for a choice-based conjoint analysis (CBC) contains attributes (or factors), alternatives (categories), profiles and choice sets. These attributes and alternatives were discussed in Section 4.2. The profiles that use these attributes and alternatives are discussed further in the next section.

¹⁵⁹ XLSTAT[®] is a statistical software that is used as an add-on for Microsoft Excel. It is available at <http://www.xlstat.com>.

4.6.1.1 Profiles

According to Hair et al. (2010), a choice-based conjoint analysis presents to the respondent one choice-set at a time. Each choice set contains more than one profile, and according to Section 4.3.2, this study shows each respondent three profiles per choice set (see Figure 4-7).

The literature on conjoint analysis shows a number of methods to estimate the profiles for evaluation by interviewees (Orme, 2002, Orme, 2010, Hair et al., 2010, Rao, 2014). For example, a full profile design uses all the combinations of the attributes and categories (Rao, 2014). Figure 4-8 shows the attributes (4 attributes) and the categories per attributes.

Figure 4-7 Attributes and Categories

		Attributes			
		1. Brand	2. Sweetness	3. Flavour	4. Price
Categories	1.	Tropicana	1. Sweet	1. Natural	1. \$2.00
	2.	Minute Maid	2. Unsweet	2. Artificial	2. \$2.50
	3.	Simply Orange	3. Very Sweet		3. \$3.00
	4.	Florida's Natural			4. \$3.50
	5.	Tampico			5. \$4.00
	6.	Sunny D			6. \$4.50
		6 categories	3 categories	2 categories	6 categories

According to Figure 4-7, a full factorial design will contain $6 \times 3 \times 2 \times 6$ or 216 combinations. The test of this number of combinations (it will equate to ask 216 questions per respondent) is not practical as pointed out in the literature (Hair et al. 2010; Rao 2014). An alternative is to use a fractional factorial design. This design involves selecting a fraction of the profiles constructed in a full factorial design (Rao, 2014). The literature shows several methods to construct a fractional factorial design (Louviere and Woodworth, 1983, Johnson and Olberts, 1992, Rao, 2014, Sichtmann et al., 2011). For example, there is a half-factorial design that uses only half of the profiles constructed in a full factorial

design and quarter-factorial design, that only uses a quarter of all the profiles (Rao, 2014). However, there are more elaborated methods, and they require the use of statistical software (Hair et al., 2010). For example, Rao (2014) explains the use of orthogonal arrays, incomplete block designs, and random sampling. An orthogonal array is a particular type of fractional factorial design that has the properties of parsimony and enables all the main effects of attributes in a conjoint study (Rao, 2014). An incomplete block design uses a set of orthogonal profiles and then divides them up into subsets (Rao, 2014). Finally, random sampling involves drawing a random sample of the profiles in a full factorial design (Rao, 2014). The fractional factorial design used in this study is presented in Table 4-23.

Table 4-23 Attributes and Categories

Observation	Brand	Sweetness	Flavor	Price
Profile1	Sunny D	Unsweet	Natural	3
Profile2	Tampico	Unsweet	Artificial	2.5
Profile3	Simply Orange	Unsweet	Artificial	3.5
Profile4	Tropicana	Sweet	Natural	4.5
Profile5	Tampico	Sweet	Artificial	4
Profile6	Minute Maid	Very Sweet	Natural	4
Profile7	Sunny D	Sweet	Artificial	4
Profile8	Tampico	Very Sweet	Natural	3
Profile9	Minute Maid	Sweet	Artificial	2
Profile10	Floridas Natural	Sweet	Natural	3.5
Profile11	Simply Orange	Sweet	Natural	2.5
Profile12	Minute Maid	Unsweet	Artificial	4.5
Profile13	Tropicana	Sweet	Artificial	3
Profile14	Simply Orange	Very Sweet	Artificial	2
Profile15	Floridas Natural	Very Sweet	Artificial	4.5
Profile16	Tropicana	Very Sweet	Artificial	2.5
Profile17	Sunny D	Very Sweet	Artificial	3.5
Profile18	Floridas Natural	Unsweet	Artificial	3
Profile19	Tropicana	Unsweet	Natural	2
Profile20	Floridas Natural	Unsweet	Natural	4

The profiles outlined in Table 4.23 were selected using the ‘optimize’ function in XLSTAT® (Addinsoft 2015) rather than by using a pre-designed factorial design

such as full-profile, half-factorial or quarter-factorial design. An optimized profile (or an optimum profile) such as the one shown in Table 4-21 ensures that all the categories are used in the profiles, and this is a better representation of the choice-based conjoint design.

Moreover, the comparisons in a choice-based conjoint analysis use more than one profile (Hair et al., 2010), and this study used three profiles per comparison. The calculation of the comparisons was also completed using the statistical software XLSTAT® (Addinsoft 2015). The comparisons used the choice-based conjoint analysis are shown in Table 4-24.

Table 4-24 CBC Comparisons

Comparisons	Choice 1	Choice 2	Choice 3
Comparison 1	20	1	19
Comparison 2	2	3	4
Comparison 3	7	6	5
Comparison 4	8	9	10
Comparison 5	13	12	11
Comparison 6	14	15	16
Comparison 7	1	20	2
Comparison 8	5	4	3
Comparison 9	6	7	8
Comparison 10	11	10	9
Comparison 11	12	13	14
Comparison 12	17	16	15
Comparison 13	3	2	1
Comparison 14	4	5	6
Comparison 15	9	8	7
Comparison 16	10	11	12
Comparison 17	15	14	13
Comparison 18	16	17	18
Comparison 19	19	18	17
Comparison 20	18	19	20

Every comparison in Table 4-24 contains a choice set using the profiles presented in Table 4-23. For example, the first comparison indicates that the participant will choose between the profiles 20, 1 and 19. An example of the set presented to the participant for the first comparison is shown in Table 4-25. Respondents have the option of selecting one of the above choices. The response for a comparison will then be a number between 1 and 3.

Table 4-25 Example of a comparison

Attribute Type	Choice 1	Choice 2	Choice 3
Brand	Florida's Natural	Sunny D	Tropicana
Sweetness	Unsweet	Unsweet	Unsweet
Flavour	Natural	Natural	Natural
Price	\$4.00	\$3.00	\$2.00

4.7 Findings

4.7.1 Responses

A total of 608 interviews were collected using an online survey and choice-based conjoint analysis developed using the Qualtrics® questionnaire platform (Qualtrics 2016). The response rate was 15% based on 4,000 surveys sent electronically. However, some responses were eliminated list wise from the statistical analysis due to partially missing data leaving 591 completed interviews. After a secondary analysis, further interviews were also eliminated due to self-reporting a different ethnicity than that required for the survey or reporting no ethnicity at all. The number of completed responses from African Americans, Caucasians and Hispanics was 540. Some respondents also self-reported a different gender (i.e. male or not disclosed) or lived in a different metropolitan area, so these responses were also eliminated, leaving 523 final completed responses. Table 4-26 shows a cross-tabulation with the completed responses by ethnicity.

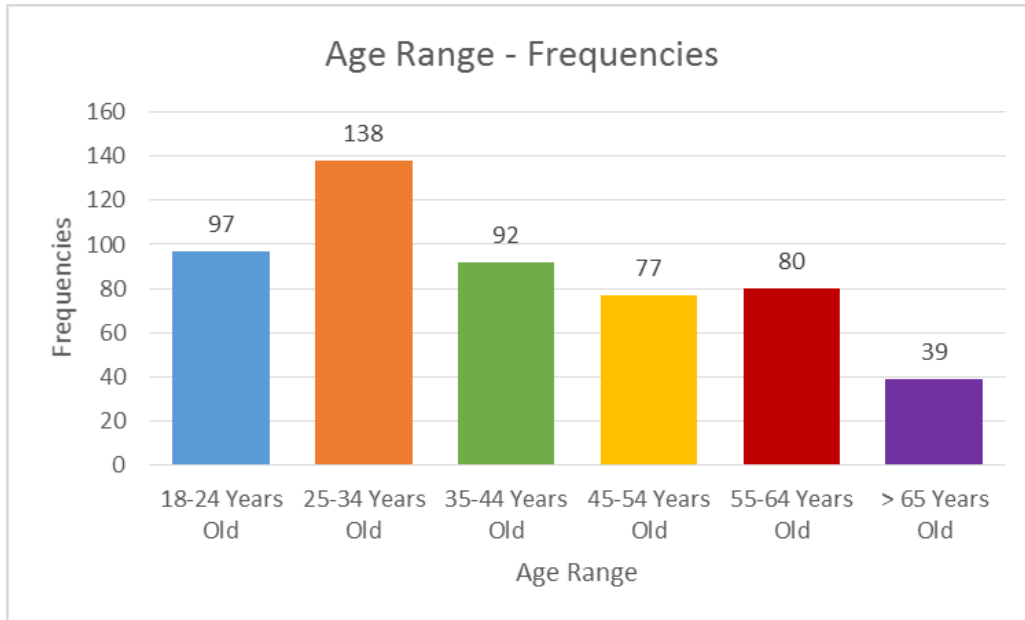
Table 4-26 Completed Responses by Ethnicity

		Ethnicity			
		Black or African American	White or Caucasian	Hispanic or Latino	Total
What is your age range?	< 18 years old	0	0	0	0
	18-24	29	20	48	97
	25-34	34	49	55	138
	35-44	37	24	31	92
	45-54	34	24	19	77
	55-64	31	36	13	80
	> 65 years old	19	16	4	39
	Total		184	169	170

The online survey and choice-based conjoint analysis ran for two weeks, and Qualtrics (Qualtrics 2016) recruited the panel according to the screening criteria explained in Section 4-3. Figure 4-8 shows the frequencies for different age

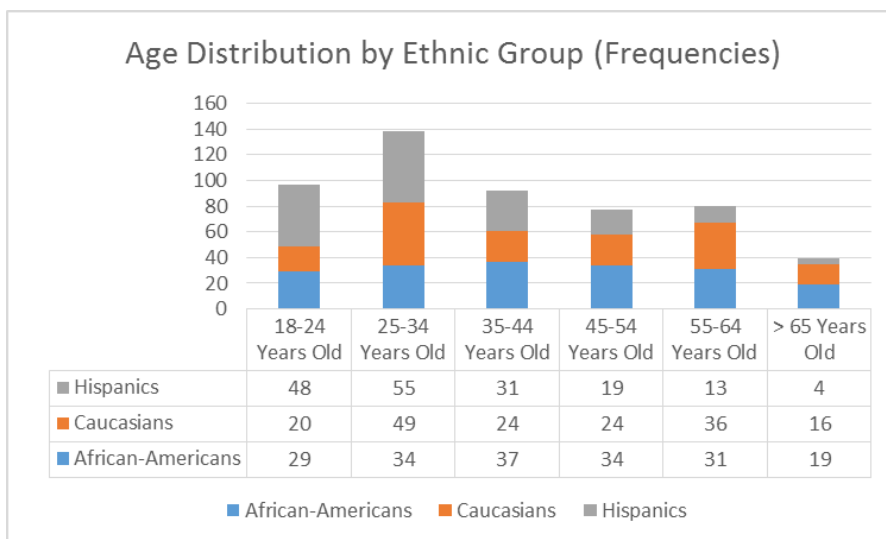
ranges in the entire sample. As evidenced in Figure 4-8, the majority of participants were relatively young (i.e. younger than 44 years old) with the largest group in the 25-34 years old range.

Figure 4-8 Age Distribution



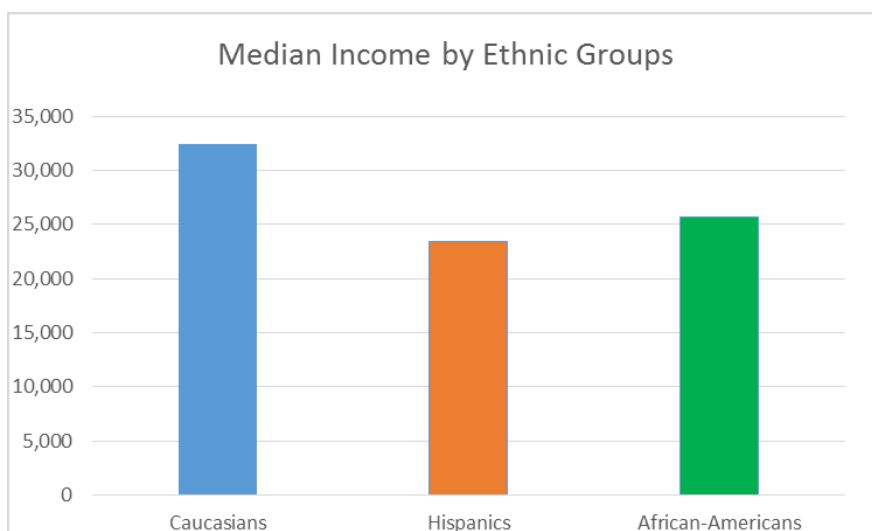
Furthermore, in Figure 4-9, the age distribution by ethnicity shows that the majority of Hispanic respondents is under 35 years as compared with African-American respondents and Caucasians whether the majority of respondents were in the 25-34 and the 35-44 age ranges. However, the age range 25-34 years old has the most respondents by ethnicity.

Figure 4-9 Age Distribution by Ethnic Group



Moreover, the median income reported by the respondents is shown in Figure 4-10. This reflects the income distribution reported by the US Census (Humes et al., 2011) and the fact that there are income differences by ethnic groups in the USA (Graddy, 1997) and this influence the directions in the study of ethnic differences (Jafari and Visconti, 2015).

Figure 4-10 Median Income by Ethnic Groups



4.7.2 Analysis of the Perception Scale

4.7.2.1 Reliability

Reliability was assessed on an ethnic and category basis. The ethnic groups were examined individually using IBM SPSS Statistics 22 (IBM 2016) using the scale reliability procedure.

The original model that used all the 40 questions from the price perception scale shows a good reliability, using the criterion specified by Nunnally and Bernstein (1994) of a Chronbach's $\alpha > 0.70$, with the exception of the Price Consciousness constructs (highlighted in bold). In other words, the construct Price Consciousness needed to be purified to obtain a more reliable scale. The original scales are shown in Table 4-27.

Table 4-27 Original Scales

	African Americans	Caucasians	Hispanics
Value Consciousness	0.781	0.821	0.835
<i>Price Consciousness</i>	0.519	0.622	0.676
Coupon Proneness	0.919	0.912	0.905
Sale Proneness	0.828	0.843	0.841
Price Maven	0.940	0.958	0.943
Price-Quality Schema	0.758	0.880	0.807
Prestige Sensitivity	0.934	0.963	0.935

Some questions were removed from the Price Consciousness scale to improve reliability. After several iterations, removing one question from the Price Consciousness at a time, it was found that by eliminating question 9:

P9: I will grocery shop at more than one store to take advantage of low prices.

It was possible to improve the reliability of the model. By removing other questions from the Price Consciousness construct, it was not feasible to improve the reliability of the scale. The reduced scale that contained the questions developed by Lichtenstein et al. (1993), but without question 9 is shown in Table 4-28.

Table 4-28 Reliability Scores after Purification

	African Americans	Caucasians	Hispanics
Value Consciousness	0.781	0.821	0.835
Price Consciousness	0.759	0.825	0.851
Coupon Proneness	0.919	0.912	0.905
Sale Proneness	0.828	0.843	0.841
Price Maven	0.940	0.958	0.943
Price-Quality Schema	0.758	0.880	0.807
Prestige Sensitivity	0.934	0.963	0.935

4.7.2.2 Model Validity

The previous section dealt with the reliability of the model. However, as pointed out by Blunch (2013, p.45), “it is of course not sufficient for a measurement instrument to be reliable, it must also be valid.” In other words, it must measure what is intended (Blunch, 2013). According to Hair et al. (2010, p. 637), “reliability is a necessary but not sufficient condition for validity.”

According to Hair et al. (2010), a condition for validity requires:

- Acceptable levels of goodness-of-fit for the measurement model
- Evidence of construct validity

As presented by Hair et al. (2010, p. 664), Goodness-of-fit, “indicates how well the specified model reproduces the observed covariance matrix among the indicator items.” Furthermore, construct validity is related in the way that constructs are correlated. However, Kline (2016) suggests that there is not a single, definite test of construct validity. Rather, Kline (2016) suggest the use of discriminant validity that occurs when there is evidence of strong intercorrelation among a set of variables. Actually, the scale proposed by Lichtenstein et al.

(1993) uses discriminant validity, in accordance to Kline (2016). Moreover, Hair et al. (2010), also suggest using convergence validity as well. In converging validity, the items that “are indicators of a specific construct should converge or share a high proportion of variance in common” (Hair et al., 2010, p. 709).

However, there are different measures of goodness-of-fit. For example, according to Cheung and Rensvold (2002), there are six categories of goodness-of-fit indices. These categories are summarised in Table 4-29.

Table 4-29 Categories of Goodness-of-Fit Indices (GFI)

Category	Indices
GFI based on minimum sample discrepancy	χ^2 (chi-square), and normed chi-square (χ^2/df ; Wheaton et al., 1977)
GFI based on population discrepancy	NCP (Steiger et al., 1985), RMSEA (Steiger, 1989)
Information-theoretic GFIs	Akaike’s Information Criterion (Akaike, 1987), Browne and Cudeck’s Criterion (1989), Expected Cross-Validation Index (Browne and Cudeck, 1993)
Incremental GFIs	Normed Fit Index (Bentler and Bonett, 1980), Relative Fit Index (Bollen, 1986), Incremental Fit Index (Bollen, 1989), TLI (Tucker and Lewis, 1973), CFI (Bentler, 1990), Relative Noncentrality Index (McDonald and Marsh, 1990)
Parsimony Adjusted GFIs	Parsimony-adjusted NFI (James et al., 1982), parsimonious CFI (Arbuckle and Wothke, 1999)
Absolute GFIs	Gamma hat (Steiger, 1989), cross-validation index (Browne and Cudeck, 1983), McDonald’s (1989), Non-Centrality Index (Hoelter, 1983)

In this regards, no single fit statistic can be employed alone for model fit, but rather a recommended set of statistics is used.

According to the recommendation presented by Kline (2006) and used in similar cross-cultural research (Zhou and Nakamoto, 2001; Moore et al., 2003; Sternquist et al., 2004; Meng and Nasco, 2009), the fit statistics that should be considered include:

1. Model chi-square (χ^2) that tests the exact-fit hypothesis that there is no difference between the covariance predicted by the model, given the parameter estimates, and the population covariance matrix (Kline 2016, p.265). The model chi-square should be reported with its degrees of freedom and p-value (Kline, 2016, p. 269). A disadvantage of the Chi-square test alone is that it is affected by the sample size (i.e. with small sample sizes, it is more likely that the model is accepted) (Kline, 2016).
2. Ratio chi-square to degrees of freedom (χ^2/df) with a goal of $\chi^2/df < 2$
3. Steiger-Lind Root Mean Square Error of Approximation (RMSEA or ϵ) with an $\epsilon < 0.8$ (Steiger, 1990).
4. Bentler Comparative Fit Index (CFI) with a goal of CFI > 0.9 (Bentler, 1990, Hu and Bentler, 1999). Accordingly, CFI “is an incremental fit that is also a goodness-of-fit statistic” (Kline 2016, p.276).
5. Incremental Fit Index (IFI) with a goal of IFI > 0.9 (Hu and Bentler, 1999)
6. Standardised Root Mean Square Residual (SRMR), with a goal of SRMR < 0.8 (Hu and Bentler, 1999)

The fit statistics was estimated using IBM SPSS AMOS 22 and shown in Table 4-30. Originally, the model fit was not optimum, but it was later purified. The details in the model optimisation are described in section 4-7-3 that covers the process for the model fit.

Table 4-30 Model Fit - Validity

	χ^2	df	χ^2/df	<i>p</i>	ϵ	CFI	IFI	SRMR
Hispanics	754.81	413	1.82	0.00	0.07	0.91	0.91	0.06
African-Americans	783.99	413	1.89	0.00	0.07	0.91	0.91	0.06
Caucasians	792.95	413	1.92	0.00	0.07	0.92	0.92	0.06

In Table 4-30, it is possible to observe that the model had a good fit, in accordance with the guidelines proposed by Kline (2016) and explained before in this section.

To test for construct validity, we use the method presented by Gaskin (2012) and shown in Table 4-31. The test measured the factor loadings for all the seven constructs of the price perception scale (Lichtenstein et al., 1993), the Average Variance Extracted (AVE) and the Maximum Shared Variance (MSV).

The Average Variance Extracted (AVE) represents the mean variance extracted for the items loading on a construct (Hair et al., 2010). Additionally, the Maximum Shared Variance (MSV) is a measure of the extent that a variable can be explained by another variable (Gaskin, 2012). Moreover, Table 4-31 also shows another measure of reliability; that is composite reliability (CR). Reliability was already discussed in the previous section, but however, the output of the validity test developed by Gaskin (2012) included this measure of reliability. Also, according to Hair et al. (2010), the composite reliability should be above 0.7., and this is supported in Table 4-31.

The criteria to determine validity is explained by Hair et al. (2010):

- Convergent validity: $AVE > 0.5$
- Discriminant validity: $AVE > MSV$

Moreover, the discriminant validity test proposed by Hair et al. (2010) is consistent with the method proposed by Fornell and Larcker (1981) in the sense that the Average Variance Extracted (AVE) has to be greater than the Maximum Shared Variance (MSV)¹⁶⁰. So, according to Table 4-31, and based on the criteria set by Hair et al. (2010) and Fornell and Larcker (1981), there are no validity issues in the constructs. The next section will deal with the assumption of normality.

¹⁶⁰ Fornell and Larcker (1981:46) states that to fully satisfy the requirements for discriminant validity, it is necessary that $\rho_{vc}(\varepsilon) > \gamma^2$ and $\rho_{vc}(\eta) > \gamma$.

Table 4-31 Test for Validity

	CR	AVE	MSV	MaxR(H)	Prestige	Value	Price	Coupon	Sale	Maven	Quality
Prestige	0.945	0.744	0.266	0.966	0.862						
Value	0.856	0.544	0.145	0.972	0.043	0.738					
Price	0.878	0.707	0.095	0.978	0.309	-0.172	0.841				
Coupon	0.907	0.662	0.120	0.982	0.057	0.287	-0.067	0.814			
Sale	0.906	0.763	0.145	0.985	0.112	0.381	0.070	0.311	0.873		
Maven	0.943	0.736	0.128	0.988	0.326	0.292	-0.045	0.347	0.338	0.858	
Quality	0.816	0.598	0.266	0.989	0.516	0.124	0.270	0.139	0.188	0.358	0.773

4.7.2.3 Normality

There is an assumption of multivariate normality (multinormality) in structural equation modelling (McGowan & Sternquist 1998; Kline 2016). According to Kline (2016, p. 74), multivariate normality “means that:

1. All the individual univariate distributions are normal;
2. All joint distributions of any pair of variables are bivariate normal, that is, each variable is normally distributed for each value of every other variable; and
3. All bivariate scatterplots are linear with homoscedastic residuals”.

To check for multinormality, we use the method proposed by Hair et al. (2010) and Pallard (2013) of using the Mahalanobis distance (D^2). This method checks for multivariate outliers in the data. Multivariate outliers are regarded to have extreme scores (i.e. very high or very low scores when compared with the central mean of the variables) and the criteria for determining extreme scores uses the degrees of freedom of the analysis (Pallard, 2013). Accordingly, the Mahalanobis distance (D^2) “has the statistical properties of significance testing” Hair et al. (2010, p. 66). Moreover, both AMOS and SPSS incorporate the analysis of normality using D^2 . The criteria set by Hair et al. (2010, p. 66) for detecting outliers using D^2 in a large sample, using the Mahalanobis distance, is:

$$\frac{D^2}{df} > 3$$

Table 4-32 shows that maximum Mahalanobis distance (D^2) found in the sample was 128.92 with 40 degrees of freedom ($df = \text{number of dependent variables}$) that results in:

$$\frac{D^2}{df} = 3.22$$

Table 4-32 Mahalanobis Distances before removing outlier

Residuals Statistics ^a							
	Min.	Max.	Mean	Std. Deviation	df	N	D ² /df
Mahal. Distance	6.99	128.92	39.92	19.94	40	523	3.22

a. Dependent Variable: Ethnicity

This indicates the presence of some outliers ($D^2 > 120$). When reviewing the results by respondents using AMOS, respondent 499 had a $D^2 = 124.12$ and therefore the response was removed from the analysis. Table 4-33 shows the Mahalanobis distances after removing the outlier. The resulting sample met the criteria set by Hair et al. (2010):

$$\frac{D^2}{df} = 2.88 < 3$$

Table 4-33 Mahalanobis Distances after removing outlier

Residuals Statistics ^a							
	Min.	Max.	Mean	Std. Deviation	df	N	D ² /df
Mahal. Distance	7.03	115.26	39.92	19.68	40	522	2.88

a. Dependent Variable: Ethnicity

According to the previous analysis, it was then possible to assume multivariate normality in the sample.

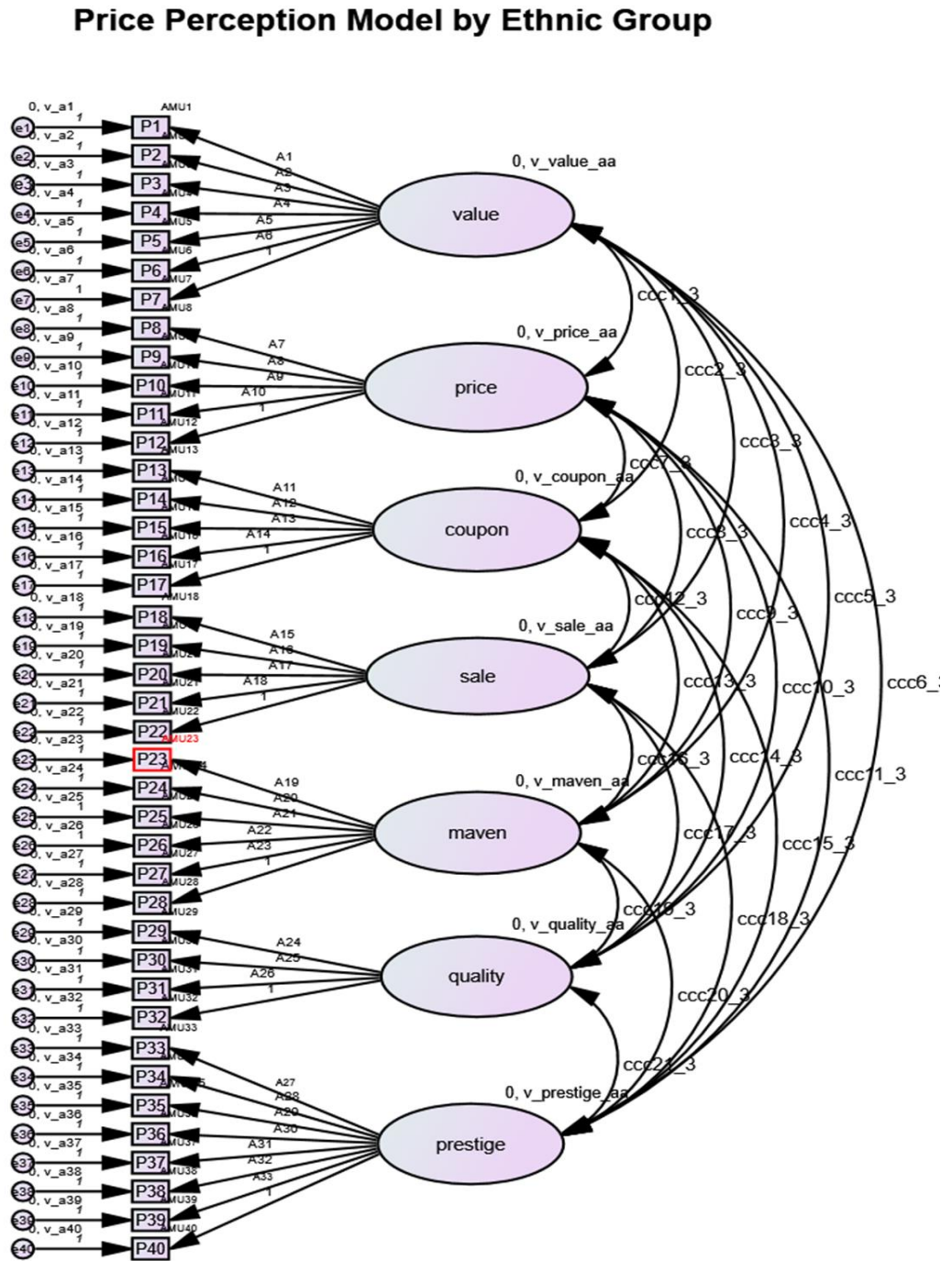
4.7.2.4 Model Identification

The previous section dealt with the assumption of multivariate normality as required in CFA. This section deals with model identification (i.e. whether there is sufficient information available to estimate values for each unknown parameter in the model). Several previous SEM studies in this area (McGowan and Sternquist, 1998, Moore et al., 2003, Jin and Sternquist, 2003, Sternquist et al., 2004, Meng and Nasco, 2009, Zielke and Komor, 2015) that used the perception scale (Lichtenstein et al., 1993) did not elaborate on model identification. This construct requires that the number of free parameters is estimated to be equal to or less than the number of unique covariances and variance terms (Hair et al., 2010).

As discussed by Schumacker and Lomax (2010, p.56), “In structural equation modelling, it is crucial that the researcher resolves the identification problem prior to the estimation of the parameters.” This view is also supported by other researchers (Hair et al., 2010; Iacobucci, 2010; Kline, 2016) in the sense that CFA models must meet the requirements for identification as per any other structural equation model.

Conversely, the rank condition requires that each parameter must be estimated by a unique relationship (Hair et al., 2010). A rule for identifying the rank condition is proposed by Bollen and Davis (2009). Accordingly, the authors proposed a rule in which “each latent variable must emit at least two paths to latent or observed variables and is applied latent variable by latent variable” (Bollen and Davis, 2009, p.524). Figure 4-11 shows the measurement model. In this model, latent variables (factors) are represented by ellipses, exogenous variables (questions in the perception scale) are represented by rectangles, and paths are represented by arrows between latent variables (ellipses) and exogenous variables. In Figure 4-11, it is possible to observe more than two paths to observed variables and thus to satisfy the rule for identification.

Figure 4-11 Measurement Model



In Figure 4-11, each question of the Price Perception Scale is denoted with the letter P. For example, P1 represents the first question of the price perception scale, as reported by Bearden et al. (2011, p. 378). The range of questions is from P1 to P40. The questions are also indicated in the Appendix.

Moreover, the identification of a CFA model can be accomplished by meeting the rank and order condition (Hair et al., 2010). The order condition requires the number of degrees of freedom (df) to be greater than zero. The computation of the degrees of freedom is shown in Figure 4-12. The degrees of freedom of 719 clearly meets the order condition set forth by Hair et al. (2010). Additionally, since the degrees of freedom are greater than zero, the model is over-identified, in other words, it has more equations than unknown parameters (Kline, 2016).

Figure 4-12 Computation of degrees of freedom

Notes for Model (Price Perception Model)

Computation of degrees of freedom (Price Perception Model)

Number of distinct sample moments: 860
Number of distinct parameters to be estimated: 141
Degrees of freedom (860 - 141): 719

Result (Price Perception Mode)
Minimum was achieved
Chi-square = 2206.715
Degrees of freedom = 719
Probability level = .000

Moreover, Hair et al. (2010, p. 704) state that “over-identification is the desired state for CFA and SEM models in general.” This is supported by Loehlin (2003) in the sense that over-identified models allow the test of statistical hypotheses including global model fit.

4.7.2.5 Summary of analysis

The previous section dealt with the reliability analysis, normality, and identification of the CFA model used in this research for the discussion of the Price Perception Scale. Next, there is a description of the model fit that resulted in the study. Accordingly, model fit was assessed using Chi-square goodness of fit tests, 'badness of fit' tests (RMSEA and RMR), and multiple fit indices such as IFI, CFI, and NNFI. This process for model fit was described by Meng and Nasco (2009) and others (Blunch, 2013; Ho, 2014; Iacobucci, 2009; Iacobucci, 2010; Kline, 2016; Schumacker and Lomax, 2010).

The initial model developed in IBM SPSS AMOS is shown in Figure 4-11 and contains the forty questions in the model originally designed by Lichtenstein et al. (1993) and presented by Bearden et al. (2011). In the model shown in Figure 4-11, factors are represented as latent variables (ellipses). These factors are value consciousness (value), price consciousness (price), coupon proneness (coupon), sale proneness (sale), price mavenism (maven), price-quality schema (quality), and prestige sensitivity (prestige).

Moreover, the forty questions of the perception scale developed by Lichtenstein et al. (1993) are represented as exogenous variables (rectangles) in the AMOS model (Blunch, 2013). Furthermore, possible associations between variables (paths) are shown as single arrows (Blunch, 2013; Kline, 2016). Also, measurement errors (ϵ) are presented in Figure 4-11 as:

$e_j =$ where j represents the question number (i.e. from one to forty).

Finally, covariances in the model are shown as double-arrows, as explained by Blunch (2013) and also by Ho (2014). Appendix D shows the estimates as reported by AMOS.

This model was also used by a number of authors (McGowan and Sternquist, 1998; Moore et al., 2003; Jin and Sternquist, 2003; Sternquist et al., 2004; Meng and Nasco, 2009; Zielke and Komor, 2015) that studied price perception among cultural groups.

Next, the models by ethnic groups are estimated using AMOS. As suggested by Lichtenstein et al. (1993), the analysis uses standardised regression weights. The standardised regression weights (β) are “standardised coefficient estimates, and are independent of the units in which all variables are measured” (Ho, 2014, p.440). Accordingly, the standardised regression weights allow the researcher directly to compare the relationship between dependent and independent variables (Ho, 2014). Consequently, the next section shows the model fit for the price perception model that includes all the respondents from all ethnic groups.

4.7.3 Model fit

The model fit was estimated using multi-group analysis in IBM SPSS AMOS 22, according to the process explained by Blunch (2013). Moreover, the criteria used for determining model fit follows the recommendations posed by Kline (2016, p.269) and Iacobucci (2010).

In the analysis, the model fit was achieved for Hispanics and African-Americans, but not for Caucasians (i.e. the ratio $\chi^2/df > 2$). Moreover, in the CFI analysis, it was found that questions 1, 6, 8, 9, 19, 30, 33 and 39 had loadings that were lower than the optimum number of 0.71 (Harrington, 2008). So, after removing questions 1, 6, 8, 9, 18, 19, 30, 33 and 39, the model fit improved considerably in terms of the ratio χ^2/df , CFI (CFI > 0.9) and IFI (IFI > 0.9). As mentioned before, test χ^2 has the disadvantage that is affected by the sample size (Kline, 2016). So, here we look at other fit indices such as χ^2/df , CFI, IFI and SRMR (Blunch, 2013). Table 4-34 shows a comparison of the model fit by ethnic group, before and after removing questions with a loading lower than the optimum 0.71.

Table 4-34 Model Fit Comparison

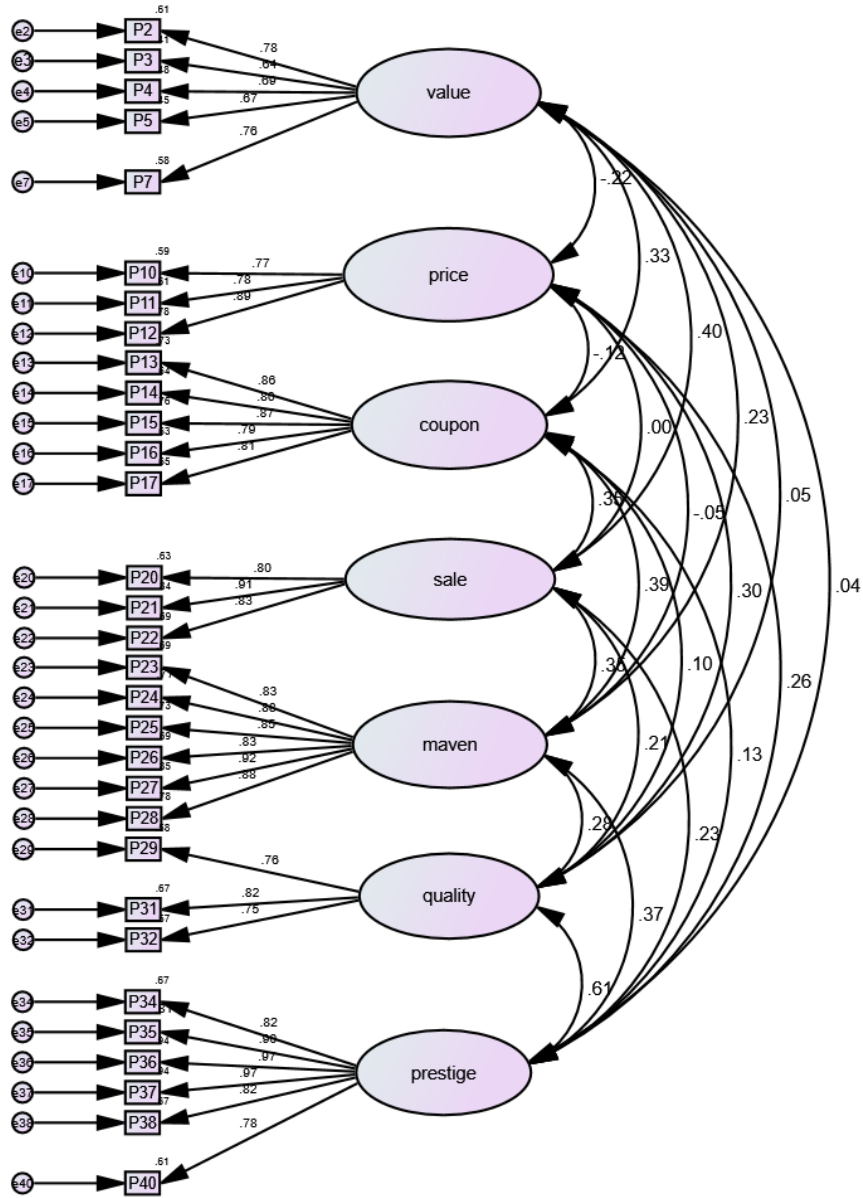
Before	χ^2	df	χ^2/df	<i>p</i>	$\hat{\epsilon}$	CFI	IFI	SRMR
Hispanics	1431.98	719	1.99	0.00	0.07	0.84	0.85	0.08
African-Americans	1381.34	719	1.92	0.00	0.07	0.86	0.86	0.07
Caucasians	1475.97	719	2.05	0.00	0.07	0.87	0.87	0.93
After	χ^2	df	χ^2/df	<i>p</i>	$\hat{\epsilon}$	CFI	IFI	SRMR
Hispanics	754.81	413	1.82	0.00	0.07	0.91	0.91	0.06
African-Americans	783.99	413	1.89	0.00	0.07	0.91	0.91	0.06
Caucasians	792.95	413	1.92	0.00	0.07	0.92	0.92	0.06

According to the test of model fit using different indices (χ^2/df , $\hat{\epsilon}$, CFI, IFI, and SRMR) proposed by Kline (2016), it is possible to conclude that the model has a good fit with a scale for each of the three ethnic groups. The resulting price perception scale after improving model fit is shown in Figure 4-13.

Once the model fit was examined in the previous section, the next step is to study the mean differences in the perception model and to test the hypotheses previously defined.

Figure 4-13 Improved Price Perception Scale

Price Perception Model by Ethnic Group



4.7.3.1 Measurement Invariance

The previous sections dealt with the model fit of the CFA model. This section with the measurement invariance of the CFA model. Tests for measurement invariance, such as metric invariance and configural invariance validate that factor structures and loadings are equivalent across groups (Steenkamp et al., 1998, Cheung and Rensvold, 2002). Configural invariance tests whether the different groups achieve adequate model fit both constrained and unconstrained (Cheung and Rensvold, 2002). Metric invariance provides a stronger by measuring whether ratings can be meaningfully compared across groups (Steenkamp et al., 1998).

The analysis for an unconstrained model (without constraining any paths) and a constrained model (by restricting the factor loadings to be equal across the three groups) was conducted for the CFA model with the three ethnic groups (Meng and Nasco, 2009). The unconstrained model reported $\chi^2 = 2609.4$, $df = 1302$, and constrained model reported $\chi^2 = 2663.9$, $df = 1363$. The analysis found metric and measurement invariance with a chi-square difference of 54.5 ($2663.9 - 2609.4$) with 61 degrees of freedom ($1363 - 1302$), with a p-value = 0.709.

The next section presents a comparison of mean differences across ethnic groups according to the approach used in the research literature (Jin & Sternquist 2003; Meng & Nasco 2009; Zielke & Komor 2015).

4.7.4 Mean differences across ethnic groups

As explained in the methodology section (Section 4) this research uses mean differences to test the hypotheses set out in Section 3. As mentioned in Section 4, this approach was used in the literature (Jin and Sternquist, 2003; Sternquist et al., 2004; Meng and Nasco, 2009; Zielke and Komor, 2015). The differences used in the following sections are estimated using MANOVA (Multivariate Analysis of Variance) as suggested by several authors that used the price perception scale and then tested for mean differences in constructs (Jin and

Sternquist, 2003; Sternquist et al., 2004; Meng and Nasco, 2009; Zielke and Komor, 2015).

However, there are several assumptions in an MANOVA analysis as follows (Hair et al., 2010):

- The sample needs to be larger (i.e. number of cases) than the number of dependent variables (Pallant, 2013). In the Price Perception Scale (Lichtenstein et al., 1993), there are 40 questions (i.e. as much as 40 dependent variables in an MANOVA analysis), and the number of respondents in this study, per ethnic group, is higher than the number of dependent variables. Therefore, this assumption is met in the analysis of MANOVA.
- Multivariate normality is assumed (Hair et al., 2010). According to Pallant (2013), the assumption of multivariate normality requires checking for outliers. However, the test for multivariate normality was performed in Section 4.7.2.3, and an outlier (respondent 499) was removed from subsequent analyses.
- Homogeneity of covariance matrices is assumed, i.e. there is equality between the covariance matrices and error variances (Hair et al., 2010). To test for homoscedasticity, the literature suggests using the Box's M test and the Levene's test. The Box's M test evaluates equality in covariance matrices, and the Levene's test evaluates equality in error variances (Hair et al., 2010). The significance of the Box's M test should be larger than 0.001 ($p > 0.001$) in order to maintain the assumption of homogeneity of covariance matrices (Pallant, 2013). Moreover, the significance of the Levene's test should be higher than 0.05 ($p > 0.05$) for any error variance (Pallant, 2013).

An MANOVA analysis on the price perception constructs revealed statistically significant differences among ethnic groups. However, these differences were only on the following constructs: Price Consciousness, Coupon Proneness, and Price-Quality Schema. There were no statistically significant differences in Sale

Proneness among ethnic groups. In regards Value Consciousness, Price Mavenism, and Prestige Sensitivity, it was not possible to establish statistically significant differences because one or more assumptions of the MANOVA analysis were not met.

A summary of the tests performed in the MANOVA analysis per construct is shown in Table 4-36. This table summarises the results of the Box's M test, Levene's test and Multivariate test (it shows the statistics Wilk's Lambda for reference, but the multivariate test used other statistics such as Pillai's Trace and Hotelling's Trace). Moreover, Table 4-35 shows the statistics per construct, including F-values and p-values (significances) and is presented to support the conclusions summarised in Table 4-35.

Furthermore, the next section will elaborate on the findings regarding the existence of a statistically significant difference in the perception of prices among ethnic groups, but only in the constructs of Price Consciousness, Coupon Proneness, and Price-Quality Schema. These findings are presented in Table 4-35.

Table 4-35 Summary of MANOVA analysis

	Box's M Test ($p > 0.001$)	Levene's Test ($p \geq 0.05$)	Multivariate Test (Wilk's Lambda) ($p < 0.05$)	Conclusion
Value Consciousness	No	No	Yes	Does not meet assumptions for MANOVA analysis
Price Consciousness	Yes	Yes	Yes	Statistically significant difference
Coupon Proneness	Yes	Yes	Yes	Statistically significant difference
Sale Proneness	Yes	Yes	No	No statistically significant difference
Price Mavenism	Yes	No (question P23)	No	Does not meet assumptions for MANOVA analysis
Price-Quality Schema	Yes	Yes	Yes	Statistically significant difference
Prestige Sensitivity	No	No (question P37)	No	Does not meet assumptions for MANOVA analysis

Table 4-36 Manova Analysis for Price Perception Constructs

	Value Consciousness	Price Consciousness	Coupon Proneness	Sale Proneness	Price Maven	Price-Quality Schema	Prestige Sensitivity
Box's M Test	96.67 (F=3.18, p=0.00)	25.78 (F = 2.31, p=0.12)	36.93 (F=1.21, p=0.19)	19.95 (F=1.64, p=0.07)	55.33 (F=1.29, p=0.09)	18.29 (F = 1.51, p = 0.11)	197.05 (F=3.34, p=0.00)
Wilks' Lambda	0.96 (F=2.09, p=0.02)	0.96 (F = 2.09, p= 0.02)	0.95 (F=2.29, p=0.01)	0.98 (F=0.98, p=0.43)	0.97 (F=1.20, p=0.27)	0.97 (F= 2.30, p = 0.03)	0.966 (F=1.28, p=0.20)
Pillai's Trace	0.04 (F-2.09, p=0.02)	0.04 (F = 2.08, p = 0.02)	0.04 (F=2.29, p=0.01)	0.01 (F=0.98, p=0.43)	0.02 (F=1.20, p=0.27)	0.26 (F = 2.29, p = 0.03)	0.03 (F=1.28, p=0.20)
Hotelling's Trace	0.04 (F-2.1, p=0.02)	0.04 (F = 2.10, p = 0.02)	0.04 (F=2.28, p=0.01)	0.01 (F=0.98, p=0.43)	0.02 (F=1.20, p=0.27)	0.27 (F = 2.30, p = 0.03)	0.03 (F=1.28, p=0.20)
Levene's Test Questions:	P2: F=5.46, p=0.00	P10 : F= 1.19, p = 0.30	P13: F=1.91, p =0.14	P20: F=0.00, p=0.99	P23: F=3.40, p=0.03)	P29: F=0.23, p=0.79	P33: F=0.25, p=0.77
	P3: F-8.10, p=0.00	P11 : F= 1.35, p = 0.25	P14: F=0.67, p=0.51	P21: F=1.14, p=0.32	P24: F=0.22, p=0.79)	P31: 0.32, p=0.72	P34: F=2.85, p=0.05
	P4: F=0.83, p=0.43	P12 : F= 0.271, p = 0.76	P15: F=1.26, p=0.28	P22: F=1.11, p=0.89	P25: F=0.73, p=0.48)	P33: 0.25, p=0.77	P35: F=0.67, p=0.50
	P5: F=3.38, p=0.03		P16: F=0.61, p=0.53		P26: F=0.36, p=0.69)		P36: F=1.56, p=0.21
	P7: F=10.33, p=0.00		P17: F= 1.00, p=0.36		P27: F=1.52, p=0.21)		P37: F=3.38, p=0.03
					P28: F=0.04, p=0.95)		P38: F=0.82, p=0.44
							P40: F=0.90, p=0.40
Statistically Signif. Difference	No	Yes	Yes	No	No	Yes	No

4.7.4.1 Differences in Value Consciousness

As discussed in the previous section, statistically significant differences were found between groups for the constructs of Price Consciousness, Coupon Proneness, and Price-Quality schema. However, no statistically significant differences were found for ethnic groups for Sale Proneness. Moreover, it was not possible to test for statistically significant differences in ethnic groups for the constructs of Value Consciousness, Price Mavenism, and Prestige-Sensitivity since there was a violation of the assumptions required for an MANOVA analysis to be valid.

In regards to the construct of Value Consciousness, it was not possible to determine a statistically significant difference (see Table 4-36 and Table 4-37) since the analysis did not meet the assumptions for homoscedasticity. However, there are approaches to deal with heteroscedasticity as pointed by Nimon (2012). Accordingly, Nimon (2012) suggest Pillai's test when the Box's M statistic reports a significance smaller or equal to 0.01 ($p \leq 0.01$) and to use tests such as Welch's W or Brown-Forsythe's F when failing to meet the Levene's test.

However, both the Welch's W and Brown-Forsythe's F test report a not significant value ($p > 0.001$) and therefore it was not possible to conclude that there were differences among ethnic groups, in regards to the construct of Value Consciousness. Table 4-37 shows the results of the test using Welch's W and Brown-Forsythe's F as proposed by Nimon (2012)¹⁶¹.

More, since we cannot establish statistically significant differences, then we will not conduct posthoc tests such as Tukey's HSD (Hair et al., 2010), for the construct of Value Consciousness.

¹⁶¹ As explained in previous sections, the questions in the perception scale are denoted with the letter P. So, P2 to P7 in Table 4-36 are equivalent to the questions 2 to 7 in the perception scale (Bearden et al., 2011). Also, the questions are detailed and numbered in the Appendix.

