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**OPERATIONALISING LUXURY IN THE
PREMIUM AUTOMOTIVE INDUSTRY**

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Supervisor: S. Evans
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ENGD THESIS

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**Operationalising Luxury in the Premium
Automotive Industry**

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ABSTRACT



This thesis presents an Action Research project investigating the use of customers' perceptions of premium and luxury cars within the premium automotive industry. The research was sponsored by Jaguar Land Rover (JLR), a UK-based automotive manufacturer.

An inductive, phenomenological approach was adopted in which JLR's Premiumness Research Programme (PRP) was used as a case study to build an understanding of the consumer's perception of luxury, to discover how to communicate this understanding within the business, and to determine how it could be integrated into the NPD process.

A passive exploratory study was conducted to understand JLR's PRP work, to seek new insights about the nature of customer's reactions when evaluating luxury and premium cars, and to assess JLR's approach in conducting the PRP. An interventionist descriptive study was conducted to probe for deeper insights into how successful JLR's research and dissemination process had been within the company, to establish how the wider NPD community interacted with the data, and to develop and test new ideas and tools that enhanced the utility and accessibility of the PRP data.

The research generated 58 Research Observations and 36 individual insights that challenged conventional wisdom about how the voice of the customer (VoC) can be captured and used in the NPD process.

JLR's PRP methodology was revealed as a powerful multi-method technique for acquiring data about consumers' expectations of luxury automotive brands and products, their reactions when evaluating luxury and premium vehicles, and their emotional satisfaction with features and attributes of luxury and premium vehicles. Limitations in JLR's ability to process and operationalise such data lead to the development of a Premiumness Verbatims Database tool which enabled the wider NPD community to access the PRP knowledge in a safe and meaningful way by considering the translation and utility of subjective VoC data.

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ABBREVIATIONS

APEAL	Automotive Performance Execution and Layout (JD Power survey)
BiC	Best in Class
DPPI 07	Designing Pleasurable Products and Interfaces Conference (2007)
E-	Number of emotionally negative comments
E+	Number of emotionally positive comments
FCPA	Ford Consumer Product Audit
FMC	Ford Motor Company
GPDS	Global Product Development System
GQRS	Global Quality Review System
IQS	Initial Quality Survey (JD Power survey)
JLR	Jaguar Land Rover
LBSI	Luxury Brand Status Index
LCEI	Luxury Brand Experience Index
MRO	Market Research Office
MY	Model Year
NA	North America
NCBS	New Car Buyer Survey
NetE	Premiumness metric, derived from subtracting the number of negative comments (E-) from the number of positive comments (E+).
NPD	New Product Development
NPI	New Product Introduction
NQPQ	Non Quantifiable Product Qualities
NVES	New Vehicle Experience Survey
PALS	Product Attribute Leadership Strategy
PRP	Premiumness Research Programme
PQ	Perceived Quality
PUV	Perceived Use Value
QFD	Quality Function Deployment
S&D	Surprise and Delight
TGW	Things gone wrong
TL	Trim Level
TVM	Total Value Management
VoC	Voice of the Customer
WiC	Worst in Class

1 INTRODUCTION



Aim To introduce the reader to the research area, to provide an overview of the aims of the research and to describe the structure of the thesis.

1.0 Chapter Structure

The chapter begins with an overview of the research project, introducing the sponsoring company and providing a synopsis of the company research activities upon which this thesis is based. The focus and objectives of the research project are presented, together with an indication of the areas in which this thesis is expected to provide a contribution to knowledge and practice. The chapter concludes with a description of the thesis structure.

1.1 Research Project Overview

This thesis presents an Engineering Doctorate (EngD) research project investigating how customers' perceptions of premium and luxury cars could be operationalised within the premium automotive industry.

The EngD research project began December 2005 at Cranfield University, UK, and was sponsored by Jaguar Land Rover (JLR), a UK-based automotive manufacturer.

When this project began, JLR was part of Ford's Premier Automotive Group (PAG). PAG comprised the Jaguar, Land Rover, Aston Martin and Volvo brands, representing Ford's luxury and premium offerings to the automotive consumer. PAG no longer exists as a group, and JLR was sold to Tata Motors in June 2007; however, its target market remains the premium and luxury automotive sector.