Table 4-37 Test on Equality of Means for Value Consciousness

Robust Tests of Equality of Means					
		Statistic ^a	df1	df2	Sig.
P2	Welch	1.259	2	341.718	.285
	Brown-Forsythe	1.249	2	495.989	.288
P3	Welch	6.204	2	340.989	.002
	Brown-Forsythe	5.346	2	494.548	.005
P4	Welch	.511	2	343.957	.600
	Brown-Forsythe	.533	2	513.522	.587
P5	Welch	.880	2	343.960	.416
	Brown-Forsythe	.933	2	510.105	.394
P7	Welch	4.422	2	339.556	.013
	Brown-Forsythe	3.697	2	490.570	.025

a. Asymptotically F distributed.

As shown in the previous section, questions such as P3 and P7 are significant. Conversely, questions P2, P4, and P4 were not significant. However, the optimised model shown in Figure 4-13, included questions P2 to P7, and not just the questions that are significant in this analysis. Moreover, the hypothesis states for this question is related to the entire dimension, and not to individual questions.

Therefore, we cannot accept the hypothesis that:

H1: Scores on the dimension of value consciousness (Lichtenstein et al., 1993) are different among African-Americans, Caucasians, and Hispanics.

In other words, we cannot reject the null hypothesis as follows:

H1₀: Scores on the construct of value consciousness are the same among African Americans, Caucasians, and Hispanics.

We could argue that since some questions (P3 and P7) were significant, the hypothesis might be partially supported. The next section will present the analysis of the construct of Price Consciousness.

4.7.4.2 Differences in Price Consciousness

As shown in the previous section, it was not possible to accept the alternate hypothesis that the construct of value consciousness was different among ethnic groups. However, in this section, when analysing the results of the MANOVA analysis, summarised in Table 4-36 and detailed in Table 4-37, it was possible to conclude that there were statistically significant differences in the construct of price consciousness among ethnic groups. As shown in Table 4-38, the assumptions for homoscedasticity were met (Box's M test and Levene's test), and the tests of Wilks' Lambda, Pillai's Trace and Hotelling's Trace reported statistically significant differences among groups (Hair et al., 2010; Ho, 2014).

Table 4-38 shows the results of the MANOVA analysis for the construct of Price Consciousness.

Table 4-38 MANOVA Analysis on Price Consciousness

	Price Consciousness
Box's M Test	25.78 (F =2.31, p=0.12)
Multivariate Tests	
Wilks' Lambda	0.96 (F = 2.09, p= 0.02)
Pillai's Trace	0.04 (F = 2.08, p = 0.02)
Hotelling's Trace	0.04 (F = 2.10, p = 0.02)
Levene's Test	
Questions:	P10 : F= 1.19, p = 0.30
	P11 : F= 1.35, p = 0.25
	P12 : F= 0.271, p = 0.76
Statistically Significant Difference	Yes

Accordingly, it is possible to reject the null hypothesis that there are differences in price consciousness among ethnic groups:

H2₀: Scores on the dimension of price consciousness (Lichtenstein et al., 1993) are the same among African-Americans, Caucasians, and Hispanics.

And we accept:

H2_a: Scores on the dimension of price consciousness are different among African-Americans, Caucasians, and Hispanics

Moreover, Hispanics reported a higher price consciousness than Caucasians and African-Americans for each of the questions in the construct of price consciousness. The mean estimates are shown in Table 4-39.

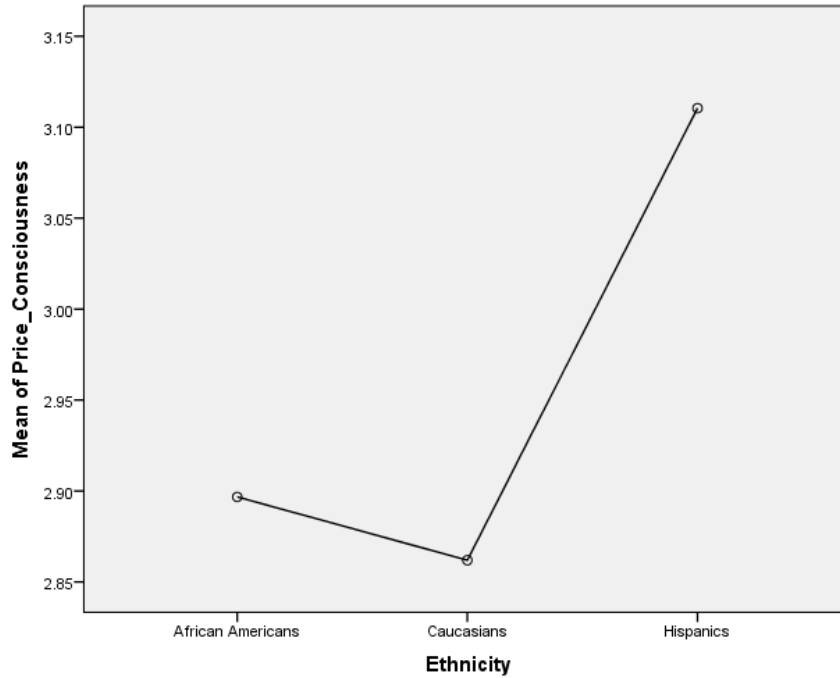
Table 4-39 Mean Estimates for Price Consciousness

		Estimates			
Dependent Variable	Ethnicity	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
P10	African Americans	3.049	.136	2.781	3.317
	Caucasians	3.225	.142	2.945	3.504
	Hispanics	3.325	.142	3.046	3.605
P11	African Americans	2.582	.132	2.322	2.841
	Caucasians	2.609	.138	2.339	2.880
	Hispanics	2.870	.138	2.599	3.141
P12	African Americans	3.060	.138	2.789	3.331
	Caucasians	2.751	.144	2.469	3.034
	Hispanics	3.136	.144	2.853	3.419

However, the Partial Eta Squared (partial η^2) in the analysis was 0.013 that represents a small effect size according to Cohen (1988, p.286). Hence, the η^2 represents the proportion of the variance in the dependent variable that cannot be explained by the independent variable (Pallant, 2013). Accordingly, 1.3% of the variance in Price Consciousness is explained by ethnicity (Pallant, 2013). The small effect size might explain why a Tukey's post hoc analysis did not

reveal statistically significant cross differences when comparing ethnic groups ($p=0.325$). A plot of the mean differences in the construct of price consciousness per ethnic group is shown in Figure 4-14.

Figure 4-14 Mean Differences in Price Consciousness



So far, we have identified that there are differences in the construct of Price Consciousness, but we have not found differences in the construct of Value Consciousness for different ethnic groups. The following section will explain the results for the construct of Sale Proneness.

4.7.4.3 Differences in Sale Proneness

The previous section evaluated the construct of Price Consciousness and found statistically significant differences among ethnic groups. When evaluating the construct of sale proneness, using the MANOVA analysis summarised in Table 4-40, it was not possible to find statistically significant differences among ethnic groups.

However, unlike the construct of Value Consciousness, where it was not possible to maintain the assumptions of homoscedasticity, in the MANOVA analysis of Sale Proneness, the assumptions of homoscedasticity were met. Hence, an analysis of Wilks' Lambda showed no differences among ethnic groups.

Therefore, we cannot accept the hypothesis that states:

H3: Scores on the dimension of sale proneness (Lichtenstein et al., 1993) are different among African-Americans, Caucasians, and Hispanics

Table 4-40 shows the results of the MANOVA analysis on Sale Proneness.

Table 4-40 MANOVA Analysis on Sale Proneness

	Sale Proneness
Box's M Test	19.95 (F=1.64, p=0.07)
Multivariate Tests	
Wilks' Lambda	0.98 (F=0.98, p=0.43)
Pillai's Trace	0.01 (F=0.98, p=0.43)
Hotelling's Trace	0.01 (F=0.98, p=0.43)
Levene's Test	
Questions:	P20: F=0.00, p=0.99
	P21: F=1.14, p=0.32
	P22: F=1.11, p=0.89
Statistically Significant Difference	No

However, as there were no statistically significant differences among ethnic groups, we will not conduct post hoc tests such as Tukey's HSD. The next section considers the analysis of the construct Coupon Proneness.

4.7.5 Differences in Coupon Proneness

The previous section evaluated the construct of Sale Proneness and found no statistically significant differences among ethnic groups. However, when evaluating the construct of coupon proneness, using the MANOVA analysis summarised in Table 4-41, it was possible to find statistically significant differences among ethnic groups.

In other words, the assumption of homoscedasticity was demonstrated (Box's M test and Levene's test) and the Wilks' Lambda test showed a statistically significant difference. Similarly, the Pillai's Trace test and the Hotelling's Trace test also showed a statistically significant difference, but as shown by Meng and Nasco (2009), in this case only the Wilks' Lambda test is necessary to show a statistically significant difference.

Therefore, we reject the null hypothesis that state that:

H₄₀: Scores on the dimension of coupon proneness (Lichtenstein et al., 1993) are the same among African-Americans, Caucasians, and Hispanics.

Table 4-41 shows the MANOVA analysis on coupon proneness. The next section will examine the results for the construct of Price Mavenism.

Table 4-41 MANOVA Analysis on Coupon Proneness

	Coupon Proneness
Box's M Test	35.94 (F=1.82, p=0.22)
Multivariate Tests	
Wilks' Lambda	0.95 (F=2.21, p=0.01)
Pillai's Trace	0.04 (F=2.21, p=0.01)
Hotelling's Trace	0.04 (F=2.21, p=0.01)
Levene's Test	
Questions:	P13: F=1.93, p =0.14
	P14: F=0.75, p=0.47
	P15: F=1.28, p=0.27
	P16: F=0.70, p=0.49
	P17: F= 1.01, p=0.36
Statistically Significant Difference	Yes

Hispanics and Caucasians reported a higher coupon proneness than African-Americans for each of the questions on the construct of price consciousness. The mean estimates are shown in Table 4-42.

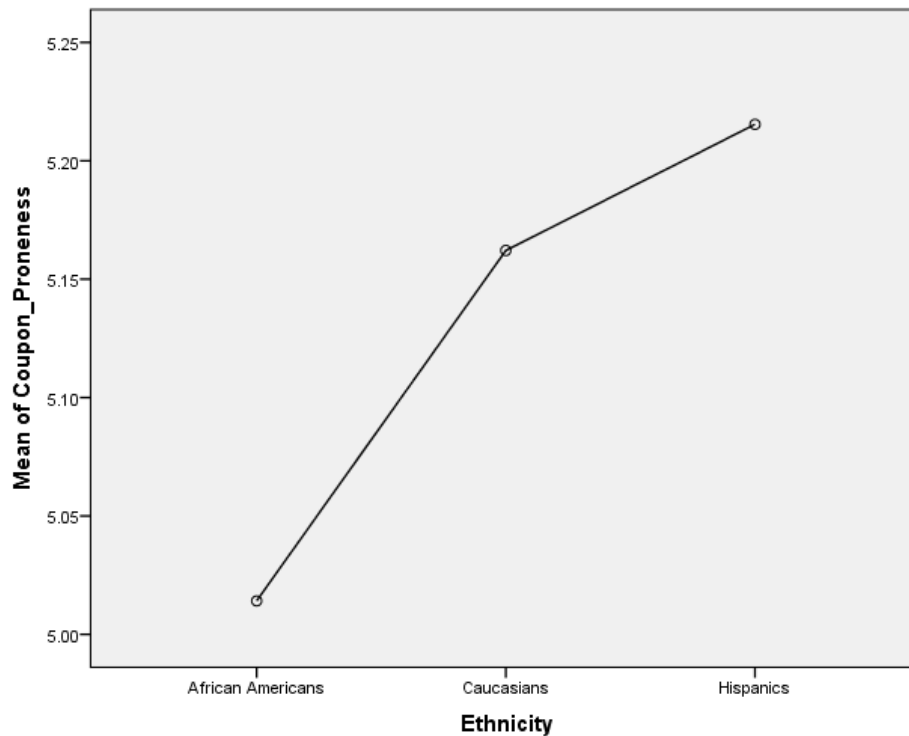
Table 4-42 Mean Estimates for Coupon Proneness

Descriptive Statistics				
	Ethnicity	Mean	Std. Deviation	N
P13	African Americans	5.41	1.760	184
	Caucasians	5.78	1.590	169
	Hispanics	5.69	1.634	169
	Total	5.62	1.670	522
P14	African Americans	4.51	2.070	184
	Caucasians	4.88	2.012	169
	Hispanics	4.68	1.962	169
	Total	4.68	2.019	522
P15	African Americans	5.49	1.730	184
	Caucasians	5.57	1.606	169
	Hispanics	5.56	1.654	169
	Total	5.54	1.664	522
P16	African Americans	4.96	1.947	184
	Caucasians	4.79	1.967	169
	Hispanics	5.05	1.891	169
	Total	4.93	1.935	522
P17	African Americans	4.70	2.020	184
	Caucasians	4.79	2.093	169
	Hispanics	5.10	1.975	169
	Total	4.86	2.033	522

However, the Partial Eta Squared (partial η^2) in the analysis was 0.021 that represents a small effect size according to Cohen (1988, p.286). Hence, the η^2 represents the proportion of the variance in the dependent variable that cannot be explained by the independent variable (Pallant, 2013). Accordingly, 2.1% of the variance in Price Consciousness is explained by ethnicity (Pallant, 2013).

The small effect size might explain why a Tukey's post hoc analysis did not reveal statistically significant cross differences when comparing ethnic groups ($p=0.211$). A plot of the mean differences in the construct of price consciousness per ethnic group is shown in Figure 4-15.

Figure 4-15 Mean Differences in Coupon Proneness



4.7.5.1 Differences in Price Mavenism

The previous section found statistically significant differences in the construct of coupon proneness. However, in this section, an MANOVA analysis on the construct of Price Mavenism found no significant differences among ethnic groups.

on the one hand, it was not possible to maintain the assumption of equality of variance (Levene's test), so according to Nimon (2012), we used the Welch's W test and Brown-Forsythe's F test but found no significant differences in the responses (i.e. significances for both tests were higher than the significance

level of 0.05, thus suggesting equality of means). Moreover, the Wilks' Lambda statistic also showed no differences in the responses. Table 4-43 shows the results of the Welch's W and Brown-Forsythe's F tests.

Table 4-43 Equality of Means for Price Mavenism

Robust Tests of Equality of Means

		Statistic ^a	df1	df2	Sig.
P23	Welch	.353	2	343.826	.703
	Brown-Forsythe	.358	2	511.341	.699
P24	Welch	.895	2	344.581	.410
	Brown-Forsythe	.891	2	516.608	.411
P25	Welch	.017	2	344.804	.983
	Brown-Forsythe	.017	2	516.844	.983
P26	Welch	.547	2	344.724	.579
	Brown-Forsythe	.558	2	516.841	.573
P27	Welch	.104	2	345.336	.902
	Brown-Forsythe	.108	2	518.037	.898
P28	Welch	.288	2	345.002	.750
	Brown-Forsythe	.289	2	517.804	.749

a. Asymptotically F distributed.

Therefore, we accept the hypothesis:

H5₀: Scores on the dimension of price mavenism (Lichtenstein et al., 1993) are equal among African-Americans, Caucasians, and Hispanics.

And we reject the alternative hypothesis:

H5_a: Scores on the dimension of price mavenism (Lichtenstein et al., 1993) are different among African-Americans, Caucasians, and Hispanics.

Also, we will not conduct a posthoc analysis since we were not able to find statistically significant results (Hair et al., 2010).

The next section explores the construct of price-quality schema.

4.7.5.2 Differences in Price-Quality Schema

As with the construct of Price Consciousness and Coupon Proneness, it was also possible to find statistically significant differences in the construct of Price-Quality schema. An MANOVA analysis on this construct revealed a Wilks's Lambda value with a significance level lower than 0.05, suggesting a statistically significant difference among groups (Hair et al., 2010; Ho, 2014). Moreover, the MANOVA analysis met the assumptions of homoscedasticity as demonstrated by the Box's M test and Levene's test, as shown in Table 4-44.

Table 4-44 MANOVA analysis for Price-Quality

	Price-Quality Schema
Box's M Test	18.29 (F = 1.51, p = 0.11)
Multivariate Tests	
Wilks' Lambda	0.97 (F= 2.30, p = 0.03)
Pillai's Trace	0.26 (F = 2.29, p = 0.03)
Hotelling's Trace	0.27 (F = 2.30, p = 0.03)
Levene's Test	
Questions:	P29: F=0.23, p=0.79
	P31: 0.32, p=0.72
	P33: 0.25, p=0.77
Statistically Significant Difference	Yes

We can, therefore, accept the hypothesis:

H6: Scores on the dimension of price-quality schema (Lichtenstein et al., 1993) are different among African-Americans, Caucasians, and Hispanics.

In other words, according to the MANOVA analysis, there are statistically significant differences in the construct of Price-Quality schema among ethnic groups.

Moreover, Hispanics and African-Americans reported a higher price-quality schema than Caucasians for each of the questions in the construct of price-quality schema. The mean estimates are shown in Table 4-45.

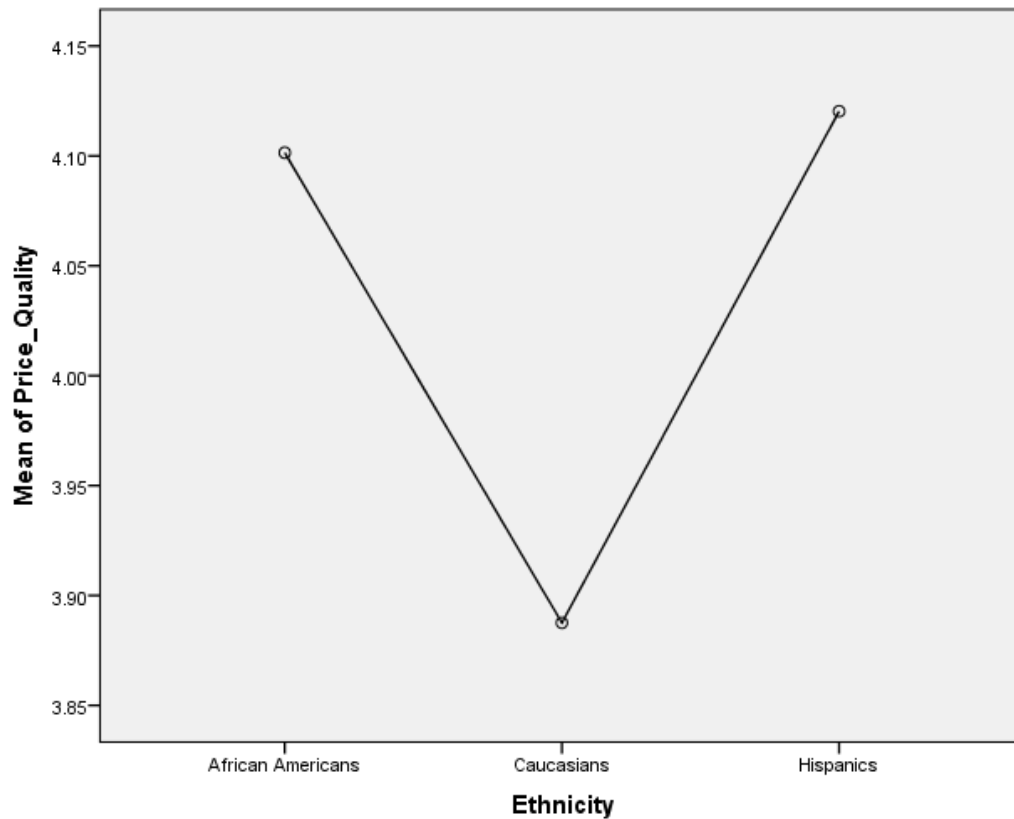
Table 4-45 Mean Estimates for Price-Quality

Descriptive Statistics				
	Ethnicity	Mean	Std. Deviation	N
P29	African Americans	3.90	1.763	184
	Caucasians	3.67	1.717	169
	Hispanics	4.07	1.750	169
	Total	3.88	1.748	522
P31	African Americans	4.27	1.572	184
	Caucasians	4.09	1.567	169
	Hispanics	4.03	1.678	169
	Total	4.13	1.605	522
P33	African Americans	4.14	1.914	184
	Caucasians	3.90	1.889	169
	Hispanics	4.27	1.913	169
	Total	4.10	1.908	522

However, the Partial Eta Squared (partial η^2) in the analysis was 0.013 which represents a small effect size according to Cohen (1988, p.286). Hence, the η^2 represents the proportion of the variance in the dependent variable that cannot be explained by the independent variable (Pallant, 2013). Accordingly, 1.3% of the variance in price-quality schema is explained by ethnicity (Pallant, 2013).

The small effect size might explain why a Tukey's post hoc analysis did not reveal statistically significant cross differences when comparing ethnic groups ($p=0.08$). A plot of the mean differences in the construct of price-quality schema per ethnic group is shown in Figure 4-16.

Figure 4-16 Mean Differences in Price-Quality



The next section considers the findings for of Prestige Sensitivity.

4.7.5.3 Differences in Prestige Sensitivity

According to the MANOVA analysis, it was not possible to establish that there were statistically significant differences for the construct of Prestige Sensitivity. On the one hand, the MANOVA analysis violated the assumptions of homoscedasticity both with the Box's test (that measures equality of covariance matrices) and with the Levene's test (which measures equality of error variances). There are several alternatives (Nimon, 2012), such as reducing the sample sizes to achieve equal samples among groups or using Welch's W or Brown-Forsythe's tests. However, both the Wilks' Lambda test and the Pillai's test, showed no differences in scores on the construct among ethnic groups. So, no further tests were undertaken on the MANOVA analysis for the construct of Prestige Sensitivity. Therefore, it was not possible to accept the hypothesis:

H7: Scores on the dimension of prestige sensitivity (Lichtenstein et al., 1993) are different among African-Americans, Caucasians, and Hispanics.

The next section deals with the results of the choice-based conjoint analysis.

4.7.6 Choice-Based Conjoint Results

The choice-based conjoint analysis explained in Section 4, was run using XLSTAT (Addinsoft, 2015). The goodness of fit was evaluated for all three ethnic groups using the log likelihood ratio (Rao, 2014). However, other measures of Goodness of Fit, such as Wald and Score, are also provided by XLSTAT and are also reported. The goodness of fit statistics (log likelihood ratio) shows that each model (Hispanics, Caucasians, and African-Americans) is significantly better than the model without any predictors (Rao, 2014). Table 4-46 shows the goodness of fit statistics.

Table 4-46 Goodness of Fit for Conjoint Analysis

Goodness of Fit	df	Hispanics	Caucasians	African-Americans	<i>p</i>
-2 Log(Likelihood)	13	1195.189	1225.838	1105.828	< 0.0001
Score	13	1162.287	1142.251	1075.726	< 0.0001
Wald	13	997.019	931.080	925.542	< 0.0001

Next, the analysis reports importances and utilities by categories (levels). According to Hair et al. (2010, p. 266), a utility is “a subjective judgement of the preference unique to each individual.” In other words, utilities represent a measure of an individual’s overall preference (Hair et al., 2010). Table 4-47 shows importances by ethnic group as reported by the choice-based conjoint analysis.

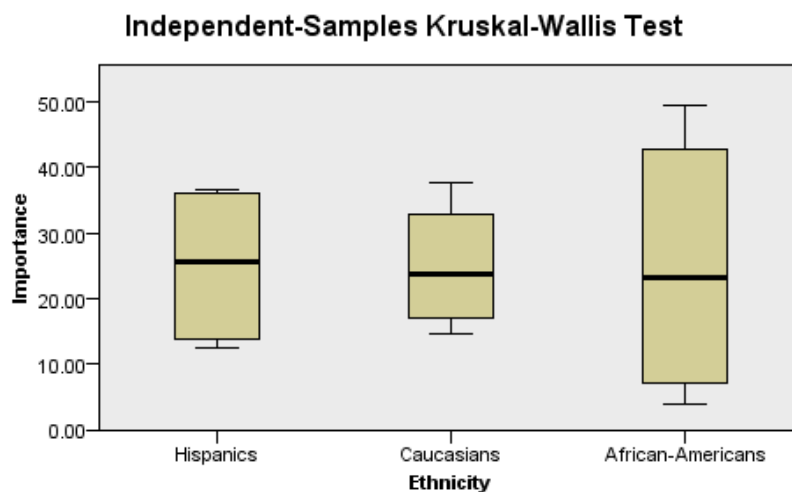
Table 4-47 Importances by Ethnic Group

	Hispanics	Caucasians	African-Americans
Brand	36.58	37.77	49.44
Sweetness	12.38	14.50	4.03
Flavour	15.22	19.77	10.38
Price	35.82	27.96	36.14
Total	100.00	100.00	100.00

In Table 4-47, it is possible to assess how the different attributes are perceived by ethnic groups. For example, African-Americans give the highest importance to Brand (49.44%) and the lowest to Sweetness (4.03%). Similarly, the importance of the attribute Price is high for every ethnic group, but it is not the highest amongst the set of attributes. Actually, every single ethnic group gives more importance to Brand than to Price. Next, the ethnic groups give more importance to Flavour than to Sweetness.

However, a Kruskal-Wallis H test was run to determine if there were differences in the importances of the attributes between Hispanics, Caucasians, and African-Americans. Distributions of importances were similar for all groups, as assessed by a visual inspection of a boxplot (see Figure 4-17). Median importance scores were not statistically significantly different between groups, $\chi^2(2) = 0.154, p = .926$

Figure 4-17 Kruskal-Wallis Test for Ethnic Groups



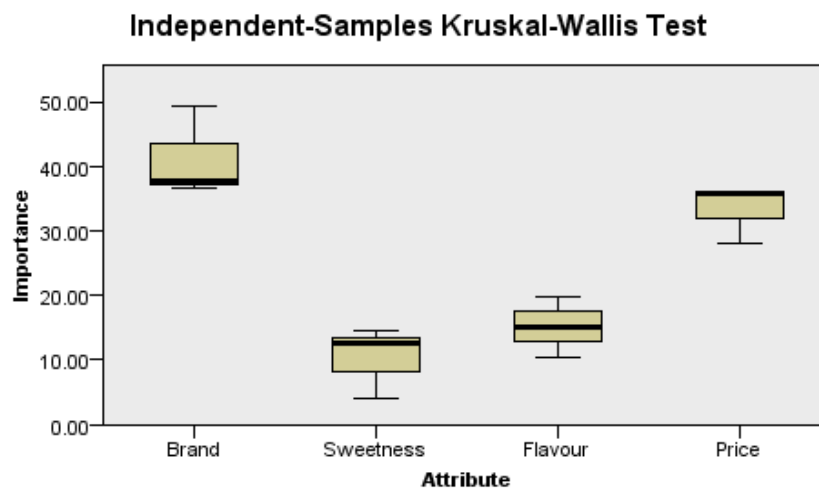
Total N	12
Test Statistic	.154
Degrees of Freedom	2
Asymptotic Sig. (2-sided test)	.926

However, another Kruskal-Wallis H test was run to determine if there were differences in the importances between the attributes Brand, Sweetness, Flavour, and Price. Distributions of importances were not similar for the attributes, as

assessed by visual inspection of a boxplot (see Figure 4-18). Median importance scores were statistically significantly different between groups, $\chi^2 (3) = 9.67$; $p = .022$

The finding that there is a statistically significant difference in the importance of the attributes is interesting since it contributes to the validity of the conjoint (Orme, 2010).

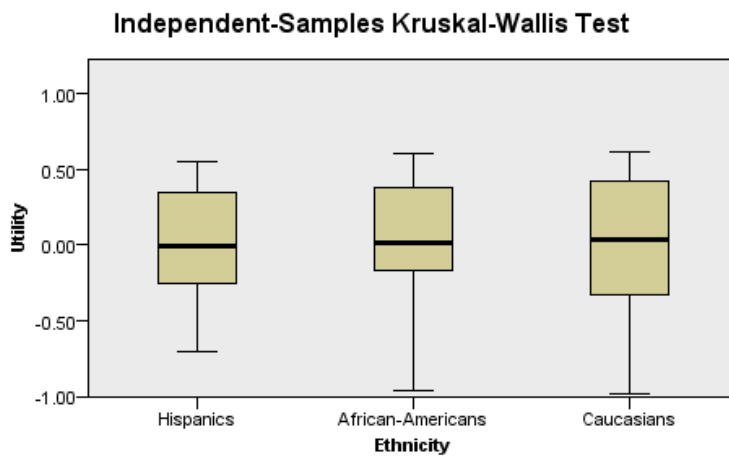
Figure 4-18 Kruskal-Wallis Test for Attributes



Total N	12
Test Statistic	9.667
Degrees of Freedom	3
Asymptotic Sig. (2-sided test)	.022

Next, the utilities by ethnic group were estimated. A Kruskal-Wallis H test was run to determine if there were differences in the utilities per ethnic group. Distributions of utilities were similar for the African-Americans, Caucasians, and Hispanics, as assessed by visual inspection of a boxplot (see Figure 4-19). Median importance scores were not statistically significantly different between groups, $\chi^2 (2) = 0.60$, $p = .971$.

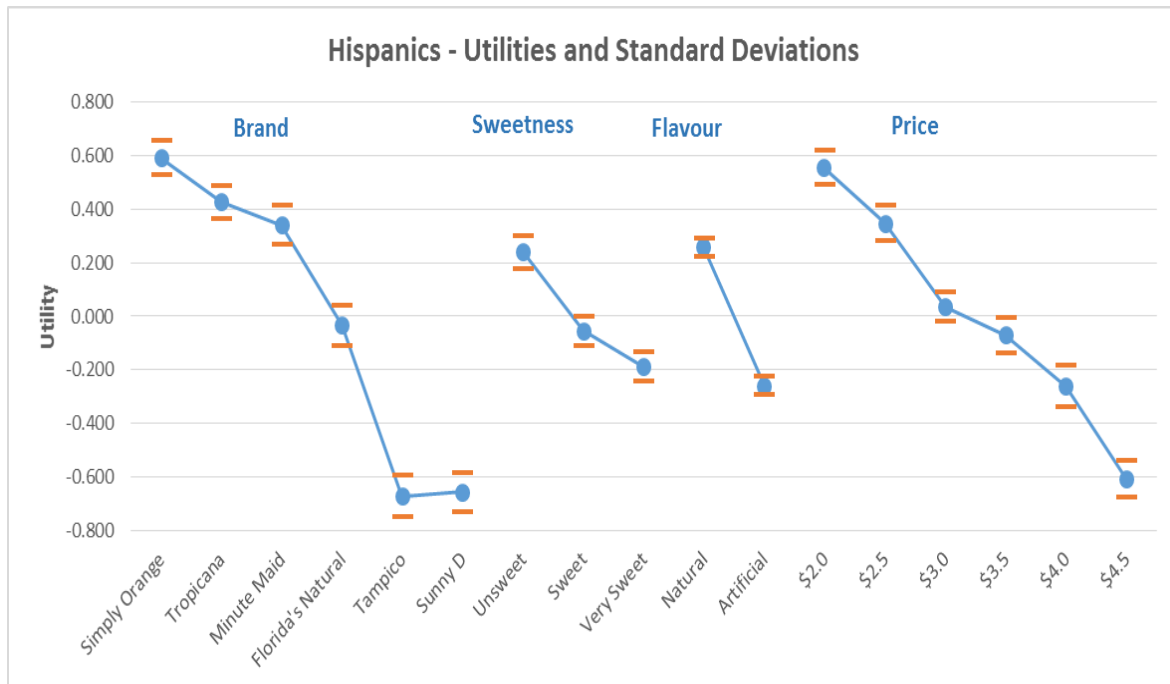
Figure 4-19 Kruskal-Wallis Test for Utilities



Total N	51
Test Statistic	.060
Degrees of Freedom	2
Asymptotic Sig. (2-sided test)	.971

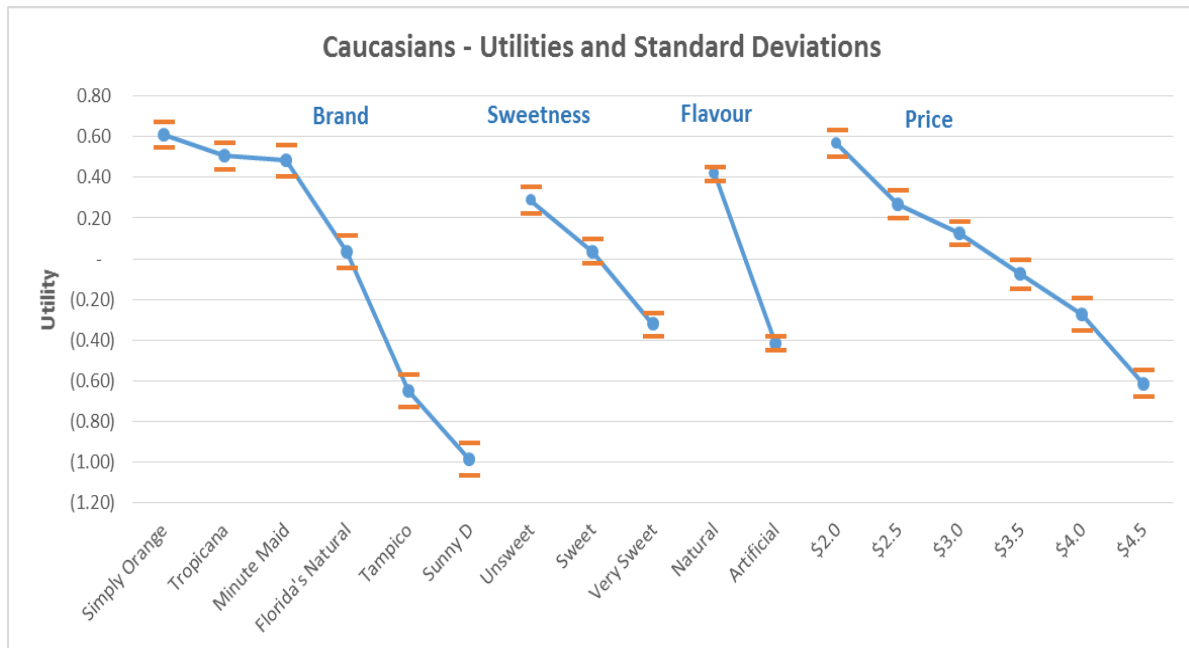
Figure 4-20 shows these utilities for Hispanics. As a result, it is possible to observe how Hispanic respondents illustrated a preference for brands such as Simply Orange, Tropicana and Minute Maid over brands such as Florida’s Natural. Also, Hispanics gave very low ratings to brands such as Tampico and Sunny D. With regards to sweetness; Hispanics gave a higher rating to unsweet constructs over very sweet constructs. Likewise, Hispanics preferred Natural constructs over Artificial constructs. Finally, it was not surprising that Hispanics preferred lower prices over higher prices when evaluating constructs separately.

Figure 4-20 Hispanics Utilities



Next, Caucasians reported similar values to Hispanics, for constructs other than Brand. In regards to brands, Caucasians rated the brands Simply Orange, Tropicana and Minute Maid, closer together than Hispanics. Also, Caucasians rated different brands such as Tampico and Sunny D, as opposite as Hispanics who rated these brands very low. The utilities estimated for Caucasians are shown in Figure 4-21.

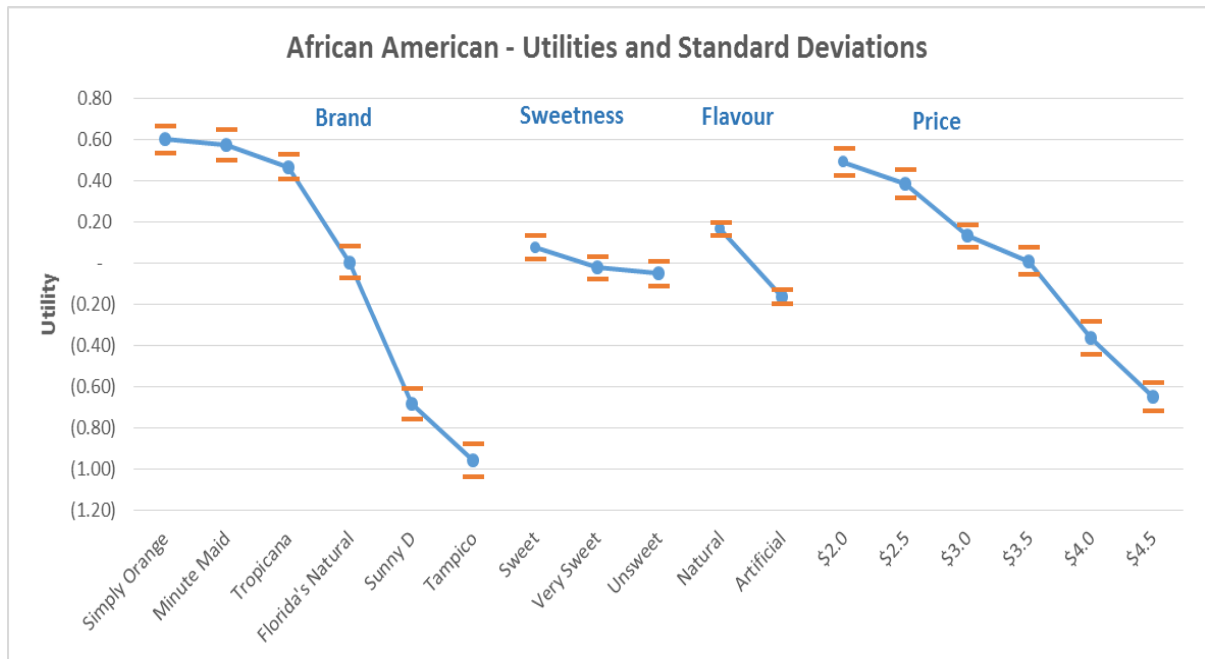
Figure 4-21 Caucasians Utilities



Finally, African Americans reported brands ratings similar to Caucasians but different from Hispanics. Also, African Americans reported ratings for Sweetness and Flavour constructs that were very close together. On the other hand, Hispanics and Caucasians reported ratings for Sweetness and Flavour that were far in the scale. This might suggest that Hispanics and Caucasians had more differences when it comes to Sweetness and Flavour.

Figure 4-22 shows the estimated utilities for African Americans.

Figure 4-22 African-American Utilities



Next, in the following section, we present a discussion of the findings both for the analysis of the Price Perception Scale (Lichtenstein et al., 1993) and the Choice-Based Conjoint Analysis.

4.8 Discussion

The findings presented in the previous sections have important implications both for academics and practitioners.

First, the findings confirmed that there are indeed differences in price perception by ethnic group and therefore confirm the suspicions presented in P1 and P2, that discussed the notion that contextual variables (such as ethnicity) have an effect on the formation of price perception. The differences in the perceptions of prices by ethnic group were measured using the Price Perception Scale (Lichtenstein et al., 1993). Specifically, it was found that there were statistically significant differences in the constructs of Price Consciousness, Coupon Proneness, and Price-Quality Schema for our three ethnic group samples. Moreover, it was found that the constructs of Value Consciousness, Sale Proneness, Price Mavenism, and Prestige-Sensitivity, were not statistically significant among ethnic groups.

Furthermore, the study revealed that Hispanics were more price conscious than African-Americans and Caucasians. This finding offers a contribution as it may be used to guide advertising and promotional practices towards Hispanics. Accordingly, a price consciousness is related not to sales proneness or coupons proneness but rather to low prices. In other words, this finding might suggest that Hispanics are more oriented to pricing practices such as everyday low prices.

Also, Hispanics and Caucasians had more coupon proneness than African-Americans. This finding also offers a marketing insight. For example, as Hispanics are more price-conscious and were more accepting of coupons, a promotional combination emphasising low prices either in the form of everyday low prices or in the form of coupons, seems appropriate. Also, the notion that African-Americans have the lowest coupon proneness might suggest that marketers should use price promotional strategies other than coupons, for African-Americans.

Additionally, Hispanics and African-Americans had higher values for the price-quality schema, than Caucasians. Although this finding does not mean that Caucasians do not recognise price-quality relationships, it does suggest that recognition of a price-quality relationship is higher for both Hispanics and African-Americans. Accordingly, the price-quality schema indicates that respondents assign a higher price to items

with a higher perceived quality (Lichtenstein et al., 1993). Interestingly, this finding is supported by research on conspicuous consumption and race that revealed higher differences for Hispanics and African-Americans (Charles et al., 2009).

Correspondingly, when taking all differences into account, it is possible to observe how Hispanics are more sensitive to prices than African-Americans and Caucasians. Moreover, the sensitivity can be explained as Hispanics have the highest scores for price consciousness (i.e. they are more price conscious), coupon proneness, and price-quality schema. This finding can also provide market insight as it suggests the importance of low prices, either in the form of everyday low prices or coupons, as well as the finding that Hispanics assign a higher value to products that have a higher perceived quality. Furthermore, these findings for Hispanics have been documented previously in the literature and are therefore corroborated (Saegert et al., 1985, Alaniz and Gilly, 1986, Webster, 1990, Mulhern and Williams, 1994); although previous are based on studies of Hispanics as an independent group (i.e. without comparing between Caucasians and African-Americans, as undertaken in this study).

Moreover, a choice-based conjoint analysis revealed that respondents preferred brands over price. The relationship between brand and price has also been documented in the marketing literature (Mulhern et al., 1998, Teltis and Gaeth, 1990, Ackennan and Tellis, 2001). Similarly; respondents gave the least preferences to the sweetness attribute. These preferences were statistically significant among the respondents. However, it was not possible to find statistically significant differences by ethnic group either by attribute (brand, price, sweetness, flavour) or by utilities.

The findings from the choice-based conjoint analysis also provide market insight. For example, the choice-based conjoint analysis revealed the importance of brand and price over other constructs such as flavour and sweetness level, in the case of refrigerated orange juices.

In general, this study provides insight into marketing practice, both from the understanding of the differences in price perception among ethnic groups (i.e. Hispanics are more sensitive to prices than Caucasians and African-Americans) and by aiding understanding of the importance of brand and price versus other attributes for different ethnic groups.

Additionally, this study provides a contribution to research. For example, based on a review of the literature, this study is the first to use the Price Perception Scale (Lichtenstein et al., 1993) across African-Americans, Caucasians, and Hispanics. The study did find significant differences among ethnic groups, in some of the constructs for the perception scale, and this contributes to the knowledge on cross-ethnic marketing (Cui and Choudhury, 2002). As such, further studies with different ethnic groups or with Hispanics at different levels of acculturation (Peñaloza and Gilly, 1999) can contribute to our understanding of ethnic pricing.

The study also indicates the methodological approach used; specifically the use of the Price Perception Scale among cultural groups, by analysing the scales using a Confirmatory Factor Analysis (CFA), followed by an MANOVA to analyse differences between ethnic groups. Hence, the contribution of this study is to adapt existing methods, such as CFA and MANOVA, to the analysis of the Price Perception Scale (Lichtenstein et al., 1993) across ethnic groups.

Moreover, this study elaborates on the findings of previous research completed in the formation and measurement of prices, undertaken in P1 and P2.

The next section presents some limitations of the study.

4.9 Limitations of the Study

This study had several limitations. Firstly, the sample size was below the recommended rule-of-thumb of 200 respondents per group, suggested by authors such as Hair et al. (2010). Despite that several authors used samples size lower than 200 respondents per group (Zhou and Nakamoto, 2001; Meng and Nasco, 2009), the sample size used in this study might provide a rationale on why the study found a weak link between ethnicity and the various scales used in the MANOVA).

Moreover, the study used a convenient sample, drawn from respondents living in the metropolitan area of Chicago, and therefore the results cannot be extrapolated to the general population.

However, it is important to note that the purpose of this study was to find whether there is a relationship between ethnicity and price perceptions, rather than finding results that could be extrapolated. Moreover, this study must be replicated and validated by further studies in other contexts and cultures.

Likewise, the relation between ethnicity and price perception might be different in other countries, in the developed world, for example, in England. More, there might be a different relationship between ethnicity and price perception in the developing world as well. As such, this study does not cover these possibilities.

Furthermore, this study used a single product category such as refrigerated orange juices, but price perception might be different across other product categories or services, and therefore further studies can explore how price perception and ethnicity is related to other product categories.

So, the next section will provide suggestions for further research.

4.10 Suggestions for Further Research

Suggestions for further research could take two approaches. On the one hand, there is a methodological pathway for further research. Accordingly, this study showed the need to compare and contrast different approaches to the analysis of the price perception scales (Lichtenstein et al., 1993). For example, the literature does not show whether conducting a CFA analysis, followed by an MANOVA (to test mean differences), is superior to other approaches, such as just an MANOVA or just a CFA analysis. Moreover, similar studies that used the approach of a CFA followed by a test of mean differences (Jin and Sternquist, 2003; Sternquist et al., 2004; Meng et al., 2006; Zielke and Komor, 2015) used either the ratings in the constructs (Jin and Sternquist, 2003; Sternquist et al., 2004; Zielke and Komor, 2015) or the means of the ratings (Meng and Nasco, 2009). This study used the ratings in the constructs as provided by the respondents, but the literature does not say whether this approach is superior to the approach used by Meng and Nasco (2009) (i.e. using the means of the ratings).

Also, this study suggests the need for further research in the use of cross-cultural choice-based conjoint analysis. In particular, in regards to the sample size. This study did not find statistically significant differences between ethnic groups (but it did find statistically significant differences between attributes), and this might be due to the sample size (although there is a possibility that there were actually no differences at all). Accordingly, the literature suggests various rules of thumb when it comes to determining sample size in the choice-based conjoint analysis (Hair et al., 2010, Orme, 2010), but perhaps there is a need for more direction on sample size determination in the cross-cultural choice-based conjoint analysis.

On the other hand, this study implies another approach for further research. Such an approach might consider further studies with different sets of ethnic groups (i.e. Asians), or groups with different levels of acculturation (i.e. first, second and third generation Hispanics). Moreover, these further studies can be

applied to other cultural factors including religiosity (i.e. Jewish versus Non-Jewish), and age groups (i.e. Millennials).

Additionally, there is a suggestion to extend the study of ethnic groups and price perception to other geographies where there is a diversity in ethnicity. For example, a study could explore the price perception between Whites and Indians in the United Kingdom.

Moreover, as presented in P1, the framework outlined for the formation of price perception suggests that cultural factors, such as ethnicity, do influence the formation of price perceptions. This study presents evidence of such influence. However, in the P1 study, we considered other factors such as store format (i.e. supermarkets versus traditional stores), time (i.e. winter versus summer), and more, that could also be studied to see their effects on price perception formation. In other words, the study of the formation of price perception could open the door to a variety of price perception studies.

4.11 Concluding Remarks

This research makes several contributions from the academic and practitioner perspectives. For example, it shows that the perception scale, developed by Lichtenstein et al. (1993) can be applied to investigate consumption behaviour amongst different ethnic groups, such as Caucasians, African Americans, and Hispanics and statistically, significant differences were found for behavioural differences relating to some price perception constructs. This finding supports the notion developed in our framework for the formation of price perception, in the sense that cultural factors (i.e. ethnicity) influence the formation of price perception. In addition, this research presented an application of choice-based conjoint analysis to study multi-ethnic pricing for the first time.

Overall, this research brings several contributions to academia and management. The contributions include adapting an existing method such as choice-based conjoint analysis for the measurement of price perceptions across cultural groups. The use of conjoint analysis in pricing research is not novel but has traditionally mostly been used to measure willingness to pay (Hensher et al., 2005, Breidert and Reutterer, 2006) and not to measure price perceptions. Moreover, this research is a continuation of the work undertaken in P1 and P2 on the topic of consumer price perceptions and uses quantitative methods to measure consumer price perceptions between cultural groups.

Overall, we hope that this research will open the door for further research on the topic of consumer price perception measurement, in particular, consumer price perception measurement for different market segments.

5 References

- Aaker, D. A. 1992. The Value of Brand Equity. *Journal of Business Strategy*, 13, 27-28,29,30,31,32.
- Ackennan, D. & Tellis, G. 2001. Can culture affect prices? A cross-cultural study of shopping and retail prices. *Journal of Retailing*, 77, 57-57.
- Adaval, R., Wyer Robert, S. & Jr 2011. Conscious and nonconscious comparisons with price anchors: Effects on willingness to pay for related and unrelated products. *Journal of Marketing Research*, 48, 355-365.
- Addinsoft 2015. XLSTAT. New York, NY: Addinsoft, Inc.
- Agarwal, S. & Teas, R. K. 2002. Cross-national applicability of a perceived quality model. *The Journal of Product and Brand Management*, 11, 213-236.
- Alaniz, L. P. & Gilly, M. C. 1986. The Hispanic Family—Consumer Research Issues. *Psychology & Marketing*, 3, 291-304.
- Alexa, M. & Zuell, C. 2000. Text Analysis Software: Commonalities, Differences and Limitations: The Results of a Review. *Quality and Quantity*, 34, 299-321.
- Alford, B. L. & Biswas, A. 2002. The effects of discount level, price consciousness and sale proneness on consumers' price perception and behavioral intention. *Journal of Business Research*, 55, 775-783.
- Allenby, G., Fennell, G., Huber, J., Eagle, T., Gilbride, T., Horsky, D., Kim, J., Lenk, P., Johnson, R., Ofek, E., Orme, B., Otter, T. & Walker, J. 2005. Adjusting Choice Models to Better Predict Market Behavior. *Marketing Letters*, 16, 197-208.
- Allsopp, J. 2005. Premium pricing: Understanding the value of premium. *Journal of Revenue & Pricing Management*, 4, 185-194.
- Alpert, F., Wilson, B. & Elliott, M. T. 1993. Price signaling: Does it ever work? *The Journal of Product and Brand Management*, 2, 13-29.
- Ålund, A. 1999. Ethnicity, multiculturalism and the problem of culture. *European societies*, 1, 105-116.
- Ancarani, F., Jacob, F. & Jallat, F. 2009. Cross-country analysis of price levels and dispersion in online and offline environments: an empirical analysis in France and Germany. *The Journal of Product and Brand Management*, 18, 497-505.

- Anselmsson, J., Johansson, U. & Persson, N. 2007. Understanding price premium for grocery products: a conceptual model of customer-based brand equity. *Journal of Product & Brand Management*, 16, 401-414.
- Applbaum, K. & Jordt, I. 1996. Notes toward an Application of McCracken's "Cultural Categories" for Cross-Cultural Consumer Research. *Journal of Consumer Research*, 23, 204-218.
- Ataman, M. B., Van Heerde, H. J. & Mela, C. F. 2010. The Long-Term Effect of Marketing Strategy on Brand Sales. *Journal of Marketing Research*, 47, 866-882.
- Azevedo, A., Von Glinow, M. A. & Paul, K. 2001. Does Ethnic Diversity Mean Cultural Diversity? *International Journal of Value - Based Management*, 14, 273-291.
- Backhaus, K., Wilken, R., Voeth, M. & Sichtmann, C. 2005. An empirical comparison of methods to measure willingness to pay by examining the hypothetical bias. *International Journal of Market Research*, 47, 543-562.
- Bakken, D. & Frazier, C. L. 2006. Conjoint analysis: Understanding consumer decision making. In: Grover, R., Vriens, M., Grover, R. & Vriens, M. (eds.). Thousand Oaks, CA, US: Sage Publications, Inc.
- Baumgartner, B. & Steiner, W. J. 2007. Are consumers heterogeneous in their preferences for odd and even prices? Findings from a choice-based conjoint study. *International Journal of Research in Marketing*, 24, 312-323.
- Baxter, D. I., Goffin, K. & Szwejczewski, M. 2014. The Repertory Grid Technique as a Customer Insight Method. *Research Technology Management*, 57, 35-42.
- Bearden, W. O., Netemeyer, R. G. & Haws, K. L. 2011. *Handbook of Marketing Scales: Multi-Item Measures for Marketing and Consumer Behavior Research*, Sage Publications.
- Becker, G. M., Degroot, M. H. & Marschak, J. 1964. Measuring utility by a single-response sequential method. *Behavioral Science*, 9, 226-232.
- Bell, D. R. & Lattin, J. M. 1998. Shopping Behavior and Consumer Preference for Store Price Format: Why "Large Basket" Shoppers Prefer EDLP. *Marketing Science*, 17, 66-66.
- Bell, R. C. 1997. *Using SPSS to Analyse Repertory Grid Data*. Department of Psychology, University of Melbourne.
- Bell, R. C. 2005. The Repertory Grid Technique. In: Fransella, F. (ed.). New York, NY, US: John Wiley & Sons Ltd.
- Bentler, P. M. 1990. Comparative Fit Indexes in Structural Models. *Psychological Bulletin*, 107, 238-238.

- Berry, J., Poortinga, Y., Breugelmans, S., Chasiotis, A. & Sam, D. 2011. *Cross-Cultural Psychology : Research and Applications*, Cambridge, UK, Cambridge University Press.
- Biswas, A. 1992. The Moderating Role of Brand Familiarity in Reference Price Perceptions. *Journal of Business Research*, 25, 251-262.
- Blaikie, N. 2007. *Approaches to Social Enquiry*, Cambridge, UK, Polity Press.
- Blunch, N. J. 2013. *Introduction to Structural Equation Modeling Using IBM SPSS Statistics and AMOS*, Sage Publications Inc.
- Bollen, K. A. & Davis, W. R. 2009. Two Rules of Identification for Structural Equation Models. *Structural Equation Modeling: A Multidisciplinary Journal*, 16, 523-536.
- Bolton, L. E., Keh, H. T. & Alba, J. W. 2010. How Do Price Fairness Perceptions Differ Across Culture? *Journal of Marketing Research (JMR)*, 47, 564-576.
- Bontempo, R. N., Bottom, W. P. & Weber, E. U. 1997. Cross-cultural differences in risk perception: A model-based approach. *Risk Analysis*, 17, 479-488.
- Boyle, P. J. & Lathrop, E. S. 2009. Are consumers' perceptions of price–quality relationships well calibrated? *International Journal of Consumer Studies*, 33, 58-63.
- Boza, M.-E. & Diamond, W. 1998. The Social Context of Exchange: Transaction Utility, Relationships and Legitimacy. *Advances in Consumer Research*, 25, 557-562.
- Breidert, C. & Reutterer, T. 2006. *Estimation of Willingness-to-Pay: Theory, Measurement, Application*.
- Briesch, R., Krishnamurthi, L., Mazumdar, T. & Raj, S. 1997. A Comparative Analysis of Reference Price Models. *Journal of Consumer Research*, 24, 202-214.
- Brislin, R. W. 1976. Comparative research methodology: Cross-cultural studies. *International Journal of Psychology*, 11, 215-215.
- Brogger, J. 2007. Reporting of systematic reviews: better software required. *Plos Medicine*, 4, e225-e225.
- Bujisic, M., Bilgihan, A. & Hutchinson, J. 2014. The effect of the type-pricing strategy on perceived price fairness and behavioral outcomes in beverage establishments. *Journal of Revenue and Pricing Management*, 13, 35-60.
- Burman, B. & Biswas, A. 2004. Reference prices in retail advertisements: moderating effects of market price dispersion and need for cognition on

- consumer value perception and shopping intention. *Journal of Product & Brand Management*, 13, 379-389.
- Burr, V., King, N. & Butt, T. 2014. Personal construct psychology methods for qualitative research. *International Journal of Social Research Methodology*, 17, 341-355.
- Burton, D. 2000. Ethnicity, Identity and Marketing: A Critical Review. *Journal of Marketing Management*, 16, 853-877.
- Butt, T. 2003. The phenomenological context of personal construct psychology. In: Fransella, F. & Fransella, F. (eds.). Butt, Trevor, School of Human & Health Sciences, University of Huddersfield, Queensgate, Huddersfield, West Yorkshire, United Kingdom, HD1 3DH: John Wiley & Sons Ltd.
- Byrne, B. 2001. Structural Equation Modeling With AMOS, EQS, and LISREL: Comparative Approaches to Testing for the Factorial Validity of a Measuring Instrument. *International Journal of Testing*, 1, 55-86.
- Caldwell, L. 2015. Making conjoint behavioural. *International Journal of Market Research*, 57, 495-501.
- Campbell, J. 2013. Antecedents to purchase intentions for Hispanic consumers: a 'local' perspective. *The International Review of Retail, Distribution and Consumer Research*, 23, 440-440.
- Campo, S. & Yagüe, M. 2007. The perception of price discounts according to consumer's characteristics. *Journal of Revenue & Pricing Management*, 6, 86-99.
- Caputi, P. & Reddy, P. 1999. A comparison of triadic and dyadic methods of personal construct elicitation. *Journal of Constructivist Psychology*, 12, 253-264.
- Carroll, J. & Green, P. 1995. Psychometric methods in marketing research: Part I, conjoint analysis. *JMR, Journal of Marketing Research*, 32, 385-385.
- Carter, R. & Curry, D. 2010. Transparent pricing: theory, tests, and implications for marketing practice. *Academy of Marketing Science. Journal*, 38, 759-759.
- Casielles, R. & Álvarez, B. 2007. Consumers' characteristics and brand choice behaviour: Loyalty and consumption. *Journal of Targeting, Measurement and Analysis for Marketing*, 15, 121-121.
- Chandon, P., Hutchinson, J., Bradlow, E. & Young, S. 2009. Does In-Store Marketing Work? Effects of the Number and Position of Shelf Facings on Brand Attention and Evaluation at the Point of Purchase. *Journal of Marketing*, 73, 1-17.
- Chandon, P., Morwitz, V. & Reinartz, W. 2005. Do Intentions Really Predict Behavior? Self-Generated Validity Effects in Survey Research. *Journal of Marketing*, 69, 1-14.

- Chandrashekar, R. 2011. Focal and contextual components of price history as determinants of expected price. *The Journal of Product and Brand Management*, 20, 408-419.
- Charles, K., Hurst, E. & Roussanov, N. 2009. Conspicuous Consumption and Race. *Quarterly Journal of Economics*, 124, 425-467.
- Cheung, G. & Rensvold, R. 2002. Evaluating Goodness-of-Fit Indexes for Testing Measurement Invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, 9, 233-255.
- Codini, A., Sacconi, N. & Sicco, A. 2012. The relationship between customer value and pricing strategies: an empirical test. *The Journal of Product and Brand Management*, 21, 538-546.
- Coffey, A. 2014. The Power of Cultural Factors in Spanish-Language Advertising: Ethnic-Group Traits and Metrics May Predict Advertiser Investment across Media Platforms. *Journal of Advertising Research*, 54, 346-355.
- Cohen, J. 1988. *Statistical Power Analysis for the Behavioral Sciences*, New York, Routledge.
- Cooper, H. 2009. *Research Synthesis and Meta-Analysis: A Step-by-Step Approach*, New York, Sage Publications.
- Cui, G. 1997. Marketing Strategies in a Multi-Ethnic Environment. *Journal of Marketing Theory & Practice*, 5, 122-122.
- Cui, G. & Choudhury, P. 2002. Marketplace diversity and cost-effective marketing strategies. *The Journal of Consumer Marketing*, 19, 54-54.
- Cunha, M. & Shulman, J. 2011. Assimilation and Contrast in Price Evaluations. *Journal of Consumer Research*, 37, 822-822.
- D'rozario, D. & Williams, J. 2005. Retail Redlining: Definition, Theory, Typology, and Measurement. *Journal of Macromarketing*, 25, 175-186.
- Damaraju, P., James B. & Chitturi 2011. *Choice-Based Conjoint Analysis: Models and Designs*. 1st ed.: Chapman and Hall/CRC.
- Darity, W., Guilkey, D.. & Winfrey, W. 1996. Explaining differences in economic performance among racial and ethnic groups in the USA: The data examined. *The American Journal of Economics and Sociology*, 55, 411-411.
- De Mooij, M. & Hofstede, G. 2011. Cross-Cultural Consumer Behavior: A Review of Research Findings. *Journal of International Consumer Marketing*, 23, 181-192.
- Deal, K. 2002. Get your conjoint online, in several flavors. *Marketing Research*, 14, 44-45.

- Desarbo, W., Ramaswamy, V. & Cohen, S. 1995. Market Segmentation with Choice-Based Conjoint Analysis. *Marketing Letters*, 6, 137-147.
- Dickson, P. & Sawyer, A. 1990. The price knowledge and search of supermarket shoppers. *Journal of Marketing*, 54, 42-42.
- Ding, M. 2007. An Incentive-Aligned Mechanism for Conjoint Analysis. *Journal of Marketing Research (JMR)*, 44, 214-223.
- Dixit, A., Hall, K. & Dutta, S. 2014. Psychological influences on customer willingness to pay and choice in automated retail settings: Context effects, attribute framing, and perceptions of fairness. *American Journal of Business*, 29, 237-260.
- Doyle, P. 2000. Value-based marketing. *Journal of Strategic Marketing*, 8, 299-311.
- Durvasula, S., Andrews, J., Lysonski, S. & Netemeyer, R. 1993. Assessing the Cross-National Applicability of Consumer Behavior Models: A Model of Attitude Toward Advertising in General. *Journal of Consumer Research*, 19, 626-636.
- Elamin, M., Flynn, D., Bassler, D., Briel, M., Alonso-Coello, P., Karanicolas, P. J., Guyatt, G., Malaga, G., Furukawa, T., Kunz, R., Schünemann, H., Murad, M., Barbui, C., Cipriani, A. & Montori, V. 2009. Choice of data extraction tools for systematic reviews depends on resources and review complexity. *Journal Of Clinical Epidemiology*, 62, 506-510.
- Ember, M. 2009. *Cross-Cultural Research Method*, AltaMira Press.
- Emslie, L., Bent, R. & Seaman, C. 2007. Missed opportunities? Reaching the ethnic consumer market. *International Journal of Consumer Studies*, 31, 168-168.
- Ene Özkaya, B. 2013. A Study Regarding the Attitudes that are Effective on the Price Perception of Consumers that Shop from the Retail Stores. *Mediterranean Journal of Social Sciences*, 4.
- Erdem, T., Mayhew, G. & Sun, B. 2001. Understanding Reference-Price Shoppers: A Within- and Cross-Category Analysis. *Journal of Marketing Research (JMR)*, 38, 445-457.
- Eriksen, T. 2012. *Ethnicity*. John Wiley & Sons, Ltd.
- Esch, F., Schmitt, B., Redler, J. & Langner, T. 2009. The brand anchoring effect: A judgment bias resulting from brand awareness and temporary accessibility. *Psychology & Marketing*, 26, 383-395.
- Estelami, H. 1997. Consumer Perceptions of Multi-Dimensional Prices. *Advances in Consumer Research*, 24, 392-399.
- Etgar, M. & Malhotra, N. 1981. Determinants of price dependency: Personal and perceptual factors. *Journal of Consumer Research*, 8, 217-222.

- Evans, W. 1996. Computer-Supported Content Analysis. *Social Science Computer Review*, 14, 269-279.
- Field, A. 2009. Exploratory Factor Analysis. London: Sage Publications, LTD.
- Fink, A. 2010. *Conducting Research Literature Reviews: From Internet to Paper*, Thousand Oaks, CA, Sage Publications Inc.
- Fornell, C. & Larcker, D. 1981. Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18, 39-50.
- Fransella, F., Bell, R. & Bannister, D. 2003. *A Manual for Repertory Grid Technique*, London, John Wiley & Sons Ltd.
- Gabor, A. & Granger, C. 1964. Price Sensitivity of the Consumer. *Journal of Advertising Research*, 4, 40-40.
- Gabor, A. & Granger, C. 1966. Price as an Indicator of Quality, Report on an Enquiry. *Economica*, 43-43.
- Gabor, A. & Granger, C. 1979. The Attitude of the Consumer to Prices. *Management Decision*, 17, 619-634.
- Gallagher, M. & Brown, T. 2013. Introduction to Confirmatory Factor Analysis and Structural Equation Modeling. In: Teo, T. (ed.). Rotterdam: SensePublishers.
- Gaskin, J. 2012. Exploratory factor analysis. *Gaskination's Statwiki*. Retrieved February, 10, 2012.
- Gendall, P., Holdershaw, J. & Garland, R. 1997. The effects of odd pricing on demand. *European Journal of Marketing*, 31, 736-913.
- Gilbride, T., Gultinan, J. & Urbany, J. 2008a. Framing effects in mixed price bundling. *Marketing Letters*, 19, 125-139.
- Gilbride, T. J., Lenk, P. & Brazell, J. 2008b. Market share constraints and the loss function in choice-based conjoint analysis. *Marketing Science*, 27, 995-1011.
- Goffin, K., Lemke, F. & Szejczewski, M. 2006. An exploratory study of 'close' supplier–manufacturer relationships. *Journal of Operations Management*, 24, 189-209.
- Goldman, A. & Hino, H. 2005. Supermarkets vs. traditional retail stores: diagnosing the barriers to supermarkets' market share growth in an ethnic minority community. *Journal of Retailing and Consumer Services*, 12, 273-284.
- Goldstein, B. 2013. *Sensation and Perception*, Cengage Learning.
- Gough, D., Oliver, S. & Thomas, J. 2012. *An Introduction to Systematic Reviews*, London, Sage Publications.

- Graddy, K. 1997. Do fast-food chains price discriminate on the race and income characteristics of an area? *Journal of Business & Economic Statistics*, 15, 391-401.
- Grandon, G. & Hoppe, U. 2009. The Business Professional Doctorate as an Informing Channel: A Survey and Analysis. *International Journal of Doctoral Studies*, 4, 27-57.
- Green, C. 1995. Differential responses to retail sales promotion among African-American and Anglo-American consumers. *Journal of Retailing*, 71, 83-83.
- Green, C. 1996. Ethnic response to couponing: a motivational perspective. *Journal of Consumer Marketing*, 13, 14-25.
- Green, P. & Rao, V. 1971. Conjoint measurement for quantifying judgemental data. *JMR, Journal of Marketing Research (pre-1986)*, 8, 355-355.
- Green, P. & Srinivasan, V. 1978. Conjoint Analysis in Consumer Research: Issues and Outlook. *Journal of Consumer Research*, 5, 103-103.
- Gwynne, A., Devlin, J. & Ennew, C. 2000. The Zone of Tolerance: Insights and Influences. *Journal of Marketing Management*, 16, 545-564.
- Hair, J., Black, W., Babin, B. & Anderson, R. 2010. *Multivariate Data Analysis: A Global Perspective*, Pearson.
- Hair, N., Rose, S. & Clark, M. 2009. Using qualitative repertory grid techniques to explore perceptions of business-to-business online customer experience. *Journal of Customer Behaviour*, 8, 51-65.
- Hallsworth, A. G. 1988. Repertory grid methodology and the analysis of group perceptions in retailing. *International Journal of Retailing*, 3, 43-54.
- Hardie, B., Johnson, E. & Fader, P. 1993. Modeling Loss Aversion and Reference Dependence Effects on Brand Choice. *Marketing Science*, 12, 378-394.
- Harrington, D. 2008. *Confirmatory Factor Analysis (Pocket Guide to Social Work Research Methods)*, New York, Oxford University Press.
- Harris, C. & Bray, J. 2007. Price endings and consumer segmentation. *Journal of Product & Brand Management*, 16, 200-205.
- Hart, C. 1998. *Doing a Literature Review*, London, Sage Publications Ltd.
- Heath, T., Chatterjee, S. & France, K. 1995. Mental accounting and changes in price: The frame dependenc. *Journal of Consumer Research*, 22, 90-90.
- Helson, H. 1964. *Adaptation-Level Theory An Experimental and Systematic Approach to Behavior*, Harper & Row.
- Hensher, D., Rose, J. & Greene, W. 2005. *Estimation of Willingness-to-Pay: Theory, Measurement, Application*.

- Herrmann, A., Huber, F., Sivakumar, K. & Wricke, M. 2004. An Empirical Analysis of the Determinants of Price Tolerance. *Psychology & Marketing*, 21, 533-551.
- Higgins, J. & Greene, S. 2008. *Cochrane Handbook for Systematic Reviews of Interventions*, Hoboken, John Wiley & Sons.
- Ho, R. 2014. *Handbook of Univariate and Multivariate Data Analysis with IBM SPSS*, Taylor & Francis Group.
- Hofstede, G. 2015. Culture's causes: the next challenge. *Cross Cultural Management*, 22, 545-569.
- Houghton, J., Van Kleef, E., Rowe, G. & Frewer, L. 2006. Consumer perceptions of the effectiveness of food risk management practices: A cross-cultural study. *Health, Risk & Society*, 8, 165-183.
- Hu, L. & Bentler, P. 1999. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6, 1-55.
- Huang, H., Chang, Y., Yeh, C. & Liao, C. 2014. Promote the price promotion. *International Journal of Contemporary Hospitality Management*, 26, 1065-1065.
- Huff, A. 1998. *Writing for Scholarly Publication*, Thousand Oaks, CA, Sage Publications.
- Humes, K., Jones, N. A. & Ramirez, R. R. 2011. Overview of Race and Hispanic Origin: 2010.
- Hunter, M. 2006. Experiences Conducting Cross-Cultural Research. *Journal of Global Information Management*, 14, 75-89.
- Iacobucci, D. 2010. Structural equations modeling: Fit indices, sample size, and advanced topics. *Journal of Consumer Psychology*, 20, 90-98.
- Iyengar, R., Jedidi, K. & Kohll, R. 2008. A Conjoint Approach to Multipart Pricing. *JMR, Journal of Marketing Research*, 45, 195-195.
- Iyer, R. & Muncy, J. 2005. The role of brand parity in developing loyal customers. *Journal of Advertising Research*, 45, 222-228.
- Jaccard, J. & Jacoby, J. 2010. *Theory Construction and Model-Building Skills: A Practical Guide for Social Scientists*, New York, The Guilford Press.
- Jaeger, S., Hedderley, D. & Macfie, H. 2001. Methodological issues in conjoint analysis: A case study. *European Journal of Marketing*, 35, 1217-1237.
- Jafari, A. & Visconti, L. 2015. New directions in researching ethnicity in marketing and consumer behaviour: A well-being agenda. *Marketing Theory*, 15, 265-265.

- Jamal, A. 2003. Retailing in a multicultural world: the interplay of retailing, ethnic identity and consumption. *Journal of Retailing and Consumer Services*, 10, 1-11.
- Janiszewski, C. & Lichtenstein, D. 1999. A Range Theory Account of Price Perception. *Journal of Consumer Research*, 25, 353-368.
- Jankowicz, D. 2005. *The easy guide to repertory grids*, John Wiley & sons.
- Jedidi, K. & Zhang, Z. 2002. Augmenting Conjoint Analysis to Estimate Consumer Reservation Price. *Management Science*, 48, 1350-1368.
- Jervis, S., Ennis, J. & Drake, M. 2012. A comparison of adaptive choice-based conjoint and choice-based conjoint to determine key choice attributes of sour cream with limited sample size. *Journal of Sensory Studies*, 27, 451-462.
- Jin, B. & Sternquist, B. 2003. The influence of retail environment on price perceptions - An exploratory study of US and Korean students.
- John, S. & Gupta, S. 2012. *An Insight into Consumer Behavior*, USA, Amazon Digital Services, Inc.
- Johnson, R. & Olberts, K. 1992. Using Conjoint Analysis in Pricing Studies: Is One Price Variable Enough?
- Johnson, R. & Orme, B. 1996. How Many Questions Should You Ask in Choice-Based Conjoint Studies?
- Jones, V., Drake, M., Harding, R. & Kuhn-Sherlock, B. 2008. Consumer perception of soy and dairy products: A cross-cultural study. *Journal of Sensory Studies*, 23, 65-79.
- Kahneman, D. & Tversky, A. 1979. Prospect Theory: an Analysis of Decision Under Risk. *Econometrica*, 47, 263-291.
- Kalyanaram, G. & Little, J. 1994. An Empirical Analysis of Latitude of Price Acceptance in Consumer Package Goods. *Journal of Consumer Research*, 21, 408-418.
- Kalyanaram, G. & Winer, R. 1995. Empirical Generalizations from Reference Price Research. *Marketing Science (1986-1998)*, 14, G161.
- Karniouchina, E., Moore, W., Van Der Rhee, B. & Verma, R. 2009. Issues in the use of ratings-based versus choice-based conjoint analysis in operations management research. *European Journal of Operational Research*, 197, 340-348.
- Katz, J. 1984. Personal construct theory and the emotions: An interpretation in terms of primitive constructs. *British Journal of Psychology*, 75, 315-315.
- Kelly, G. 1955. *The Psychology of Personal Constructs*, New York, Norton.

- Kenny, D. & West, T. 2010. Similarity and agreement in self- and other perception: A meta-analysis. *Personality and Social Psychology Review*, 14, 196-213.
- Kerin, R., Jain, A. & Howard, D. 1992. Store Shopping Experience and Consumer Price-Quality-Value Perceptions. *Journal of Retailing*, 68, 376-376.
- Khare, A., Ahtani, D. & Khattar, M. 2014. Influence of price perception and shopping motives on Indian consumers' attitude towards retailer promotions in malls. *Asia Pacific Journal of Marketing and Logistics*, 26, 272-295.
- Klein, A., Nihalani, K. & Krishnan, K. 2010. A comparison of the validity of interviewer-based and online-conjoint analyses. *Journal of Management and Marketing Research*, 4, 1-15.
- Klein, N. & Oglethorpe, J. 1987. Cognitive reference points in consumer decision making. *Advances in Consumer Research*, 14, 183-187.
- Kline, R. 2016. *Principles and Practice of Structural Equation Modeling*, The Guilford Press.
- Knight, G. 1999. Consumer preferences for foreign and domestic products. *Journal of Consumer Marketing*, 16, 151-162.
- Kopalle, P. & Winer, R. 1996. A dynamic model of reference price and expected quality. *Marketing letters*, 7, 41-52.
- Koschate-Fischer, N., Diamantopoulos, A. & Oldenkotte, K. 2012. Are Consumers Really Willing to Pay More for a Favorable Country Image? A Study of Country-of-Origin Effects on Willingness to Pay. *Journal of International Marketing*, 20, 19-41.
- Kot, F. & Hendel, D. 2012. Emergence and growth of professional doctorates in the United States, United Kingdom, Canada and Australia: a comparative analysis. *Studies in Higher Education*, 37, 345-364.
- Kraus, S., Meier, F., Eggers, F., Bouncken, R. & Schuessler, F. 2016. Standardisation vs. adaption: a conjoint experiment on the influence of psychic, cultural and geographical distance on international marketing mix decisions. *European Journal of International Management*, 10, 127-156.
- Kumar, V., Karande, K. & Reinartz, W. 1998. The impact of internal and external reference prices on brand choice: The moderating role of contextual variables. *Journal of Retailing*, 74, 401-426.
- Kurtuluş, K. & Okumuş, A. 2010. Consumers' price perceptions as a segmentation criteria: An emerging market case. *Bir bölümlendirme kriteri olarak tüketicilerin fiyat algılamaları: Gelişmekte olan piyasa örneği.*, 39, 21-34.

- Leach, C., Freshwater, K., Aldridge, J. & Sunderland, J. 2001. Analysis of repertory grids in clinical practice. *British Journal of Clinical Psychology*, 40, 225-248.
- Lemke, F., Clark, M. & Wilson, H. 2011. Customer experience quality: An exploration in business and consumer contexts using repertory grid technique. *Journal of the Academy of Marketing Science*, 39, 846-869.
- Lemke, F., Goffin, K. & Szejcowski, M. 2003. Investigating the meaning of supplier-manufacturer partnerships. *International Journal of Physical Distribution & Logistics Management*, 33, 12-12.
- Liao, T. F. 1994. *Interpreting Probability Models: Logit, Probit, and Other Generalized Linear Models*, Thousand Oaks, CA, Sage Publications Inc.
- Lichtenstein, D., Netemeyer, R. & Burton, S. 1990. Distinguishing coupon proneness from value consciousness: An acquisition-transaction utility. *Journal of Marketing*, 54, 54-54.
- Lichtenstein, D., Ridgway, N. & Netemeyer, R. 1993. Price Perceptions and Consumer Shopping Behavior: A Field Study. *Journal of Marketing Research*, 30, 234-245.
- Lim, L. & Firkola, P. 2000. Methodological issues in cross-cultural management research: Problems, solutions, and proposals. *Asia Pacific Journal of Management*, 17, 133-154.
- Lollock, L. 2001. The foreign-born population in the United States. *Current Population Reports, US Census Bureau*.
- Louviere, J. & Woodworth, G. 1983. Design and Analysis of Simulated Consumer Choice or Allocation Experiments: An Approach Based on Aggregate Data. *JMR, Journal of Marketing Research*, 20, 350-350.
- Lowe, B. & Alpert, F. 2007. Measuring reference price perceptions for new product categories: which measure is best? *Journal of Product & Brand Management*, 16, 132-141.
- Lowe, B. & Alpert, F. 2010. Pricing strategy and the formation and evolution of reference price perceptions in new product categories. *Psychology & Marketing*, 27, 846-873.
- Manrai, L. & Manrai, A. 2011. Hofstede's Cultural Dimensions and Tourist Behaviors: A Review and Conceptual Framework. *Las dimensiones culturales y la conducta turística según Hofstede: análisis y marco conceptual.*, 16, 23-48.
- Marn, M. & Rosiello, R. 1992. Managing price, gaining profit. *Harvard Business Review*.
- Marsden, D. & Littler, D. 2000a. Exploring consumer product construct systems with the repertory grid technique. *Qualitative Market Research*, 3, 127-143.

- Marsden, D. & Littler, D. 2000b. Repertory grid technique An interpretive research framework. *European Journal of Marketing*, 34, 816-816.
- Marsh, H. 1994. Confirmatory factor analysis models of factorial invariance: A multifaceted approach. *Structural Equation Modeling: A Multidisciplinary Journal*, 1, 5-34.
- Masiero, L. & Nicolau, J. 2012. Tourism Market Segmentation Based on Price Sensitivity: Finding Similar Price Preferences on Tourism Activities. *Journal of Travel Research*, 51, 426-435.
- Matsumoto, D. & Vijver, F. 2011. *Cross-Cultural Research Methods in Psychology*, New York, NY, Cambridge University Press.
- Matsumoto, D. & Vijver, F. 2010. *Product Details Cross-Cultural Research Methods in Psychology (Culture and Psychology)*, Cambridge University Press.
- Maxwell, S. 2001. An expanded price/brand effect model: A demonstration of heterogeneity in global consumption. *International Marketing Review*, 18, 325-325.
- Maxwell, S., Lee, S., Anselstetter, S., Comer, L. & Maxwell, N. 2009. Gender differences in the response to unfair prices: a cross-country analysis. *The Journal of Consumer Marketing*, 26, 508-515.
- Mazumdar, T. & Jun, S. 1993. Consumer evaluations of multiple versus single price change. *Journal of Consumer Research*, 20, 441-450.
- Mccracken, G. 1986. Culture and Consumption: A Theoretical Account of the Structure and Movement of the Cultural Meaning of Consumer Goods. *Journal of Consumer Research (1986-1998)*, 13, 71-71.
- Mccullough, D. 2002. A User's Guide to Conjoint Analysis. *Marketing Research*, 14, 18-23.
- Mcgowan, K. & Sternquist, B. 1998. Dimensions of price as a marketing universal: A Comparison of Japanese and U.S. consumers. *Journal of International Marketing*, 6, 49-65.
- Meghani, S., Chittams, J., Hanlon, A. & Curry, J. 2013. Measuring preferences for analgesic treatment for cancer pain: How do African-Americans and Whites perform on choice-based conjoint (CBC) analysis experiments? *BMC Medical Informatics and Decision Making*, 13, 118-118.
- Meißner, M. & Decker, R. 2010. Eye-tracking information processing in choice-based conjoint analysis. *International Journal of Market Research*, 52, 591-610.
- Mendoza, J. & Baines, P. Towards a consumer price perception formation framework: a systematic review. 2012 2012.

- Meng, J. 2011. Understanding cultural influence on price perception: empirical insights from a SEM application. *Journal of Product & Brand Management*, 20, 526-540.
- Meng, J. & Nasco, S. 2009. Cross-Cultural Equivalence of Price Perceptions across American, Chinese, and Japanese Consumers. *Journal of Product & Brand Management*, 18, 506-516.
- Meng, J., Nasco, S. & Clark, T. 2007. Measuring Country-of-Origin Effects in Caucasians, African-Americans and Chinese Consumers for Products and Services. *Journal of International Consumer Marketing*, 20, 17-17.
- Metzler, A., Gorden, H. & Neimeyer, G. 2002. The effect of repertory grid scale size and rating direction on structural measures of differentiation. *Journal of Constructivist Psychology*, 15, 95-107.
- Mich, C. & Keillor, B. 2011. Ethnic Identity: Understanding Cultural Differences Within a Culture. *Marketing Management Journal*, 21, 1-9.
- Michon, R. & Chebat, J.-C. 2004. Cross-cultural mall shopping values and habitats. *Journal of Business Research*, 57, 883-892.
- Millan, E., De Pelsmacker, P. & Wright, L. 2013. Clothing consumption in two recent EU Member States: A cross-cultural study. *Journal of Business Research*, 66, 975-982.
- Miller, K., Hofstetter, R., Krohmer, H. & Zhang, Z. 2011. How Should Consumers' Willingness to Pay Be Measured? An Empirical Comparison of State-of-the-Art Approaches. *Journal of Marketing Research*, 48, 172-184.
- Minkov, M. & Hofstede, G. 2011. The evolution of Hofstede's Doctrine. *Cross Cultural Management*, 18, 10-20.
- Miranda, M. 2001. The influence of price reductions on shoppers' reference price and reservation price when upgrading to premium brands. *Journal of Targeting, Measurement & Analysis for Marketing*, 10, 42-42.
- Monroe, K. 1973. Buyer's Subjective Perceptions of Price. *Journal of Marketing Research (JMR)*, 10, 70-80.
- Moon, S. & Voss, G. 2009. How do price range shoppers differ from reference price point shoppers? *Journal of Business Research*, 62, 31-38.
- Moore, M., Kennedy, K. M. & Fairhurst, A. 2003. Cross-cultural equivalence of price perceptions between US and Polish consumers. *International Journal of Retail & Distribution Management*, 31, 268-279.
- Moore, W. L. 2004. A cross-validity comparison of rating-based and choice-based conjoint analysis models. *International Journal of Research in Marketing*, 21, 299-312.

- Morris, R. 1994. Computerized Content Analysis in Management Research: A Demonstration of Advantages & Limitations. *Journal of Management*, 20, 903-931.
- Moschis, G. P., Prahato, A. E. & Mitchell, L. G. 1986. Family Communication Influences on the Development of Consumer Behavior: some Additional Findings. *Advances in Consumer Research*, 13, 365-369.
- Mulhern, F. J. & Williams, J. D. 1994. A comparative analysis of shopping behavior in Hispanic and non-Hispanic market areas. *Journal of Retailing*, 70, 231-231.
- Mulhern, F. J., Williams, J. D. & Leone, R. P. 1998. Variability of brand price elasticities across retail stores: Ethnic, income, and brand determinants. *Journal of Retailing*, 74, 427-446.
- Nagle, T. & Hogan, J. 2010. *The Strategy and Tactics of Pricing*. Routledge.
- Nasiry, J. & Popescu, I. 2008. Dynamic Pricing with Loss Averse Consumers and Peak-End Anchoring. *INSEAD Working Papers Collection*, 1-39.
- Nedungadi, P. 1990. Recall and Consumer Consideration Sets: Influencing Choice Without Altering Brand Evaluations. *Journal of Consumer Research*, 17, 263-263.
- Neimeyer, G. J. & Tolliver, R. 2002. The effects of construct examples on the content and structure of personal systems. *Journal of Constructivist Psychology*, 15, 127-138.
- Newman, M. & Elbourne, D. 2004. Improving the Usability of Educational Research: Guidelines for the REPOrting of Primary Empirical Research Studies in Education (The REPOSE Guidelines). *Evaluation and Research in Education*, 18, 201-212.
- Nezlek, J. 2011. Multilevel Modeling and Cross-Cultural Research. In: Matsumoto, D. & Van De Vijver, F. (eds.). New York: Cambridge University Press.
- Nguyen, A., Heeler, R. M. & Taran, Z. 2007. High-low context cultures and price-ending practices. *The Journal of Product and Brand Management*, 16, 206-214.
- Niedrich, R. W., Sharma, S. & Wedell, D. H. 2001. Reference Price and Price Perceptions: A Comparison of Alternative Models. *Journal of Consumer Research*, 28, 339-354.
- Nimon, K. F. 2012. Statistical Assumptions of Substantive Analyses Across the General Linear Model: A Mini-Review. *Frontiers in Psychology*, 3, 322-322.
- Nishimoto, R. H. 1986. The cross-cultural metric equivalence of Langner's twenty-two item index. *Journal of Social Service Research*, 9, 37-52.

- O'cass, A. & Mcewen, H. 2004. Exploring consumer status and conspicuous consumption. *Journal of Consumer Behaviour*, 4, 25-39.
- O'mara-Eves, A., Thomas, J., Mcnaught, J., Miwa, M. & Ananiadou, S. 2015. Using text mining for study identification in systematic reviews: a systematic review of current approaches. *Systematic Reviews*, 4, 5-5.
- Oakley, A., Gough, D., Oliver, S. & Thomas, J. 2005. The politics of evidence and methodology: lessons from the EPPI-Centre. *Evidence & Policy: A Journal of Research, Debate and Practice*, 1, 5-32.
- Orme, B. 2002. Conjoint Analysis Has Value. *Marketing Research*, 14, 46-47.
- Orme, B. 2010. *Getting Started with Conjoint Analysis: Strategies for Product Design and Pricing Research*, Research Publishers LLC.
- Palazón, M. & Delgado, E. 2009. The moderating role of price consciousness on the effectiveness of price discounts and premium promotions. *Journal of Product & Brand Management*, 18, 306-312.
- Pallant, J. 2013. *SPSS Survival Manual*, Open University Press.
- Parducci, A. 1965. Category judgment: a range-frequency model. *Psychological Review*, 72, 407-407.
- Parguel, B., Delécolle, T. & Valette-Florence, P. 2015. How price display influences consumer luxury perceptions. *Journal of Business Research*, 69, 341-348.
- Peñaloza, L. & Gilly, M. C. 1999. Marketer acculturation: The changer and the changed. *Journal of Marketing*, 63, 84-104.
- Petticrew, M. & Roberts, H. 2006. *Systematic Reviews in the Social Sciences: A Practical Guide*, Oxford, Blackwell Publishing.
- Pires, G. D., Stanton, J. & Stanton, P. 2011. Revisiting the substantiality criterion: from ethnic marketing to market segmentation. *Journal of business research*, 64, 988-996.
- Podoshen, J. S. 2006. Word of mouth, brand loyalty, acculturation and the American Jewish consumer. *Journal of Consumer Marketing*, 23, 266-282.
- Pollard, K. M. & O'hare, W. P. 1999. America's Racial and Ethnic Minorities.
- Qualtrics 2016. Qualtrics. Provo, UT.
- Rajendran, K. N. & Tellis, G. J. 1994. Contextual and temporal components of reference price. *Journal of Marketing*, 58, 22-22.
- Rao, A. R. & Bergen, M. E. 1992. Price Premium Variations as a Consequence of Buyers' Lack of Information. *Journal of Consumer Research*, 19, 412-423.

- Rao, A. R. & Monroe, K. B. 1996. Causes and consequences of price premiums. *Journal of Business*, 69, 511-511.
- Rao, V. R. 2014. *Applied Conjoint Analysis*, Springer.
- Reardon, J. & Miller, C. 2012. The effect of response scale type on cross-cultural construct measures. *International Marketing Review*, 29, 24-53.
- Rindfleisch, A., Burroughs, J. E. & Denton, F. 1997. Family Structure, Materialism, and Compulsive Consumption. *Journal of Consumer Research*, 23, 312-325.
- Roy, A. & Henry, W. 1995. Special issue on Pricing Strategy and the Marketing Mix. *Journal of Business Research*, 33, 183-185.
- Saegert, J., Hoover, R. J. & Hilger, M. T. 1985. Characteristics of Mexican American consumers. *Journal of Consumer Research*, 12, 104-109.
- Schumacker, R. E. & Lomax, R. G. 2010. *A Beginner's Guide to Structural Equation Modeling*, Taylor & Francis Group.
- Schwartz, B. & Krantz, J. 2015. *Sensation and Perception*, New York, Sage Publications, Inc.
- Scott, M. L., Mende, M. & Bolton, L. E. 2013. Judging the Book by Its Cover? How Consumers Decode Conspicuous Consumption Cues in Buyer-Seller Relationships. *Journal of Marketing Research (JMR)*, 50, 334-347.
- Sechrest, L. 1963. The Psychology Of Personal Constructs: George Kelly. In: Wepman, J. M., Heine, R. W., Wepman, J. M. & Heine, R. W. (eds.). Hawthorne, NY, US: Aldine Publishing Co.
- Sethuraman, R., Kerin, R. A. & Cron, W. L. 2005. A field study comparing online and offline data collection methods for identifying product attribute preferences using conjoint analysis. *Journal of Business Research*, 58, 602-610.
- Sichtmann, C., Wilken, R. & Diamantopoulos, A. 2011. Estimating willingness-to-pay with choice-based conjoint analysis – Can consumer characteristics explain variations in accuracy? *British Journal of Management*, 22, 628-645.
- Simmons, P. & Weiserbs, D. 1992. Consumer price perceptions and expectations. *Oxford economic papers*, 44, 35-50.
- Sin, L. Y. M., Cheung, G. W. H. & Lee, R. 1999. Methodology in cross-cultural consumer research: A review and critical assessment. *Journal of International Consumer Marketing*, 11, 75-96.
- Sinha, P. K. & Prasad, P. V. R. 2004. Reference Price: Impact of Shopper's Behaviour at the Store. *Decision (0304-0941)*, 31, 19-50.

- Skouras, T., Avlonitis, G. J. & Indounas, K. A. 2005. Economics and marketing on pricing: how and why do they differ? *Journal of Product & Brand Management*, 14, 362-374.
- Sowter, A. P., Gabor, A. & Granger, C. W. J. 1979. The Effect off Price on Choice A Theoretical and Empirical Investigation. *Management Decision*, 17, 673-690.
- Sriram & Forman, A. M. 1993. The relative importance of products' environmental attributes: A cross-cultural comparison. *International Marketing Review*, 10, 51-51.
- Steenkamp, J., X, Benedict, E. M. & Baumgartner, H. 1998. Assessing Measurement Invariance in Cross-National Consumer Research. *Journal of Consumer Research*, 25, 78-107.
- Steiger, J. H. 1990. Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research*, 25, 173-180.
- Sternquist, B., Sang-Eun Byun, B. & Jin, B. 2004. The Dimensionality of Price Perceptions: A Cross-Cultural Comparison of Asian Consumers. *International Review of Retail, Distribution & Consumer Research*, 14, 83-100.
- Stojnov, D. & Butt, T. 2002. The relational basis of personal construct psychology. In: Neimeyer, R. A., Neimeyer, G. J., Neimeyer, R. A. & Neimeyer, G. J. (eds.). Westport, CT, US: Praeger Publishers/Greenwood Publishing Group.
- Stoten, D. W. 2016. Discourse, knowledge and power: the continuing debate over the DBA. *Journal of Management Development*, 35, 430-447.
- Suk, K., Lee, J. & Lichtenstein, D. R. 2012. The influence of price presentation order on consumer choice. *Journal of Marketing Research*, 49, 708-717.
- Suri, R., Chandrashekar, R. & Grewal, D. 2008. Effects of Spatial Location of Price Information on Consumers' Perception of Prices and Products. *Advances in Consumer Research*, 35, 929-930.
- Szűcs, V., Guerrero, L., Claret, A., Tarcea, M., Szabó, E. & Bánáti, D. 2014. Food additives and consumer preferences: A cross-cultural choice based conjoint analysis. *Acta Alimentaria*, 43, 180-187.
- Taher, A. & El Basha, H. 2006. Heterogeneity of consumer demand: opportunities for pricing of services. *Journal of Product & Brand Management*, 15, 331-340.
- Tam, C. & Elliott, G. 2011. Branding and product evaluation across Chinese regions. *Marketing Intelligence & Planning*, 29, 385-402.
- Tan, C. T., Mccollough, J. & Teoh, J. 1987. An Individual Analysis Approach to Cross Cultural Research. *Advances in Consumer Research*, 14, 394-397.

- Tang, C. S., Bell, D. R. & Teck-Hua, H. 2001. Store choice and shopping behavior: How price format works. *California Management Review*, 43, 56-74.
- Teltis, G. J. & Gaeth, G. J. 1990. Best Value, Price-Seeking, and Price Aversion: The impact of Information and Learning on Consumer Choices. *Journal of Marketing*, 54, 34-45.
- Thaler, R. H. 1983. Transaction Utility Theory. *Advances in Consumer Research*, 10, 229-232.
- Thaler, R. H. 2008. Mental Accounting and Consumer Choice. *Marketing Science*, 27, 15-25.
- Thomas, J., Brunton, J. & Graziosi, S. 2010. Eppi-Reviewer 4: Software for Research Synthesis. London: Social Science Research Unit, Institute Of Education.
- Thomas, M. & Menon, G. 2007. When Internal Reference Prices and Price Expectations Diverge: The Role of Confidence. *Journal of Marketing Research (JMR)*, 44, 401-409.
- Tinn, I. 1982. Some problems with pricing research. *Journal of the Market Research Society*, 24, 317-334.
- Tomico, O., Karapanos, E., Lévy, P., Mizutani, N. & Yamanaka, T. 2009. The repertory grid technique as a method for the study of cultural differences. *International Journal of Design*, 3, 55-63.
- Tranfield, D., Denyer, D. & Smart, P. 2003. Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14, 207-222.
- Tsalikis, J., Seaton, B. & Tomaras, P. 2002. A new perspective on cross-cultural ethical evaluations: The use of conjoint analysis. *Journal of Business Ethics*, 35, 281-292.
- Tversky, A. & Kahneman, D. 1986. Rational Choice and the Framing of Decisions. *Journal of Business*, 59, S251-S278.
- Vanhuele, M. & Dreze, X. 2002. Measuring the price knowledge shoppers bring to the store. *Journal of Marketing*, 66, 72-85.
- Varki, S. & Colgate, M. 2001. The Role of Price Perceptions in an Integrated Model of Behavioral Intentions. *Journal of Service Research*, 3, 232-240.
- Vázquez-Casielles, R., Suárez-Álvarez, L. & Del Río-Lanza, A. B. 2009. Customer satisfaction and switching barriers: Effects on repurchase intentions, positive recommendations, and price tolerance. *Journal of Applied Social Psychology*, 39, 2275-2302.
- Vijver, F. V. D. & Leung, K. 1997. *Methods and Data Analysis for Cross-Cultural Research (Cross Cultural Psychology)*, SAGE Publications, Inc.

- Vijver, F. V. D. & Leung, K. 2011. Equivalence and Bias: A Review of Concepts, Models, and Data Analytic Procedures.
- Voelckner, F. 2006. An empirical comparison of methods for measuring consumers' willingness to pay. *Marketing Letters*, 17, 137-149.
- Völckner, F. 2011. The dual role of price: decomposing consumers' reactions to price. *Journal of the Academy of Marketing Science*, 1-19.
- Völckner, F. & Sattler, H. 2005. *Separating Negative and Positive Effects of Price with Choice-Based Conjoint Analysis*, Inst. Für Handel und Marketing.
- Volkman, J. 1951. Scales of judgment and their implications for social psychology. Oxford: Harper & Row.
- Wagner, W., Hansen, K. & Kronberger, N. 2014. Quantitative and qualitative research across cultures and languages: cultural metrics and their application. *Integrative Psychological & Behavioral Science*, 48, 418-434.
- Wang, K., Liu, H., Hu, W. & Cox, L. 2016. Using online self-assessment tool to improve conjoint analysis. *Internet Research*, 26, 644-660.
- Wansink, B., Kent, R. J. & Hoch, S. J. 1998. An anchoring and adjustment model of purchase quantity decisions. *JMR, Journal of Marketing Research*, 35, 71-81.
- Watchravesringkan, K. 2005. *A hierarchical model of values, price perception, ongoing search and shopping behaviors: A cross-cultural comparison*. The University of Arizona.
- Watchravesringkan, K., Yan, R.-N. & Yurchisin, J. 2008. Cross-cultural invariance of consumers' price perception measures.
- Weber, E. U. & Hsee, C. 1998. Cross-cultural Differences in Risk Perception, but Cross-cultural Similarities in Attitudes Towards Perceived Risk. *Management Science*, 44, 1205-1217.
- Webster, C. 1990. Attitudes Toward Marketing Practices: The Effects of Ethnic Identification. *Journal of Applied Business Research*, 7, 107-107.
- Wedel, M. & Leeflang, P. S. H. 1998. A model for the effects of psychological pricing in Gabor-Granger price studies. *Journal of Economic Psychology*, 19, 237-237.
- Wegener, D. T., Petty, R. E., Blankenship, K. L. & Detweiler-Bedell, B. 2010. Elaboration and numerical anchoring: Breadth, depth, and the role of (non-)thoughtful processes in anchoring theories. *Journal of Consumer Psychology (Elsevier Science)*, 20, 28-32.
- Winer, R. S. 1986. A Reference Price Model of Brand Choice for Frequently Purchased Products. *Journal of Consumer Research*, 13, 250-250.

- Winer, R. S. 1988. Behavioral perspective on pricing: buyers' subjective perceptions of price revisited.
- Wolfe, R. A., Gephart, R. P. & Johnson, T. E. 1993. Computer-Facilitated Qualitative Data Analysis: Potential Contributions to Management Research. *Journal of Management*, 19, 637-637.
- Worrell, F. 2016. Culture as Race/Ethnicity. *In: Mclean, K. & Syed, M. (eds.) Reprint ed ed. New York: Oxford University Press.*
- Xia, L., Monroe, K. B. & Cox, J. L. 2004. The Price Is Unfair! A Conceptual Framework of Price Fairness Perceptions. *Journal of Marketing*, 68, 1-15.
- Yeoman, I. & McMahon-Beattie, U. 2006. Luxury markets and premium pricing. *Journal of Revenue & Pricing Management*, 4, 319-328.
- Yin, T. & Paswan, A. K. 2007. Antecedents to consumer reference price orientation: an exploratory investigation. *The Journal of Product and Brand Management*, 16, 269-279.
- Yoo, D.-I. & Ohta, H. 1995. Optimal pricing and product-planning for new multiattribute products based on conjoint analysis. *International Journal of Production Economics*, 38, 245-245.
- Young, F. W., Takane, Y. & Lewycky, R. 1978. ALSCAL: A nonmetric multidimensional scaling program with several individual-differences options. *Behavior Research Methods & Instrumentation*, 10, 451-453.
- Zeithaml, V. 1988. Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing*, 52, 2-22.
- Zhou, K. Z., Su, C. T. & Bao, Y. Q. 2002. A paradox of price-quality and market efficiency: a comparative study of the US and China markets. *International Journal of Research in Marketing*, 19, 349-365.
- Zhou, Z. & Nakamoto, K. 2001. Price Perceptions: A Cross-National Study between American and Chinese Young Consumers. *Advances in Consumer Research*, 28, 161-168.
- Zicha, M. A. & Roy, R. A. 1986. Conjoint Analysis: One Way to Answer Pricing Questions. *Marketing News*, 20, 16-16.
- Zielke, S. 2011. Integrating emotions in the analysis of retail price images. *Psychology & Marketing*, 28, 330-359.
- Zielke, S. & Komor, M. 2015. Cross-national differences in price-role orientation and their impact on retail markets. *Academy of Marketing Science Journal*, 43, 159-180.

APPENDICES

Appendix A Glossary of Terms

Adaptation-Level Theory: Helson (1964) asserts in his definition of adaptation-level theory that past experiences characterise our perceptions forming judgments that are context sensitive. The adaptation-level theory is used to explain reference prices and price perceptions (Niedrich *et al.*, 2001).

Anchoring: As explained by Monroe (1973) in the context of price perceptions, Anchoring occurs when a standard price for each discernible quality level is used as an anchor to judge other prices. A more conceptual definition is given by Esch *et al.* (2009) who define anchoring as “a biased judgment of a stimulus based on an initial assessment of another stimulus and an insufficient adjustment away from that initial assessment”.

Bundling: According to Gilbride *et al.* (2008), Bundling “is the business practice of offering two or more products for sale as package”.

Conspicuous consumption: In a conspicuous consumption, *there is a “deliberate engagement in symbolic and visible purchase, possession and usage of products and services imbued with scarce economic and cultural capital with the motivation to communicate a distinctive self-image to others “* (Roy *et al.*, 2011: 217). O’Cass and McEwen (2004) made the distinction between status consumption and conspicuous consumption by indicating that the latter is affected only by interpersonal influences and different genders display different consumption tendencies (as opposed to status consumption which is affected by self-monitoring and interpersonal influences and displays no difference in tendencies by gender)

Contextual pricing: It is the consumers’ evaluations of prices in the presence of external factors that might influence price perceptions. These external factors can be location-based (geographical or spatial), time-based and/or event-based.

Contextual factors of segmentation: It is the use of variables such as time, location, and geo-demographics variables (Greene and Greene, 2008) as segmentation variables. It is more common in the Internet and mobile marketing.

Dynamic Pricing: Represents how prices change according to certain factors and imply that prices might not be the same for two different consumers or even the same customer at different times. It is a concept often found in Internet retailing (and Mobile retailing) but is also present in the hotel and airline industries.

Framing of Decisions: Defined by Tversky and Kahneman (1986), this concept is based on Prospect Theory, framing controls “the manner in which the choice problem is presented”.

Mental Accounting: According to Thaler (2008: 15), Mental Accounting is a model that “starts with the mental coding of combinations of gains and losses using the prospect theory value function” and continues with the concept of transaction utility for evaluation of purchases.

Mixed Bundling: According to Gilbride *et al.* (2008), Mixed Bundling is a form of bundling where “the consumer has the choice of buying two or more products separately or together in a bundle”.

Premium Pricing: Premium pricing can be defined as the conscious setting of higher prices in order to match or even suggest a higher quality of a product or service or perhaps to insinuate a level of exclusivity.

Price Endings: This is the use of odd or round endings (e.g. £1.99 rather than £2.00) in the setting of prices. Harris and Bray (2007) investigated a way to propose a segmentation model based on price endings.

Price Fairness: According to Xia *et al.* (2004) in their study about the theoretical foundations of fairness, the buyer’s perception of whether the price for a product is fair plays an important role in the purchase decision.

Price Perception: Monroe (1993) studied pricing from a psychological perspective where price, as a variable, is one of many cues used by consumers (other variables cited are brand name, colour, size and package) to produce a stimulus (i.e. a purchase occasion) thus suggesting that an actual purchase occasion will depend on the perceptual process an individual uses along with external variables (or contextual factors).

Price Signalling: Alpert (1993) describes price signalling as a way to indicate a higher quality by means of a higher price even when the level of superior quality cannot be demonstrated.

Prospect Theory: Proposed by Kahneman and Tversky (1979) establish that the choice process during decision making under risk is made in two phases; a preliminary analysis of offered prospects, and a subsequent evaluation phase.

Psychology of Pricing: According to Hunt (2002: 27), the psychology of pricing “focuses on the psychological component of the perceptions of consumers on prices”.

Pure Bundling: According to Gilbride *et al.* (2008: 125), Pure Bundling is a form of bundling where “the component products are only sold as a package”.

Range Theory: Proposed by Janiszewski and Lichtenstein (1999), and suggests that a consumer’s assessment of the attractiveness of a given price depends on the comparison of the endpoints of a price range and not just on the evaluation of an internal reference price.

Transaction Utility Theory: First postulated by Thaler (1983: 199) with the basic premise that “a consumer’s behaviour depends not just on the value of goods and services available relative to their respective prices, but also on the consumer’s perception of the quality of the financial terms of the deal”.

Willingness to Pay: According to Wertenbroch and Skiera (2002: 228), Willingness to Pay (WTP) “denotes the maximum price a buyer is willing to pay for a given quantity of a good”. So, the price that a buyer is willing to pay is at least as high as the posted price whereas the price that a non-buyer is willing to pay is lower than the posted price.

Zones of Tolerance: According to Gwynne *et al.* (2000: 545), zones of tolerance “represent both a range of expectations and an area of acceptable outcomes” It has its origins in the Service and Quality industries.

A.1 Codes used in the Narrative Synthesis

The following codes were using during the narrative synthesis of this review. Most codes were created *a priori* but other codes were generated during the quality appraisal phase.

Codes	A priori / Generated
Consumer Behaviour	A priori
Value Perceptions	A priori
Affect	A priori
Transaction Value	A priori
Price Increase	A priori
Fairness Perception	A priori
Reference Price	A priori
Gains and Losses	A priori
Price Perception Effect	A priori
Asymmetries of Information	Generated

Codes	A priori / Generated
Brand Equity	A priori
False Memories of Prices	A priori
Framing of Decisions	A priori
Psychology of Prices	A priori
Contextual Information	Generated
Price Evaluations	Generated
Willingness to Pay	Generated
Price Comparisons	Generated
Prior Beliefs	Generated
Frequency of Purchase	Generated
Magnitude of Purchase	Generated
Premium Pricing	A priori
Anchoring	A priori

Codes	A priori / Generated
Reference Price	A priori
Price Sensitivity	A priori
Mental Accounting	A priori
Product Quality	A priori
Prospect Theory	A priori
Adaptation-Level Theory	A priori
Range Theory	A priori
Range Frequency Theory	A priori
Purchase Intention	Generated
Price Fairness	Generated
Segmentation	Generated
Measures Price Perception	Generated
Price Discounts	Generated

Different perspectives on price perception

Author	Key Concept	Perspective
Abhijit (1992)	Brand Familiarity	Discusses the influence of brand familiarity in price perception according to different reference prices.
Abhijit <i>et al.</i> (1999) and Abhijit <i>et al.</i> (2002)	External Reference Price	Explores the effect of advertisements and other external price information on the perception of prices
Nguyen <i>et al.</i> (2007)	International Pricing	Argues that different cultures perceive prices differently.
Adaval and Wyer (2011)	Price Anchors	Establishes an association between price perceptions and anchoring arguing that consumers anchor their reference prices according to different criteria (see 2.3.7 for thorough explanation of Anchoring)
Adaval and Monroe (2002)	Contextual Pricing	Examines the influence of external variables on price perceptions.
Ackerman and Perner (2003)	Social comparison of prices	Inquiries on the effect of social comparison (what did my friends pay for this?) on price perceptions.

Author	Key Concept	Perspective
Alba et al. (1994)	Prior beliefs, magnitude and frequency of purchase	Examines the influence of prior beliefs, magnitude and frequency of purchase on price perceptions.
Alford and Biswas (2002)	Price consciousness	Explores the effect of price consciousness along with behavioural intent on the perception of prices.
Alpert <i>et al.</i> (1993)	Price Signalling	Establishes a relationship between quality perception and price perception using price as a signal to quality.
Anderson (1996)	Price Tolerance	Discusses the relationship between zones of tolerance and price perceptions.
Herrman and Wrickle (1998)	Behavioural Pricing	Illustrates how behavioural pricing models are based on the role of multi-dimensional pricing and its effect on price perception. The study argues that presenting prices with several pieces of information (for example, in the case of a mobile phone subscription, the price is composed of a down payment, an activation fee, others fees and taxes, and a monthly recurring charge) will have different effect on consumers depending on how the prices are presented.

Author	Key Concept	Perspective
Aradhna (1991)	Willingness to pay	Studies the effect of price perception on a willingness to pay.
Aradhna <i>et al.</i> (2002)	Price framing	Analyses the impact of price frames on perceived savings using external reference prices as a cue.
Bechwati <i>et al.</i> (2009), Bolton <i>et al.</i> (2003)	Price unfairness	Scrutinises the effect of price fairness on consumer's price perception from the perspective of <i>price unfairness</i> .
Lowe and Alpert (2007)	Reference price	Measure reference price perception for new products and look at alternative measurement model.
Bolton and Myers (2003)	Price-based segmentation	Uses price perception and price elasticity as a model for consumer segmentation in an international setting.
Briesch <i>et al.</i> (1997)	Reference price	Surveys models of reference prices based on <i>stimulus</i> (information available at the purchase occasion) and memory (price history and contextual factors) and propose best models for measuring price perceptions.

Author	Key Concept	Perspective
Alba <i>et al.</i> (1999), Cai and Suri (2007), Chen and Rao (2006)	Price discounts	Argues that consumers' perceptions of prices depend on upon how price discounts are presented.
Campo and Yagüe (2007)	Price promotions	Explores the effect of price promotions (not just discounts) on price perceptions.
Carter and Curry (2010)	Transparent Pricing	Examines the effect of transparent pricing (i.e. where retailers reveal how the price is allocated) based upon utility functions and argues that consumers will pay more when they are more informed about how the price was calculated.
Casielles and Álvarez (2007)	Brand Loyalty	Observes the effect of brand loyalty on consumer's price perceptions.

A.2 Review of the Evidence

Title	Type of Study	Contribution	Data Collection	Core Concept
Adaval (2002)	Empirical	Price Perception Influenced <i>Memory of Prices Norm Theory</i> <i>Consumers recalled recent prices according to prices shown</i> Price Perception Effect	Qualitative <i>Four experiments on how consumers perceive prices and memory of prices.</i>	False Memories of Prices Price Perception Contextual Information Willingness to Pay Magnitude of Purchase
Adaval (2011)	Empirical	Price Perception Influenced Price Perception Effect	Qualitative	Anchoring Price Perception Willingness to Pay Selective Accessibility
Alba (1994)	Empirical	Price Perception Influenced Price Perception Effect	Qualitative	Mental Accounting Reference Price Willingness to Pay Prior Beliefs Frequency of Purchase Magnitude of Purchase

Title	Type of Study	Contribution	Data Collection	Core Concept
Allsopp (2005)	Theoretical	Price Perception Effect	No Data Collection	Brand Equity Willingness to Pay Premium Pricing Consumer Behaviour
Bechwati (2009)	Empirical	Price Perception Influenced Price Perception Effect	Qualitative	Price Perception Willingness to Pay Consumer Behaviour Price Fairness Prospect Theory
Bergman (2010)	Empirical	Price Perception Influenced Price Perception Effect	Qualitative	Anchoring Price Evaluations Willingness to Pay Prospect Theory
Biswas (2008)	Theoretical	Price Perception Influenced Price Perception Effect	No Data Collection Qualitative	Framing of Decisions Willingness to Pay Consumer Behaviour Prospect Theory

Title	Type of Study	Contribution	Data Collection	Core Concept
Blamires (1997)	Theoretical	Measures Price Perception	No Data Collection	Psychology of Prices Consumer Behaviour Trade-Off Analysis Conjoint Analysis
Bornemann (2011)	Empirical	Price Perception Influenced Price Perception Effect Measures Price Perception	Qualitative	Brand Equity False Memories of Prices Psychology of Prices Willingness to Pay Consumer Behaviour Conjoint Analysis
Burman (2004)	Empirical	Price Perception Influenced Price Perception Effect Measures Price Perception	Qualitative	Brand Equity Psychology of Prices Reference Price Price Evaluations Willingness to Pay Price Comparisons Conjoint Analysis

Title	Type of Study	Contribution	Data Collection	Core Concept
Burton (1998)	Empirical	Price Perception Influenced Measures Price Perception	Qualitative	Brand Equity Mental Accounting Psychology of Prices Conjoint Analysis
Campo (2007)	Empirical	Price Perception Influenced Measures Price Perception	Qualitative	Reference Price Adaptation-Level Theory Assimilation/Contrast Theory
Carter (2010)	Empirical	Price Perception Influenced	Qualitative	Mental Accounting Reference Price Price Evaluations Willingness to Pay Price Comparisons Consumer Behaviour Price Fairness
Chandrashekaran (1995)	Empirical	Price Perception Influenced Measures Price Perception	Qualitative	Mental Accounting Reference Price Willingness to Pay

Title	Type of Study	Contribution	Data Collection	Core Concept
Chandrashekaran (2011)	Empirical	Price Perception Influenced	Quantitative	Mental Accounting Reference Price Willingness to Pay
Chernev (2003)	Empirical	Price Perception Influenced	Qualitative	Mental Accounting Price Perception Reference Price Price Comparisons Prior Beliefs
CUNHA (2011)	Empirical	Price Perception Influenced Price Perception Effect	Qualitative	Asymmetries of Information Reference Price Price Evaluations Willingness to Pay Price Comparisons Adaptation-Level Theory
Daskalopoulou (2006)	Empirical	Price Perception Influenced Price Perception Effect	Qualitative	Framing of Decisions Mental Accounting Willingness to Pay

Title	Type of Study	Contribution	Data Collection	Core Concept
Daskalopoulou (2008)	Empirical	Price Perception Influenced	Qualitative	Framing of Decisions Mental Accounting Price Fairness
Diller (2008)	Theoretical	Price Perception Influenced	No Data Collection	Mental Accounting Reference Price Price Evaluations Consumer Behaviour Price Fairness
Estelami (1997)	Empirical	Price Perception Influenced Measures Price Perception	Qualitative	Anchoring Price Perception Reference Price Price Evaluations Scales / Measurement
Frey (1993)	Empirical	Price Perception Influenced	Qualitative	Anchoring Mental Accounting Price Fairness

Title	Type of Study	Contribution	Data Collection	Core Concept
Gendall (1997)	Empirical	Measures Price Perception	Qualitative	Reference Price Contextual Information Price Evaluations Willingness to Pay Price Comparisons Gabor Granger Pricing Research
Gilbride (2008)	Empirical	Price Perception Influenced Price Perception Effect	Qualitative	Framing of Decisions Willingness to Pay
Goldsmith (2010)	Empirical	Price Perception Influenced	Qualitative	Brand Equity Price Perception Psychology of Prices Price Evaluations Consumer Behaviour
Gotlieb (1991)	Empirical	Price Perception Influenced	Qualitative	Price Perception Reference Price Price Comparisons Adaptation-Level Theory

Title	Type of Study	Contribution	Data Collection	Core Concept
Ha (2006)	Empirical	Price Perception Influenced	Qualitative	Framing of Decisions Mental Accounting Reference Price Contextual Information
Hansen (2005)	Empirical	Measures Price Perception	Qualitative	Framing of Decisions Mental Accounting Prior Beliefs Consumer Behaviour Scales / Measurement
Harris (2007)	Empirical	Price Perception Influenced Measures Price Perception	Qualitative	Price Perception Psychology of Prices Reference Price Price Evaluations Gabor Granger Pricing Research
Haws (2006)	Empirical	Price Perception Influenced	Qualitative	Price Evaluations Price Fairness Prospect Theory

Title	Type of Study	Contribution	Data Collection	Core Concept
Heath (1995)	Empirical	Price Perception Influenced	Qualitative	Framing of Decisions Mental Accounting Psychology of Prices Reference Price
Hyeong (2006)	Empirical	Price Perception Influenced	Qualitative	Brand Equity Mental Accounting Price Perception Reference Price Prior Beliefs
Ingenbleek (2007)	Empirical	Price Perception Influenced Measures Price Perception	Qualitative	Brand Equity Psychology of Prices Price Consciousness
Janiszewski (1999)	Theoretical	Price Perception Influenced	No Data Collection	Adaptation-Level Theory Range Theory

Title	Type of Study	Contribution	Data Collection	Core Concept
Jiang (2007)	Empirical	Price Perception Influenced	Qualitative	Asymmetries of Information False Memories of Prices Framing of Decisions Price Evaluations Price Comparisons
Jun (2004)	Empirical	Price Perception Influenced	Qualitative	Brand Equity Mental Accounting Consumer Behaviour Prospect Theory
Kerin (1992)	Theoretical	Price Perception Influenced	No Data Collection	Brand Equity Price Perception Reference Price Consumer Behaviour
Kinni (2003)	Theoretical	Price Perception Influenced	No Data Collection	Brand Equity

Title	Type of Study	Contribution	Data Collection	Core Concept
Kopalle (1996)	Empirical	Price Perception Influenced	Qualitative	Asymmetries of Information Mental Accounting Price Perception Price Evaluations Price Comparisons Prospect Theory
Kopalle (2003)	Empirical	Price Perception Influenced Price Perception Effect	Qualitative	Reference Price Price Evaluations Willingness to Pay Price Comparisons Scales / Measurement
Krishna (2002)	Empirical	Price Perception Influenced	Qualitative	Framing of Decisions Mental Accounting
Kristensen (1997)	Empirical	Price Perception Influenced	Qualitative	Anchoring Reference Price Prospect Theory

Title	Type of Study	Contribution	Data Collection	Core Concept
Kumar (1998)	Empirical	Price Perception Influenced	Qualitative	Framing of Decisions Mental Accounting Reference Price Contextual Information Price Evaluations
Kurtuluş (2010)	Empirical	Price Perception Influenced Measures Price Perception	Qualitative	Anchoring Mental Accounting Price Perception Psychology of Prices Reference Price Contextual Information Scales / Measurement
Xia and Monroe (2008)	Empirical	Price Perception Influenced	Qualitative	Price Perception Reference Price Prior Beliefs Price Fairness

Title	Type of Study	Contribution	Data Collection	Core Concept
Lichtenstein (1993)	Empirical	Price Perception Influenced	Qualitative	Asymmetries of Information False Memories of Prices Framing of Decisions Mental Accounting Price Perception
Lindsey-Mullikin (2003)	Theoretical	Price Perception Influenced	No Data Collection	Reference Price Contextual Information Price Evaluations Prior Beliefs
Long-Tolbert (2006)	Empirical	Price Perception Influenced	Qualitative	Framing of Decisions Mental Accounting Price Perception Psychology of Prices Prior Beliefs
Lowe (2007)	Empirical	Price Perception Influenced Measures Price Perception	Qualitative	Psychology of Prices Reference Price Scales / Measurement

Title	Type of Study	Contribution	Data Collection	Core Concept
Lowe (2010)	Empirical	Price Perception Influenced	Qualitative	Price Perception Reference Price Contextual Information
Lowe (2010)	Empirical	Price Perception Influenced Price Perception Effect	Quantitative	Brand Equity Reference Price Willingness to Pay Price Comparisons Prior Beliefs
Martin (2009)	Empirical	Price Perception Influenced	Qualitative	Reference Price Magnitude of Purchase Price Fairness
Martins (1994)	Theoretical	Price Perception Influenced	No Data Collection	Brand Equity Price Fairness
Maxwell (2010)	Theoretical	Price Perception Influenced	No Data Collection	Brand Equity Contextual Information Price Fairness

Title	Type of Study	Contribution	Data Collection	Core Concept
Mazumdar (2005)	Empirical	Price Perception Influenced	Qualitative	Mental Accounting Reference Price Consumer Behaviour
Moon (2009)	Empirical	Price Perception Influenced	Qualitative	Mental Accounting Adaptation-Level Theory Range Theory
Munnukka (2006)	Empirical	Price Perception Influenced Measures Price Perception	Qualitative	Price Perception Reference Price Contextual Information Frequency of Purchase Scales / Measurement
Munnukka (2008)	Empirical	Price Perception Influenced Price Perception Effect Measures Price Perception	Qualitative	Price Perception Psychology of Prices Reference Price Price Evaluations Willingness to Pay
Murray (1995)	Empirical	Price Perception Influenced	Qualitative	Price Perception Psychology of Prices Contextual Information Price Evaluations Prior Beliefs

Title	Type of Study	Contribution	Data Collection	Core Concept
Nasiry (2009)	Empirical	Price Perception	Qualitative	False Memories of Prices

		Influenced		Framing of Decisions Mental Accounting Reference Price Contextual Information Price Comparisons Prior Beliefs
Niedrich (2001)	Empirical	Price Perception Influenced	Qualitative	Anchoring Framing of Decisions Mental Accounting Adaptation-Level Theory Scales / Measurement Range Theory Range-Frequency Theory
Niedrich (2009)	Empirical	Price Perception Influenced	Qualitative	Reference Price Frequency of Purchase Range-Frequency Theory

Title	Type of Study	Contribution	Data Collection	Core Concept
Noel (1996)	Empirical	Price Perception Influenced Price Perception Effect Measures Price Perception	Qualitative	Brand Equity Price Perception Willingness to Pay Magnitude of Purchase Scales / Measurement
Park (2011)	Empirical	Price Perception Influenced Price Perception Effect	Qualitative	Anchoring Asymmetries of Information Price Perception Psychology of Prices Willingness to Pay
Peine (2009)	Empirical	Price Perception Influenced Measures Price Perception	Qualitative	Brand Equity Framing of Decisions Mental Accounting Price Perception Reference Price Scales / Measurement

Title	Type of Study	Contribution	Data Collection	Core Concept
Putler (1992)	Empirical	Price Perception Influenced	Qualitative	Framing of Decisions Mental Accounting Reference Price Scales / Measurement
Rajneesh (2008)	Empirical	Price Perception Influenced	Qualitative	Mental Accounting Price Perception Reference Price Contextual Information Price Evaluations
Ranyard (1993)	Empirical	Price Perception Influenced Price Perception Effect	Qualitative	Framing of Decisions Mental Accounting Price Evaluations Willingness to Pay Price Comparisons Scales / Measurement

Title	Type of Study	Contribution	Data Collection	Core Concept
Ranyard (2001)	Empirical	Price Perception Influenced Price Perception Effect Measures Price Perception	Qualitative	Asymmetries of Information Framing of Decisions Mental Accounting Price Perception Reference Price Willingness to Pay Scales / Measurement
Ranyard (2008)	Theoretical	Price Perception Influenced	No Data Collection	Reference Price Contextual Information Price Evaluations Price Comparisons
Rao (1992)	Empirical	Price Perception Influenced	Qualitative	Asymmetries of Information False Memories of Prices Framing of Decisions Mental Accounting Consumer Behaviour

Title	Type of Study	Contribution	Data Collection	Core Concept
Rao (2005)	Empirical	Price Perception Influenced	Qualitative	Brand Equity Framing of Decisions Mental Accounting Premium Pricing Consumer Behaviour Scales / Measurement
Rosa-Diaz (2004)	Empirical	Price Perception Influenced	Qualitative	Asymmetries of Information False Memories of Prices Framing of Decisions Price Perception Reference Price Contextual Information Price Evaluations
Shoemaker (2005)	Theoretical	Price Perception Influenced	No Data Collection	Price Perception Psychology of Prices Price Comparisons Prospect Theory

Title	Type of Study	Contribution	Data Collection	Core Concept
Simonson (2004)	Empirical	Price Perception Influenced Price Perception Effect	Qualitative	Anchoring Price Perception Willingness to Pay
Smith (2002)	Theoretical	Price Perception Influenced Price Perception Effect	No Data Collection	Price Perception Psychology of Prices Reference Price Contextual Information Price Evaluations Willingness to Pay
Thaler (2008)	Theoretical	Price Perception Influenced	No Data Collection	Mental Accounting Prospect Theory
Thomas (2004)	Theoretical	Price Perception Influenced	Qualitative	Framing of Decisions Price Perception Magnitude of Purchase
Urbany (1990)	Empirical	Price Perception Influenced Measures Price Perception	Qualitative	Prospect Theory Scales / Measurement

Title	Type of Study	Contribution	Data Collection	Core Concept
Vaidyanathan (2000)	Empirical	Price Perception Influenced Measures Price Perception	Qualitative	Brand Equity False Memories of Prices Price Perception Psychology of Prices Reference Price Contextual Information Scales / Measurement
Vanhuele (2006)	Theoretical	Price Perception Influenced	No Data Collection	Asymmetries of Information False Memories of Prices Price Perception Price Evaluations Frequency of Purchase Magnitude of Purchase Consumer Behaviour

Title	Type of Study	Contribution	Data Collection	Core Concept
Xia (2004)	Empirical	Price Perception Influenced	Qualitative	Price Fairness
Xia (2010)	Theoretical	Price Perception Influenced	No Data Collection	Price Fairness
Yeoman (2007)	Theoretical	Price Perception Influenced	No Data Collection	Contextual Information Price Evaluations Price Comparisons
Yuan (2011)	Empirical	Price Perception Influenced	Qualitative	Brand Equity Reference Price Contextual Information Price Evaluations Price Comparisons
Zielke (2008)	Empirical	Price Perception Influenced	Qualitative	Asymmetries of Information Brand Equity Price Perception Psychology of Prices Reference Price

A.3 Included / Excluded on Quality Criteria

A.3.1 Included on Quality Criteria

- Adaval, R. and Monroe, K. (2002), "Automatic Construction and Use of Contextual Information for Product and Price Evaluations", *Journal of Consumer Research*, Vol. 28, p. 572-588.
- Adaval, R. and Wyer, R. S. (2011), "Conscious and Nonconscious Comparisons with Price Anchors: Effects on Willingness to Pay for Related and Unrelated Products", *Journal of Marketing Research*, Vol. 48, p. 355-365.
- Alba, J. W., Broniarczyk, S. M., Shimp, T. A. and Urbany, J. E. (1994), "The Influence of Prior Beliefs, Frequency Cues, and Magnitude Cues On Consumers' Perceptions of Comparative Price Data", *Journal of Consumer Research*, Vol. 21, p. 219-235.
- Allsopp, J. (2005). "Premium Pricing: Understanding The Value Of Premium", *Journal Of Revenue And Pricing Management*, Vol. 4, p. 185-194.
- Bechwati, N., Sisodia, R. and Sheth, J. (2009), "Developing A Model of Antecedents to Consumers' Perceptions and Evaluations of Price Unfairness", *Journal of Business Research*, Vol. 62, Issue 8, p. 761-767.
- Bergman, O., Ellingsen, T., Johannesson, M. and Svensson, C. (2010), "Anchoring and Cognitive Ability", *Economics Letters*, Vol. 107, p. 66-68.
- Biswas, D. and Grau, S. L. (2008), "Consumer Choices under Product Option Framing: Loss Aversion Principles or Sensitivity to Price Differentials?" *Psychology & Marketing*, Vol. 25, p. 399-415.
- Blamires, C. (1997), "Pricing Research Techniques: A Review and a New Approach", *Milestones in Market Research: Part 2*, Vol. 39, p. 85-107.
- Bornemann, T. and Homburg, C. (2011), "Psychological Distance and the Dual Role of Price", *Journal of Consumer Research*, Vol. 38, p. 490-504.
- Burman, B. and Biswas, A. (2004), "Reference Prices In Retail Advertisements: Moderating Effects Of Market Price Dispersion And Need For Cognition On Consumer Value Perception And Shopping Intention", *The Journal Of Product And Brand Management*, Vol. 13, p. 379-389.
- Burton, S., Lichtenstein, D., Netemeyer, R. and Garretson, J. (1998), "A Scale For Measuring Attitude Toward Private Label Products And An Examination Of Its Psychological And Behavioral Correlates", *Academy Of Marketing Science Journal*, Vol. 26, p. 293-306.

- Campo, S. & Yagüe, M. J. (2007), "Effects of Price Promotions on the Perceived Price", *International Journal of Service Industry Management*, Vol. 18, p. 269-286.
- Carter, R. E. & Curry, D. J. (2010), "Transparent Pricing: Theory, Tests, and Implications for Marketing Practice", *Journal of the Academy Of Marketing Science*, Vol. 38, p. 759-774.
- Chandrashekar, R. (2011), "Focal and Contextual Components of Price History as Determinants of Expected Price". *The Journal of Product and Brand Management*, Vol. 20, p. 408-419.
- Chandrashekar, R. and Jagpal, H. (1995), "Measuring Internal Reference Price: Some Preliminary Results", *Pricing Strategy & Practice*, Vol. 3, p. 28-34.
- Chernev, A. and Wheeler, S. C. (2003), "The Role Of Reference Points In Evaluating Price Information", *Advances In Consumer Research*, Vol. 30, p. 305-308.
- Cunha, M. and Shulman, J. (2011), "Assimilation and Contrast in Price Evaluations". *Journal of Consumer Research*, Vol. 37, p. 822-835.
- Daskalopoulou, I. (2008), "Fairness Perceptions and Observed Consumer Behavior: Results of A Partial Observability Model", *Journal of Socio - Economics*, Vol. 37, No. 1, p. 31-44.
- Daskalopoulou, I. and Petrou, A. (2006), "Consumers' Expenditures and Perceived Price Fairness". *International Journal of Social Economics*, Vol. 33, p. 766-780.
- Diller, H. (2008), "Price Fairness", *Journal of Product & Brand Management*, Vol. 17, p. 353-355.
- Estelami, H. (1997), "Consumer Perceptions Of Multi-Dimensional Prices", *Advances In Consumer Research*, Vol. 24, p. 392-399.
- Frey, B. and Pommerehne, W. (1993), "On The Fairness Of Pricing - An Empirical Survey Among The General Population". *Journal Of Economic Behavior & Organization*, Vol. 20, p. 295-295.
- Gendall, P., Holdershaw, J. and Garland, R. (1997), "The Effects Of Odd Pricing On Demand". *European Journal Of Marketing*, Vol. 31, p. 736-913.
- Gilbride, T., Gultinan, J. and Urbany, J. (2008), "Framing Effects In Mixed Price Bundling", *Marketing Letters*, Vol. 19, p. 125-139.

- Goldsmith, R., Flynn, L. and Kim, D. (2010), "Status Consumption And Price Sensitivity". *Journal Of Marketing Theory And Practice*, Vol. 18, p. 323-338.
- Gotlieb, J. B. and Dubinsky, A. J. (1991), "Influence Of Price On Aspects Of Consumers' Cognitive Process", *Journal Of Applied Psychology*, Vol. 76, p. 541-549.
- Gotlieb, J. B. and Sarel, D. (1991), "Effects Of Price Advertisements On Perceived Quality And Purchase Intentions", *Journal Of Business Research*, Vol. 22, p. 195-210.
- Ha Hwan, H., Hyun J. S. and Pae J. H. (2006), "Consumers' 'Mental Accounting' In Response To Unexpected Price Savings At The Point Of Sale", *Marketing Intelligence & Planning*, Vol. 24, p. 406-416.
- Hansen, T. (2005), "Perspectives On Consumer Decision Making: An Integrated Approach", *Journal Of Consumer Behaviour*, Vol. 4, p. 420-437.
- Harris, C. and Bray, J. (2007), "Price Endings And Consumer Segmentation", *The Journal Of Product And Brand Management*, Vol. 16, p. 200-205.
- Haws, K. L. and Bearden, W. O. (2006), "Dynamic Pricing And Consumer Fairness Perceptions", *Journal Of Consumer Research*, Vol. 33, p. 304-311.
- Heath, T. B., Chatterjee, S. and France, K. R. (1995), "Mental Accounting And Changes In Price: The Frame Dependence Of Reference Dependence", *Journal Of Consumer Research*, Vol. 22, p. 90-97.
- Hyeong M. K. and Kachersky, L. (2006), "Dimensions Of Price Salience: A Conceptual Framework For Perceptions Of Multi-Dimensional Prices", *Journal Of Product & Brand Management*, Vol. 15, p. 139-147.
- Ingenbleek, P. (2007), "Value-Informed Pricing In Its Organizational Context: Literature Review, Conceptual Framework, And Directions For Future Research", *The Journal Of Product And Brand Management*, Vol. 16, p. 441-458.
- Janiszewski, C. and Lichtenstein D. R., (1999), "A Range Theory Account Of Price Perception", *Journal Of Consumer Research*, Vol. 25, p. 353-369.
- Jiang, Y. (2007), "Price Discrimination With Opaque Products. *Journal Of Revenue And Pricing Management*", Vol. 6, p. 118-134.
- Jun, S., Macinnis, D. and Park, C. (2004), "Formation Of Price Expectation In Brand Extensions And Impact On Brand Extension Evaluation", *Advances In Consumer Research*, Vol. 32, p.137-142.

- Kerin, R. A., Jain, A. & Howard, D. J. (1992), "Store Shopping Experience And Consumer Price-Quality-Value Perceptions", *Journal Of Retailing*, Vol. 68, p. 376-397.
- Kinni, T. (2003), "Setting The Right Price At The Right Time". *Harvard Management Update*, Vol. 8, p. 3-5.
- Kopalle, P., Rao, A. and Assuncao, J. (1996), "Asymmetric Reference Price Effects And Dynamic Pricing Policies", *Marketing Science*, Vol. 15, Issue 1, p. 60.
- Kopalle, P. and Lindsey-Mullikin, J. (2003), "The Impact Of External Reference Price On Consumer Price Expectations". *Journal Of Retailing*, Vol. 79, p. 225-236.
- Krishna, A., Briesch, R., Lehmann, D. and Yuan, H. (2002), "A Meta-Analysis Of The Impact Of Price Presentation On Perceived Savings", *Journal Of Retailing*, Vol. 78, p. 101-118.
- Kristensen, H. and Gärling, T. (1997), "Determinants Of Buyers' Aspiration And Reservation Price", *Journal Of Economic Psychology*, Vol. 18, p. 487-503.
- Kumar, V., Karande, K. and Reinartz, W. (1998), "The Impact Of Internal And External Reference Prices On Brand Choice: The Moderating Role Of Contextual Variables", *Journal Of Retailing*, Vol. 74, p. 401-426.
- Kurtuluş, K. and Okumuş, A. (2010), "Consumers' Price Perceptions As A Segmentation Criteria: An Emerging Market Case". *Istanbul University Journal of the School of Business Administration*, Vol. 39, p. 21-34.
- Lan, X. and Monroe K. B. (2008), "Perceived Price Fairness And Perceived Transaction Value", *Advances In Consumer Research - European Conference Proceedings*, Vol. 8, p. 394-394.
- Lichtenstein, D. R., Ridgway, N. M. and Netemeyer, R. G. (1993), "Price Perceptions And Consumer Shopping Behavior: A Field Study", *Journal Of Marketing Research*, Vol. 30, p. 234-245.
- Lindsey-Mullikin, J. (2003), "Beyond Reference Price: Understanding Consumers' Encounters With Unexpected Prices", *The Journal Of Product And Brand Management*, Vol. 12, p. 140-140.
- Long-Tolbert, S. and Suri, R. (2006), "Understanding Value Perceptions In Consumer Relationships: A Look At The Role Of Self-Esteem", *Advances In Consumer Research*, Vol. 34, p. 399-400.

- Lowe, B. and Alpert, F. (2007), "Measuring Reference Price Perceptions For New Product Categories: Which Measure Is Best?", *The Journal Of Product And Brand Management*, Vol. 16, p. 132-141.
- Lowe, B. and Alpert, F. (2010A), "Pricing Strategy And The Formation And Evolution Of Reference Price Perceptions In New Product Categories", *Psychology & Marketing*, Vol. 27, p. 846-873.
- Lowe, B. and Alpert, F. (2010B), "The Relative Influence Of Pioneer And Follower Price On Reference Price And Value Perceptions", *The Journal Of Product And Brand Management*, Vol. 19, p. 504-511.
- Martin, W., Ponder, N. and Lueg, J. (2009), "Price Fairness Perceptions And Customer Loyalty In A Retail Context", *Journal Of Business Research*, Vol. 62, p. 588.
- Martins, M. and Monroe, K. B. (1994), "Perceived Price Fairness: A New Look At An Old Construct", *Advances In Consumer Research*, Vol. 21, p. 75-78.
- Maxwell, S. and Comer, L. (2010), "The Two Components Of A Fair Price: Social And Personal", *The Journal Of Product And Brand Management*, Vol. 19, p. 375-380.
- Mazumdar, T., Raj, S. P. and Sinha, I. (2005), "Reference Price Research: Review And Propositions". *Journal Of Marketing*, Vol. 69, p. 84-102.
- Moon, S. and Voss, G. (2009), "How Do Price Range Shoppers Differ From Reference Price Point Shoppers?", *Journal Of Business Research*, Vol. 62, p. 31-38.
- Munnukka, J. (2006), "Pricing Method As A Tool For Improved Price Perception", *Journal Of Revenue & Pricing Management*, Vol. 5, p. 207-220.
- Munnukka, J. (2008), "Customers' Purchase Intentions As A Reflection Of Price Perception", *Journal Of Product & Brand Management*, Vol. 17, p. 188-196.
- Murray, K. and Schlacter, J. (1995), "Using Consumer Perceptions To Operationalize The Service Construct: Exploratory Research In Theory Extension And Validation", *Psychology & Marketing*, Vol. 12, p. 501-501.
- Nasiry, J. and Popescu, I. (2009), "Dynamic Pricing With Loss Averse Consumers And Peak-End Anchoring", *Insead Working Papers Collection*, p. 1-55.
- Niedrich, R. W., Sharma, S. and Wedell, D. H. (2001). "Reference Price And Price Perceptions: A Comparison Of Alternative Models", *Journal Of Consumer Research*, Vol. 28, p. 339-354.

- Niedrich, R. W., Weathers, D., Hill, R. C. and Bell, D. R. (2009), "Specifying Price Judgments With Range-Frequency Theory In Models Of Brand Choice", *Journal Of Marketing Research*, Vol. 46, p. 693-702.
- Noel, N. and Hanna, N. (1996), "Benchmarking Consumer Perceptions Of Product Quality With Price: An Exploration", *Psychology & Marketing*, Vol. 13, p. 591-591.
- Park, J. H., Maclachlan, D. L. and Love, E. (2011), "New Product Pricing Strategy Under Customer Asymmetric Anchoring", *International Journal Of Research In Marketing*, Vol. 28, No. 4, p. 309-318.
- Peine, K., Heitmann, M. and Herrmann, A. (2009), "Getting A Feel For Price Affect: A Conceptual Framework And Empirical Investigation Of Consumers' Emotional Responses To Price Information", *Psychology & Marketing*, Vol. 26, p. 39-66.
- Putler, D. (1992), "Incorporating Reference Price Effects Into A Theory Of Consumer Choice", *Marketing Science*, Vol. 11, p. 287-287.
- Rajneesh, S., Rajesh, C. and Dhruv, G. (2008), "Effects Of Spatial Location Of Price Information On Consumers' Perception Of Prices And Products", *Advances In Consumer Research - North American Conference Proceedings*. Vol. 35, p. 929-930.
- Ranyard, R. and Abdel-Nabi, D. (1993), "Mental Accounting And The Process Of Multiattribute Choice". *Acta Psychologica*, Vol. 84, p. 161-177.
- Ranyard, R., Charlton, J. P. and Williamson, J. (2001), "The Role Of Internal Reference Prices In Consumers' Willingness To Pay Judgments: Thaler's Beer Pricing Task Revisited", *Acta Psychologica*, Vol. 106, p. 265-283.
- Ranyard, R., Del, M., Fabio, B. N., Duxbury, D. and Summers, B. (2008), "Perceptions And Expectations Of Price Changes And Inflation: A Review And Conceptual Framework", *Journal Of Economic Psychology*, Vol. 29, p. 378-400.
- Rao, A. and Bergen, M. E. (1992), "Price Premium Variations As A Consequence Of Buyers' Lack Of Information", *Journal Of Consumer Research*, Vol. 19, p. 412-423.
- Rao, A. (2005), "The Quality Of Price As A Quality Cue", *Journal Of Marketing Research*, Vol. 42, p. 401-405.
- Rosa-Diaz, I. (2004), "Price Knowledge: Effects Of Consumers' Attitudes Towards Prices, Demographics, And Socio-Cultural Characteristics", *The Journal Of Product And Brand Management*, Vol. 13, p. 406-428.

- Shoemaker, S. (2005), "Pricing And The Consumer", *Journal Of Revenue And Pricing Management*, Vol. 4, p. 228-236.
- Simonson, I. and Drolet, A. (2004), "Anchoring Effects On Consumers' Willingness-To-Pay And Willingness-To-Accept", *Journal Of Consumer Research*, Vol. 31, p. 681-690.
- Smith, G. and Nagle, T. (2002), "How Much Are Customers Willing To Pay?", *Marketing Research*, Vol. 14, p. 20-25.
- Thaler, R. H. (2008), "Mental Accounting And Consumer Choice", *Marketing Science*, Vol. 27, p. 15-25.
- Thomas, M. and Morwitz, V. (2004), "Effects Of Framing On Magnitude Perceptions Of Prices", *Advances In Consumer Research*, Vol. 31, p. 454-456.
- Urbany, J. E. and Dickson, P. R. (1990), "Prospect Theory And Pricing Decisions", *Journal Of Behavioral Economics*, Vol. 19, p. 69-80.
- Vaidyanathan, R. (2000), "The Role Of Brand Familiarity In Internal Reference Price Formation: An Accessibility–Diagnosticity Perspective", *Journal Of Business And Psychology*, Vol. 14, p. 605-624.
- Vanhuele, M., Laurent, G. and Dreze, X. (2006), "Consumers' Immediate Memory For Prices", *Journal Of Consumer Research*, Vol. 33, p.163-172.
- Varki, S. and Colgate, M. (2001), "The Role Of Price Perceptions In An Integrated Model Of Behavioral Intentions", *Journal Of Service Research*, Vol. 3, p. 232.
- Voelckner, F. (2006), "An Empirical Comparison Of Methods For Measuring Consumers' Willingness To Pay". *Marketing Letters*, Vol. 17, p. 137-149.
- Völckner, F. (2008), "The Dual Role Of Price: Decomposing Consumers' Reactions To Price", *Academy Of Marketing Science Journal*, Vol. 36, p. 359-377.
- Wakefield, K. L. and Inman, J. J. (2003), "Situational Price Sensitivity: The Role Of Consumption Occasion, Social Context And Income", *Journal Of Retailing*, Vol. 79, p. 199-212.
- Xia, L., Monroe, K. and Cox, J. (2004), "The Price Is Unfair! A Conceptual Framework Of Price Fairness Perceptions", *Journal Of Marketing*, Vol. 68, p. 1-15.

- Xia, L. and Monroe K. (2010), "Is A Good Deal Always Fair? Examining The Concepts Of Transaction Value And Price Fairness", *Journal Of Economic Psychology*.
- Yeoman, I. (2007), "Pricing", *Journal Of Revenue & Pricing Management*, Vol. 6, p. 1-1.
- Yuan, H. and Han, S. (2011), "The Effects Of Consumers' Price Expectations On Sellers' Dynamic Pricing Strategies", *Journal Of Marketing Research*, Vol. 48, p. 48-61.
- Zielke, S. (2008), "Exploring Asymmetric Effects In The Formation Of Retail Price Satisfaction", *Journal Of Retailing & Consumer Services*, Vol. 15, p. 335-347.

A.4 Excluded on Quality Criteria

A.4.1 Excluded on Introductory Elements

- Adaval, R. and Monroe, K. (2002), "Automatic Construction And Use Of Contextual Information For Product And Price Evaluations". *Journal Of Consumer Research*, Vol. 28, p. 572-588.
- Adaval, R., Wyer, R. S. (2011), "Conscious And Nonconscious Comparisons With Price Anchors: Effects On Willingness To Pay For Related And Unrelated Products", *Journal Of Marketing Research*, Vol. 48, p. 355-365.
- Alba, J. W., Broniarczyk, S. M., Shimp, T. A. and Urbany, J. E. (1994), "The Influence Of Prior Beliefs, Frequency Cues, And Magnitude Cues On Consumers' Perceptions Of Comparative Price Data", *Journal Of Consumer Research*, Vol. 21, p. 219-235.
- Allsopp, J. (2005), "Premium Pricing: Understanding The Value Of Premium", *Journal Of Revenue And Pricing Management*, Vol. 4, p. 185-194.
- Bechwati, N., Sisodia, R. and Sheth, J. (2009), "Developing A Model Of Antecedents To Consumers' Perceptions And Evaluations Of Price Unfairness", *Journal Of Business Research*, Vol. 62, p. 761.
- Bergman, O., Ellingsen, T., Johannesson, M. and Svensson, C. (2010), "Anchoring And Cognitive Ability". *Economics Letters*, Vol. 107, p. 66-68.
- Biswas, D. and Grau, S. L. (2008), "Consumer Choices Under Product Option Framing: Loss Aversion Principles Or Sensitivity To Price Differentials?", *Psychology & Marketing*, Vol. 25, p. 399-415.
- Blamires, C. (1997), "Pricing Research Techniques A Review And A New Approach", *Milestones In Market Research: Part 2*, Vol. 39, p. 85-107.
- Bornemann, T. & Homburg, C. (2011), "Psychological Distance And The Dual Role Of Price". *Journal Of Consumer Research*, Vol. 38, p. 490-504.
- Burman, B. and Biswas, A. (2004), "Reference Prices In Retail Advertisements: Moderating Effects Of Market Price Dispersion And Need For Cognition On Consumer Value Perception And Shopping Intention", *The Journal Of Product And Brand Management*, Vol. 13, p. 379-389.
- Burton, S., Lichtenstein, D., Netemeyer, R. and Garretson, J. (1998), "A Scale For Measuring Attitude Toward Private Label Products And An Examination Of Its Psychological And Behavioral Correlates". *Academy Of Marketing Science Journal*, Vol. 26, p. 293-306.

- Campo, S. and Yagüe, M. J. (2007), "Effects Of Price Promotions On The Perceived Price", *International Journal Of Service Industry Management*, Vol. 18, p. 269-286.
- Carter, R. E. and Curry, D. J. (2010). "Transparent Pricing: Theory, Tests, And Implications For Marketing Practice". *Journal Of The Academy Of Marketing Science*, Vol. 38, p. 759-774.
- Chandrashekar, R. (2011), "Focal And Contextual Components Of Price History As Determinants Of Expected Price", *The Journal Of Product And Brand Management*, Vol. 20, p. 408-419.
- Chandrashekar, R. and Jagpal, H. (1995), "Measuring Internal Reference Price: Some Preliminary Results". *Pricing Strategy & Practice*, Vol. 3, p. 28-34.
- Chernev, A. and Wheeler, S. C. (2003), "The Role Of Reference Points In Evaluating Price Information". *Advances In Consumer Research*, Vol. 30, p. 305-308.
- Cunha, J. R. and Shulman, J. D. (2011), "Assimilation And Contrast In Price Evaluations", *Journal Of Consumer Research*, Vol. 37, p. 822-835.
- Daskalopoulou, I. (2008), "Fairness Perceptions And Observed Consumer Behavior: Results Of A Partial Observability Model", *Journal Of Socio - Economics*, Vol. 37, p. 31.
- Daskalopoulou, I. and Petrou, A. (2006), "Consumers' Expenditures And Perceived Price Fairness", *International Journal Of Social Economics*, Vol. 33, p. 766-780.
- Diller, H. (2008), "Price Fairness", *Journal Of Product & Brand Management*, Vol. 17, p. 353-355.
- Estelami, H. (1997), "Consumer Perceptions Of Multi-Dimensional Prices", *Advances In Consumer Research*, Vol. 24, p. 392-399.
- Frey, B. and Pommerehne, W. (1993), "On The Fairness Of Pricing - An Empirical Survey Among The General Population", *Journal Of Economic Behavior & Organization*, Vol. 20, p. 295-295.
- Gendall, P., Holdershaw, J. and Garland, R. (1997), "The Effects Of Odd Pricing On Demand", *European Journal Of Marketing*, Vol. 31, p. 736-913.
- Gilbride, T., Guiltinan, J. and Urbany, J. (2008), "Framing Effects In Mixed Price Bundling", *Marketing Letters*, Vol. 19, p. 125-139.

- Goldsmith, R., Flynn, L. and Kim, D. (2010), "Status Consumption And Price Sensitivity", *Journal Of Marketing Theory And Practice*, Vol. 18, p. 323-338.
- Gotlieb, J. B. and Dubinsky, A. J. (1991), "Influence Of Price On Aspects Of Consumers' Cognitive Process", *Journal Of Applied Psychology*, Vol. 76, p. 541-549.
- Gotlieb, J. B. and Sarel, D. (1991), "Effects Of Price Advertisements On Perceived Quality And Purchase Intentions", *Journal Of Business Research*, Vol. 22, p. 195-210.
- Ha Hwan, H., Hyun Jung, S. and Pae Jae, H. (2006). "Consumers Mental Accounting In Response To Unexpected Price Savings At The Point Of Sale". *Marketing Intelligence & Planning*, Vol. 24, p. 406-416.
- Hansen, T. (2005). "Perspectives On Consumer Decision Making: An Integrated Approach". *Journal Of Consumer Behaviour*, Vol. 4, p. 420-437.
- Harris, C. and Bray, J. (2007). "Price Endings And Consumer Segmentation". *The Journal Of Product And Brand Management*, Vol. 16, p.200-205.
- Haws, K. L. and Bearden, W. O. (2006). "Dynamic Pricing And Consumer Fairness Perceptions". *Journal Of Consumer Research*, Vol. 33, p. 304-311.
- Heath, T. B., Chatterjee, S. and France, K. R. (1995). "Mental Accounting And Changes In Price: The Frame Dependence Of Reference Dependence". *Journal Of Consumer Research*, Vol. 22, p. 90-97.
- Hyeong Min, K. and Kachersky, L. (2006). "Dimensions Of Price Salience: A Conceptual Framework For Perceptions Of Multi-Dimensional Prices". *Journal Of Product & Brand Management*, Vol. 15, p. 139-147.
- Ingenbleek, P. (2007). "Value-Informed Pricing In Its Organizational Context: Literature Review, Conceptual Framework, And Directions For Future Research". *The Journal Of Product And Brand Management*, Vol. 16, p. 441-458.
- Janiszewski, C. and Lichtenstein, D. R. (1999). "A Range Theory Account Of Price Perception". *Journal Of Consumer Research*, Vol. 25, p. 353-369.
- Jiang, Y. (2007). "Price Discrimination With Opaque Products". *Journal Of Revenue And Pricing Management*, Vol. 6, p. 118-134.
- Jun, S., Macinnis, D. and Park, C. (2004). "Formation Of Price Expectation In Brand Extensions And Impact On Brand Extension Evaluation". *Advances In Consumer Research*, Vol. 32, p. 137-142.

- Kerin, R. A., Jain, A. and Howard, D. J. (1992). "Store Shopping Experience And Consumer Price-Quality-Value Perceptions". *Journal Of Retailing*, Vol. 68, p. 376-397.
- Kinni, T. (2003). "Setting The Right Price At The Right Time". *Harvard Management Update*, Vol. 8, p. 3-5.
- Kopalle, P., Rao, A. & Assuncao, J. (1996). "Asymmetric Reference Price Effects And Dynamic Pricing Policies". *Marketing Science (1986-1998)*, Vol.15, p. 60.
- Kopalle Praveen, K. & Lindsey-Mullikin, J. (2003). "The Impact Of External Reference Price On Consumer Price Expectations". *Journal Of Retailing*, Vol. 79, p. 225-236.
- Krishna, A., Briesch, R., Lehmann, D. and Yuan, H. (2002). "A Meta-Analysis Of The Impact Of Price Presentation On Perceived Savings". *Journal Of Retailing*, Vol. 78, p. 101-118.
- Kristensen, H. and Gärling, T. (1997). "Determinants Of Buyers' Aspiration And Reservation Price". *Journal Of Economic Psychology*, Vol. 18, p. 487-503.
- Kumar, V., Karande, K. & Reinartz, W. (1998). "The Impact Of Internal And External Reference Prices On Brand Choice: The Moderating Role Of Contextual Variables". *Journal Of Retailing*, Vol. 74, p. 401-426.
- Kurtuluş, K. and Okumuş, A. (2010). "Consumers' Price Perceptions As A Segmentation Criteria: An Emerging Market Case". *Istanbul University Journal Of The School Of Business Administration*, Vol. 39, p. 21-34.
- Lichtenstein, D. R., Ridgway, N. M. and Netemeyer, R. G. (1993). "Price Perceptions And Consumer Shopping Behavior: A Field Study". *Journal Of Marketing Research*, Vol. 30, p. 234-245.
- Lindsey-Mullikin, J. (2003). "Beyond Reference Price: Understanding Consumers' Encounters With Unexpected Prices". *The Journal Of Product And Brand Management*, Vol. 12, No. 3, p. 140-153.
- Long-Tolbert, S. and Suri, R. (2006). "Understanding Value Perceptions In Consumer Relationships: A Look At The Role Of Self-Esteem". *Advances In Consumer Research*, Vol. 34, p. 399-400.
- Lowe, B. and Alpert, F. (2007), "Measuring Reference Price Perceptions For New Product Categories: Which Measure Is Best?" *The Journal of Product and Brand Management*, Vol.16, p.132-141.

- Lowe, B. and Alpert, F. (2010). "A Pricing Strategy And The Formation And Evolution Of Reference Price Perceptions In New Product Categories". *Psychology & Marketing*, Vol.27, p. 846-873.
- Lowe, B. and Alpert, F. (2010). "The Relative Influence of Pioneer and Follower Price on Reference Price and Value Perceptions". *The Journal Of Product And Brand Management*, Vol. 19, p. 504-511.
- Martin, W., Ponder, N. and Lueg, J. (2009). "Price Fairness Perceptions And Customer Loyalty In A Retail Context". *Journal Of Business Research*, Vol. 62, p. 588.
- Martins, M. and Monroe, K. B. (1994), "Perceived Price Fairness: A New Look At An Old Construct". *Advances In Consumer Research*, Vol. 21, p. 75-78.
- Maxwell, S. and Comer, L. (2010). "The Two Components Of A Fair Price: Social And Personal". *The Journal Of Product And Brand Management*, Vol. 19, p. 375-380.
- Mazumdar, T., Raj, S. P. and Sinha, I. (2005). "Reference Price Research: Review And Propositions". *Journal Of Marketing*, Vol. 69, p. 84-102.
- Moon, S. and Voss, G. (2009). "How Do Price Range Shoppers Differ From Reference Price Point Shoppers?". *Journal Of Business Research*, Vol.62, p. 31-38.
- Munnukka, J. (2006). "Pricing Method as a Tool for Improved Price Perception". *Journal Of Revenue & Pricing Management*, Vol. 5, p.207-220.
- Munnukka, J. (2008). "Customers' Purchase Intentions as a Reflection of Price Perception". *Journal of Product & Brand Management*, Vol.17, p.188-196.
- Murray, K. and Schlacter, J. (1995). "Using Consumer Perceptions To Operationalize The Service Construct: Exploratory Research In Theory Extension And Validation". *Psychology & Marketing*, Vol.12, Issue 6, p. 501-530.
- Nasiry, J. & Popescu, I. (2009). "Dynamic Pricing with Loss Adverse Consumers and Peak-End Anchoring". *Insead Working Papers Collection*, p.1-55.
- Niedrich, R. W., Sharma, S. and Wedell, D.H. (2001). "Reference Price And Price Perceptions: A Comparison Of Alternative Models". *Journal Of Consumer Research*, Vol. 28, p. 339-354.
- Niedrich, R. W., Weathers, D., Hill, R. C. and Bell, D. R. (2009). "Specifying Price Judgments with Range-Frequency Theory in Models of Brand Choice". *Journal Of Marketing Research*, Vol. 46, p. 693-702.

- Noel, N. and Hanna, N. (1996). "Benchmarking Consumer Perceptions Of Product Quality With Price: An Exploration". *Psychology & Marketing*, Vol. 13, p. 591-591.
- Park, J. H., Maclachlan, D.L. and Love, E. (2011). "New Product Pricing Strategy under Customer Asymmetric Anchoring". *International Journal of Research in Marketing*. 28, Issue 4, p. 309-318
- Peine, K., Heitmann, M. and Herrmann, A. (2009). "Getting A Feel For Price Affect: A Conceptual Framework And Empirical Investigation Of Consumers' Emotional Responses To Price Information". *Psychology & Marketing*, Vol. 26, p. 39-66.
- Putler, D. (1992). "Incorporating Reference Price Effects Into A Theory Of Consumer Choice". *Marketing Science*. Vol.11, p. 287-287.
- Rajneesh, S., Rajesh, C. and Dhruv, G. (2008). "Effects of Spatial Location of Price Information on Consumers' Perception of Prices and Products". *Advances in Consumer Research - North American Conference Proceedings. Association for Consumer Research*. Vol. 35, p. 929-930
- Ranyard, R. and Abdel-Nabi, D. (1993). "Mental Accounting and the Process of Multiattribute Choice", *Acta Psychologica*, Vol. 84, p.161-177.
- Ranyard, R., Charlton J. P. and Williamson, J. (2001). "The Role Of Internal Reference Prices In Consumers' Willingness To Pay Judgments: Thaler's Beer Pricing Task Revisited". *Acta Psychologica*, Vol.106, p. 265-283.
- Ranyard, R., Del, M., Fabio, Bonini, N., Duxbury, D. and Summers, B. (2008). "Perceptions And Expectations Of Price Changes And Inflation: A Review And Conceptual Framework". *Journal Of Economic Psychology*, Vol. 29, p. 378-400.
- Rao, A. and Bergen, M. (1992). "Price Premium Variations As A Consequence Of Buyers' Lack of Information". *Journal Of Consumer Research*, Vol. 19, p. 412-423.
- Rao, A. (2005). "The Quality of Price as a Quality Cue". *Journal Of Marketing Research*, Vol. 42, p. 401-405.
- Rosa-Diaz, I. (2004). "Price Knowledge: Effects Of Consumers' Attitudes Towards Prices, Demographics, And Socio-Cultural Characteristics". *The Journal Of Product And Brand Management*, Vol.13, p. 406-428.
- Shoemaker, S. (2005). "Pricing and the Consumer". *Journal Of Revenue And Pricing Management*, Vol.4, p. 228-236.

- Simonson, I. and Drolet, A. (2004). "Anchoring Effects On Consumers' Willingness-To-Pay And Willingness-To-Accept". *Journal Of Consumer Research*, Vol. 31, p. 681-690.
- Smith, G. and Nagle, T. (2002). "How Much Are Customers Willing To Pay?" *Marketing Research*, Vol. 14, p. 20-25.
- Thaler, R. H. (2008). "Mental Accounting And Consumer Choice". *Marketing Science*, Vol. 27, p. 15-25.
- Thomas, M. and Morwitz, V. (2004). "Effects of Framing on Magnitude Perceptions of Prices". *Advances In Consumer Research*, Vol. 31, p. 454-456.
- Urbany, J. E. and Dickson, P. R. (1990). "Prospect Theory And Pricing Decisions". *Journal Of Behavioral Economics*, Vol. 19, p. 69-80.
- Vaidyanathan, R. (2000). "The Role Of Brand Familiarity In Internal Reference Price Formation: An Accessibility–Diagnosticity Perspective". *Journal Of Business And Psychology*, Vol. 14, p. 605-624.
- Vanhuele, M., Laurent, G. and Dreze, X. (2006). "Consumers' Immediate Memory for Prices". *Journal Of Consumer Research*, Vol. 33, p. 163-172.
- Varki, S. and Colgate, M. (2001). "The Role of Price Perceptions in an Integrated Model of Behavioral Intentions". *Journal Of Service Research*, Vol. 3, p. 232.
- Voelckner, F. (2006). "An Empirical Comparison of Methods for Measuring Consumers' Willingness to Pay". *Marketing Letters*, Vol. 17, p. 137-149.
- Völckner, F. (2008). "The Dual Role Of Price: Decomposing Consumers' Reactions To Price". *Academy Of Marketing Science Journal*, Vol. 36, p. 359-377.
- Wakefield, K. L. and Inman, J. J. (2003). "Situational Price Sensitivity: The Role Of Consumption Occasion, Social Context And Income". *Journal of Retailing*, Vol. 79, p. 199-212.
- Xia, L., Monroe, K. B. and Cox, J. (2004). "The Price Is Unfair! A Conceptual Framework of Price Fairness Perceptions". *Journal Of Marketing*, Vol. 68, p. 1-15.
- Xia, L. and Monroe, K. B. (2008). "Perceived Price Fairness And Perceived Transaction Value". *Advances In Consumer Research - European Conference Proceedings*, Vol. 8, p. 394-394.

Xia, L. and Monroe, K. B. (2010), "Is A Good Deal Always Fair? Examining the Concepts of Transaction Value and Price Fairness", *Journal of Economic Psychology*, Vol. 31, Issue 6, p. 884-894

Yeoman Dr, I. (2007). "Pricing". *Journal Of Revenue and Pricing Management*, Vol. 6, p. 1-1.

Yuan, H. and Han, S. (2011). "The Effects of Consumers' Price Expectations on Sellers' Dynamic Pricing Strategies". *Journal Of Marketing Research*, Vol. 48, p. 48-61.

Zielke, S. (2008). "Exploring Asymmetric Effects in the Formation of Retail Price Satisfaction". *Journal Of Retailing and Consumer Services*, Vol. 15, p. 335-347.

A.4.2 Excluded on Purpose of the Study

- Abdul-Muhmin, A. G. (2011). "Repeat Purchase Intentions In Online Shopping: The Role Of Satisfaction, Attitude, And Online Retailers' Performance". *Journal of International Consumer Marketing*, Vol. 23, p. 5-20.
- Abe, M. (1998). "Measuring Consumer, Nonlinear Brand Choice Response to Price". *Journal Of Retailing*, Vol. 74, p. 541-568.
- Acharyya, R. (2005). "Quality Discrimination among Income Constrained Consumers". *Economics Letters*, Vol. 86, p. 245-251.
- Ackerman, D. and Tellis, G. (2001). "Can Culture Affect Prices? A Cross-Cultural Study of Shopping and Retail Prices". *Journal Of Retailing*, Vol. 77, p. 57-82.
- Aertsens, J., Mondelaers, K., Verbeke, W., Buysse, J. and Guido, V.H. (2011). "The Influence of Subjective and Objective Knowledge on Attitude, Motivations and Consumption of Organic Food". *British Food Journal*, Vol. 113, p. 1353-1378.
- Agarwal, J., Malhotra, N. K. and Bolton, R. N. (2010), "A Cross-National And Cross-Cultural Approach To Global Market Segmentation: An Application Using Consumers' Perceived Service Quality". *Journal Of International Marketing*, Vol. 18, p. 18-40.
- Agarwal, S. and Teas, R. (2001), "Perceived Value: Mediating Role Of Perceived Risk". *Journal Of Marketing Theory And Practice*, Vol. 9, p. 1-14.
- Akhter, S. H. (2009). "Niches at the Edges: Price-Value Trade-off, Consumer Behavior, and Marketing Strategy". *Journal Of Product & Brand Management*, Vol. 18, p. 136-142.
- Albaum, G. and Wiley, J. (2010). "Consumer Perceptions of Extended Warranties and Service Providers". *The Journal of Consumer Marketing*, Vol. 27, p. 516-523.
- Alfnes, F., Guttormsen, A. G., Steine, G. and Kolstad, K. (2006). "Consumers' Willingness To Pay For The Color Of Salmon: A Choice Experiment With Real Economic Incentives". *American Journal Of Agricultural Economics*, Vol. 88, p. 1050-1061.
- Alfnes, F., Rickertsen, K. and Ueland, Ø. (2008). "Consumer Attitudes toward Low Stake Risk in Food Markets". *Applied Economics*, Vol. 40, p. 3039.

- Allenby, G., Fennell, G., Bemmaor, A., Bhargava, V., Christen, F., Dawley, J., Dickson, P., Edwards, Y., Garratt, M., Ginter, J., Sawyer, A., Staelin, R. and Sha, Y. (2002). "Market Segmentation Research: Beyond Within And Across Group Differences". *Marketing Letters*, Vol. 13, p. 233-243.
- Amaldoss, W. and Jain, S. (2008). "Trading Up: A Strategic Analysis Of Reference Group Effects". *Marketing Science*, Vol. 27, p. 932-942.
- Anderson, E. T. and Simester, D.I. (2001). "Research Note: Price Discrimination As An Adverse Signal: Why An Offer To Spread Payments May Hurt Demand". *Marketing Science*, Vol. 20, p. 315-327.
- Anderson, E. W. (1996). "Customer Satisfaction And Price Tolerance". *Marketing Letters*, Vol. 7, p. 265-274.
- Andersson, H. (2005). "The Value Of Safety As Revealed In The Swedish Car Market: An Application Of The Hedonic Pricing Approach". *Journal Of Risk And Uncertainty*, Vol. 30, p. 211-239.
- Andreas, H. and Martin, W. (1998). "Evaluating Multidimensional Prices". *Journal Of Product & Brand Management*, p. 7.
- Ania, A. B. (2008). "Evolutionary Stability And Nash Equilibrium In Finite Populations, With An Application To Price Competition". *Journal Of Economic Behavior & Organization*, Vol. 65, p. 472-488.
- Anstine, D. B. (2001). "How Much Will Consumers Pay? A Hedonic Analysis of the Cable Television Industry". *Review Of Industrial Organization*, Vol. 19, p. 129.
- Anttila, M. (2004). "Consumer Price Perceptions after Translation to Euro Currency". *The Journal Of Product And Brand Management*, Vol.13, p. 47-55.
- Antón, C., Camarero, C. and Carrero, M. (2007). "Analysing Firms' Failures As Determinants Of Consumer Switching Intentions: The Effect Of Moderating Factors". *European Journal of Marketing*, Vol. 41, 1p. 35-158.
- Arcelus, F., Shah, N. and Srinivasan, G. (2003). "Retailer's Pricing, Credit and Inventory Policies For Deteriorating Items in Response To Temporary Price/Credit Incentives". *International Journal of Production Economics*, Vol. 81/82, p. 153-162.
- Arcidiacono, D. (2011). "Consumer Rationality In A Multidisciplinary Perspective". *Journal Of Socio - Economics*, Vol. 40, p. 516.

- Avlonitis, G. and Indounas, K. (2004). "Pricing Strategy And Practice: The Impact Of Market Structure On Pricing Objectives On Service Firms". *The Journal of Product and Brand Management*, Vol. 13, p. 343-358.
- Bell, D. and Lattin, J. (1998). "Shopping Behavior And Consumer Preference For Store Price Format: Why "Large Basket" Shoppers Prefer Edlp". *Marketing Science (1986-1998)*, Vol. 17, p. 66.
- Bertini, M. and Wathieu, L. (2008). "Attention-Arousal Through Price Partitioning". *Marketing Science*, Vol. 27, p. 236-246,308,311.
- Besanko, D., Gupta, S. and Jain, D. (1998). "Logit Demand Estimation Under Competitive Pricing Behavior: An Equilibrium Framework". *Management Science*, Vol. 44, p. 1533-1547.
- Betts, E. and Mcgoldrick, P. (1996). "Consumer Behaviour And The Retail "Sales" Modelling The Development Of An "Attitude Problem"". *European Journal Of Marketing*, Vol. 30, p. 40-40.
- Biglaiser, G. and Ching-To, A. M. (2003). "Price And Quality Competition Under Adverse Selection: Market Organization And Efficiency". *The Rand Journal Of Economics*, Vol. 34, p. 266-266.
- Biswas, A., Dutta, S. and Pullig, C. (2006). "Low Price Guarantees As Signals Of Lowest Price: The Moderating Role Of Perceived Price Dispersion". *Journal Of Retailing*, Vol. 82, p. 245-257.
- Biswas, A., Pullig, C., Yagci, M. I. and Dean, D. H. (2002). "Consumer Evaluation of Low Price Guarantees: The Moderating Role of Reference Price and Store Image". *Journal Of Consumer Psychology*, Vol. 12, p. 107-118.
- Bizer, G. Y. and Petty, R.E. (2002). "An Implicit Measure Of Price Perception: Exploring The Odd-Pricing Effect. Advances In Consumer Research." *Association For Consumer Research*. Vol. 29, Issue 1, p. 220-221
- Blair, R. and Depasquale, C. (2010). "A Note On Two-Part Pricing Under Uncertainty". *Managerial and Decision Economics*, Vol. 31, p. 545.
- Blavatsky, P. R. and Köhler, W. R. (2009). "Range Effects And Lottery Pricing". *Experimental Economics*, Vol. 12, p. 332-349.
- Burman, B. and Biswas, A. (2007). "Partitioned Pricing: Can We Always Divide and Prosper?". *Journal Of Retailing*, Vol. 83, p. 423-436.
- Cai, Y. and Cude, B. (2011). "Reference Prices And Consumers' Feeling Of Regret: An Investigation Of Consumers' Use Of An Online Price-Bidding Method". *International Journal Of Consumer Studies*, Vol. 35, p. 441-447.

- Callow, M. A. and Lerman, D.B. (2003). "Consumer Evaluations Of Price Discounts In Foreign Currencies". *Journal Of Product & Brand Management*, Vol. 12, p. 307-322.
- Camerer, C. F. (1992). "The Rationality Of Prices And Volume In Experimental Markets". *Decision Processes In Negotiation*, Vol. 51, p. 237-272.
- Campo, S. and Yagüe, M. J. (2007). "The Perception Of Price Discounts According To Consumer's Characteristics". *Journal Of Revenue & Pricing Management*, Vol. 6, p. 86-99.
- Carlson, J., Huppertz, J. and Neidermeyer, P. (2008). "Price And Consumer Cost Responsibility Effects On Quality Perceptions And Price Negotiation Likelihood For Healthcare Services". *Health Marketing Quarterly*, Vol. 25, p. 303.
- Chandran, S. and Morwitz, V. G. (2005). "Effects Of Participative Pricing On Consumers' Cognitions And Actions: A Goal Theoretic Perspective". *Journal of Consumer Research*, Vol. 32, p. 249-259.
- Chen, Z. and Dubinsky, A. J. (2003). "A Conceptual Model Of Perceived Customer Value In E-Commerce: A Preliminary Investigation". *Psychology & Marketing*, Vol. 20, p. 323-347.
- Choudhary, V., Ghose, A., Mukhopadhyay, T. and Rajan, U. (2005). "Personalized Pricing And Quality Differentiation". *Management Science*, Vol. 51, p. 1120-1130.
- Chowdhury, M. and Biswas, M. (2011). "The Effects Of Country Associations And Price On Consumer Quality Perceptions: A Cognitive Information Processing Perspective". *International Journal Of Management*, Vol. 28, p. 111-126,199.
- Christandl, F., Fetchenhauer, D. and Hoelzl, E. (2011). "Price Perception And Confirmation Bias In The Context Of A Vat Increase". *Journal Of Economic Psychology*, Vol. 32, p. 131-141.
- Christen, M. and Sarvary, M. (2007). "Competitive Pricing Of Information: A Longitudinal Experiment". *Journal Of Marketing Research*, Vol. 44, p.42-56.
- Compeau, L., Lindsey-Mullikin, J., Grewal, D. and Petty, R. (2004). "Consumers' Interpretations Of The Semantic Phrases Found In Reference Price Advertisements". *The Journal Of Consumer Affairs*, Vol. 38, p.178-187.
- Coulter, K. (2007). "The Effects Of Digit-Direction On Eye Movement Bias And Price-Rounding Behavior". *The Journal Of Product And Brand Management*, Vol. 16, p. 501-508.

- Dana, K., Thomas, K. J., Thomas, E. K. and Joseph, K. J. (2009). "Willingness To Pay Premium For Organic Products: A Case Study In Kerala". *Journal Of Environmental Economics*, Vol. 7, p. 29-33.
- Danzon, P. (1997). "Price Discrimination for Pharmaceuticals: Welfare Effects in the US and the EU". *International Journal of the Economics of Business*, Vol. 4, p. 301-321.
- Darke, P. R., Freedman, J.L. and Chaiken, S. (1995). "Percentage Discounts, Initial Price, And Bargain Hunting: A Heuristic -- Systematic Approach To Price Search Behavior". *Journal Of Applied Psychology*, Vol. 80, p. 280-586.
- De, C., Leslie, K. S. and Chedgey, M. (1992). "Brand Pricing In A Recession". *European Journal Of Marketing*, Vol. 26, p. 5-5.
- Del, R., Vazquez, R. and Iglesias, V. (2001). "The Effects Of Brand Associations On Consumer Response", *The Journal of Consumer Marketing*, Vol. 18, p. 410-425.
- Dell'ariccia, G. and Marquez, R. (2008). "Can Cost Increases Increase Competition? Asymmetric Information And Equilibrium Prices". *The Rand Journal Of Economics*, Vol. 39, p. 144-162.
- Delvecchio, D., Krishnan, H. S. and Smith, D. (2007). "Cents Or Percent? The Effects Of Promotion Framing On Price Expectations And Choice", *Journal Of Marketing*, Vol. 71, p. 158.
- Delvecchio, D. and Smith, D. C. (2005). "Brand-Extension Price Premiums: The Effects Of Perceived Fit And Extension Product Category Risk". *Journal Of The Academy Of Marketing Science*, Vol. 33, p. 184-196.
- Desarbo, W. S., Ramaswamy, V. and Cohen, S. H. (1995), "Market Segmentation With Choice-Based Conjoint Analysis", *Marketing Letters*, Vol. 6, p. 137-147.
- Devlin, J., Ennew, C., Mckechnie, S. and Smith, A. (2007), "A Study Of Time Limited Price Promotions", *The Journal of Product and Brand Management*, Vol. 16, p. 280-285.
- Dhar, R. and Wertenbroch, K. (2000), "Consumer Choice Between Hedonic And Utilitarian Goods", *Journal Of Marketing Research*, Vol. 37, p. 60-71.
- Dholakia, U. M. and Simonson, I. (2005). "The Effect Of Explicit Reference Points On Consumer Choice And Online Bidding Behavior". *Marketing Science*, Vol. 24, p. 206-217.

- Dodds, W. (1991). "In Search Of Value: How Price And Store Name Information Influence Buyers' Product Perceptions". *The Journal of Services Marketing*, Vol. 5, p. 27-27.
- Domowitz, I. (1993). "Automating The Price Discovery Process: Some International Comparisons And Regulatory Implications". *Journal Of Financial Services Research*, Vol. 6, p. 305-305.
- Downward, P. (2000). "A Realist Appraisal Of Post-Keynesian Pricing Theory". *Cambridge Journal Of Economics*, Vol. 24, p. 211.
- Drakopoulos, S. (1992). "Psychological Thresholds, Demand And Price Rigidity". *The Manchester School*, Vol. 60, p. 152-152.
- Dutta, S. and Bhowmick, S. (2009). "Consumer Responses To Offline And Online Low Price Signals: The Role Of Cognitive Elaboration". *Journal Of Business Research*, Vol. 62, p. 629-635.
- Dutta, S. and Biswas, A. (2005). "Effects Of Low Price Guarantees On Consumer Post-Purchase Search Intention: The Moderating Roles Of Value Consciousness And Penalty Level". *Journal Of Retailing*, Vol. 81, p. 283-291.
- Dutta, S., Biswas, A. and Grewal, D. (2007). "Low Price Signal Default: An Empirical Investigation Of Its Consequences". "Academy Of Marketing Science". *Journal Of Retailing*, Vol. 35, p. 76-88.
- Ehrenberg, A., Scriven, J. and Barnard, N. (1997). "Advertising And Price". *Journal Of Advertising Research*, Vol. 37, p. 27-35.
- Elegido, J. M. (2009). "The Just Price: Three Insights From The Salamanca School". *Journal Of Business Ethics*, Vol. 90, p. 29-46.
- Elzinga, K. G. and Mills, D. E. (2001). "Predatory Pricing And Strategic Theory". *Georgetown Law Journal*, Vol. 89, p. 2475.
- Emons, W. (1997). "Credence Goods And Fraudulent Experts". *The Rand Journal Of Economics*, Vol. 28, p. 107-119.
- Engelbrecht-Wiggans, R., Haruvy, E. and Katok, E. (2007). "A Comparison Of Buyer-Determined And Price-Based Multiattribute Mechanisms". *Marketing Science*, Vol. 26, p. 629-641.
- Erdem, T., Swait, J. and Louviere, J. (2002). "The Impact Of Brand Credibility On Consumer Price Sensitivity". *International Journal Of Research In Marketing*, Vol. 19, p. 1-19.

- Eren, S. S. and Maglaras, C. (2010). "Monopoly Pricing With Limited Demand Information". *Journal Of Revenue & Pricing Management*, Vol. 9, p. 23-48.
- Erevelles, S. (1993). "The Price -- Warranty Contract And Product Attitudes". *Journal Of Business Research*, Vol. 27, p. 171-181.
- Erevelles, S., Roy, A. and Vargo, S. (1999). "The Use Of Price And Warranty Cues In Product Evaluation: A Comparison Of U.S. And Hong Kong Consumers." *Journal Of International Consumer Marketing*, Vol. 11, p. 67-91.
- Eric, T. A. (2004). "Coordinating Price Reductions And Coupon Events", *Journal Of Marketing Research*, Vol. 41, p. 411-422.
- Esteban, S., Miyagawa, E. and Shum, M. (2007). "Nonlinear Pricing With Self-Control Preferences". *Journal Of Economic Theory*, Vol. 135, p. 306.
- Estelami, H. (1999). "A Presentation And Media Effects In Service Price Advertising". *Services Marketing Quarterly*, Vol. 18, p. 81-103.
- Estelami, H. (1999). "The Computational Effect Of Price Endings In Multi-Dimensional Price Advertising". *The Journal Of Product And Brand Management*, Vol. 8, p. 244-256.
- Estelami, H. (2008). "Consumer Use Of The Price-Quality Cue In Financial Services". *The Journal Of Product And Brand Management*, Vol.17, p. 197-208.
- Fava, V. L. (2010). "Price Dispersion And Price Indexes". *Applied Economics*, Vol. 42, p. 23-36.
- Feltham, T. S., Phillips, F. and Sheehan, N. T. 2003. "The Same Difference? A Transfer-Pricing Case". *Issues In Accounting Education*, Vol. 18, p. 93.
- Ferguson, J., Ellen, P. and Piscopo, G. (2011). "Suspicion And Perceptions Of Price Fairness In Times Of Crisis". *Journal Of Business Ethics*, Vol. 98, p. 331-349.
- Fischer, A. and Zurlinden, M. (1999). "Exchange Rate Effects Of Central Bank Interventions: An Analysis Of Transaction Prices". *The Economic Journal*, Vol. 109, p. 662-676.
- Fogel, S., Lovallo, D. and Caringal, C. (2004). "Loss Aversion For Quality In Consumer Choice". *Australian Journal Of Management*, Vol. 29, p. 45-63.
- Folkertsma, C. (2002). "The Euro And Psychological Prices: Simulations Of The Worst-Case Scenario". *The Economist*, Vol. 150, p. 19-19.

- Fraccastoro, K., Burton, S. and Biswas, A. (1993). "Effective Use Of Advertisements Promoting Sale Prices". *The Journal Of Consumer Marketing*, Vol. 10, p. 61-61.
- Frankenberger, K. and Liu, R. (1994). "Does Consumer Knowledge Affect Consumer Responses To Advertised Reference Price Claims?" *Psychology & Marketing* (1986-1998), Vol. 11, p. 235-235.
- Freiesleben, J. (2004). "How Better Quality Affects Pricing". *Quality Progress*, Vol. 37, p. 48-52.
- Frenzen, H., Hansen, A.K., Krafft, M., Mantrala, M. and Schmidt, S. (2010). "Delegation Of Pricing Authority To The Sales Force: An Agency-Theoretic Perspective Of Its Determinants And Impact On Performance". *International Journal Of Research In Marketing*, Vol. 27, p. 58.
- Gan, L., He, S., Huang, T. and Tan, J. (2007), "A Comparative Analysis Of Online Grocery Pricing In Singapore". *Electronic Commerce Research And Applications*, Vol. 6, p. 474-483.
- Gillman, M. (2002), "Keynes's Treatise: Aggregate Price Theory for Modern Analysis?", *European Journal of the History of Economic Thought*, Vol. 9, p. 430-451.
- Greitemeyer, T., Schulz-Hardt, S., Traut-Mattausch, E. and Frey, D. (2005). "The Influence Of Price Trend Expectations On Price Trend Perceptions: Why The Euro Seems To Make Life More Expensive?". *Journal Of Economic Psychology*, Vol. 26, p. 541-548.
- Grewal, D., Hardesty, D. M. and Iyer, G. R. (2004). "The Effects Of Buyer Identification And Purchase Timing On Consumers' Perceptions Of Trust, Price Fairness, And Repurchase Intentions". *Journal Of Interactive Marketing (John Wiley & Sons)*, Vol. 18, p. 87-100.
- Grewal, D. and Lindsey-Mullikin, J. (2006). "The Moderating Role Of The Price Frame On The Effects Of Price Range And The Number Of Competitors On Consumers' Search Intentions". *Journal Of The Academy Of Marketing Science*, Vol. 34, p. 55-62.
- Grewal, D., Marmorstein, H. and Sharma, A. (1996). "Communicating Price Information Through Semantic Cues: The Moderating Effects Of Situation And Discount Size". *Journal Of Consumer Research*, Vol. 23, p. 148-148.
- Grewal, D., Monroe, K. B. and Krishnan, R. (1998). "The Effects Of Price-Comparison Advertising On Buyers' Perceptions Of Acquisition Value, Transaction Value, And Behavioral Intentions". *Journal Of Marketing*, Vol. 62, p. 46-59.

- Guiltinan, J. and Gundlach, G. (1996). "Aggressive And Predatory Pricing: A Framework For Analysis". *Journal Of Marketing*, Vol. 60, p. 87-87.
- Gupta, S. and Kim, H.W. (2010). "Value-Driven Internet Shopping: The Mental Accounting Theory Perspective". *Psychology & Marketing*, Vol. 27, p. 13-35.
- Handa, P. and Linn, S. C. (1991). "Equilibrium Factor Pricing With Heterogeneous Beliefs". *Journal Of Financial & Quantitative Analysis*, Vol. 26, p. 11-22.
- Hanousek, J. and Filer, R. (2004). "Consumers' Opinion Of Inflation Bias Due To Quality Improvements". *Economic Development And Cultural Change*, Vol. 53, p. 235-254.
- Hart, L. (2010). "Understanding The Psychology Of Pricing". *Kitchen & Bath Design News*, Vol. 28, p. 32-32.
- Heffetz, O. and Shayo, M. (2009). "How Large Are Non-Budget-Constraint Effects Of Prices On Demand?". *American Economic Journal. Applied Economics*, Vol. 1, p. 170-199.
- Homburg, C., Koschate, N. and Hoyer, W. D. (2005). "Do Satisfied Customers Really Pay More? A Study Of The Relationship Between Customer Satisfaction And Willingness To Pay". *Journal Of Marketing*, Vol. 69, p. 84-96.
- Howard, D. J. and Kerin, R.A. (2006). "Broadening The Scope Of Reference Price Advertising Research: A Field Study Of Consumer Shopping Involvement". *Journal Of Marketing*, Vol. 70, p. 185-204.
- Huang, J. (2003). "Impact Of Divergent Consumer Confidence On Option Prices". *Review Of Derivatives Research*, Vol. 6, p.165-177.
- Huang, W. (2011). "Price-Taking Behavior Versus Continuous Dynamic Optimizing". *Journal Of Economic Behavior & Organization*, Vol. 78, p.37-50.
- Huber, O. W. (2011). "Frequency Of Price Increases And Perceived Inflation. An Experimental Investigation". *Journal Of Economic Psychology*, Vol. 32, p. 651-661.
- Indounas, K. (2008). "The Relationship Between Pricing And Ethics In Two Industrial Service Industries". *The Journal Of Business & Industrial Marketing*, Vol. 23, p.161-169.
- Jap, S. and Naik, P. (2004). "Introduction To The Special Issue On Online Pricing". *Journal Of Interactive Marketing*, Vol. 18, p.4-4.

- Jen-Hung, H., Lee, B. and Ho, S. (2004). "Consumer Attitude Toward Gray Market Goods". *International Marketing Review*, Vol. 21, p. 598-614.
- Kalita, J., Sharan, J. and Lehmann, D. (2004). "Do High Prices Signal High Quality? A Theoretical Model And Empirical Results". *The Journal Of Product And Brand Management*, Vol. 13, p. 279-288.
- Kalwani, M. U., Yim, C. K., Rinne, H. J. and Sugita, Y. (1990). "A Price Expectations Model Of Customer Brand Choice". *Journal Of Marketing Research*, Vol. 27, p. 251-262.
- Kalyanaram, G. and Winer, R. (1995). "Empirical Generalizations From Reference Price Research". *Marketing Science (1986-1998)*, Vol. 14, p. 161.
- Kim, Y. H., Aggarwal, P., Ha, Y. M. & Cha Tai, H. (2006), "Optimal Pricing Strategy For Foreign Market Entry: A Game Theoretic Approach", *Managerial & Decision Economics*, Vol. 27, p. 643-653.
- Ko, K. (2008), "Optimal Pricing Model", *Journal Of Global Business Issues*, Vol. 2, p. 143-147.
- Koch, J. and Cebula, R. (2002). "Price, Quality, And Service On The Internet: Sense And Nonsense". *Contemporary Economic Policy*, Vol. 20, p. 25-37.
- Kocherlakota, N. R. (1996). "The Equity Premium: It's Still A Puzzle". *Journal Of Economic Literature*, Vol. 34, p. 42.
- Kopalle, P., Biswas, D., Chintagunta, P. K., Fan, J., Pauwels, K., Ratchford, B. T. and Sills, J. A. (2009). "Retailer Pricing And Competitive Effects". *Journal Of Retailing*, Vol. 85, p. 56-70.
- Koçaş, C. and Bohlmann, J. D. (2008). "Segmented Switchers And Retailer Pricing Strategies". *Journal Of Marketing*, Vol. 72, p. 124-142.
- Kraus, U. and Candace, A.Y. (2003). "Product Line Selection And Pricing Under A Share-Of-Surplus Choice Model". *European Journal of Operational Research*, Vol. 150, p. 653-671.
- Krystallis, A. and Chryssohoidis, G. (2005). "Consumers' Willingness To Pay For Organic Food: Factors That Affect It And Variation Per Organic Product Type". *British Food Journal*, Vol. 107, p. 320-343.
- Lee, J. D., Repkine, A., Hwang, S. W. and Kim, T. Y. (2004), "Estimating Consumers' Willingness To Pay For Individual Quality Attributes With Deal", *The Journal Of The Operational Research Society*, Vol. 55, p. 1064-1070.

- Lichtenstein, D. (2005). "Price Perceptions, Merchant Incentives, And Consumer Welfare". *The Journal Of Product And Brand Management*, Vol. 14, p. 357-361.
- Loureiro, M. L., McCluskey, J. J. and Mittelhammer, R.C. (2002). "Will Consumers Pay A Premium For Eco-Labeled Apples?" *Journal Of Consumer Affairs*, Vol. 36, p. 203-219.
- Lowe, B. (2010). "Consumer Perceptions Of Extra Free Product Promotions And Discounts: The Moderating Role Of Perceived Performance Risk". *The Journal Of Product And Brand Management*, Vol. 19, p. 496-503.
- Lurie, N. and Srivastava, J. (2001). "Price-Matching Refunds And Consumer Price Perceptions: Effect On Store Price Image And Processing Of Price Information" *Advances In Consumer Research*. Vol. 28. p. 324
- Luzar, E. J. and Cosse, K. J. (1998). "Willingness To Pay Or Intention To Pay: The Attitude–Behavior Relationship In Contingent Valuation". *The Journal Of Socio-Economics*, Vol. 27, p. 427-444.
- Marquis, M. and Dube, L. (1994). "Consumers' Response To Waiting Time: New Segmentation Bases Are Required For Service Industries". *Advances In Consumer Research*, Vol. 21, p. 548-553.
- Matanovich, T., Lilien, G. L. and Rangaswamy, A. (1999), "Engineering The Price-Value Relationship", *Marketing Management*, Vol. 8, p. 48-53.
- Maxwell, S. (1995). "What Makes A Price Increase Seem "Fair"?" *Pricing Strategy & Practice*, Vol. 3, p. 21-27.
- Maxwell, S. (1999). "Biased Attributions Of A Price Increase: Effects Of Culture And Gender", *The Journal Of Consumer Marketing*, Vol. 16, p. 9-23.
- Mazumdar, T. and Papatla, P. (1995), "Loyalty Differences In The Use Of Internal And External Reference Prices", *Marketing Letters*, Vol. 6, p. 111-122.
- Meredith, L. and Maki, D. (2001). "Product Cannibalization And The Role Of Prices". *Applied Economics*, Vol. 33, p. 1785-1793.
- Middleton, L. P. and Satchell, S. E. (2001). "Deriving The Arbitrage Pricing Theory When The Number Of Factors Is Unknown". *Quantitative Finance*, Vol. 1, p. 502-508.
- Miyazaki, A. D. (2003). "Psychology & Marketing Guest Editorial: The Psychology Of Pricing On The Internet". *Psychology & Marketing*, Vol. 20, p. 471-476.

- Moore, M. and Carpenter, J. (2006), "The Effect Of Price As A Marketplace Cue On Retail Patronage", *Journal Of Product & Brand Management*, Vol.15, p. 265-271.
- Moorthy, S. and Zhang, X. (2006), "Price Matching By Vertically Differentiated Retailers: Theory And Evidence", *Journal Of Marketing Research*, Vol. 43, p. 1-1.
- Nair, H. (2007). "Intertemporal Price Discrimination with Forward-Looking Consumers: Application to the Us Market for Console Video-Games". *Quantitative Marketing & Economics*, Vol. 5, p. 239-292.
- Narasimhan, R., Ghosh, S. and Mendez, D. (1993), "A Dynamic Model of Product Quality and Pricing Decisions on", *Decision Sciences*, Vol. 24, p. 893-893.
- Padula, G. and Busacca, B. (2005), "The Asymmetric Impact Of Price-Attribute Performance On Overall Price Evaluation", *Journal Of Service Management*, Vol. 16, p. 28-54.
- Paulins, V. and Geistfeld, L. (2003), "The Effect Of Consumer Perceptions Of Store Attributes On Apparel Store Preference", *Journal Of Fashion Marketing And Management*, Vol. 7, p. 371-385.
- Ramirez, E. and Goldsmith, R. (2009), "Some Antecedents Of Price Sensitivity", *Journal Of Marketing Theory And Practice*, Vol.17, p. 199-213.
- Ross, J. and Harradine, R. (2010), "Value Brands: Cheap Or Trendy?", *Journal Of Fashion Marketing And Management*, Vol. 14, p. 350-366.
- Schindler, R. (2009), "Patterns Of Price Endings Used In Us And Japanese Price Advertising", *International Marketing Review*, Vol. 26, p.17-29.
- Shin-Yi, W. and Banker, R. D. (2010), "Best Pricing Strategy For Information Services". *Journal of the Association for Information Systems*, Vol. 11, p. 339-366.
- Shioda, R., Tunçel, L. and Myklebust, T. (2011). "Maximum Utility Product Pricing Models And Algorithms Based On Reservation Price". *Computational Optimization And Applications*, Vol. 48, p.157-198.
- Simon, H. (1995). "Pricing Problems In A Global Setting", *Marketing News*, Vol. 29, p. 4-8.
- Simon, H. and Fassnacht, M. (1993). "Price Bundling", *European Management Journal*, Vol. 11, p. 403-403.

- Skugge, G. (2011). "The Future Of Pricing: Outside-In". *Journal Of Revenue And Pricing Management*, Vol. 10, p. 392-395.
- Spiegel, U. and Templeman, J. (2009A), "Economics Of Deals And Optimal Pricing Policy", *International Journal Of Business*, Vol. 14, p. 1-19.
- Spiegel, U. and Templeman, J. (2009B), "Economics Of Deals And Optimal Pricing Policy", *International Journal Of Business*, Vol. 14, p.1-19.
- Spiegel, Y. and Yehezkel, Y. (2003), "Price And Non-Price Restraints When Retailers Are Vertically Differentiated", *International Journal Of Industrial Organization*, Vol. 21, p. 923.
- Srivastava, J. and Lurie, N. (2001). "A Consumer Perspective On Price-Matching Refund Policies: Effect On Price Perceptions And Search Behavior". *Journal Of Consumer Research*, Vol. 28, p. 296-307.
- Stamer, H. and Diller, H. (2006). "Price Segment Stability In Consumer Goods Categories". *The Journal Of Product And Brand Management*, Vol.15, p.62-72.
- Stubbs, P. (2000). "Predatory Pricing". *Nz Marketing Magazine*, Vol.19, p.45.
- Su, X. (2007). "Intertemporal Pricing With Strategic Customer Behavior". *Management Science*, Vol. 53, p. 726-741.
- Su, X. (2009). "A Model Of Consumer Inertia With Applications To Dynamic Pricing". *Production And Operations Management*, Vol. 18, p. 365-380.
- Suri, R., Lee, J. A., Manchanda, R. V. and Monroe, K. B. (2003A). "The Effect Of Computer Anxiety On Price Value Trade-Off In The On-Line Environment". *Psychology & Marketing*, Vol. 20, p. 515-536.
- Suri, R., Long, M. & Monroe, K. B. (2003B). "The Impact Of The Internet And Consumer Motivation On Evaluation Of Prices". *Journal Of Business Research*, Vol. 56, p. 379.
- Suri, R. and Manchanda, R. (2001). "The Effects Of Acculturation On Consumers' Sensitivity To Prices". *Journal Of International Consumer Marketing*, Vol. 13, p. 35-56.
- Suri, R., Manchanda, R. and Kohli, C. (2002A). "Comparing Fixed Price And Discounted Price Strategies: The Role Of Affect On Evaluations". *The Journal Of Product And Brand Management*, Vol. 11, p.160-160.
- Suri, R., Lee, J. A., Manchanda, R., and Monroe, K. B. (2003A). "The Effect Of Computer Anxiety On Price Value Trade-Off in the On-Line Environment". *Psychology & Marketing*, Vol. 20, Issue 6, p. 515-536

- Suri, R. and Monroe, K. (2003). "The Effects Of Time Constraints On Consumers' Judgments Of Prices And Products". *Journal Of Consumer Research*, Vol. 30, p. 92-92.
- Suter, T. and Hardesty, D. (2005). "Maximizing Earnings And Price Fairness Perceptions In Online Consumer-To-Consumer Auctions". *Journal Of Retailing*, Vol. 81, p. 307-317.
- Suter, T. A. and Burton, S. (1996). "Believability And Consumer Perceptions Of Implausible Reference Prices In Retail Advertisements". *Psychology & Marketing*, Vol. 13, p. 37-54.
- Tellis, G.J. and Gaeth, G. J. (1990). "Best Value, Price-Seeking, and Price Aversion: The Impact Of Information And Learning On Consumer Choices". *Journal Of Marketing*, Vol. 54, p. 34-45.
- Tybout, A. M. and Artz, N. (1994). "Consumer Psychology". *Annual Review Of Psychology*, Vol. 45, p. 131-169.
- Tynan, C., Mckechnie, S. and Chhuon, C. (2010). "Co-Creating Value For Luxury Brands". *Journal Of Business Research*, Vol. 63, p. 1156-1163.
- Urbany, J., Kalapurakal, R. and Dickson, P. (1996). "Price Search In The Retail Grocery Market". *Journal Of Marketing*, Vol. 60, p. 91-91.
- Vaidyanathan, R. and Aggarwal, P. (2003). "Who Is The Fairest Of Them All? An Attributional Approach To Price Fairness Protections". *Journal Of Business Research*, Vol. 56, p. 453-453.
- Vaidyanathan, R. and Aggarwal, P. (2008). "The Impact Of Price Display Size On Processing And Evaluation Of Comparative Price Advertisements". *Advances In Consumer Research - European Conference Proceedings*, Vol. 8, p. 397-398.
- Valliant, R. (1991). "Variance Estimation For Price Indexes From A Two-Stage Sample With Rotating Panels". *Journal Of Business & Economic Statistics*, Vol. 9, p. 409-409.
- Venkatesh, R. and Mahajan, V. (1997). "Products With Branded Components: An Approach For Premium Pricing And Partner Selection". *Marketing Science (1986-1998)*, Vol. 16, p. 146.
- Vigneron, F. and Lester, W. J. (1999). "A Review And A Conceptual Framework Of Prestige-Seeking Consumer Behavior". *Academy Of Marketing Science Review*, Vol. 1999, p. 1-1.

- Voss, G. B., Parasuraman, A. and Grewal, D. (1998). "The Roles Of Price, Performance, And Expectations In Determining Satisfaction In Service Exchanges". *Journal Of Marketing*, Vol. 62, p. 46-61.
- Walley, M. J. C. and Fortin, D. R. (2005). "Behavioral Outcomes From Online Auctions: Reserve Price, Reserve Disclosure, And Initial Bidding Influences In The Decision Process". *Journal Of Business Research*, Vol. 58, p.1409-1418.
- Watchravesringkan, K. and Yurchisin, J. (2007). "A Structural Analysis of Value Orientations, Price Perception And On-going Search Behaviour: A Cross-Cultural Study of American and Korean Consumers". *International Journal Of Consumer Studies*, Vol. 31, p. 272-282.
- Xianhang, Y., Mukhopadhyay, S. and Zhu, X. (2006). "A Bertrand Model Of Pricing Of Complementary Goods Under Information Asymmetry". *Journal Of Business Research*, Vol. 59, p. 1182-1182.
- Zbaracki, M. J. (2007). "A Sociological View Of Costs Of Price Adjustment: Contributions From Grounded Theory Methods". *Price Rigidity And Flexibility: Recent Theoretical Developments*, Vol. 28, p. 553-567.
- Zhang, S. (2001). "On A Profit Maximizing Location Model". *Annals Of Operations Research*, Vol. 103, p. 251-260.
- Zhang, Z. (1995). "Price-Matching Policy And The Principle Of Minimum Differentiation". *The Journal Of Industrial Economics*, Vol. 43, p. 287-287.
- Zhou, Z. and Nakamoto, K. (2001). "Price Perceptions: A Cross-National Study Between American And Chinese Young Consumers". *Advances In Consumer Research*, Vol. 28, p. 161-168.
- Zielke, S. (2006). "Measurement Of Retailers Price Images With A Multiple-Item Scale". *The International Review Of Retail, Distribution And Consumer Research*, Vol. 16, p. 297-297.
- Zielke, S. (2011). "Integrating Emotions In The Analysis Of Retail Price Images". *Psychology & Marketing*, Vol. 28, p. 330-359.

A.4.3 Excluded on Methods

- Abhijit, B. (1992), "The moderating role of brand familiarity in reference price perceptions", *Journal of Business Research*, Vol. 25, No. 3, p. 251-262.
- Abhijit, B., Chris, P., Balaji, K. and Scot, B. (1999), "Consumer evaluation of reference price advertisements: Effects of other brands' prices and semantic cues", *Journal of Public Policy & Marketing*, Vol. 18, No. 1, p. 52-65.
- Adam, N., Roger, H. and Zinaida, T. (2007), "High-low context cultures and price-ending practices", *The Journal of Product and Brand Management*, Vol. 16, No. 3, p. 206-214.
- Alexander, C. (2003), "Reverse Pricing and Online Price Elicitation Strategies in Consumer Choice", *Journal of Consumer Psychology (Lawrence Erlbaum Associates)*, Vol. 13, No. 1, p. 51.
- Andrea, K. (1999), "Pricing in Euroland", *World Trade*, Vol. 12, No. 1, p. 52.
- Beard, T. and George, S. (1994), "Purchase decisions made prior to the revelation of price: Simple analytics of the consumer's problem", *Southern Economic Journal*, Vol. 60, No. 4, p. 1055-1055.
- Cadre, L., Mustapha, B. and Bruno, T. (2009), "Consumers' preference modeling to price bundle offers in the telecommunications industry: a game with competition among operators", *Netnomics : Economic Research and Electronic Networking*, Vol. 10, No. 2, p. 171-208.
- Coulter, K. S. (2009), "The Effects of Phonetic Symbolism on Comparative Price Perceptions", *Advances in Consumer Research - North American Conference Proceedings*, Vol. 36, p. 986-988.
- Daniel, K. (2006), "Advertising and Conspicuous Consumption", *Journal of Institutional and Theoretical Economics*, Vol. 162, No. 4, p. 661-682.
- Dhruv, G. and Howard, M. (1994), "Market price variation, perceived price variation, and consumers' price search decisions for durable goods", *Journal of Consumer Research*, Vol. 21, No. 3, p. 453-460.
- Donovan, R. J., Rossiter, J. R., Gilian, M. and Andrew, N. (1994), "Store atmosphere and purchasing behavior", *Journal of Retailing*, Vol. 70, No. 3, p. 283-294.
- Erdem, T., Michael, K. and Baohong, S. (2010), "A simple test for distinguishing between internal reference price theories", *Quantitative Marketing & Economics*, Vol. 8, No. 3, p. 303-332.

- Fox, K. F. and Kehret-Ward, T. (1990), "Naïve theories of price: A developmental model", *Psychology, marketing, and children*, Vol. 7, No. 4, p. 311-329.
- Frey, B. S. (1993), "Motivation as a limit to pricing", *Journal of Economic Psychology*, Vol. 14, No. 4, p. 635-664.
- Gürler, Ü. Öztop, S., and Şen, A. (2009), "Optimal bundle formation and pricing of two products with limited stock", *International Journal of Production Economics*, Vol. 118, No. 2, p. 442.
- Henrik, K. and Tommy, G. (2000), "Anchoring induced biases in consumer price negotiations", *Journal of Consumer Policy*, Vol. 23, No. 4, p. 445-460.
- Hugh, S. (1992), "Asymmetric Information Flows in Customer Markets", *Bulletin of Economic Research*, Vol. 44, No. 4, p. 323-323.
- Jen-Hung, H., Chang, C. and Chen, Y. (2005), "Perceived fairness of pricing on the Internet", *Journal of Economic Psychology*, Vol. 26, No. 3, p. 343-361.
- Juan, G. M. and Suzanne, N. (2009), "Cross-cultural equivalence of price perceptions across American, Chinese, and Japanese consumers", *The Journal of Product and Brand Management*, Vol. 18, No. 7, p. 506-516.
- Kai, K. and Hans, J. (1990), "Pricing and the Correspondence to Market Conditions: Some Danish Evidence", *European Journal of Marketing*, Vol. 24, No. 5, p. 50-50.
- Kamel, J., Jagpal, S. and Puneet, M. (2003), "Measuring heterogeneous reservation prices for product bundles", *Marketing Science*, Vol. 22, No. 1, p. 107-130.
- Kamel, J. and Zhang, Z. J. (2002), "Augmenting conjoint analysis to estimate consumer reservation price", *Management Science*, Vol. 48, No. 10, p. 1350-1368.
- Kaufmann, P. J., Smith, N. C. and Ortmeyer, G. K. (1994), "Deception in retailer high-low pricing: A 'rule of reason' approach", *Journal of Retailing*, Vol. 70, No. 2, p. 115-138.
- Kittichai, W., Ruoh-Nan, Y. and Jennifer, Y. (2008), "Cross-cultural invariance of consumers' price perception measures", *International Journal of Retail & Distribution Management*, Vol. 36, No. 10, p. 759-779.
- Lisa, O. (1998), "The effect of correlation between price and quality on consumer choice", *Organizational behavior and human decision processes*, Vol. 75, No. 3, p. 258-273.

- Mariola, P. and Delgado-Ballester, E. (2009), "Effectiveness of price discounts and premium promotions", *Psychology & Marketing*, Vol. 26, No. 12, p. 1108-1129.
- Michaela, D. and Jain Dipak, C. (2006), "Consumer Preferences and Product-Line Pricing Strategies: An Empirical Analysis", *Marketing Science*, Vol. 25, No. 2, p. 164-174.
- Miller Klaus, M., Reto, H., Harley, K. and Zhang, Z. J. (2011), "How should consumers' willingness to pay be measured? An empirical comparison of state-of-the-art approaches", *Journal of Marketing Research*, Vol. 48, No. 1, p. 172-184.
- Peter, D. and Cindy, C. (2005), "Effects of pricing and promotion on consumer perceptions: it depends on how you frame it", *Journal of Retailing*, Vol. 81, No. 1, p. 35-47.
- Rajesh, C. (2004), "The influence of redundant comparison prices and other price presentation formats on consumers' evaluations and purchase intentions", *Journal of Retailing*, Vol. 80, No. 1, p. 53-66.
- Robert, S., Debanjan, M., Yuxin, C. and Skander, E. (2003), "A Comment on "Price-Endings When Prices Signal Quality"", *Management Science*, Vol. 49, No. 12, p. 1753-1758.
- Sanjay, J. and Joydeep, S. (2000), "An experimental and theoretical analysis of price-matching refund policies", *Journal of Marketing Research*, Vol. 37, No. 3, p. 351-362.
- Sarah, M. (2002), "Rule-based price fairness and its effect on willingness to purchase", *Journal of Economic Psychology*, Vol. 23, No. 2, p. 191-212.
- Sarah, M., Sanghyun, L., Sabine, A., Comer, B. and Nicholas, M. (2009), "Gender differences in response to unfair prices: A cross-country analysis", *Journal of Consumer Marketing*, Vol. 26, No. 7, p. 508-515.
- Simon, L., Illia, A. and Lawson-Body, A. (2011), "Perceived price fairness of dynamic pricing", *Industrial Management + Data Systems*, Vol. 111, No. 4, p. 531-550.
- Smith Carter, L. and Hantula D., A. (2003), "Pricing effects on foraging in a simulated Internet shopping mall", *Journal of Economic Psychology*, Vol. 24, No. 5, p. 653-674.
- Subhojit, B. (2009), "Effect of product category on promotional choice: comparative study of discounts and freebies", *Management Research Review*, Vol. 32, No. 2, p. 120-131.

Tridib, M. and Monroe, B. (1990), "The effects of buyers' intentions to learn price information on price encoding", *Journal of Retailing*, Vol. 66, No. 1, p. 15-32.

Tridib, M. and Sung, Y. J. (1993), "Consumer evaluations of multiple versus single price change", *Journal of Consumer Research*, Vol. 20, No. 3, p. 441-450.

Turley, L. and Roy, C. (1995), "Price knowledge for services: An empirical investigation", *Services Marketing Quarterly*, Vol. 12, No. 1, p. 39-39.

Urbany, E. and Dickson, R. (1991), "Consumer Normal Price Estimation: Market versus Personal Standards", *Journal of Consumer Research*, Vol. 18, No. 1, p. 45-51.

Valerie, F. and Wheat, R. D. (1995), "Consumers' price perceptions of promoted products", *Journal of Retailing*, Vol. 71, No. 3, p. 317.

A.4.4 Excluded on Significance of Contribution

- Cai, Z. and Suri, R. (2007), "The Effect Of Multiple Discounts On Consumers' Price Perceptions", *AMA Winter Educators' Conference Proceedings*, American Marketing Association, Vol. 18, p. 320-321
- Chalkley, M. (1998). "Intermediate Microeconomics: A Perspective On Price Theory". *Economic Journal*, Vol.108, p. 942-943.
- Fibich, G., Gavious, A. and Lowengart, O. (2007). "Optimal Price Promotion In The Presence Of Asymmetric Reference-Price Effects". *Managerial And Decision Economics*, Vol. 28, p. 569.
- Garbarino, E. and Lee, O. F. (2003). "Dynamic Pricing In Internet Retail: Effects On Consumer Trust". *Psychology & Marketing*, Vol. 20, p. 495-513.
- Garrow, L., Jones, S. and Parker, R. (2007). "How Much Airline Customers Are Willing To Pay: An Analysis Of Price Sensitivity In Online Distribution Channels". *Journal Of Revenue And Pricing Management*, Vol. 5, p. 271-290.
- Jiang, P. (2002). "A Model Of Price Search Behavior In Electronic Marketplace". *Internet Research*, Vol. 12, p.181-190.
- Jiang, P. and Rosenbloom, B. (2005). "Customer Intention To Return Online: Price Perception, Attribute-Level Performance, And Satisfaction Unfolding Over Time". *European Journal Of Marketing*, Vol. 39, p. 150-174.
- Kaiser, U. and Wright, J. (2006). "Price Structure In Two-Sided Markets: Evidence From The Magazine Industry". *International Journal Of Industrial Organization*, Vol. 24, p. 1-28.
- Lemieux, J. and Peterson, R. (2011). "Purchase Deadline As A Moderator Of The Effects Of Price Uncertainty On Search Duration". *Journal Of Economic Psychology*, Vol. 32, p. 33-44.
- Leszczyc, P., Chun, Q. and Yongfu, H. (2008), "A Reference Price Effect Of Buy-Now Prices In Internet Auctions". *Advances In Consumer Research - Latin American Conference Proceedings, Association For Consumer Research*, p. 137-138.
- Merikle, P., Smilek, D. and Eastwood, J. (2001). "Perception Without Awareness: Perspectives From Cognitive Psychology". *The Cognitive Neuroscience Of Consciousness*, Vol. 79, p.115-134.

- Schultz, J. (1995). "It's Now Or Never For Price Increases". *Paperboard Packaging*, Vol. 80, p. 4.
- Shampanier, K., Mazar, N. and Ariely, D. (2007). "Zero As A Special Price: The True Value Of Free Products". *Marketing Science*, Vol. 26, p. 742-757.
- Sibly, H. (1995). "Price Dynamics In Repeat-Purchase Markets". *Economic Record*, Vol. 71, p. 179-179.
- Suri, R., Manchanda, R. and Kohli, C. (2000). "Brand Evaluations: A Comparison Of Fixed Price And Discounted Price Offers". *The Journal Of Product And Brand Management*, Vol.9, p.193-206.
- Xia, L. (2003). "Consumers' Judgements Of Numerical And Price Information". *The Journal Of Product And Brand Management*, Vol. 12, p. 275-292.
- Xia, L. and Monroe, K. (2004). "Price Partitioning On The Internet. *Journal Of Interactive Marketing*", Vol. 18, p. 63-73.

Appendix B

Example Repertory Grids

B.1 Hispanic Respondent



Repertory Grid #: 117

Interviewee #: M(H)

	Construct	Brand 1 Simply Orange	Brand 2 Tampico	Brand 3 Minute Maid	Brand 4 Florida's Natural	Brand 5 Sunny D	Brand 6 Tropicana	Construct	
1	Smooth Flavor	1	7	2	6	3	2	Strong Flavor	1
2	Natural Flavor	1	7	1	1	7	1	Artificial Flavor	2
3	Preferred Brand	1	6	1	1	1	2	Unknown Brand	3
4	Best Flavor	1	7	1	1	7	1	Worst Flavor	4
5	Less Sugar	1	7	3	4	7	3	More Sugar	5
6	Natural Color	1	6	2	2	5	1	Artificial Color	6
7	More Juice	1	7	1	1	7	1	Less Juice	7
8									8
9									9
10									10
11									11
12									12
13									13
14									14
		\$3.75	\$2.00	\$3.25	\$3.99	\$2.50	\$3.90		

Date: 09/02/14 ##### Start time: 7:25 PM ##### Finish Time: 8:32 PM

B.2 Caucasian Respondent



Repertory Grid #: 010

Interviewee #: 002

	Construct	Brand 1 Simply Orange	Brand 2 Tampico	Brand 3 Minute Maid	Brand 4 Florida's Natural	Brand 5 Sunny D	Brand 6 Tropicana	Construct	
1	Slender Bottle	1	7	2	6	3	2	Large Bottle	1
2	Orange Juice	1	7	1	1	7	1	Orange Drink	2
3	Large Label	1	6	1	1	1	2	Small Label	3
4	Less Preservatives	1	7	1	1	7	1	More Preservatives	4
5	Transparent Bottle	1	7	3	4	7	3	Opaque Bottle	5
6	Large Image	1	6	2	2	5	1	Small Image	6
7	Higher Quality	1	7	1	1	7	1	Lower Quality	7
8	Natural Ingredients	1	7	1	1	7	1	Artificial Ingredients	8
9	Lightly Sweetened	1	7	2	2	7	2	Heavily Sweetened	9
10	Distinct Calorie Listing	1	7	1	7	1	1	Discrete Calorie Listing	10
11	Refrigerated Juice	1	7	1	1	7	1	Shelved Juice	11
12	National	1	7	4	1	7	1	Imported	12
13	Experience	1	7	4	4	6	3	Inexperience	13
14	Multiple Seals	1	7	1	7	7	7	One Seal	14
		\$4.50	\$3.00	\$4.00	\$4.00	\$3.60	\$4.00		

Date: 11/15/14 ##### Start Time: 7:50 PM ##### Finish Time: 9:02 PM

B.3 African American Respondent



Repertory Grid #: 30

Interviewee #: CC2

	Construct	Brand 1 Simply Orange	Brand 2 Tampico	Brand 3 Minute Maid	Brand 4 Florida's Natural	Brand 5 Sunny D	Brand 6 Tropicana	Construct	
1	Handle	7	1	7	1	7	7	No Handle	1
2	Easy to Pour	1	7	3	1	4	1	Hard to Pour	2
3	Accessible Lid	1	7	1	5	4	1	Inaccessible Lid	3
4	Edged Shape	5	3	7	1	6	1	Circular Shape	4
5	Brand Loyalty	4	7	1	5	3	1	Brand Unloyalty	5
6	Orange Juice	1	7	1	1	5	1	Orange Punch	6
7	Familiarity	5	3	1	3	2	1	Unfamiliarity	7
8	Quart Size	1	7	1	2	3	1	Gallon Size	8
9	High Quality	2	7	1	2	3	1	Low Quality	9
10	Visible Seal	1	2	1	2	3	1	Non-Visible Seal	10
11	Fresh Ingredients	1	7	1	2	3	1	Artificial Ingredients	11
12	Adult Juice	1	7	1	3	4	3	Childrens Juice	12
		\$2.59	\$2.00	\$2.50	\$2.99	\$3.00	\$2.69		

Date: 12/4/14 ##### Start Time: 3:00 PM ##### Finish Time: 4:17 PM

B.4 SPSS commands for analysing repertory grids

The analysis of multiple repertory grids was conducted using the SPSS V.20 Statistical Software with the SPSS Categories module as presented by Bell (1997). According to the author, the grids correspond to a Type II grid (Table B-4) shows the different grid data structures handled by SPSS as presented by the author) with a structure type 5 (same elements with varying number of constructs) and the multiple grid analysis suggested was based on Multidimensional Scaling (Bell, 1997:40) although Discriminant Analysis could work as well (Bell, 1997:35), however it was found during this research produces a rather voluminous output that is difficult to interpret. On the other hand, Multidimensional Scaling produced results that were clearer to analyse.

Table B-4 Possible Multiple Grid Data Structures handled by SPSS

Structure	Type	Columns	Rows
1	I	Same numbers of different elements	Varying or same numbers of different constructs
2	I	Same numbers of different constructs	Varying or same numbers of different elements
3	II	Same numbers of different elements	Same constructs
4	II	Same numbers of different constructs	Same elements
5	II	Same elements	Varying or same numbers of different constructs
6	II	Same constructs	Varying or same numbers of different elements
7	III	Same elements	Same constructs
8	III	Same constructs	Same elements

Source: Bell (1997:32)

The use of multidimensional scaling assumes that each grid is a replication of a previous one. So, the data has to be coded in SPSS in a way that constructs are listed in rows and an extra column, called Grid, indicates the number of the grid where the construct belong to.

B.5 SPSS Commands

B.5.1 Proximities

```
PROXIMITIES MinuteMaid FloridasNatural SimplyOrange Tropicana Tampico SunnyD  
  
/PRINT NONE  
  
/MATRIX OUT  
('/var/folders/vn/tc8krx910hd58rfh835t_1k00000gn/T/spssM0NVs0/spssalsc.tmp')  
  
/MEASURE=SEUCLID  
  
/STANDARDIZE=NONE  
  
/VIEW=VARIABLE.
```

B.5.2 Clusters

```
CLUSTER MinuteMaid FloridasNatural SimplyOrange Tropicana Tampico SunnyD  
  
/METHOD WARD  
  
/MEASURE=SEUCLID  
  
/ID=LeftConstruct  
  
/PRINT SCHEDULE  
  
/PLOT DENDROGRAM
```

B.5.3 Multidimensional Scaling

ALSCAL

/MATRIX=IN

('/var/folders/vn/tc8krx910hd58rfh835t_1k00000gn/T/spssM0NVs0/spssalsc.tmp')

/LEVEL=ORDINAL

/CONDITION=MATRIX

/MODEL=INDSCAL

/CRITERIA=CONVERGE (0.001) STRESSMIN (0.005) ITER (30) CUTOFF (0)
DIMENS (2,2)

/PLOT=DEFAULT

/PRINT=DATA.

ERASE

FILE='/var/folders/vn/tc8krx910hd58rfh835t_1k00000gn/T/spssM0NVs0/spssalsc.tmp'.

B.5.4 PRINCIPAL COMPONENT ANALYSIS FOR KEY CONSTRUCTS

To analyse key constructs using factor analysis, it is necessary to transform every construct into a variable for SPSS. Since the original data for this study comes in a matrix where columns represent elements and rows represent constructs, it is necessary to flip the matrix. This is necessary because SPSS treats variables as columns (Field, 2009).

The SPSS command to transform constructs into variables is explained by Bell (1997):

```
FLIP  
  
        VARIABLES= MinuteMaid FloridasNatural SimplyOrange Tropicana Tampico  
SunnyD  
  
        /NEWNAME=LeftConstruct
```

This command will create as many variables as constructs are in the grids. In other words, there might be over 100 variables and the SPSS command might be tedious.

A general form of running the factor analysis in SPSS, once the constructs are assigned as variables with the FLIP command, is as follows:

```
FACTOR  
  
        /VARIABLES <all the constructs elicited per ethnic group>  
  
        /MISSING LISTWISE /ANALYSIS <all the constructs elicited per ethnic group>  
  
        /PRINT INITIAL CORRELATION EXTRACTION  
  
        /CRITERIA MINEIGEN(1) ITERATE(25)  
  
        /EXTRACTION PC  
  
        /ROTATION NOROTATE.
```

SPSS Command for PCA for Hispanics

FACTOR

```
/VARIABLES Smooth_Flavor Natural Preferred_brand Best_flavor Less_sugar  
Natural_color More_juice Small_size Like_juice Best_flavor_A Looks_expensive  
Less_sweet More_juice_A Orange_Flavor More_Juice_B Natural_Color_A  
Natural_Appearance Low_acidity Good_taste Best_brand Best_packaging  
Natural_Appearance_A More_juice_C Healthy Orange_flavor_A Thick_consistency  
Natural_appearance_B Natural_color_B Small_size_A More_vitamin Advertised  
More_pulp Sweet Best_packaging_A Recognized_brand Thick More_juice_D  
Like_juice_A Pulp Natural_A Good_taste_A Pure_juice Orange_flavor_B Fresh  
Like_juice_B Natural_ingredients Expensive Good_taste_B Pure_orange_juice  
Sweet_A More_product Orange_juice Thin Known_brand Traditional Family Popular  
Good_taste_C Pure_Juice_A Big_size More_sugar More_vitamins Family_A  
Good_quality Big_size_A Tasty Thick_A Natural_B Known_brand_A Popular_A  
High_sugar Juice Pulp_A Family_B Natural_C Organic Popular_B Advertised_A  
Juice_A Big Good_Taste_D Juice_B Big_A Like Popular_C Good_flavor Family_C  
Natural_D Juice_C Bottle Much_sugar Known Good_taste_E Orange Good_color  
Good_consistency Natural_E Healthy_A Family_size Juice_D Orange_A Good_taste_F  
Available Natural_F With_vitamins Juice_E Carton High_sugar_A Good_color_A  
Orange_B Thick_B Orange_juice_A Family_D High_sugar_B Popular_D Available_A  
Orange_color High_sugar_C
```

```
/MISSING LISTWISE
```

/ANALYSIS Smooth_Flavor Natural Preferred_brand Best_flavor Less_sugar
Natural_color More_juice Small_size Like_juice Best_flavor_A Looks_expensive
Less_sweet More_juice_A Orange_Flavor More_Juice_B Natural_Color_A
Natural_Appearance Low_acidity Good_taste Best_brand Best_packaging
Natural_Appearance_A More_juice_C Healthy Orange_flavor_A Thick_consistency
Natural_appearance_B Natural_color_B Small_size_A More_vitamin Advertised
More_pulp Sweet Best_packaging_A Recognized_brand Thick More_juice_D

Like_juice_A Pulp Natural_A Good_taste_A Pure_juice Orange_flavor_B Fresh
Like_juice_B Natural_ingredients Expensive Good_taste_B Pure_orange_juice
Sweet_A More_product Orange_juice Thin Known_brand Traditional Family Popular
Good_taste_C Pure_Juice_A Big_size More_sugar More_vitamins Family_A
Good_quality Big_size_A Tasty Thick_A Natural_B Known_brand_A Popular_A
High_sugar Juice Pulp_A Family_B Natural_C Organic Popular_B Advertised_A
Juice_A Big Good_Taste_D Juice_B Big_A Like Popular_C Good_flavor

Family_C Natural_D Juice_C Bottle Much_sugar Known Good_taste_E Orange
Good_color Good_consistency Natural_E Healthy_A Family_size Juice_D Orange_A
Good_taste_F Available Natural_F With_vitamins Juice_E Carton High_sugar_A
Good_color_A Orange_B Thick_B Orange_juice_A Family_D High_sugar_B Popular_D
Available_A Orange_color High_sugar_C

/PRINT INITIAL EXTRACTION FSCORE

/CRITERIA MINEIGEN (1) ITERATE (25)

/EXTRACTION PC

/ROTATION NOROTATE

/SAVE REG (ALL)

/METHOD=CORRELATION.

B.5.5 PCA by Hispanics: Output

Component Matrix^a

	Component				
	1	2	3	4	5
Smooth_Flavor	.859	-.174	-.040	.243	.412
Natural	.859	-.174	-.040	.243	.412
Preferred_brand	.859	-.174	-.040	.243	.412
Best_flavor	.859	-.174	-.040	.243	.412
Less_sugar	.840	-.387	-.374	-.031	-.061
Natural_color	.849	-.522	-.075	-.012	.018
More_juice	.849	-.522	-.075	-.012	.018
Small_size	.447	-.087	.502	.220	-.702
Like_juice	.075	-.448	.299	.590	-.596
Best_flavor_A	.281	.220	.396	.842	.087
Looks_expensive	.281	-.263	.659	.605	-.227
Less_sweet	.830	.164	-.522	.099	-.038
More_juice_A	.674	-.147	-.066	.503	.517
Orange_Flavor	.839	.378	.342	.180	-.068
More_Juice_B	.849	.310	.226	.286	.224
Natural_Color_A	.849	-.522	-.075	-.012	.018
Natural_Appearance	.096	-.410	.351	.834	-.068
Low_acidity	.406	-.742	.284	-.437	-.112
Good_taste	.406	-.742	.284	-.437	-.112
Best_brand	.447	-.880	.152	-.030	.046
Best_packaging	.653	-.667	.146	.023	-.326
Natural_Appearance_A	.808	-.385	.056	-.419	-.140
More_juice_C	.829	-.346	.108	-.176	.389
Healthy	.818	-.103	.506	-.251	.043

PCA by Hispanics: Output (cont.)

Orange_flavor_A	.849	-.522	-.075	-.012	.018
Thick_consistency	.859	-.416	.092	.125	.255
Natural_appearance_B	.859	-.416	.092	.125	.255
Natural_color_B	.849	-.522	-.075	-.012	.018
Small_size_A	.849	-.522	-.075	-.012	.018
More_vitamin	.159	-.179	.378	.800	-.399
Advertised	.251	-.959	-.041	.093	-.087
More_pulp	.849	-.522	-.075	-.012	.018
Sweet	.789	.060	-.259	-.426	-.353
Best_packaging_A	.839	-.454	.040	-.118	-.273
Recognized_brand	.830	-.319	-.259	-.138	-.353
Thick	.789	.234	.024	-.395	-.408
More_juice_D	.789	.234	.024	-.395	-.408
Like_juice_A	.789	.234	.024	-.395	-.408
Pulp	.859	-.174	-.040	.243	.412
Natural_A	.839	.445	-.073	.267	.144
Good_taste_A	.820	.232	-.407	-.007	-.330
Pure_juice	.840	.270	-.355	.236	.199
Orange_flavor_B	.840	.270	-.355	.236	.199
Fresh	.840	.270	-.355	.236	.199
Like_juice_B	.839	.445	-.073	.267	.144
Natural_ingredients	.849	.310	.226	.286	.224
Expensive	.829	-.346	.108	-.176	.389
Good_taste_B	-.065	.138	-.283	-.602	.731
Pure_orange_juice	.789	.301	-.391	-.308	-.196
Sweet_A	-.789	-.060	.259	.426	.353
More_product	-.859	.174	.040	-.243	-.412
Orange_juice	.800	.233	-.506	-.202	.095

PCA by Hispanics: Output (cont.)

Thin	-.067	.488	.282	-.540	.622
Known_brand	.829	.513	.043	.161	-.147
Traditional	-.849	.522	.075	.012	-.018
Family	-.468	.814	.162	-.252	.167
Popular	.799	.582	.059	-.140	-.014
Good_taste_C	.818	-.103	.506	-.251	.043
Pure_Juice_A	.808	.206	.489	-.239	-.091
Big_size	-.830	-.164	.522	-.099	.038
More_sugar	-.830	-.164	.522	-.099	.038
More_vitamins	.808	.447	.358	-.121	.066
Family_A	-.848	.173	-.490	-.050	.091
Good_quality	.849	.310	.226	.286	.224
Big_size_A	-.830	-.164	.522	-.099	.038
Tasty	.818	-.103	.506	-.251	.043
Thick_A	.808	.206	.489	-.239	-.091
Natural_B	.808	.447	.358	-.121	.066
Known_brand_A	.839	.378	.342	.180	-.068
Popular_A	-.819	.453	.059	.313	-.152
High_sugar	-.848	.173	-.490	-.050	.091
Juice	.799	.582	.059	-.140	-.014
Pulp_A	.799	.582	.059	-.140	-.014
Family_B	-.830	-.164	.522	-.099	.038
Natural_C	.808	.206	.489	-.239	-.091
Organic	.799	.582	.059	-.140	-.014
Popular_B	-.830	-.164	.522	-.099	.038
Advertised_A	.808	.447	.358	-.121	.066
Juice_A	.839	.378	.342	.180	-.068
Big	-.830	-.164	.522	-.099	.038
Good_Taste_D	.799	.582	.059	-.140	-.014
Juice_B	.829	.513	.043	.161	-.147

PCA by Hispanics: Output (cont.)

Big_A	-.800	-.233	.506	.202	-.095
Like	.056	.238	-.148	.701	-.653
Popular_C	-.849	.522	.075	.012	-.018
Good_flavor	.848	-.173	.490	.050	-.091
Family_C	-.830	.319	.259	.138	.353
Natural_D	.828	-.172	.390	-.145	.334
Juice_C	.808	.447	.358	-.121	.066
Bottle	.828	-.172	.390	-.145	.334
Much_sugar	-.840	.146	.506	-.087	-.096
Known	-.849	.522	.075	.012	-.018
Good_taste_E	-.830	-.164	.522	-.099	.038
Orange	.849	-.522	-.075	-.012	.018
Good_color	.828	-.172	.390	-.145	.334
Good_consistency	.808	.447	.358	-.121	.066
Natural_E	.839	-.454	.040	-.118	-.273
Healthy_A	.808	.447	.358	-.121	.066
Family_size	-.849	.522	.075	.012	-.018
Juice_D	-.830	-.164	.522	-.099	.038
Orange_A	.849	-.522	-.075	-.012	.018
Good_taste_F	.819	.406	-.124	.024	-.384
Available	-.849	.522	.075	.012	-.018
Natural_F	.839	-.454	.040	-.118	-.273
With_vitamins	.829	.513	.043	.161	-.147
Juice_E	.799	.582	.059	-.140	-.014
Carton	.849	.310	.226	.286	.224
High_sugar_A	-.839	-.378	-.342	-.180	.068
Good_color_A	.829	.513	.043	.161	-.147
Orange_B	.849	-.522	-.075	-.012	.018
Thick_B	.849	.310	.226	.286	.224
Orange_juice_A	.840	-.146	-.506	.087	.096
Orange_color	.808	.206	.489	-.239	-.091
High_sugar_C	-.820	-.232	.407	.007	.330

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

B.5.6 Labelling of key constructs for Hispanics

Construct	Largest Value	Associated Component	Label
Smooth_Flavor	0.859	1	High-Quality Brand
Natural	0.859	1	
Preferred_brand	0.859	1	
Best_flavor	0.859	1	
Less_sugar	0.840	1	
Natural_color	0.849	1	
More_juice	0.849	1	
Less_sweet	0.830	1	
More_juice_A	0.674	1	
Orange_Flavor	0.839	1	
More_Juice_B	0.849	1	
Natural_Color_A	0.849	1	
Low_acidity	0.406	1	
Good_taste	0.406	1	
Best_brand	0.447	1	
Best_packaging	0.653	1	
Natural_Appearance_A	0.808	1	
More_juice_C	0.829	1	
Healthy	0.818	1	
Orange_flavor_A	0.849	1	
Thick_consistency	0.859	1	
Natural_appearance_B	0.859	1	
Natural_color_B	0.849	1	
Small_size_A	0.849	1	
Advertised	0.251	1	
More_pulp	0.849	1	
Sweet	0.789	1	
Best_packaging_A	0.839	1	

Labelling of key constructs for Hispanics (cont.)

Recognized_brand	0.830	1	
Thick	0.789	1	
More_juice_D	0.789	1	
Like_juice_A	0.789	1	
Pulp	0.859	1	
Natural_A	0.839	1	
Good_taste_A	0.820	1	
Pure_juice	0.840	1	
Orange_flavor_B	0.840	1	
Fresh	0.840	1	
Like_juice_B	0.839	1	
Natural_ingredients	0.849	1	
Expensive	0.829	1	
Pure_orange_juice	0.789	1	
Orange_juice	0.800	1	
Known_brand	0.829	1	
Popular	0.799	1	
Good_taste_C	0.818	1	
Pure_Juice_A	0.808	1	
More_vitamins	0.808	1	
Good_quality	0.849	1	
Tasty	0.818	1	
Thick_A	0.808	1	
Natural_B	0.808	1	
Known_brand_A	0.839	1	
Juice	0.799	1	
Pulp_A	0.799	1	
Natural_C	0.808	1	
Organic	0.799	1	
Advertised_A	0.808	1	
Juice_A	0.839	1	

Labelling of key constructs for Hispanics (cont.)

Good_Taste_D	0.799	1	
Juice_B	0.829	1	
Good_flavor	0.848	1	
Natural_D	0.828	1	
Juice_C	0.808	1	
Bottle	0.828	1	
Orange	0.849	1	
Good_color	0.828	1	
Good_consistency	0.808	1	
Natural_E	0.839	1	
Healthy_A	0.808	1	
Orange_A	0.849	1	
Good_taste_F	0.819	1	
Natural_F	0.839	1	
With_vitamins	0.829	1	
Juice_E	0.799	1	
Carton	0.849	1	
Good_color_A	0.829	1	
Orange_B	0.849	1	
Thick_B	0.849	1	
Orange_juice_A	0.840	1	
Orange_color	0.808	1	
More_product	0.174	2	Traditional Brand
Traditional	0.522	2	
Family	0.814	2	
Family_A	0.173	2	
Popular_A	0.453	2	
High_sugar	0.173	2	
Popular_C	0.522	2	
Known	0.522	2	
Family_size	0.522	2	

Labelling of key constructs for Hispanics (cont.)

Available	0.522	2	
Small_size	0.502	3	Big Sweet Juice
Looks_expensive	0.659	3	
Big_size	0.522	3	
More_sugar	0.522	3	
Big_size_A	0.522	3	
Family_B	0.522	3	
Popular_B	0.522	3	
Big	0.522	3	
Big_A	0.506	3	
Much_sugar	0.506	3	
Good_taste_E	0.522	3	
Juice_D	0.522	3	
Family_D	0.522	3	
High_sugar_B	0.522	3	
High_sugar_C	0.407	3	
Like_juice	0.590	4	Natural Flavour
Best_flavor_A	0.842	4	
Natural_Appearance	0.834	4	
More_vitamin	0.800	4	
Sweet_A	0.426	4	
Like	0.701	4	
Popular_D	0.376	4	
Good_taste_B	0.731	5	Good Taste
Thin	0.622	5	
Family_C	0.353	5	
High_sugar_A	0.068	5	
Available_A	0.384	5	

B.5.7 SPSS Command for PCA for African Americans

FACTOR

```
/VARIABLES Orange_Juice Loyal_Customer Easy_to_Pour Fresh_Ingredients Natural_Sugar  
National_Light_Orange Large_Quantity Natural_Chemicals Name_Brand Simple_Label Adult_J  
uice Fresh_Just_Orange Cost_Efficient Plastic_Handle More_Juice Rich_Flavor Storage_Efficie  
nt_Natural_Sugar_A Attractive_Label Sturdy_Lid Pure_Juice Adult_Advertising Good_Calories  
Affordable Vitamins_Displayed Domesticated Sugary_Taste Bigger_Quantity Outside_Influence  
Tamperproof Orange_Flavor Thin_Half_Gallon Natural_Vitamins_Fresh_Squeezed  
Sweet_Expensive Smooth_Healthy_Calories Attractive_Packaging Product_Information Bowling  
_Pin_Shape High_Quality Authentic_Juice  
High_Quality_D K_100__More_Sugar Simple_Label_A Large_Lid Two_Labels Name_Brand_A  
Loyal_Customer_A Light_Orange_A Storage_Efficient_A Orange_Juice_A Thinner_High_Qualit  
y_A Less_Expensive Sweet_A Pure_Juice_A Fancy_Label Sale_Price Less_Calories Thicker_  
Neck Orange_Juice_B High_Quality_B Sale_Price_A Thin_A Less_Expensive_A Strong_Flavor  
More_Vitamins More_Juice_A Appealing_Label_More_Experience Handle_Orange_Juice_C Lo  
yal_Customer_B High_Quality_C Thinner_A Sweet_B Attractive_Label_A More_Juice_B Fresh  
_ingredients_A Experienced_User Handle_A Flavorful_Orange_Juice_D Adult_Beverage Thin_J  
uice Vitamins_Labeled_Handle_B Light_Orange_B Appealing_Label_A Brand_Name Fresh_Ing  
redients_B Large_Quantity_A U.S._Made Sale_Price_B Real_Juice Genuine_Vitamins Natural_  
Sugar_B Full_Flavor Distributes_Iron Name_Brand_B Long_Neck Thick_Texture Storage_Effici  
ent_B Natural_Coloring Low_Price_Pure Adult_Beverage_A Easy_to_Carry Lower_Calories Hi  
gh_Quality_E Hard_Plastic Low_Acidity Less_Sugar Compact_Storage Cheap_Loyal_Customer  
_C Orange_Juice_E Naturally_Sweetened Popular_Brand Ounces_Sectioned Pure_Squeezed  
Appealing_Orange Easy_to_Grip Cheap_A National_A Low_Calories More_Advertising Person  
al_Reference Orange_Juice_F Fresh_Ingredients_C Natural_Flavor Trustworthy_High_Quality_  
F Inexpensive_American_Healthy_Naturally_Sweetened_A Larger_Quantity Coupon_Available  
Easy_to_Pour_A Natural_Sugar_C Fruit_Juice Natural_Flavor_A Modern_Label_Handle_C U.S.  
_Product Sale_Price_C Nutritional_Value Large_Cap_Pure_Product Trustworthy_Brand_Fresh_  
Taste_Natural_Sugar_D Real_Juice_A Cheap_B Easy_to_Pour_B Pure_Squeezed_A Fruity_Fl  
avor Name_Brand_C Healthy_A Attractive_Orange_Brand_Loyalty_Less_Chemicals
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/MISSING LISTWISE

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/ANALYSIS Orange_Juice Loyal_Customer Easy_to_Pour Fresh_Ingredients Natural_Sugar N  
ational_Light_Orange Large_Quantity Natural_Chemicals Name_Brand Simple_Label Adult_Jui  
ce Fresh_Just_Orange Cost_Efficient Plastic_Handle More_Juice Rich_Flavor Storage_Efficient  
Natural_Sugar_A Attractive_Label Sturdy_Lid Pure_Juice Adult_Advertising Good_Calories Aff
```

ordable Vitamins_Displayed Domesticated Sugary_Taste Bigger_Quantity Outside_Influence T
amperproof Orange_Flavor Thin Half_Gallon Natural_Vitamins_Fresh_Squeezed Sweet Expen
sive Smooth Healthy_Calories Attractive_Packaging Product_Information Bowling_Pin_Shape
High_Quality Authentic_Juice More_Sugar Simple_Label_A Large_Lid Two_Labels Name_Bran
d_A Loyal_Customer_A Light_Orange_A Storage_Efficient_A Orange_Juice_A Thinner High_Q
uality_A Less_Expensive Sweet_A Pure_Juice_A Fancy_Label Sale_Price Less_Calories Thick
er_Neck Orange_Juice_B High_Quality_B Sale_Price_A Thin_A Less_Expensive_A Strong_Fla
vor More_Vitamins More_Juice_A Appealing_Label_More_Experience Handle Orange_Juice_C
Loyal_Customer_B High_Quality_C Thinner_A Sweet_B Attractive_Label_A More_Juice_B Fre
sh_ingredients_A Experienced_User Handle_A Flavorful Orange_Juice_D Adult_Beverage Thin
_Juice Vitamins_Labeled Handle_B Light_Orange_B Appealing_Label_A Brand_Name Fresh_I
ngredients_B Large_Quantity_A U.S._Made Sale_Price_B Real_Juice Genuine_Vitamins Natur
al_Sugar_B Full_Flavor Distributes_Iron Name_Brand_B Long_Neck Thick_Texture Storage_Ef
ficient_B Natural_Coloring Low_Price_High_Quality_D K_100__Pure Adult_Beverage_A Easy_t
o_Carry Lower_Calories High_Quality_E Hard_Plastic Low_Acidity Less_Sugar Compact_Stora
ge Cheap Loyal_Customer_C Orange_Juice_E Naturally_Sweetened Popular_Brand Ounces_
Sectioned Pure_Squeezed Appealing_Orange Easy_to_Grip Cheap_A National_A Low_Calorie
s More_Advertising Personal_Reference Orange_Juice_F Fresh_Ingredients_C Natural_Flavor
Trustworthy High_Quality_F Inexpensive American Healthy Naturally_Sweetened_A Larger_Qu
antity Coupon_Available_Easy_to_Pour_A Natural_Sugar_C Fruit_Juice Natural_Flavor_A Mod
ern_Label Handle_C U.S._Product Sale_Price_C Nutritional_Value Large_Cap Pure_Product T
rustworthy_Brand Fresh_Taste Natural_Sugar_D Real_Juice_A Cheap_B Easy_to_Pour_B Pur
e_Squeezed_A Fruity_Flavor Name_Brand_C Healthy_A Attractive_Orange Brand_Loyalty Les
s_Chemicals

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/PRINT INITIAL EXTRACTION  
/CRITERIA MINEIGEN(1) ITERATE(25)  
/EXTRACTION PC  
/ROTATION NOROTATE  
/METHOD=CORRELATION.
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B.5.8 PCA by African Americans: Output

Component Matrix ^a

	Component				
	1	2	3	4	5
Orange_Juice	.832	.024	.453	-.302	.101
Loyal_Customer	.217	.394	.417	-.289	.735
Easy_to_Pour	-.460	-.828	.045	.231	.216
Fresh_Ingredients	.981	.016	.006	-.114	.155
Natural_Sugar	.987	.052	.149	-.017	.015
National	.633	.117	.670	.206	.308
Light_Orange	.864	.192	.314	.308	.152
Large_Quantity	-.706	-.502	.415	.240	.138
Natural_Chemicals	.971	-.156	.181	.000	.031
Name_Brand	.414	.522	.740	.025	-.090
Simple_Label	-.122	-.425	-.566	-.528	.452
Adult_Juice	.927	-.331	.115	-.126	.040
Fresh	.985	-.153	.051	.051	.046
Just_Orange	.970	-.238	.020	-.010	.051
Cost_Efficient	-.789	.431	.139	-.403	-.105
Plastic_Handle	-.471	-.843	.240	.093	.042
More_Juice	-.471	-.843	.240	.093	.042
Rich_Flavor	.974	-.201	-.089	-.015	-.055
Storage_Efficient	.891	-.303	.090	.317	.072
Natural_Sugar_A	.972	-.209	.035	-.069	-.074
Attractive_Label	.892	-.178	-.242	.088	.325
Sturdy_Lid	.973	.049	-.191	-.038	-.110
Pure_Juice	.886	.146	-.380	.013	.222
Adult_Advertising	.751	-.361	-.250	.342	-.356
Good_Calories	.987	-.051	.087	.121	.040

PCA by African Americans: Output (cont.)

Affordable	-.898	-.118	.408	-.038	.113
Vitamins_Displayed	-.969	-.067	-.125	-.199	-.032
Domesticated	.548	.156	.799	.061	-.181
Sugary_Taste	-.656	-.020	-.716	-.064	.231
Bigger_Quantity	-.886	-.146	.380	-.013	-.222
Outside_Influence	.436	.544	-.255	.583	.330
Tamperproof	.302	-.115	-.557	.089	.760
Orange_Flavor	.880	-.143	-.380	-.142	.201
Thin	.937	-.081	-.331	-.044	-.063
Half_Gallon	.968	-.137	-.196	-.038	.058
Natural_Vitamins	.904	-.328	-.136	-.232	.053
Fresh_Squeezed	.981	-.161	-.053	-.084	.045
Sweet	.957	-.279	-.013	.059	-.045
Expensive	.950	-.153	-.210	-.019	-.172
Smooth	.892	-.250	-.318	.200	-.040
Healthy_Calories	.930	-.206	-.271	.110	.080
Attractive_Packaging	.951	-.180	-.242	.042	-.054
Product_Information	.989	-.105	-.065	.051	-.069
Bowling_Pin_Shape	.841	.099	-.516	.100	-.077
High_Quality	.743	-.221	-.487	.279	-.290
Authentic_Juice	.843	-.210	-.452	-.033	-.198
More_Sugar	.890	-.136	-.310	.299	-.055
Simple_Label_A	.759	-.002	-.590	-.253	-.106
Large_Lid	.834	.157	-.416	-.017	.325
Two_Labels	.987	-.051	.087	.121	.040
Name_Brand_A	.853	.111	-.462	.024	-.215
Loyal_Customer_A	.899	.020	-.412	-.129	-.071
Light_Orange_A	.896	.001	-.373	.120	-.209

PCA by African Americans: Output (cont.)

Storage_Efficient_A	.893	.149	-.410	-.065	-.087
Orange_Juice_A	.972	-.115	-.169	-.093	-.064
Thinner	.808	-.142	-.416	.160	.359
High_Quality_A	.944	-.073	.270	-.078	-.155
Less_Expensive	-.922	.293	-.237	.041	.081
Sweet_A	-.856	.431	-.090	-.247	.114
Pure_Juice_A	.619	-.127	.694	-.200	-.282
Fancy_Label	.333	.211	.145	.792	-.444
Sale_Price	-.915	.364	-.064	-.151	.052
Less_Calories	-.563	.478	.363	.567	-.048
Thicker_Neck	.126	.987	-.008	.076	.064
Orange_Juice_B	.457	.390	.734	.256	-.185
High_Quality_B	.461	.797	-.265	.129	-.255
Sale_Price_A	-.313	-.661	-.083	-.498	.459
Thin_A	.621	.596	-.028	.431	-.268
Less_Expensive_A	-.974	.166	-.068	.138	-.031
Strong_Flavor	.391	.653	.621	.168	-.082
More_Vitamins	.673	.681	.204	.052	-.197
More_Juice_A	-.803	-.406	.405	.163	-.015
Appealing_Label	.304	.495	.518	.616	.125
More_Experience	.231	.909	.047	-.266	-.216
Handle	-.373	-.863	.209	.006	.270
Orange_Juice_C	.956	.122	-.084	-.205	.146
Loyal_Customer_B	.426	.534	.373	-.611	.145
High_Quality_C	.786	.452	-.061	-.416	-.037
Thinner_A	.849	-.285	.222	.192	-.334
Sweet_B	.242	-.143	.335	-.896	-.075
Attractive_Label_A	.805	-.147	.553	-.155	-.018
More_Juice_B	-.779	-.218	.390	.383	.215
Fresh_ingredients_A	.927	-.316	-.046	.131	-.145

PCA by African Americans: Output (cont.)

Experienced_User	.458	.416	.335	-.644	.300
Handle_A	-.471	-.843	.240	.093	.042
Flavorful	.632	-.068	.716	-.282	.060
Orange_Juice_D	.986	-.134	.058	.064	.045
Adult_Beverage	.944	-.164	.207	.078	.184
Thin_Juice	.981	-.085	-.045	.033	.168
Vitamins_Labeled	-.970	.238	-.020	.010	-.051
Handle_B	-.471	-.843	.240	.093	.042
Light_Orange_B	.974	-.166	.068	-.138	.031
Appealing_Label_A	.139	.817	.400	-.277	-.275
Brand_Name	.987	.052	.149	-.017	.015
Fresh_Ingredients_B	.986	-.134	.058	.064	.045
Large_Quantity_A	-.215	-.903	.231	-.142	-.256
U.S._Made	-.338	.014	.864	-.357	-.112
Sale_Price_B	.065	.752	-.085	.650	-.006
Real_Juice	.950	-.079	.120	-.279	.008
Genuine_Vitamins	.947	-.168	.195	-.193	.016
Natural_Sugar_B	.959	-.121	.090	-.216	-.105
Full_Flavor	.832	-.042	.414	-.206	-.305
Distributes_Iron	.981	-.161	-.053	-.084	.045
Name_Brand_B	.730	.432	.488	-.196	-.067
Long_Neck	.581	.703	-.397	-.102	-.014
Thick_Texture	.926	.068	-.108	-.355	.008
Storage_Efficient_B	.782	.242	-.415	-.380	.115
Natural_Coloring	.970	-.238	.020	-.010	.051
Low_Price	-.889	.260	-.278	.107	.232
High_Quality_D	.922	-.293	.237	-.041	-.081
K_100__Pure	.970	-.238	.020	-.010	.051
Adult_Beverage_A	.927	-.316	-.046	.131	-.145

PCA by African Americans: Output (cont.)

Easy_to_Carry	.212	-.375	.595	.677	.039
Lower_Calories	.100	.157	.745	.295	.568
High_Quality_E	.985	-.153	.051	.051	.046
Hard_Plastic	.972	-.209	.035	-.069	-.074
Low_Acidity	.701	-.142	-.108	.264	.638
Less_Sugar	.945	-.298	-.029	.095	-.095
Compact_Storage	.612	.553	-.460	-.302	-.133
Cheap	-.915	.227	.028	-.255	.215
Loyal_Customer_C	.102	.347	-.741	.560	.079
Orange_Juice_E	.985	-.153	.051	.051	.046
Naturally_Sweetened	.970	-.050	.227	.069	.023
Popular_Brand	.947	.071	.276	.146	.014
Ounces_Sectioned	.479	-.462	-.354	.657	.018
Pure_Squeezed	.962	-.069	.072	.189	.171
Appealing_Orange	.810	.311	.188	.434	.155
Easy_to_Grip	.089	-.505	-.292	.407	-.697
Cheap_A	-.950	.261	-.005	-.044	-.164
National_A	.878	-.245	.379	-.159	.007
Low_Calories	.016	.705	.026	.686	.176
More_Advertising	.850	.516	-.107	.007	-.005
Personal_Reference	.534	.824	-.183	-.024	-.038
Orange_Juice_F	.979	.160	.061	-.109	.007
Fresh_Ingredients_C	.747	-.034	.093	-.300	-.585
Natural_Flavor	.950	-.213	.169	-.125	-.093
Trustworthy	.547	.819	-.171	-.009	-.037
High_Quality_F	.931	-.259	.137	-.049	-.211
Inexpensive	-.830	-.331	-.401	-.156	-.131
American	.760	.438	.232	.421	.001

PCA by African Americans: Output (cont.)

Healthy	.952	.017	.275	.009	-.133
Naturally_Sweetened_A	.807	-.447	.314	.167	-.148
Larger_Quantity	-.739	-.285	.099	.584	-.147
Coupon_Available	.070	.979	-.052	.171	-.063
Easy_to_Pour_A	.644	.306	-.693	.001	-.110
Natural_Sugar_C	.978	.044	.158	-.127	.007
Fruit_Juice	.923	-.232	.291	.093	.034
Natural_Flavor_A	.998	-.026	-.037	-.031	.037
Modern_Label	.911	-.307	.146	-.208	-.102
Handle_C	-.471	-.843	.240	.093	.042
U.S._Product	.412	-.048	.905	-.072	-.064
Sale_Price_C	.208	.861	.420	-.163	-.113
Nutritional_Value	.952	.017	.275	.009	-.133
Large_Cap	.642	.230	-.001	.460	.569
Pure_Product	.951	.010	-.202	-.234	.031
Trustworthy_Brand	.970	-.238	.020	-.010	.051
Fresh_Taste	.996	-.066	-.027	-.027	.040
Natural_Sugar_D	.950	-.261	.005	.044	.164
Real_Juice_A	.969	.067	.125	.199	.032
Cheap_B	-.915	.192	.112	-.034	-.335
Easy_to_Pour_B	-.100	-.590	-.337	.287	-.668
Pure_Squeezed_A	.979	.160	.061	-.109	.007
Fruity_Flavor	.996	-.066	-.027	-.027	.040
Name_Brand_C	.978	.089	-.135	-.129	.028
Healthy_A	.987	-.051	.087	.121	.040
Attractive_Orange	.266	.218	.627	.406	.569
Brand_Loyalty	.892	-.021	-.033	.020	.450
Less_Chemicals	.996	-.066	-.027	-.027	.040

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

B.5.9 Labelling of key constructs for African Americans

Construct	Component	Key Construct	Label
Orange_Juice	0.832	1	Natural Healthy Juice
Fresh_Ingredients	0.981	1	
Natural_Sugar	0.987	1	
Light_Orange	0.864	1	
Natural_Chemicals	0.971	1	
Adult_Juice	0.927	1	
Fresh	0.985	1	
Just_Orange	0.97	1	
Rich_Flavor	0.974	1	
Storage_Efficient	0.891	1	
Natural_Sugar_A	0.972	1	
Attractive_Label	0.892	1	
Sturdy_Lid	0.973	1	
Pure_Juice	0.886	1	
Adult_Advertising	0.751	1	
Good_Calories	0.987	1	
Orange_Flavor	0.88	1	
Thin	0.937	1	
Half_Gallon	0.968	1	
Natural_Vitamins	0.904	1	
Fresh_Squeezed	0.981	1	
Sweet	0.957	1	
Expensive	0.95	1	
Smooth	0.892	1	
Healthy_Calories	0.93	1	
Attractive_Packaging	0.951	1	
Product_Information	0.989	1	
Bowling_Pin_Shape	0.841	1	

Labelling of key constructs for African Americans (cont.)

High_Quality	0.743	1	
Authentic_Juice	0.843	1	
More_Sugar	0.89	1	
Simple_Label_A	0.759	1	
Large_Lid	0.834	1	
Two_Labels	0.987	1	
Name_Brand_A	0.853	1	
Loyal_Customer_A	0.899	1	
Light_Orange_A	0.896	1	
Storage_Efficient_A	0.893	1	
Orange_Juice_A	0.972	1	
Thinner	0.808	1	
High_Quality_A	0.944	1	
Thin_A	0.621	1	
Orange_Juice_C	0.956	1	
High_Quality_C	0.786	1	
Thinner_A	0.849	1	
Attractive_Label_A	0.805	1	
Fresh_ingredients_A	0.927	1	
Experienced_User	0.458	1	
Orange_Juice_D	0.986	1	
Adult_Beverage	0.944	1	
Thin_Juice	0.981	1	
Light_Orange_B	0.974	1	
Brand_Name	0.987	1	
Fresh_Ingredients_B	0.986	1	
Real_Juice	0.95	1	
Genuine_Vitamins	0.947	1	
Natural_Sugar_B	0.959	1	
Full_Flavor	0.832	1	

Labelling of key constructs for African Americans (cont.)

Distributes_Iron	0.981	1	
Name_Brand_B	0.73	1	
Thick_Texture	0.926	1	
Storage_Efficient_B	0.782	1	
Natural_Coloring	0.97	1	
High_Quality_D	0.922	1	
K_100__Pure	0.97	1	
Adult_Beverage_A	0.927	1	
High_Quality_E	0.985	1	
Hard_Plastic	0.972	1	
Low_Acidity	0.701	1	
Less_Sugar	0.945	1	
Compact_Storage	0.612	1	
Orange_Juice_E	0.985	1	
Naturally_Sweetened	0.97	1	
Popular_Brand	0.947	1	
Pure_Squeezed	0.962	1	
Appealing_Orange	0.81	1	
National_A	0.878	1	
More_Advertising	0.85	1	
Orange_Juice_F	0.979	1	
Fresh_Ingredients_C	0.747	1	
Natural_Flavor	0.95	1	
High_Quality_F	0.931	1	
American	0.76	1	
Healthy	0.952	1	
Naturally_Sweetened_A	0.807	1	
Easy_to_Pour_A	0.644	1	
Natural_Sugar_C	0.978	1	
Fruit_Juice	0.923	1	

Labelling of key constructs for African Americans (cont.)

Natural_Flavor_A	0.998	1	
Modern_Label	0.911	1	
Nutritional_Value	0.952	1	
Large_Cap	0.642	1	
Pure_Product	0.951	1	
Trustworthy_Brand	0.97	1	
Fresh_Taste	0.996	1	
Natural_Sugar_D	0.95	1	
Real_Juice_A	0.969	1	
Pure_Squeezed_A	0.979	1	
Fruity_Flavor	0.996	1	
Name_Brand_C	0.978	1	
Healthy_A	0.987	1	
Brand_Loyalty	0.892	1	
Less_Chemicals	0.996	1	
Cost_Efficient	0.431	2	Inexpensive Juice
Less_Expensive	0.293	2	
Sweet_A	0.431	2	
Sale_Price	0.364	2	
Thicker_Neck	0.987	2	
High_Quality_B	0.797	2	
Less_Expensive_A	0.166	2	
Strong_Flavor	0.653	2	
More_Vitamins	0.681	2	
More_Experience	0.909	2	
Loyal_Customer_B	0.534	2	
Vitamins_Labeled	0.238	2	
Appealing_Label_A	0.817	2	
Sale_Price_B	0.752	2	
Long_Neck	0.703	2	

Labelling of key constructs for African Americans (cont.)

Low_Price	0.26	2	
Cheap	0.227	2	
Cheap_A	0.261	2	
Low_Calories	0.705	2	
Personal_Reference	0.824	2	
Trustworthy	0.819	2	
Coupon_Available	0.979	2	
Sale_Price_C	0.861	2	
Cheap_B	0.192	2	
National	0.67	3	Large Juice
Large_Quantity	0.415	3	
Name_Brand	0.74	3	
Plastic_Handle	0.24	3	
More_Juice	0.24	3	
Affordable	0.408	3	
Domesticated	0.799	3	
Bigger_Quantity	0.38	3	
Pure_Juice_A	0.694	3	
Fancy_Label	0.792	3	
Orange_Juice_B	0.734	3	
More_Juice_A	0.405	3	
Sweet_B	0.335	3	
More_Juice_B	0.39	3	
Handle_A	0.24	3	
Flavorful	0.716	3	
Handle_B	0.24	3	
Large_Quantity_A	0.231	3	
U.S._Made	0.864	3	
Lower_Calories	0.745	3	
Handle_C	0.24	3	

Labelling of key constructs for African Americans (cont.)

U.S._Product	0.905	3	
Attractive_Orange	0.627	3	
Easy_to_Pour	0.231	4	Convenient Package
Outside_Influence	0.583	4	
Less_Calories	0.567	4	
Appealing_Label	0.616	4	
Easy_to_Carry	0.677	4	
Loyal_Customer_C	0.56	4	
Ounces_Sectioned	0.657	4	
Easy_to_Grip	0.407	4	
Larger_Quantity	0.584	4	
Easy_to_Pour_B	0.287	4	
Loyal_Customer	0.735	5	Simple Packaging
Simple_Label	0.452	5	
Vitamins_Displayed	-0.032	5	
Sugary_Taste	0.231	5	
Tamperproof	0.76	5	
Sale_Price_A	0.459	5	
Handle	0.27	5	
Inexpensive	-0.131	5	

B.5.10 SPSS Command for PCA for Caucasians

FACTOR

```
/VARIABLES Slender_Bottle Orange_Juice Large_Label Less_Preservatives Transparent_Bottle Large_
Image Higher_Quality Natural_Ingredients Lightly_Sweetened Distinct_Calorie_Listing Refrigerated_Juice
National Experience Multiple_Seals Attractive_Label Less_Additives Easily_Handled Natural_Ingredients_A
Less_Sugar Thicker_Cap Pours_Easily High_Quality Orange_Juice_A Strong_Flavor National_A
Multiple_Seals_A Brand_Name Experience_A Smaller_Quantity Orange_Juice_B Pure_Flavor Natural_Sugar
National_B
High_Quality_A Thick_Texture Accessible_Cap Easily_Handled_A Natural_Ingredients_B Orange_Juice_C
Tangy Low_Acidity Fresh_Ingredients National_C Experience_B Thick_Consistency High_Calories
High_Quantity Adult_Juice Exciting_Label Name_Brand Natural_Flavor Light_Consistency Targets_Adults
Less_Sugar_A Juice Juice_Lid Unique_Font Organic From_Fruit Sale_Price Eye_Catching Juicy_Orange
Orange_Juice_D Native Pours_Easily_A Appealing_Label Flavorful Safe_Packaging More_Juice Orange_Lid
Sweet Natural_Color
Preserves_Space Real_Juice Thin_Texture Refrigerated Orange_Flavor Attractive_Label_A Good_Quality
Brand_
Name_A National_D Real_Juice_A Experience_C Light Reasonable_Price Simple_Label User_Friendly_Bottle
National_E Fresh Sale_Price_A Appetizing_Orange Green_Lid Orange_Juice_E Fresh_Squeezed
Sliced_Orange National_Product More_Content Sufficient_Vitamins All_Natural Economical Adult_Friendly
High_Acidity Attractive_Label_B Orange_Juice_F Fresh_Flavor Lean_Bottle Sliced_Orange_A Less_Sugar_B
Low_Acidity_A
Not_Concentrated Handle Detailed_Label American_Product Healthy_Calories More_Juice_A Orange_Juice_G
Vitamin_Rich Fresh_Ingredients_A Natural_Sugar_A Unpasteurized Premium_Bottle Natural_Vitamins
National_F Shortened_Expiration High_Quality_B Sale_Price_B Product_Loyalty Orange_Juice_H
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Natural_Sugar_B Fresh_Ingredients_B Advertises_Product Nutritional_Value Slim_Storage Low_Acidity_B
One_Flavor Thick_Consistency_A Trustworthy Sale_Price_C High_Quality_C Slim_Bottle Double_Seal
K_100__Quality
Attractive_Label_C Fresh_Ingredients_C National_G Real_Juice_B Twist_Cap Carrying_Convenient
Name_Brand_A Sale_Price_D Naturally_Sweet Large_Quantity Reasonably_Priced Multiple_Flavors
Experience_D Fresh_Ingredients_D Long_Neck Adult_Brand High_Advertising Name_Brand_B
Handle_A Easy_to_Pour Accessible_Lid Edged_Shape Brand_Loyalty Orange_Juice_I Familiarity
Quart_Size High_Quality_D Visible_Seal Fresh_Ingredients_E Adult_Juice_A

/MISSING LISTWISE

/ANALYSIS Slender_Bottle Orange_Juice Large_Label Less_Preservatives Transparent_Bottle Large_Image
Higher_Quality Natural_Ingredients Lightly_Sweetened Distinct_Calorie_Listing Refrigerated_Juice
National Experience Multiple_Seals Attractive_Label Less_Additives Easily_Handled Natural_Ingredients_A
Less_Sugar Thicker_Cap Pours_Easily High_Quality Orange_Juice_A Strong_Flavor National_A
Multiple_Seals_A Brand_Name Experience_A Smaller_Quantity Orange_Juice_B Pure_Flavor Natural_Sugar
National_B
High_Quality_A Thick_Texture Accessible_Cap Easily_Handled_A Natural_Ingredients_B Orange_Juice_C
Tangy Low_Acidity Fresh_Ingredients National_C Experience_B Thick_Consistency High_Calories
High_Quantity Adult_Juice Exciting_Label Name_Brand Natural_Flavor Light_Consistency Targets_Adults
Less_Sugar_A Juice Juice_Lid Unique_Font Organic From_Fruit Sale_Price Eye_Catching Juicy_Orange
Orange_Juice_D Native Pours_Easily_A Appealing_Label Flavorful Safe_Packaging More_Juice Orange_Lid
Sweet Natural_Color
Preserves_Space Real_Juice Thin_Texture Refrigerated Orange_Flavor Attractive_Label_A Good_Quality
Brand_Name_A National_D Real_Juice_A Experience_C Light Reasonable_Price Simple_Label

User_Friendly_Bottle National_E Fresh Sale_Price_A Appetizing_Orange Green_Lid Orange_Juice_E
Fresh_Squeezed Sliced_Orange National_Product More_Content Sufficient_Vitamins All_Natural Economica
I Adult_Friendly High_Acidity Attractive_Label_B Orange_Juice_F Fresh_Flavor Lean_Bottle Sliced_Orange_A
Less_Sugar_B Low_Acidity_A
Not_Concentrated Handle Detailed_Label American_Product Healthy_Calories More_Juice_A
Orange_Juice_G Vitamin_Rich Fresh_Ingredients_A Natural_Sugar_A Unpasteurized Premium_Bottle
Natural_Vitamins National_F Shortened_Expiration High_Quality_B Sale_Price_B Product_Loyalty
Orange_Juice_H Natural_Sugar_B Fresh_Ingredients_B Advertises_Product Nutritional_Value Slim_Storage
Low_Acidity_B One_Flavor Thick_Consistency_A Trustworthy Sale_Price_C High_Quality_C Slim_Bottle
Double_Seal K_100__Quality
Attractive_Label_C Fresh_Ingredients_C National_G Real_Juice_B Twist_Cap Carrying_Convenient
Name_Brand_A Sale_Price_D Naturally_Sweet Large_Quantity Reasonably_Priced Multiple_Flavors
Experience_D Fresh_Ingredients_D Long_Neck Adult_Brand High_Advertising Name_Brand_B Handle_A
Easy_to_Pour Accessible_Lid Edged_Shape Brand_Loyalty Orange_Juice_I Familiarity Quart_Size
High_Quality_D Visible_Seal Fresh_Ingredients_E Adult_Juice_A

/PRINT INITIAL EXTRACTION

/CRITERIA MINEIGEN(1) ITERATE(25)

/EXTRACTION PC

/ROTATION NOROTATE

/METHOD=CORRELATION.

B.5.11 PCA by Caucasians: Output

Component Matrix^a

	Component				
	1	2	3	4	5
Slender_Bottle	0.597	0.679	-0.378	0.157	0.126
Orange_Juice	0.987	-0.116	0.025	-0.077	-0.08
Large_Label	0.672	0.532	0.403	0.063	0.315
Less_Preservatives	0.987	-0.116	0.025	-0.077	-0.08
Transparent_Bottle	0.944	-0.044	-0.29	0.052	0.142
Large_Image	0.989	0.028	-0.036	0.127	-0.055
Higher_Quality	0.987	-0.116	0.025	-0.077	-0.08
Natural_Ingredients	0.987	-0.116	0.025	-0.077	-0.08
Lightly_Sweetened	0.99	-0.124	-0.053	-0.022	0.025
Distinct_Calorie_Listing	0.375	0.847	-0.349	0.137	0.035
Refrigerated_Juice	0.987	-0.116	0.025	-0.077	-0.08
National	0.917	-0.262	0.079	0.286	-0.054
Experience	0.905	0.018	-0.238	0.275	0.221
Multiple_Seals	0.547	0.19	-0.504	-0.43	0.475
Attractive_Label	0.978	-0.192	0.065	-0.024	0.038
Less_Additives	0.956	-0.232	-0.006	-0.179	0.008
Easily_Handled	0.804	0.306	-0.51	0.027	0
Natural_Ingredients_A	0.987	-0.116	0.025	-0.077	-0.08
Less_Sugar	0.982	-0.166	0.043	0.041	-0.073
Thicker_Cap	0.994	0.05	-0.042	-0.047	-0.068
Pours_Easily	0.639	0.11	-0.431	0.622	-0.078
High_Quality	0.982	-0.166	0.043	0.041	-0.073
Orange_Juice_A	0.987	-0.116	0.025	-0.077	-0.08

PCA by Caucasians: Output (cont.)

Strong_Flavor	0.978	-0.192	0.065	-0.024	0.038
National_A	0.987	-0.116	0.025	-0.077	-0.08
Multiple_Seals_A	0.599	0.125	-0.412	-0.448	0.505
Brand_Name	0.952	0.008	-0.038	-0.156	-0.259
Experience_A	0.94	0.254	0.149	-0.171	0.005
Smaller_Quantity	0.994	0.05	-0.042	-0.047	-0.068
Orange_Juice_B	0.966	-0.107	0.095	-0.126	-0.174
Pure_Flavor	0.987	-0.116	0.025	-0.077	-0.08
Natural_Sugar	0.967	-0.187	0.144	-0.076	-0.06
National_B	0.96	0.196	0.195	0.028	0.023
High_Quality_A	0.987	-0.116	0.025	-0.077	-0.08
Thick_Texture	0.919	-0.16	0.167	-0.31	0.077
Accessible_Cap	0.96	0.196	0.195	0.028	0.023
Easily_Handled_A	0.749	0.066	0.305	0.577	0.09
Natural_Ingredients_B	0.979	-0.139	0.045	-0.143	0.027
Orange_Juice_C	0.979	0.027	0.157	0.128	-0.006
Tangy	0.975	0.008	-0.122	0.175	0.067
Low_Acidity	0.917	-0.01	-0.036	0.355	-0.18
Fresh_Ingredients	0.983	0.116	0.03	0.137	-0.023
National_C	0.972	-0.191	0.052	0.102	-0.069
Experience_B	0.685	0.445	-0.094	0.567	0.053
Thick_Consistency	0.953	-0.21	-0.171	0.049	-0.131
High_Calories	0.567	-0.224	-0.747	-0.042	-0.262
High_Quantity	-0.987	0.116	-0.025	0.077	0.08
Adult_Juice	0.959	-0.246	0.084	0.104	0.05
Exciting_Label	0.818	0.005	-0.226	0.525	-0.062
Name_Brand	0.72	0.548	0.367	0.155	0.148
Natural_Flavor	0.862	0.076	-0.408	-0.167	0.239
Light_Consistency	0.915	-0.069	-0.274	-0.028	0.287

PCA by Caucasians: Output (cont.)

Targets_Adults	0.837	-0.532	0.094	-0.075	0.034
Less_Sugar_A	0.984	-0.095	-0.091	0.071	-0.093
Juice	0.922	0.063	-0.295	-0.22	0.104
Juice_Lid	0.747	0.281	-0.58	-0.059	-0.153
Unique_Font	0.224	-0.27	-0.687	0.381	0.51
Organic	0.885	0.043	-0.277	-0.293	0.228
From_Fruit	0.987	-0.116	0.025	-0.077	-0.08
Sale_Price	-0.651	0.334	-0.354	0.351	-0.465
Eye_Catching	0.849	-0.046	0.444	0.122	0.255
Juicy_Orange	0.235	0.919	0.269	0.051	-0.158
Orange_Juice_D	0.96	0.196	0.195	0.028	0.023
Native	0.755	0.21	0.515	0.184	0.294
Pours_Easily_A	-0.354	-0.848	0.332	0.124	-0.172
Appealing_Label	0.852	0.227	0.453	0.081	0.104
Flavorful	0.874	0.415	0.156	-0.004	0.198
Safe_Packaging	0.547	0.19	-0.504	-0.43	0.475
More_Juice	-0.775	-0.077	-0.15	-0.547	0.268
Orange_Lid	-0.513	0.491	-0.235	-0.254	-0.613
Sweet	0.932	-0.094	-0.143	-0.171	0.27
Natural_Color	0.934	0.095	-0.31	-0.074	-0.127
Preserves_Space	0.909	0.219	-0.346	0.049	0.064
Real_Juice	0.899	-0.18	-0.02	-0.185	0.354
Thin_Texture	0.862	-0.251	-0.182	-0.232	-0.327
Refrigerated	0.867	-0.411	-0.149	-0.171	-0.171
Orange_Flavor	0.97	0.023	-0.198	-0.076	-0.113
Attractive_Label_A	0.456	0.718	0.347	0.382	-0.097
Good_Quality	0.977	-0.089	0.003	-0.004	-0.195

PCA by Caucasians: Output (cont.)

Brand_Name_A	0.216	0.819	-0.52	0.112	-0.005
National_D	0.72	0.548	0.367	0.155	0.148
Real_Juice_A	0.892	-0.311	-0.212	0.189	0.161
Experience_C	0.797	-0.222	-0.215	0.209	0.474
Light	0.868	-0.219	-0.372	0.198	0.145
Reasonable_Price	-0.957	0.099	0.21	-0.167	-0.046
Simple_Label	0.51	0.46	-0.179	0.603	0.364
User_Friendly_Bottle	-0.302	-0.786	0.168	0.474	0.195
National_E	0.965	-0.159	0.117	-0.006	-0.171
Fresh	0.987	-0.116	0.025	-0.077	-0.08
Sale_Price_A	-0.803	-0.049	-0.151	0.478	0.319
Appetizing_Orange	0.183	0.86	0.124	-0.12	0.444
Green_Lid	0.513	-0.491	0.235	0.254	0.613
Orange_Juice_E	0.987	-0.099	-0.07	0.045	-0.091
Fresh_Squeezed	0.952	-0.16	0.065	-0.21	0.139
Sliced_Orange	-0.455	0.077	0.693	-0.528	0.17
National_Product	0.727	-0.237	0.327	-0.202	0.516
More_Content	-0.974	0.025	0.189	-0.048	0.108
Sufficient_Vitamins	0.98	0.124	0.157	0.003	-0.001
All_Natural	0.987	-0.116	0.025	-0.077	-0.08
Economical	-0.96	0.104	-0.11	0.136	0.193
Adult_Friendly	0.966	-0.107	0.095	-0.126	-0.174
High_Acidity	0.987	-0.116	0.025	-0.077	-0.08
Attractive_Label_B	0.422	0.431	0.784	-0.132	-0.066
Orange_Juice_F	0.988	0.078	0.132	-0.013	-0.017
Fresh_Flavor	0.978	-0.192	0.065	-0.024	0.038

PCA by Caucasians: Output (cont.)

Lean_Bottle	0.572	-0.592	0.05	0.563	0.047
Sliced_Orange_A	0.324	0.398	0.728	-0.413	0.191
Less_Sugar_B	0.965	-0.159	0.117	-0.006	-0.171
Low_Acidity_A	-0.927	0.095	-0.168	0.175	0.27
Not_Concentrated	0.978	-0.192	0.065	-0.024	0.038
Handle	-0.375	-0.847	0.349	-0.137	-0.035
Detailed_Label	0.275	0.02	0.713	0.622	-0.17
American_Product	0.901	-0.132	0.166	0.378	-0.003
Healthy_Calories	0.952	-0.16	0.065	-0.21	0.139
More_Juice_A	-0.565	-0.463	0.404	-0.275	0.477
Orange_Juice_G	0.978	-0.176	0.047	0.065	-0.071
Vitamin_Rich	0.869	0.382	0.289	0.093	0.087
Fresh_Ingredients_A	0.982	-0.166	0.043	0.041	-0.073
Natural_Sugar_A	0.976	-0.18	-0.035	0.113	0.036
Unpasteurized	-0.698	0.211	-0.128	0.419	-0.525
Premium_Bottle	0.912	-0.211	0.165	0.292	0.104
Natural_Vitamins	0.987	-0.116	0.025	-0.077	-0.08
National_F	0.994	-0.026	0.075	-0.048	-0.051
Shortened_Expiration	0.967	-0.204	-0.026	-0.106	-0.108
High_Quality_B	0.844	-0.257	0.18	0.42	0.113
Sale_Price_B	0.504	0.133	0.37	0.754	0.147
Product_Loyalty	0.696	-0.432	0.166	0.513	0.194
Orange_Juice_H	0.969	0.14	0.121	0.085	-0.143
Natural_Sugar_B	0.953	0.161	-0.103	0.072	-0.224
Fresh_Ingredients_B	0.942	0.281	0.093	-0.049	0.148
Advertises_Product	0.961	-0.223	-0.037	-0.112	-0.114
Nutritional_Value	0.948	0.275	-0.019	-0.154	-0.033

PCA by Caucasians: Output (cont.)

Slim_Storage	0.978	-0.176	0.047	0.065	-0.071
Low_Acidity_B	-0.285	-0.256	-0.369	0.846	-0.044
One_Flavor	0.96	0.196	0.195	0.028	0.023
Thick_Consistency_A	0.797	-0.066	0.303	-0.263	-0.446
Trustworthy	0.828	0.113	0.427	-0.264	-0.222
Sale_Price_C	-0.01	-0.396	-0.874	0.269	-0.085
High_Quality_C	0.724	-0.047	-0.248	-0.444	-0.463
Slim_Bottle	0.874	0.241	-0.397	0.096	-0.108
Double_Seal	0.676	-0.018	-0.194	-0.46	0.542
K_100__Quality	0.987	-0.049	-0.085	-0.077	-0.097
Attractive_Label_C	0.978	-0.192	0.065	-0.024	0.038
Fresh_Ingredients_C	0.987	-0.116	0.025	-0.077	-0.08
National_G	0.929	-0.304	-0.084	-0.137	-0.139
Real_Juice_B	0.967	-0.204	-0.026	-0.106	-0.108
Twist_Cap	0.794	0.336	-0.495	-0.104	-0.01
Carrying_Convenient	0.308	-0.875	-0.157	-0.258	-0.219
Name_Brand_A	0.96	-0.262	-0.008	0.021	-0.101
Sale_Price_D	-0.923	0.238	-0.256	-0.006	0.16
Naturally_Sweet	0.778	0.151	-0.256	-0.533	0.15
Large_Quantity	-0.631	-0.655	0.298	0.068	0.281
Reasonably_Priced	-0.994	0.026	-0.075	0.048	0.051
Multiple_Flavors	-0.847	0.193	-0.101	0.332	-0.355
Experience_D	-0.166	0.923	0.166	-0.297	-0.071
Fresh_Ingredients_D	0.987	-0.049	-0.085	-0.077	-0.097
Long_Neck	0.333	0.73	-0.219	0.548	0.087
Adult_Brand	0.987	-0.116	0.025	-0.077	-0.08
High_Advertising	0.09	0.452	0.791	-0.402	0.011

PCA by Caucasians: Output (cont.)

Name_Brand_B	0.451	0.42	0.613	0.493	-0.041
Handle_A	-0.375	-0.847	0.349	-0.137	-0.035
Easy_to_Pour	0.906	0.09	0.246	0.329	0.048
Accessible_Lid	0.784	0.525	-0.325	0.039	-0.044
Edged_Shape	0.118	-0.64	0.296	0.477	-0.511
Brand_Loyalty	0.555	0.746	-0.03	-0.091	-0.355

Orange_Juice_I	0.988	0.078	0.132	-0.013	-0.017
Familiarity	-0.036	0.496	0.223	-0.34	-0.767
Quart_Size	0.893	0.422	0.126	0.077	0.05
High_Quality_D	0.858	0.457	0.224	0.018	-0.07
Visible_Seal	0.765	-0.159	-0.557	-0.166	-0.227
Fresh_Ingredients_E	0.893	0.422	0.126	0.077	0.05
Adult_Juice_A	0.878	0.362	-0.026	-0.132	0.283

Extraction Method: Principal Component Analysis.

^a 5 components extracted.

B.5.12 Labelling of key constructs for Caucasians

Construct	Component	Key Construct	Label
Slender_Bottle	0.679	1	Natural Orange Juice Brand
Orange_Juice	0.987	1	
Large_Label	0.672	1	
Less_Preservatives	0.987	1	
Transparent_Bottle	0.944	1	
Large_Image	0.989	1	
Higher_Quality	0.987	1	
Natural_Ingredients	0.987	1	
Lightly_Sweetened	0.99	1	
Distinct_Calorie_Listing	0.847	1	
Refrigerated_Juice	0.987	1	
National	0.917	1	
Experience	0.905	1	
Multiple_Seals	0.547	1	
Attractive_Label	0.978	1	
Less_Additives	0.956	1	
Easily_Handled	0.804	1	
Natural_Ingredients_A	0.987	1	
Less_Sugar	0.982	1	
Thicker_Cap	0.994	1	
Pours_Easily	0.639	1	
High_Quality	0.982	1	
Orange_Juice_A	0.987	1	
Strong_Flavor	0.978	1	
National_A	0.987	1	

Labelling of key constructs for Caucasians (cont.)

Multiple_Seals_A	0.599	1	
Brand_Name	0.952	1	
Experience_A	0.94	1	
Smaller_Quantity	0.994	1	
Orange_Juice_B	0.966	1	
Pure_Flavor	0.987	1	
Natural_Sugar	0.967	1	
National_B	0.96	1	
High_Quality_A	0.987	1	
Thick_Texture	0.919	1	
Accessible_Cap	0.96	1	
Easily_Handled_A	0.749	1	
Natural_Ingredients_B	0.979	1	
Orange_Juice_C	0.979	1	
Tangy	0.975	1	
Low_Acidity	0.917	1	
Fresh_Ingredients	0.983	1	
National_C	0.972	1	
Experience_B	0.685	1	
Thick_Consistency	0.953	1	
High_Calories	0.567	1	
High_Quantity	0.116	1	
Adult_Juice	0.959	1	
Exciting_Label	0.818	1	
Name_Brand	0.72	1	
Natural_Flavor	0.862	1	
Light_Consistency	0.915	1	
Targets_Adults	0.837	1	
Less_Sugar_A	0.984	1	
Juice	0.922	1	

Labelling of key constructs for Caucasians (cont.)

Juice_Lid	0.747	1	
Unique_Font	0.51	1	
Organic	0.885	1	
From_Fruit	0.987	1	
Sale_Price	0.351	1	
Eye_Catching	0.849	1	
Juicy_Orange	0.919	1	
Orange_Juice_D	0.96	1	
Native	0.755	1	
Pours_Easily_A	0.332	1	
Appealing_Label	0.852	1	
Flavorful	0.874	1	
Safe_Packaging	0.547	1	
More_Juice	0.268	1	
Orange_Lid	0.491	1	
Sweet	0.932	1	
Natural_Color	0.934	1	
Preserves_Space	0.909	1	
Real_Juice	0.899	1	
Thin_Texture	0.862	1	
Refrigerated	0.867	1	
Orange_Flavor	0.97	1	
Attractive_Label_A	0.718	1	
Good_Quality	0.977	1	
Brand_Name_A	0.819	1	
National_D	0.72	1	
Real_Juice_A	0.892	1	
Experience_C	0.797	1	
Light	0.868	1	
Reasonable_Price	0.21	1	

Labelling of key constructs for Caucasians (cont.)

Simple_Label	0.603	1	
User_Friendly_Bottle	0.474	1	
National_E	0.965	1	
Fresh	0.987	1	
Sale_Price_A	0.478	1	
Appetizing_Orange	0.86	1	
Green_Lid	0.613	1	
Orange_Juice_E	0.987	1	
Fresh_Squeezed	0.952	1	
Sliced_Orange	0.693	1	
National_Product	0.727	1	
More_Content	0.189	1	
Sufficient_Vitamins	0.98	1	
All_Natural	0.987	1	
Economical	0.193	1	
Adult_Friendly	0.966	1	
High_Acidity	0.987	1	
Attractive_Label_B	0.784	1	
Orange_Juice_F	0.988	1	
Fresh_Flavor	0.978	1	
Lean_Bottle	0.572	1	
Sliced_Orange_A	0.728	1	
Less_Sugar_B	0.965	1	
Low_Acidity_A	0.27	1	
Not_Concentrated	0.978	1	
Handle	0.349	1	
Detailed_Label	0.713	1	
American_Product	0.901	1	
Healthy_Calories	0.952	1	
More_Juice_A	0.477	1	

Labelling of key constructs for Caucasians (cont.)

Orange_Juice_G	0.978	1	
Vitamin_Rich	0.869	1	
Fresh_Ingredients_A	0.982	1	
Natural_Sugar_A	0.976	1	
Unpasteurized	0.419	1	
Premium_Bottle	0.912	1	
Natural_Vitamins	0.987	1	
National_F	0.994	1	
Shortened_Expiration	0.967	1	
High_Quality_B	0.844	1	
Sale_Price_B	0.754	1	
Product_Loyalty	0.696	1	
Orange_Juice_H	0.969	1	
Natural_Sugar_B	0.953	1	
Fresh_Ingredients_B	0.942	1	
Advertises_Product	0.961	2	Known Flavourful Brand
Nutritional_Value	0.948	2	
Slim_Storage	0.978	2	
Low_Acidity_B	0.846	2	
One_Flavor	0.96	2	
Thick_Consistency_A	0.797	2	
Trustworthy	0.828	2	
Sale_Price_C	0.269	2	
High_Quality_C	0.724	2	
Slim_Bottle	0.874	2	
Double_Seal	0.676	2	
K_100__Quality	0.987	2	
Attractive_Label_C	0.978	2	

Labelling of key constructs for Caucasians (cont.)

Fresh_Ingredients_C	0.987	3	Fresh Juice Brand
National_G	0.929	3	
Real_Juice_B	0.967	3	
Twist_Cap	0.794	3	
Carrying_Convenient	0.308	3	
Name_Brand_A	0.96	3	
Sale_Price_D	0.238	3	
Naturally_Sweet	0.778	3	
Large_Quantity	0.298	3	
Reasonably_Priced	0.051	3	
Multiple_Flavors	0.332	3	
Experience_D	0.923	3	
Fresh_Ingredients_D	0.987	4	Convenient Branded Packaging
Long_Neck	0.73	4	
Adult_Brand	0.987	4	
High_Advertising	0.791	4	
Name_Brand_B	0.613	4	
Handle_A	0.349	4	
Easy_to_Pour	0.906	4	
Accessible_Lid	0.784	4	
Edged_Shape	0.477	4	
Brand_Loyalty	0.746	4	
Orange_Juice_I	0.988	5	High Quality Packaging
Familiarity	0.496	5	
Quart_Size	0.893	5	
High_Quality_D	0.858	5	
Visible_Seal	0.765	5	
Fresh_Ingredients_E	0.893	5	
Adult_Juice_A	0.878	5	

B.6 Constructs by Ethnic Group

B.7 Constructs – Caucasian Respondents

#	Left Construct	Right Construct
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1	Slender Bottle	Large Bottle
2	Orange Juice	Orange Drink
3	Large Label	Small Label
4	Less Preservatives	More Preservatives
5	Transparent Bottle	Opaque Bottle
6	Large Image	Small Image
7	Higher Quality	Lower Quality
8	Natural Ingredients	Artificial Ingredients
9	Lightly Sweetened	Heavily Sweetened
10	Distinct Calorie Listing	Discrete Calorie Listing
11	Refrigerated Juice	Shelved Juice
12	National	Imported
13	Experience	Inexperience
14	Multiple Seals	One Seal
15	Attractive Label	Unattractive Label
16	Less Additives	More Additives
17	Easily Handled	Difficult Handling
18	Natural Ingredients	Modified Ingredients
19	Less Sugar	More Sugar
20	Thicker Cap	Thinner Cap
21	Pours Easily	Spills Easily
22	High Quality	Low Quality
23	Orange Juice	Orange Drink
24	Strong Flavor	Weak Flavor
25	National	Imported
26	Multiple Seals	One Seal
27	Brand Name	Generic Name

Constructs – Caucasian Respondents (cont.)

28	Experience	Inexperience
29	Smaller Quantity	Larger Quantity
30	Orange Juice	Orange Drink
31	Pure Flavor	Imitation Flavor
32	Natural Sugar	Added Sugar
33	National	Imported
34	High Quality	Low Quality
35	Thick Texture	Thin Texture
36	Accessible Cap	Inaccessible Cap
37	Easily Handled	Difficulty Handling
38	Natural Ingredients	Artificial Ingredients
39	Orange Juice	Orange Drink
40	Tangy	Sugary
41	Low Acidity	High Acidity
42	Fresh Ingredients	Artificial Ingredients
43	National	Imported
44	Experience	Inexperience
45	Thick Consistency	Thin Consistency
46	High Calories	Low Calories
47	High Quantity	Low Quantity
48	Adult Juice	Children's Juice
49	Exciting Label	Difficulty Handling
50	Name Brand	Off Brand
51	Natural Flavor	Artificial Flavor
52	Light Consistency	Heavy Consistency
53	Targets Adults	Targets Children
54	Less Sugar	More Sugar
55	Juice	Punch
56	Juice Lid	Milk Lid
57	Unique Font	Generic Font

Constructs – Caucasian Respondents (cont.)

58	Organic	Processed
59	From Fruit	From Concentrate
60	Sale Price	Full Price
61	Eye Catching	Dull
62	Juicy Orange	Dry Orange
63	Orange Juice	Orange Drink
64	Native	Foreign
65	Pours Easily	Pours Difficultly
66	Appealing Label	Unappealing Label
67	Flavorful	Diluted
68	Safe Packaging	Unsafe Packaging
69	More Juice	Less Juice
70	Orange Lid	Green Lid
71	Sweet	Bitter
72	Natural Color	Dyed Color
73	Preserves Space	Wastes Space
74	Real Juice	Unamerican
75	Thin Texture	Thick Texture
76	Refrigerated	Stocked
77	Orange Flavor	Added Flavors
78	Attractive Label	Boring Label
79	Good Quality	Cheap Quality
80	Brand Name	Green Lid
81	National	International
82	Real Juice	Fake Juice
83	Experience	Inexperience
84	Light	Heavy
85	Reasonable Price	Unreasonable Price
86	Simple Label	Cluttered Label
87	User-Friendly Bottle	Nonuser-Friendly Bottle

Constructs – Caucasian Respondents (cont.)

88	National	Imported
89	Fresh	Preservatives
90	Sale Price	Full Price
91	Appetizing Orange	Unappetizing Orange
92	Green Lid	Orange Lid
93	Orange Juice	Orange Drink
94	Fresh Squeezed	Man-Made
95	Sliced Orange	Whole Orange
96	National Product	Foreign Product
97	More Content	Less Content
98	Sufficient Vitamins	Insufficient Vitamins
99	All Natural	Chemically Altered
100	Economical	Expensive
101	Adult Friendly	Child Friendly
102	High Acidity	Low Acidity
103	Attractive Label	Unattractive Label
104	Orange Juice	Orange Drink
105	Fresh Flavor	Artificial Flavor
106	Lean Bottle	Fat Bottle
107	Sliced Orange	Whole Orange
108	Less Sugar	More Sugar
109	Low Acidity	High Acidity
110	Not Concentrated	Concentrated
111	Handle	No Handle
112	Detailed Label	Non-Detailed Label
113	American Product	Foreign Product
114	Healthy Calories	Unhealthy Calories
115	More Juice	Less Juice
116	Orange Juice	Orange Drink
117	Vitamin Rich	Vitamin Deficient

Constructs – Caucasian Respondents (cont.)

118	Fresh Ingredients	Fabricated Ingredients
119	Natural Sugar	Artificial Sugar
120	Unpasteurized	Pasteurized
121	Premium Bottle	Cheap Bottle
122	Natural Vitamins	Infused Vitamins
123	National	Imported
124	Shortened Expiration	Extended Expiration
125	High Quality	Low Quality
126	Sale Price	Full Price
127	Product Loyalty	Product Unloyalty
128	Orange Juice	Orange Punch
129	Natural Sugar	Extra Sugar
130	Fresh Ingredients	Artificial Ingredients
131	Advertises Product	Advertises Cartoon
132	Nutritional Value	Inadequate Nutrition
133	Slim Storage	Bulky Storage
134	Low Acidity	High Acidity
135	One Flavor	Multiple Flavors
136	Thick Consistency	Thin Consistency
137	Trustworthy	Untrustworthy
138	Sale Price	Full Price
139	High Quality	Low Quality
140	Slim Bottle	Big Bottle
141	Double Seal	Single Seal
142	100% Quality	0% Quality
143	Attractive Label	Unattractive Label
144	Fresh Ingredients	Processed Ingredients
145	National	Imported
146	Real Juice	Imitation Juice
147	Twist Cap	Pull-&-Peel Cap

Constructs – Caucasian Respondents (cont.)

148	Carrying Convenient	Carrying Inconvenient
149	Name Brand	Store Brand
150	Sale Price	Full Price
151	Naturally Sweet	Overly Sweet
152	Large Quantity	Small Quantity
153	Reasonably Priced	Unreasonably Priced
154	Multiple Flavors	One Flavor
155	Experience	No Experience
156	Fresh Ingredients	Processed Ingredients
157	Long Neck	Short Neck
158	Adult Brand	Childs Brand
159	High Advertising	Low Advertising
160	Name Brand	Generic Brand
161	Handle	No Handle
162	Easy to Pour	Hard to Pour
163	Accessible Lid	Inaccessible Lid
164	Edged Shape	Circular Shape
165	Brand Loyalty	Brand Unloyalty
166	Orange Juice	Orange Punch
167	Familiarity	Unfamiliarity
168	Quart Size	Gallon Size
169	High Quality	Low Quality
170	Visible Seal	Non-Visible Seal
171	Fresh Ingredients	Artificial Ingredients
172	Adult Juice	Children Juice

B.7.1 Constructs – Hispanic Respondents

#	Left Construct	Right Construct
1	More Juice	More Water
2	Natural Color	Artificial Color
3	Natural Appearance	Artificial Appearance
4	Low acidity	High Acidity
5	Good taste	Bad taste
6	Best brand	Regular brand
7	Best packaging	Regular packaging
8	Natural Appearance	Artificial Appearance
9	More juice	More Water
10	Healthy	Artificial
11	Orange flavor	Artificial Flavor
12	Thick consistency	Thin Consistency
13	Natural appearance	Artificial Appearance
14	Natural color	Artificial Color
15	Small size	Big size
16	More vitamins	No vitamins
17	Advertised	Unknown
18	More pulp	Watery
19	Sweet	Bland
20	Best packaging	Regular packaging
21	Recognized brand	Unknown brand
22	Thick	Thin
23	More juice	More Water
24	Like juice	Like water
25	Pulp	Smooth
26	Natural	Artificial
27	Good taste	Bad taste
28	Pure juice	Flavored drink

Constructs – Hispanic Respondents (cont.)

29	Orange flavor	Artificial Flavor
30	Fresh	Concentrate
31	Like juice	Like water
32	Natural ingredients	Artificial ingredients
33	Expensive	Cheap
34	Good taste	Bad taste
35	Orange juice	Orange drink
36	Sweet	Bland
37	More product	Less product
38	Orange juice	Orange drink
39	Thin	Thick
40	Known brand	Unknown brand
41	Traditional	New
42	Family	Individual
43	Popular	Unkown
44	Good taste	Bad taste
45	Pure Juice	Flavored drink
46	Big size	Small size
47	More sugar	Less sugar
48	More vitamins	No vitamins
49	Family	Individual
50	Good quality	Bad quality
51	Big size	Small size
52	Tasty	Dull
53	Thick	Thin
54	Natural	Artificial
55	Known brand	Unknown brand
56	Popular	Unkown
57	High sugar	Low sugar
58	Juice	Water

Constructs – Hispanic Respondents (cont.)

59	Pulp	Smooth
60	Family	Individual
61	Natural	Artificial
62	Organic	Chemical
63	Popular	Unknown
64	Advertised	Private Label
65	Juice	Water
66	Big	Small
67	Good Taste	Bad taste
68	Juice	Water
69	Big	Small
70	Like	Dislike
71	Popular	Unknown
72	Good flavor	Bad flavor
73	Family	Individual
74	Natural	Artificial
75	Juice	Water
76	Big Bottle	Small Bottle
77	Much sugar	Less sugar
78	Known	Unknown
79	Good taste	Bad taste
80	Orange	Flavored water
81	Good color	Bad color
82	Good consistency	Thin Consistency
83	Natural	Artificial
84	Healthy	Unhealthy
85	Family size	Personal size
86	Juice	Water
87	Orange	Flavored water
88	Good taste	Bad taste

Constructs – Hispanic Respondents (cont.)

89	Available	Unavailable
90	Natural	Artificial
91	With vitamins	No vitamins
92	Juice	Water
93	Carton	Plastic
94	High sugar	Low sugar
95	Good color	Bad color
96	Orange	Flavored water
97	Thick	Thin
98	Orange juice	Orange drink
99	Family	Individual
100	High sugar	Low sugar
101	Popular	Unkown
102	Available	Unavailable
103	Orange color	Artificial Color
104	High sugar	Low sugar

B.8 Constructs – African American Respondents

#	Left Construct	Right Construct
1	Orange Juice	Orange Drink
2	Loyal Customer	Unloyal Customer
3	Easy to Pour	Hard to Pour
4	Fresh Ingredients	Manufactured Ingredients
5	Natural Sugar	Added Sugar
6	National	International
7	Light Orange	Dark Orange
8	Large Quantity	Small Quantity
9	Natural Chemicals	Added Chemicals
10	Name Brand	Generic Brand
11	Simple Label	Busy Label
12	Adult Juice	Children's Juice
13	Fresh	Processed
14	Just Orange	Mixed Citrus
15	Cost Efficient	Expensive
16	Plastic Handle	No Handle
17	More Juice	Less Juice
18	Rich Flavor	Weak Flavor
19	Storage Efficient	Storage Inefficient
20	Natural Sugar	Added Sugar
21	Attractive Label	Unattractive Label
22	Sturdy Lid	Weak Lid
23	Pure Juice	Diluted Juice
24	Adult Advertising	Children's Advertising
25	Good Calories	Empty Calories
26	Affordable	Expensive
27	Vitamins Displayed	Vitamins Hidden

Constructs – African American Respondents (cont.)

28	Domesticated	Imported
29	Sugary Taste	Tangy Taste
30	Bigger Quantity	Smaller Quantity
31	Outside Influence	Internal Influence
32	Tamperproof	Tamper able
33	Orange Flavour	Mystery Flavour
34	Thin	Thick
35	Half Gallon	Gallon
36	Natural Vitamins	Added Vitamins
37	Fresh Squeezed	Processed
38	Sweet	Tart
39	Expensive	Cheap
40	Smooth	Rough
41	Healthy Calories	Negative Calories
42	Attractive Packaging	Unattractive Packaging
43	Product Information	Lack of Information
44	Bowling Pin Shape	Bowling Ball Shape
45	High Quality	Low Quality
46	Authentic Juice	Artificial Juice
47	More Sugar	Less Sugar
48	Simple Label	Dramatic Label
49	Large Lid	Small Lid
50	Two Labels	One Label
51	Name Brand	Off Brand
52	Loyal Customer	Unloyal Customer
53	Light Orange	Dark Orange
54	Storage Efficient	Storage Inefficient
55	Orange Juice	Orange Drink
56	Thinner	Thicker
57	High Quality	Low Quality

Constructs – African American Respondents (cont.)

58	Less Expensive	More Expensive
59	Sweet	Tangy
60	Pure Juice	Impure Juice
61	Fancy Label	Plain Label
62	Sale Price	Full Price
63	Less Calories	More Calories
64	Thicker Neck	Thinner Neck
65	Orange Juice	Orange Drink
66	High Quality	Low Quality
67	Sale Price	Full Price
68	Thin	Thick
69	Less Expensive	More Expensive
70	Strong Flavor	Weak Flavor
71	More Vitamins	Less Vitamins
72	More Juice	Less Juice
73	Appealing Label	Unappealing Label
74	More Experience	Less Experience
75	Handle	No Handle
76	Orange Juice	Orange Drink
77	Loyal Customer	Unloyal Customer
78	High Quality	Low Quality
79	Thinner	Thicker
80	Sweet	Bitter
81	Attractive Label	Unattractive Label
82	More Juice	Less Juice
83	Fresh ingredients	Artificial Ingredients
84	Experienced User	Inexperienced User
85	Handle	Handle-Free
86	Flavorful	Diluted
87	Orange Juice	Orange Drink

Constructs – African American Respondents (cont.)

88	Adult Beverage	Children Beverage
89	Thin Juice	Thick Juice
90	Vitamins Labeled	Vitamins Unlabeled
91	Handle	No Handle
92	Light Orange	Dark Orange
93	Appealing Label	Non-Appealing Label
94	Brand Name	Generic Brand
95	Fresh Ingredients	Concentrated Ingredients
96	Large Quantity	Small Quantity
97	U.S. Made	Imported
98	Sale Price	Full Price
99	Real Juice	Generic Juice
100	Genuine Vitamins	Synthetic Vitamins
101	Natural Sugar	Added Sugar
102	Full Flavor	Diluted Flavor
103	Distributes Iron	Retains Iron
104	Name Brand	Off Brand
105	Long Neck	Short Neck
106	Thick Texture	Thin Texture
107	Storage Efficient	Storage Consuming
108	Natural Coloring	Dyed Coloring
109	Low Price	High Price
110	High Quality	Low Quality
111	100% Pure	< 100% Pure
112	Adult Beverage	Children's Beverage
113	Easy to Carry	Difficult to Carry
114	Lower Calories	Higher Calories
115	High Quality	Low Quality
116	Hard Plastic	Soft Plastic
117	Low Acidity	High Acidity

Constructs – African American Respondents (cont.)

118	Less Sugar	More Sugar
119	Compact Storage	Bulky Storage
120	Cheap	Expensive
121	Loyal Customer	Un-loyal Customer
122	Orange Juice	Orange Punch
123	Naturally Sweetened	Added Sweetener
124	Popular Brand	Unpopular Brand
125	Ounces Sectioned	Ounces Un-sectioned
126	Pure Squeezed	Un-squeezed
127	Appealing Orange	Unappealing Orange
128	Easy to Grip	Easy to Slip
129	Cheap	Expensive
130	National	Imported
131	Low Calories	High Calories
132	More Advertising	Less Advertising
133	Personal Reference	Non-Reference
134	Orange Juice	Orange Drink
135	Fresh Ingredients	Processed Ingredients
136	Natural Flavor	Artificial Flavor
137	Trustworthy	Untrustworthy
138	High Quality	Low Quality
139	Inexpensive	Expensive
140	American	Imported
141	Healthy	Unhealthy
142	Naturally Sweetened	Artificially Sweetened
143	Larger Quantity	Smaller Quantity
144	Coupon Available	Coupon Unavailable
145	Easy to Pour	Messy to Pour
146	Natural Sugar	Added Sugar
147	Fruit Juice	Fruit Drink

Constructs – African American Respondents (cont.)

148	Natural Flavor	Artificial Flavor
149	Modern Label	Old-Style Label
150	Handle	No Handle
151	U.S. Product	Outsourced Product
152	Sale Price	Full Price
153	Nutritional Value	Non-Nutritional Value
154	Large Cap	Small Cap
155	Pure Product	Impure Product
156	Trustworthy Brand	Untrustworthy Brand
157	Fresh Taste	Processed Taste
158	Natural Sugar	Added Sugar
159	Real Juice	Artificial Juice
160	Cheap	Expensive
161	Easy to Pour	Difficult to Pour
162	Pure Squeezed	Not Squeezed
163	Fruity Flavor	Watery Flavor
164	Name Brand	Generic Brand
165	Healthy	Unhealthy
166	Attractive Orange	Unattractive Orange
167	Brand Loyalty	Brand Unloyalty
168	Less Chemicals	More Chemicals

Appendix C

Comparisons of the CBC design

Comparison 1

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Florida's Natural	Sunny D	Tropicana	
Sweetness	Unsweet	Unsweet	Unsweet	
Flavour	Natural	Natural	Natural	
Price	4	3	2	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 2

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Tampico	Simply Orange	Tropicana	
Sweetness	Unsweet	Unsweet	Sweet	
Flavour	Artificial	Artificial	Natural	
Price	2.5	3.5	4.5	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 3

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Sunny D	Minute Maid	Tampico	
Sweetness	Sweet	Very Sweet	Sweet	
Flavour	Artificial	Natural	Artificial	
Price	4	4	4	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 4 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Tampico	Minute Maid	Florida's	

			Natural	
Sweetness	Very Sweet	Sweet	Sweet	
Flavour	Natural	Artificial	Natural	
Price	3	2	3.5	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 5 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Tropicana	Minute Maid	Simply Orange	
Sweetness	Sweet	Unsweet	Sweet	
Flavour	Artificial	Artificial	Natural	
Price	3	4.5	2.5	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 6 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Simply Orange	Florida's Natural	Tropicana	
Sweetness	Very Sweet	Very Sweet	Very Sweet	
Flavour	Artificial	Artificial	Artificial	
Price	2	4.5	2.5	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 7 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Sunny D	Floridas Natural	Tampico	
Sweetness	Unsweet	Unsweet	Unsweet	
Flavour	Natural	Natural	Artificial	
Price	3	4	2.5	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 8 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Tampico	Tropicana	Simply Orange	
Sweetness	Sweet	Sweet	Unsweet	
Flavour	Artificial	Natural	Artificial	
Price	4	4.5	3.5	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 9 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Minute Maid	Sunny D	Tampico	
Sweetness	Very Sweet	Sweet	Very Sweet	
Flavour	Natural	Artificial	Natural	
Price	4	4	3	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 10 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Simply Orange	Floridas Natural	Minute Maid	
Sweetness	Sweet	Sweet	Sweet	
Flavour	Natural	Natural	Artificial	
Price	2.5	3.5	2	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 11 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Minute Maid	Tropicana	Simply Orange	
Sweetness	Unsweet	Sweet	Very Sweet	
Flavour	Artificial	Aritificial	Artificial	
Price	4.5	3	2	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 12 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Sunny D	Tropicana	Floridas Natural	
Sweetness	Very Sweet	Very Sweet	Very Sweet	
Flavour	Artificial	Artificial	Artificial	
Price	3.5	2.5	4.5	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 13 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Simply Orange	Tampico	Sunny D	
Sweetness	Unsweet	Unsweet	Unsweet	
Flavour	Artificial	Artificial	Natural	
Price	3.5	2.5	3	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 14 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Tropicana	Tampico	Minute Maid	
Sweetness	Sweet	Sweet	Very Sweet	
Flavour	Natural	Artificial	Natural	
Price	4.5	4	4	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 15 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Minute Maid	Tampico	Sunny D	
Sweetness	Sweet	Very Sweet	Sweet	
Flavour	Artificial	Natural	Artificial	
Price	2	3	4	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 16 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Floridas Natural	Simply Orange	Minute Maid	
Sweetness	Sweet	Sweet	Unsweet	
Flavor	Natural	Natural	Artificial	
Price	3.5	2.5	4.5	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 17 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Floridas Natural	Simply Orange	Tropicana	
Sweetness	Very Sweet	Very Sweet	Sweet	
Flavor	Artificial	Artificial	Artificial	
Price	4.5	2	3	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 18 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Tropicana	Sunny D	Floridas Natural	
Sweetness	Very Sweet	Very Sweet	Unsweet	
Flavor	Artificial	Artificial	Artificial	
Price	2.5	3.5	3	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 19 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Tropicana	Floridas Natural	Sunny D	
Sweetness	Unsweet	Unsweet	Very Sweet	
Flavor	Natural	Artificial	Artificial	
Price	2	3	3.5	
Code	1	2	3	0

Enter the code of the selected choice:

Comparison 20 :

Factor	Profile 1	Profile 2	Profile 3	None
Brand	Floridas Natural	Tropicana	Floridas Natural	
Sweetness	Unsweet	Unsweet	Unsweet	
Flavor	Artificial	Natural	Natural	
Price	3	2	4	
Code	1	2	3	0

Enter the code of the selected choice:

C.1 Price Perception Scales

All the items in the Price Perception Scales are scored on a seven-point Likert scale from *Strongly Disagree* to *Strongly Agree* (Lichtenstein et al., 1993).

C.1.1 Value Consciousness

Scale	Item
Value Consciousness	I am very concerned about low prices, but I am equally concerned about product quality
	When grocery shopping, I compare the prices of different brands to be sure I get the best value for the money
	When purchasing a product, I always try to maximize the quality I get for the money I spend
	When I buy products, I like to be sure that I am getting my money's worth
	I shop around for lower prices on products, but they still must meet certain quality requirements before I buy them
	When I shop, I usually compare the "price per ounce" information for brands I normally buy
	I always check prices at the grocery store to be sure I get the best value for the money I spend

C.1.2 Price Consciousness

According to Bearden, Netemeyer and Haws (2011, p.379), the first, second, third and fifth item in this scale require a reverse scoring (strongly agree to disagree strongly). Item four requires a standardized score (strongly disagree to agree strongly)

Scale	Item
Price Consciousness	I am not willing to go the extra effort to find lower prices
	I will grocery shop at more than one store to take advantage of low prices
	The money saved by finding lower prices is usually not worth the time and effort
	I would never shop at more than one store to find low prices
	The time it takes to find low prices is usually not worth the effort

C.1.3 Coupon Proneness

Scale	Item
Coupon Proneness	Redeeming coupons make me feel good
	I enjoy clipping coupons out of the newspaper
	When I use coupons, I feel that I am getting a good deal
	I enjoy using coupons regardless of the amount I save by doing so
	Beyond the money I save, redeeming coupons give me a sense of joy

C.1.4 Sales Proneness

Scale	Item
Sale Proneness	If a product is on sale, that can be a reason for me to buy it
	When I buy a brand that is on sale, I feel that I am getting a good deal
	I have favourite brands, but most of the time I buy the brand that is on sale
	I am more likely to buy brands that are on sale
	Compared to most people, I am more likely to buy brands that are on special

C.1.5 Price Mavens

Scale	Item
Price Mavens ¹⁶²	People ask me for information about prices for different types of products
	I am considered somewhat of an expert when it comes to knowing the prices of products
	For many kinds of products, I would be better able than most people to tell someone where to shop to get the best buy
	I like helping people by providing them with price information about many types of products
	My friends think of me as a good source of price information
	I enjoy telling people how much they might expect to pay for different kinds of products

C.1.6 Price-Quality Schema

Scale	Item
Price-Quality Schema	Generally speaking, the higher the price of the product, the higher the quality
	The old saying “you get what you pay for” is true
	The price of a product is a good indicator of its quality
	You always have to pay a bit more for the best

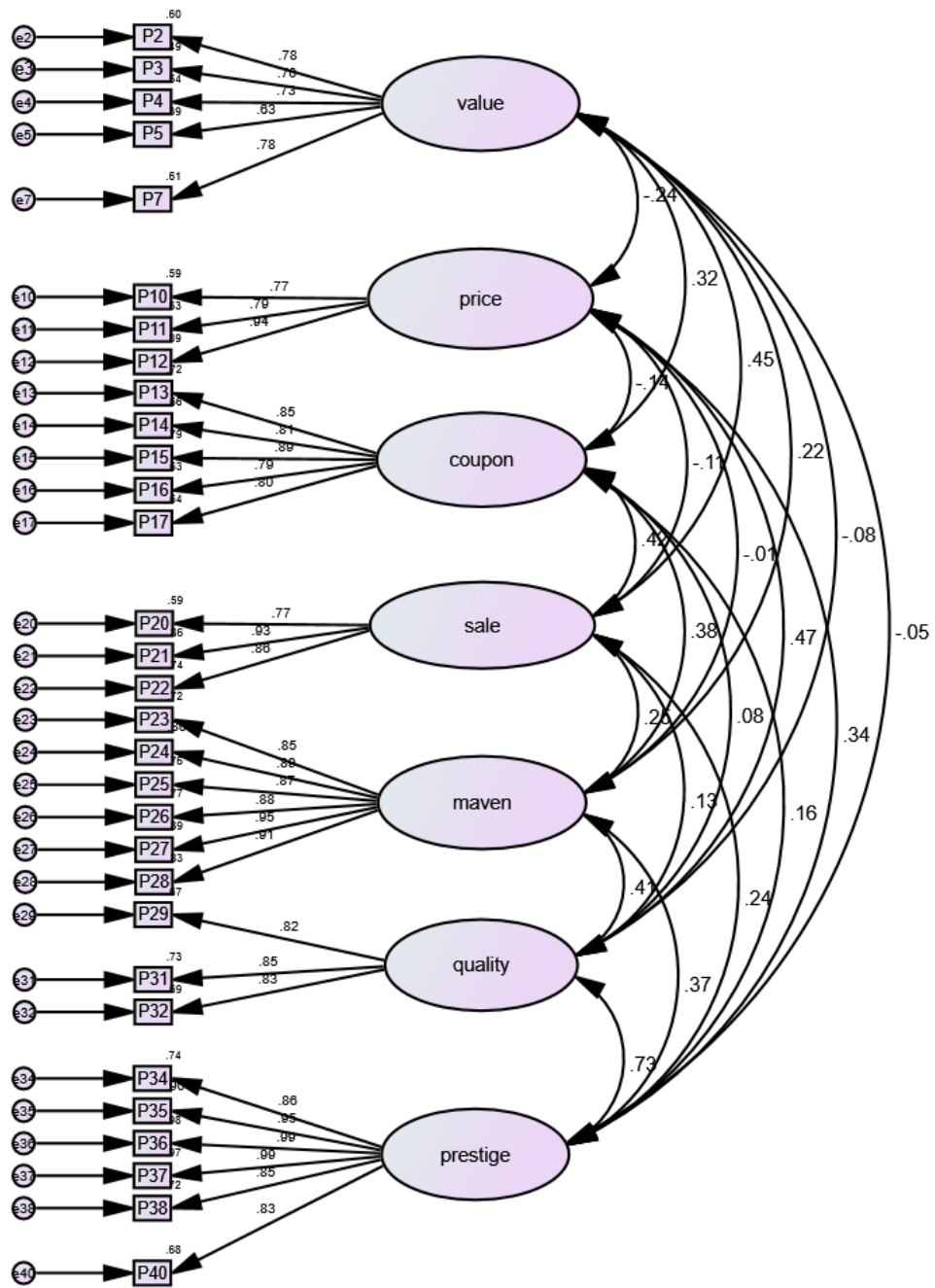
C.1.7 Prestige Sensitivity

Scale	Item
Prestige Sensitivity	People notice when you buy the most expensive brand of a product
	Buying a high price brand
	The price of a product is a good indicator of its quality
	You always have to pay a bit more for the best makes me feel classy
	I enjoy the prestige of buying a higher price product
	It says something to people when you buy the high-priced version of a product
	Your friends will think you are cheap if you consistently buy the lowest priced version of a product
	I think others make judgements about me by the kinds of products and brands I buy
	Even for a relatively inexpensive product, I think that buying a costly brand is impressive

¹⁶² The price mavenism scale was adapted from the “market maven” scale (Bearden et al., 2011)

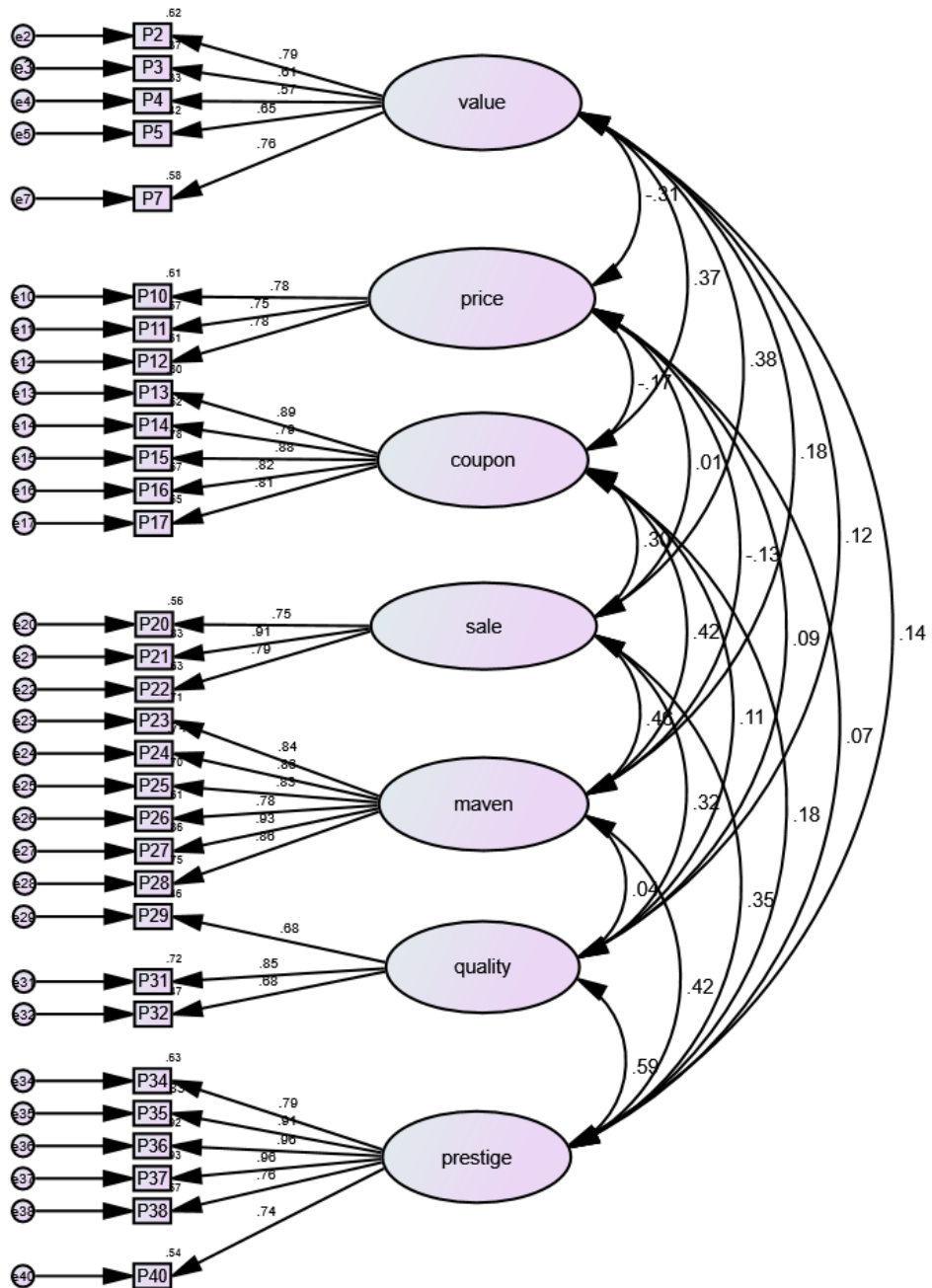
C.2 Price Perception Model – Caucasians

Price Perception Model - Caucasians



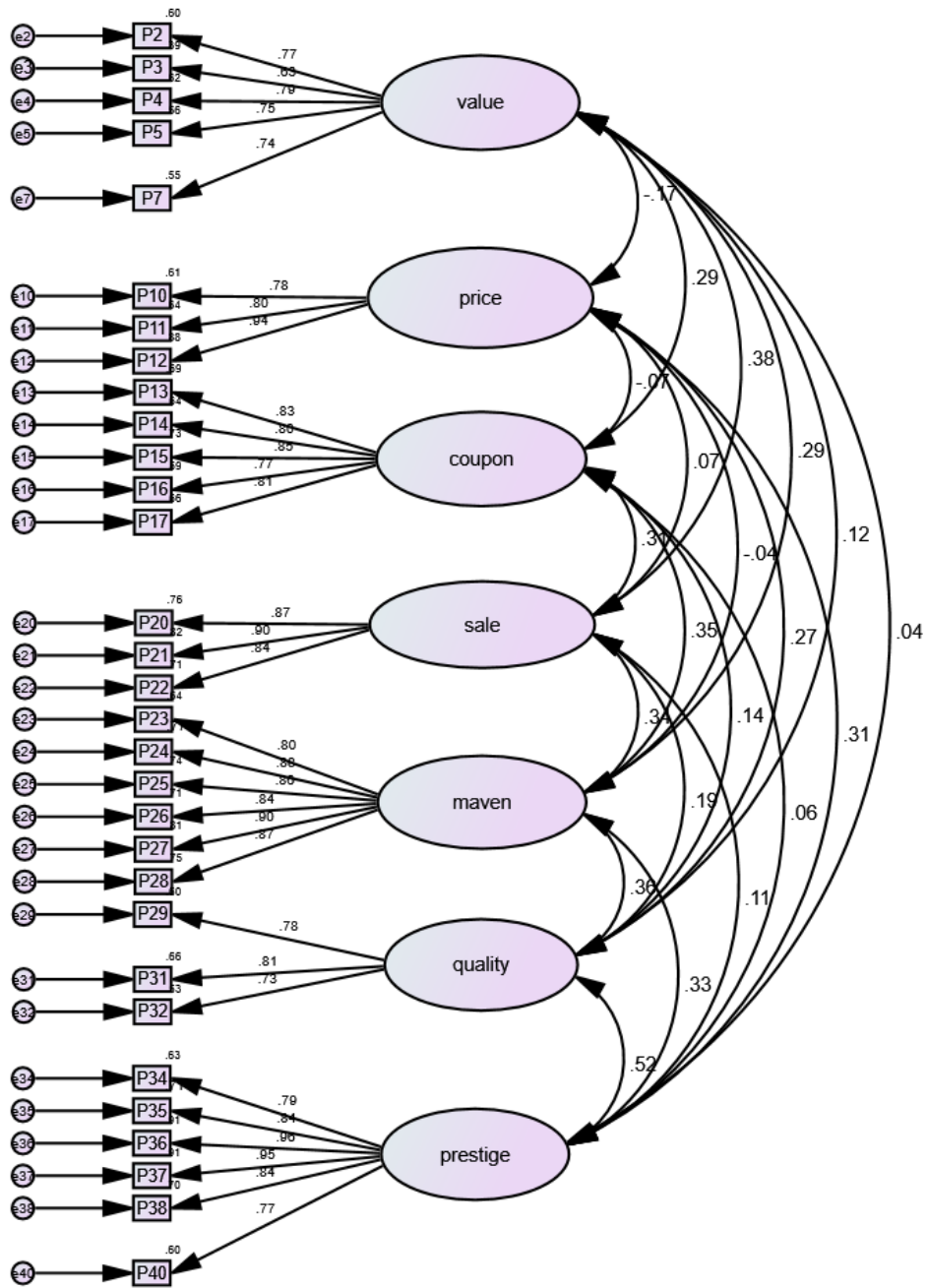
C.3 Price Perception Model – African-Americans

Price Perception Model - African-Americans



C.4 Price Perception Model – Hispanics

Price Perception Model - Hispanics



C.5 SEM Analysis – Estimates

In this section, the estimates as reported from IBM AMOS are reported.

C.5.1 Estimates – General Price Perception Model

Estimates (Price Perception Model)

Loadings: (Price Perception Model) ; $p < 0.001$

			Estimate	Standard Error (SE)	Critical Ratio (CR)	Significance (P)	Label
P5	<---	value	0.882	0.061	14.537	***	A5
P4	<---	value	0.714	0.048	14.907	***	A4
P3	<---	value	0.8	0.058	13.828	***	A3
P2	<---	value	1.102	0.066	16.815	***	A2
P12	<---	price	1				
P11	<---	price	0.846	0.045	18.978	***	A10
P10	<---	price	0.858	0.046	18.686	***	A9
P17	<---	coupon	1				
P16	<---	coupon	0.939	0.046	20.337	***	A14
P15	<---	coupon	0.884	0.038	23.096	***	A13
P14	<---	coupon	0.985	0.048	20.517	***	A12
P13	<---	coupon	0.873	0.039	22.536	***	A11
P22	<---	sale	1				
P21	<---	sale	1.119	0.048	23.403	***	A18
P20	<---	sale	1.024	0.049	20.723	***	A17
P27	<---	maven	1.046	0.032	32.198	***	A23
P26	<---	maven	0.897	0.035	25.781	***	A22
P25	<---	maven	0.879	0.032	27.21	***	A21
P24	<---	maven	0.931	0.033	28.58	***	A20
P32	<---	quality	1				
P31	<---	quality	1.018	0.061	16.794	***	A26
P29	<---	quality	1.026	0.064	16.005	***	A24
P38	<---	prestige	1.106	0.052	21.22	***	A32
P37	<---	prestige	1.326	0.049	26.892	***	A31
P36	<---	prestige	1.296	0.048	26.946	***	A30
P35	<---	prestige	1.192	0.049	24.303	***	A29
P7	<---	value	1				
P23	<---	maven	0.915	0.035	25.794	***	A19
P28	<---	maven	1				
P34	<---	prestige	1.05	0.049	21.219	***	A28
P40	<---	prestige	1				

Standardized Regression Weights: (Caucasians - Price Perception Mode)

			Estimate
P5	<---	value	0.673
P4	<---	value	0.69
P3	<---	value	0.641
P2	<---	value	0.784
P12	<---	price	0.885
P11	<---	price	0.783
P10	<---	price	0.77
P17	<---	coupon	0.806
P16	<---	coupon	0.794
P15	<---	coupon	0.872
P14	<---	coupon	0.8
P13	<---	coupon	0.857
P22	<---	sale	0.83
P21	<---	sale	0.914
P20	<---	sale	0.797
P27	<---	maven	0.923
P26	<---	maven	0.832
P25	<---	maven	0.855
P24	<---	maven	0.875
P32	<---	quality	0.755
P31	<---	quality	0.82
P29	<---	quality	0.76
P38	<---	prestige	0.817
P37	<---	prestige	0.967
P36	<---	prestige	0.968
P35	<---	prestige	0.902
P7	<---	value	0.762
P23	<---	maven	0.832
P28	<---	maven	0.881
P34	<---	prestige	0.817
P40	<---	prestige	0.783

Intercepts: (Caucasians - Price Perception Model); p < 0.001

	Estimate	Standard Error (S.E.)	Critical Ratio (CR)	Significance (P)	Label
P7	5.906	0.058	101.391	***	AMU7
P5	5.931	0.058	102.088	***	AMU5
P4	6.296	0.046	137.189	***	AMU4
P3	5.985	0.055	108.158	***	AMU3
P2	5.954	0.062	95.424	***	AMU2
P12	2.983	0.082	36.424	***	AMU12
P11	2.686	0.078	34.281	***	AMU11
P10	3.193	0.081	39.506	***	AMU10
P17	4.864	0.089	54.719	***	AMU17
P16	4.929	0.085	58.199	***	AMU16
P15	5.535	0.073	76.162	***	AMU15
P14	4.679	0.088	52.969	***	AMU14
P13	5.618	0.073	76.936	***	AMU13
P22	4.964	0.074	66.868	***	AMU22
P21	5.145	0.075	68.265	***	AMU21
P20	4.778	0.079	60.334	***	AMU20
P28	4.365	0.087	50.237	***	AMU28
P27	4.275	0.087	49.334	***	AMU27
P26	4.595	0.083	55.664	***	AMU26
P25	4.53	0.079	57.566	***	AMU25
P24	4.044	0.081	49.666	***	AMU24
P23	3.985	0.084	47.344	***	AMU23
P32	4.736	0.075	63.232	***	AMU32
P31	4.13	0.07	58.793	***	AMU31
P29	3.876	0.076	50.739	***	AMU29
P40	2.824	0.081	34.801	***	AMU40
P38	3.398	0.086	39.507	***	AMU38
P37	3.207	0.087	36.809	***	AMU37
P36	3.168	0.085	37.248	***	AMU36
P35	3.229	0.084	38.464	***	AMU35
P34	3.203	0.082	39.198	***	AMU34

Covariances: (Caucasians - Price Perception Mode); p < 0.001 is represented by ****

			Estimate	Standard Error (S.E.)	Critical Ratio (C.R.)	Significance (P)	Label
value	<-->	price	-0.377	0.089	-4.24	***	ccc1_3
value	<-->	coupon	0.541	0.09	6.024	***	ccc2_3
value	<-->	sale	0.571	0.081	7.084	***	ccc3_3
value	<-->	maven	0.407	0.09	4.518	***	ccc4_3
value	<-->	quality	0.068	0.069	0.992	0.321	ccc5_3
prestige	<-->	value	0.058	0.071	0.813	0.416	ccc6_3
price	<-->	coupon	-0.325	0.134	-2.426	0.015	ccc7_3
price	<-->	sale	0.007	0.115	0.062	0.95	ccc8_3
price	<-->	maven	-0.148	0.14	-1.062	0.288	ccc9_3
price	<-->	quality	0.634	0.117	5.409	***	ccc10_3
prestige	<-->	price	0.634	0.12	5.268	***	ccc11_3
coupon	<-->	sale	0.801	0.121	6.598	***	ccc12_3
coupon	<-->	maven	1.112	0.149	7.474	***	ccc13_3
coupon	<-->	quality	0.22	0.107	2.046	0.041	ccc14_3
prestige	<-->	coupon	0.321	0.112	2.869	0.004	ccc15_3
sale	<-->	maven	0.865	0.127	6.839	***	ccc16_3
sale	<-->	quality	0.387	0.096	4.041	***	ccc17_3
prestige	<-->	sale	0.472	0.1	4.715	***	ccc18_3
maven	<-->	quality	0.627	0.118	5.305	***	ccc19_3
prestige	<-->	maven	0.941	0.128	7.331	***	ccc20_3
prestige	<-->	quality	1.149	0.12	9.569	***	ccc21_3

Correlations: (Caucasians - Price Perception Mode)

			Estimate
value	<-->	price	-0.224
value	<-->	coupon	0.326
value	<-->	sale	0.4
value	<-->	maven	0.23
value	<-->	quality	0.052
prestige	<-->	value	0.039
price	<-->	coupon	-0.12
price	<-->	sale	0.003
price	<-->	maven	-0.051
price	<-->	quality	0.296
prestige	<-->	price	0.264
coupon	<-->	sale	0.347
coupon	<-->	maven	0.388
coupon	<-->	quality	0.104
prestige	<-->	coupon	0.135
sale	<-->	maven	0.352
sale	<-->	quality	0.213
prestige	<-->	sale	0.231
maven	<-->	quality	0.278
prestige	<-->	maven	0.371
prestige	<-->	quality	0.613

Variances: (Price Perception Model); p<0.001

	Estimate	Standard Error (S.E.)	Critical Ratio (C.R.)	Significance (P)	Label
value	1.027	0.107	9.558	***	v_value_aa
price	2.744	0.234	11.722	***	v_price_aa
coupon	2.683	0.246	10.892	***	v_coupon_aa
sale	1.981	0.178	11.138	***	v_sale_aa
maven	3.056	0.241	12.699	***	v_maven_aa
quality	1.669	0.179	9.346	***	v_quality_aa
prestige	2.109	0.198	10.666	***	v_prestige_aa
e7	0.744	0.061	12.111	***	v_a7
e5	0.963	0.07	13.752	***	v_a5
e4	0.575	0.043	13.513	***	v_a4
e3	0.941	0.067	14.14	***	v_a3
e2	0.784	0.068	11.492	***	v_a2
e12	0.757	0.111	6.847	***	v_a12
e11	1.24	0.106	11.688	***	v_a11
e15	0.659	0.057	11.561	***	v_a15
e14	1.469	0.108	13.623	***	v_a14
e13	0.741	0.061	12.177	***	v_a13
e22	0.895	0.078	11.488	***	v_a22
e21	0.487	0.073	6.63	***	v_a21
e20	1.195	0.094	12.668	***	v_a20
e28	0.885	0.066	13.318	***	v_a28
e26	1.096	0.077	14.327	***	v_a26
e25	0.87	0.062	13.938	***	v_a25
e24	0.809	0.06	13.467	***	v_a24
e23	1.138	0.079	14.323	***	v_a23
e32	1.259	0.106	11.901	***	v_a32
e31	0.845	0.088	9.609	***	v_a31
e29	1.288	0.109	11.767	***	v_a29
e40	1.329	0.086	15.51	***	v_a40
e38	1.284	0.084	15.337	***	v_a38
e37	0.257	0.026	9.715	***	v_a37
e36	0.235	0.025	9.459	***	v_a36
e35	0.686	0.048	14.344	***	v_a35
e34	1.159	0.076	15.337	***	v_a34

Squared Multiple Correlations: (Caucasians - Price Perception Mode)

	Estimate
P34	0.667
P35	0.814
P36	0.938
P37	0.935
P38	0.668
P40	0.613
P29	0.577
P31	0.672
P32	0.57
P23	0.692
P24	0.766
P25	0.731
P26	0.692
P27	0.853
P28	0.776
P20	0.635
P21	0.836
P22	0.689
P13	0.734
P14	0.639
P15	0.761
P16	0.631
P17	0.65
P10	0.593
P11	0.613
P12	0.784
P2	0.614
P3	0.411
P4	0.477
P5	0.454
P7	0.58

Appendix D CBC Analysis Survey

Cross Cultural Conjoint Analysis

Q1 Dear Participant,

Thanks for your attention. This is academic study looking at consumer's perceptions of prices among different cultural groups conducted by Jose Mendoza at Cranfield University in the United Kingdom. Please note that any personal information that we collect from you will be anonymized and therefore your responses cannot be traced back to you in any form.

This study has two parts. First, it will ask some ranking questions related to price perception and then it will ask you to answer a series of choice questions. If you would like to authenticate the bona fides of this study, please contact the supervisor of this research study:

Cranfield University

Many thanks for your kind participation

Jose Mendoza

Cranfield University

Q2 Section I – Demographics

In this brief section, we will ask simple questions about your age, gender and self-reported ethnicity.

Many thanks

Q3 What is your age range?

- < 18 years old
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- > 65 years old

Q4 What is your gender?

- Male
- Female
- Other / Do not want to disclose

Q5 What is your ethnicity?

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White or Caucasian
- Hispanic or Latino
- Other Ethnicity or Mixed Race

Q4 Where do you live? Which one of the following is the closest Metropolitan area to you?

- Chicago Metro (Chicago and Suburbs)
- New York Metropolitan area (Manhattan, New Jersey, Brooklyn, Bronx, Staten Island, Queens, Westchester)
- Los Angeles Metropolitan area
- Dallas / Ft. Worth Metropolitan area
- Other Metropolitan area
-

Q6 Section II - Price Perception Scales (1/7)

Value Consciousness

In this section, we will ask seven (7) questions. To response, you should drag the slider depending to whether you agree or disagree with the statement.

Q7 Value Consciousness

_____ I am very concerned about low prices, but I am equally concerned about product quality

_____ When grocery shopping, I compare the prices of different brands to be sure I get the best value for the money

_____ When purchasing a product, I always try to maximize the quality I get for the money I spend

_____ When I buy products, I like to be sure that I am getting my money's worth

_____ I generally shop around for lower prices on products, but they still must meet certain quality requirements before I will buy them

_____ When I shop, I usually compare the "price per ounce" information for brands I normally buy

_____ I always check prices at the grocery store to be sure I get the best value for the money I spend

Q8 Section II - Price Perception Scales (2/7)

Price Consciousness

In this section, we will ask five (5) questions. To response, you should drag the slider to the appropriate side of the scale depending on the extent to which you agree or disagree with the statements provided.

Q9 Price Consciousness

_____ I am not willing to go the extra effort to find lower prices

_____ I will grocery shop at more than one store to take advantage of low prices

_____ The money saved by finding lower prices is usually not worth the time and effort

_____ I would never shop at more than one store to find low prices

_____ The time it takes to find low prices is usually not worth the effort

Q10 Section II - Price Perception Scales (3/7)

Coupon Proneness

In this section, we will ask five (5) questions. To response, you should drag the slider depending to whether you agree or disagree with the statement.

Q11 Coupon Consciousness

_____ Redeeming coupons makes me feel good

_____ I enjoy clipping coupons out of the newspaper

_____ When I use coupons, I feel that I am getting a good deal

_____ I enjoy using coupons regardless of the amount I save by doing so

_____ Beyond the money I save, redeeming coupons, gives me a sense of joy

Q12 Section II - Price Perception Scales (4/7)

In this section, we will ask five (5) questions. To response, you should drag the slider to the appropriate side of the scale depending on the extent to which you agree or disagree with the statements provided.

Q13 Sale Proneness

- _____ If a product is on sale, that can be a reason for me to buy it
- _____ When I buy a brand that is on sale, I feel that I am getting a good deal
- _____ I have favorite brands, but most of the time, I buy the brand that is on sale
- _____ I am more likely to buy brands that are on sale
- _____ Compared to most people, I am more likely to buy brands that are on special offer

Q14 Section II - Price Perception Scales (5/7)

Price Maven

In this section, we will ask six (6) questions. To response, you should drag the slider to the appropriate side of the scale depending on the extent to which you agree or disagree with the statements provided

Q15 Price Maven

- _____ People ask me for information about prices for different types of products
- _____ I am considered somewhat of an expert when it comes to knowing the prices of products
- _____ For many kind of products, I would be better able than most people to tell someone where to shop to get the best buy
- _____ I like helping people by providing them with price information about many type of products
- _____ My friends think of me as a good source of price information
- _____ I enjoy telling people how much they might expect to pay for different kind of products

Q16 Section II - Price Perception Scales (6/7)

Price-Quality

In this section, we will ask four (4) questions. To response, you should drag the slider to the appropriate side of the scale depending on the extent to which you agree or disagree with the statements provided.

Q17 Price-Quality

_____ Generally speaking, the higher the price of the product, the higher the quality

_____ The old saying " you get what you pay for" is generally true

_____ The price of a product is a good indicator of its quality

_____ You always have to pay a bit more for the best

Q18 Section II - Price Perception Scales (7/7)

Prestige Sensitivity

In this section, we will ask eight (8) questions. To response, you should drag the slider to the appropriate side of the scale depending on the extent to which you agree or disagree with the statements provided.

Q19 Prestige Sensitivity

_____ People notice when you buy the most expensive brand of a product

_____ Buying a high price brand makes me feel good about myself

_____ Buying the most expensive brand of a product makes me feel classy

_____ I enjoy the prestige of buying a high priced product

_____ I enjoy the prestige of buying a high priced product

_____ It says something to people when you buy the higher priced version of a product

_____ Your friends will think you are cheap if you consistently buy the lowest priced version of a product

_____ Even for a relatively inexpensive product, I think that buying a costly brand is impressive

Q20 Section III - Choice Questions

In this final section, we will ask you to make one choice from a total of four (4) choices. Please make your choice as if you were actually buying the product.

We will ask questions regarding the following brand of refrigerated juices:

We will present two questions at the time.

Q21 Please, select the choice that is most attractive to you (1/20)

Brand	Florida's Natural	Brand	Sunny D	Brand	Tropicana
Sweetness	Not Sweet	Sweetness	Not Sweet	Sweetness	Not Sweet
Flavor	Natural	Flavor	Natural	Flavor	Natural
Price	\$ 4.00	Price	\$ 3.00	Price	\$ 2.00

Q22 Please, select the choice that is most attractive to you (2/20)

Brand	Tampico	Brand	Simply Orange	Brand	Tropicana
Sweetness	Not Sweet	Sweetness	Not Sweet	Sweetness	Sweet
Flavor	From Concentrate	Flavor	From Concentrate	Flavor	Natural
Price	\$ 2.50	Price	\$ 3.50	Price	\$ 4.50

Q23 Please, select the choice that is most attractive to you (3/20)

Brand	Sunny D	Brand	Minute Maid	Brand	Tampico
Sweetness	Sweet	Sweetness	Very Sweet	Sweetness	Sweet
Flavor	From Concentrate	Flavor	Natural	Flavor	From Concentrate
Price	\$ 4.00	Price	\$ 4.00	Price	\$ 4.00

Q24 Please, select the choice that is most attractive to you (4/20)

Brand	Tampico	Brand	Minute Maid	Brand	Florida's Natural
Sweetness	Very Sweet	Sweetness	Sweet	Sweetness	Sweet
Flavor	Natural	Flavor	From Concentrate	Flavor	Natural
Price	\$ 3.00	Price	\$ 2.00	Price	\$ 3.50

Q28 Please, select the choice that is most attractive to you (5/20)

Brand	Tropicana
Sweetness	Sweet
Flavor	From Concentrate
Price	\$ 3.00

Brand	Minute Maid
Sweetness	Not Sweet
Flavor	From Concentrate
Price	\$ 4.50

Brand	Simply Orange
Sweetness	Sweet
Flavor	From Concentrate
Price	\$ 2.50

Q25 Please, select the choice that is most attractive to you (6/20)

Brand	Simply Orange
Sweetness	Very Sweet
Flavor	From Concentrate
Price	\$ 2.00

Brand	Florida's Natural
Sweetness	Very Sweet
Flavor	From Concentrate
Price	\$ 4.50

Brand	Tropicana
Sweetness	Very Sweet
Flavor	From Concentrate
Price	\$ 2.50

Q30 Please, select the choice that is most attractive to you (7/20)

Brand	Sunny D
Sweetness	Not Sweet
Flavor	Natural
Price	\$ 3.00

Brand	Florida's Natural
Sweetness	Unsweet
Flavor	Natural
Price	\$ 4.00

Brand	Tampico
Sweetness	Not Sweet
Flavor	From Concentrate
Price	\$ 2.50

Q31 Please, select the choice that is most attractive to you (8/20)

Brand	Tampico
Sweetness	Sweet
Flavor	From Concentrate
Price	\$ 4.00

Brand	Tropicana
Sweetness	Sweet
Flavor	Natural
Price	\$ 4.50

Brand	Simply Orange
Sweetness	Not Sweet
Flavor	From Concentrate
Price	\$ 3.50

Q32 Please, select the choice that is most attractive to you (9/20)

Brand	Minute Maid
Sweetness	Very Sweet
Flavor	Natural
Price	\$ 4.00

Brand	Sunny D
Sweetness	Sweet
Flavor	From Concentrate
Price	\$ 4.00

Brand	Tampico
Sweetness	Very Sweet
Flavor	Natural
Price	\$ 3.00

Q33 Please, select the choice that is most attractive to you (10/20)

Brand	Simply Orange
Sweetness	Sweet
Flavor	Natural
Price	\$ 2.50

Brand	Florida's Natural
Sweetness	Sweet
Flavor	Natural
Price	\$ 3.50

Brand	Minute Maid
Sweetness	Sweet
Flavor	From Concentrate
Price	\$ 2.00

Q34 Please, select the choice that is most attractive to you (11/20)

Brand	Minute Maid
Sweetness	Unsweet
Flavor	From Concentrate
Price	\$ 4.50

Brand	Tropicana
Sweetness	Sweet
Flavor	From Concentrate
Price	\$ 3.00

Brand	Simply Orange
Sweetness	Very Sweet
Flavor	From Concentrate
Price	\$ 2.00

Q35 Please, select the choice that is most attractive to you (12/20)

Brand	Sunny D
Sweetness	Very Sweet
Flavor	From Concentrate
Price	\$ 3.50

Brand	Tropicana
Sweetness	Very Sweet
Flavor	From Concentrate
Price	\$ 2.50

Brand	Florida's Natural
Sweetness	Very Sweet
Flavor	From Concentrate
Price	\$ 4.50

Q36 Please, select the choice that is most attractive to you (13/20)

Brand	Simply Orange
Sweetness	No Sweet
Flavor	From Concentrate
Price	\$ 3.50

Brand	Tampico
Sweetness	No Sweet
Flavor	From Concentrate
Price	\$ 2.50

Brand	Sunny D
Sweetness	No Sweet
Flavor	Natural
Price	\$ 3.00

Q37 Please, select the choice that is most attractive to you (14/20)

Brand	Tropicana
Sweetness	Sweet
Flavor	Natural
Price	\$ 4.50

Brand	Tampico
Sweetness	Sweet
Flavor	From Concentrate
Price	\$ 4.00

Brand	Minute Maid
Sweetness	Very Sweet
Flavor	Natural
Price	\$ 4.00

Q38 Please, select the choice that is most attractive to you (15/20)

Brand	Minute Maid
Sweetness	Sweet
Flavor	From Concentrate
Price	\$ 2.00

Brand	Tampico
Sweetness	Very Sweet
Flavor	Natural
Price	\$ 3.00

Brand	Sunny D
Sweetness	Sweet
Flavor	From Concentrate
Price	\$ 4.00

Q39 Please, select the choice that is most attractive to you (16/20)

Brand	Florida's Natural
Sweetness	Sweet
Flavor	Natural
Price	\$ 3.50

Brand	Simply Orange
Sweetness	Sweet
Flavor	Natural
Price	\$ 2.50

Brand	Minute Maid
Sweetness	No Sweet
Flavor	From Concentrate
Price	\$ 4.50

Q40 Please, select the choice that is most attractive to you (17/20)

Brand	Florida's Natural
Sweetness	Very Sweet
Flavor	From Concentrate
Price	\$ 4.50

Brand	Simply Orange
Sweetness	Very Sweet
Flavor	From Concentrate
Price	\$ 2.00

Brand	Tropicana
Sweetness	Sweet
Flavor	From Concentrate
Price	\$ 3.00

Q41 Please, select the choice that is most attractive to you (18/20)

Brand	Tropicana
Sweetness	Very Sweet
Flavor	From Concentrate
Price	\$ 2.50

Brand	Sunny D
Sweetness	Very Sweet
Flavor	From Concentrate
Price	\$ 3.50

Brand	Florida's Natural
Sweetness	No Sweet
Flavor	From Concentrate
Price	\$ 3.00

Q42 Please, select the choice that is most attractive to you (19/20)

Brand	Tropicana
Sweetness	No Sweet
Flavor	Natural
Price	\$ 2.00

Brand	Florida's Natural
Sweetness	No Sweet
Flavor	From Concentrate
Price	\$ 3.00

Brand	Sunny D
Sweetness	Very Sweet
Flavor	From Concentrate
Price	\$ 3.50

Q43 Please, select the choice that is most attractive to you (20/20)

Brand	Florida's Natural
Sweetness	No Sweet
Flavor	From Concentrate
Price	\$ 3.00

Brand	Tropicana
Sweetness	No Sweet
Flavor	Natural
Price	\$ 2.00

Brand	Florida's Natural
Sweetness	No Sweet
Flavor	Natural
Price	\$ 4.00

Q27 Thanks for your participation!

Your participations were recorded successfully.

We appreciate your participation.

Thanks

The Research Team