JLR recognised that to be competitive in the premium and luxury automotive markets, they needed to be able to capture and understand what premium and luxury mean to their customers, and to be able to articulate and incorporate this successfully and appropriately into their products.

JLR's Market Research Office (MRO) therefore commissioned a series of clinics to collect customer reactions to and ratings of premium and luxury cars, referred to as the Premiumness Research Programme. The Premiumness Research Programme (PRP) aimed to identify those product attributes and characteristics which contributed to customers' perceptions of premiumness in the high end automotive market.

This EngD research project uses the Premiumness Research Programme as a case study to identify how a subjective concept such as luxury can be embedded within a complex product design and development process by considering the translation and utility of subjective “voice of the customer” (VoC) data.

1.2 JLR’s Premiumness Research Programme

Between 2000 and 2005, JLR¹ and Volvo² conducted independent research to establish what the terms “premium” and “luxury” mean to the public [1] [2] [3] [4]. These studies found distinct differences in consumers’ ability to verbalize these concepts, and found that the term “premium” was not readily used by customers to describe automotive products.

A more recent qualitative study by JLR considered what premiumness meant from the customer’s perspective [5]. This research was known as “Premiumness Stage 1”, and its findings are described in Appendix A. This work established that the Jaguar and Land Rover brands were not perceived as luxury in the eyes of the customer, representing a significant competitive disadvantage. The study identified premiumness as a prerequisite for luxury; it made some suggestions as to what defines premiumness, but could find no existing articulation of brands in terms of luxury or premiumness, and no system to measure the luxury level or premiumness of vehicles or brands or nameplates (models).

JLR therefore recognised that further research was required to articulate a coherent and unambiguous understanding of premiumness and luxury, and to develop a methodology by which appropriate levels of premiumness and luxury could be re-established into the Jaguar and Land Rover brands. This led JLR to conduct two further research clinics that focussed specifically on premium and luxury cars.

The research process and reported findings of the first of these, Premiumness Stage 2, are described in Appendix B. This research clinic gathered three types of data from customers, combining elements of the Stage 1 research approach with actual product evaluation: how automotive brands are perceived relative to each other in terms of high-end versus mass-produced offerings (as per Stage 1), what customers instinctively say when viewing premium and luxury cars (product evaluation) and finally how customers rate specific attributes for those cars they viewed (product evaluation element).

The second additional clinic (L486/L538) followed the same process as Stage 2, but rather than looking at a range of premium and luxury cars, it looked specifically at the recently-launched Land Rover Freelander 2 and the competition set for 2 new Land Rover models. The research process and reported findings are described in Appendix C.

¹ Positioned at the time as Ford’s luxury brand.

² Representing Ford’s premium product offering.

In parallel with these two studies, this EngD project was instigated to evaluate JLR's PRP processes and understand how to best to exploit the data collected. This EngD research project therefore uses JLR's Stage 2 and L486/L538 premiumness programmes as case studies.

The relationship between JLR's PRP work and this EngD project is somewhat complex: they represent separate but related research activities. Stage 1 of the PRP was conducted by JLR prior to the commencement of this EngD project. The Stage 2 research clinics and initial findings were developed and conducted by JLR during the initial phase of this EngD project. The L486/L538 research clinics were developed and conducted collaboratively to enable initial feedback from the EngD research to inform the process. However, the detailed analyses conducted within Chapters 4 and 5 of this thesis were conducted solely by the researcher for the purposes of this EngD, in which JLR are the subject of the study; the EngD research does not form part of JLR's PRP activities. This demarcation is discussed further in Chapter 3 (section 3.4, page 73).

1.3 Organisational Context

JLR operates a programme delivery process for new product development that is based on Ford's Global Product Development System (GPDS)", the purpose of which is to develop the product and product programme that satisfies all identified customer requirements.

GPDS is a scalable framework that follows the classic V-systems engineering approach, with a series of gateways, events and deliverables (including inviolables) that each programme must achieve. Its four main phases are *definition, design, verification and launch*, and *manage*.

A seven-stage target definition process (Figure 1) is used to translate customer, corporate and regulatory requirements into actionable, measurable objectives.

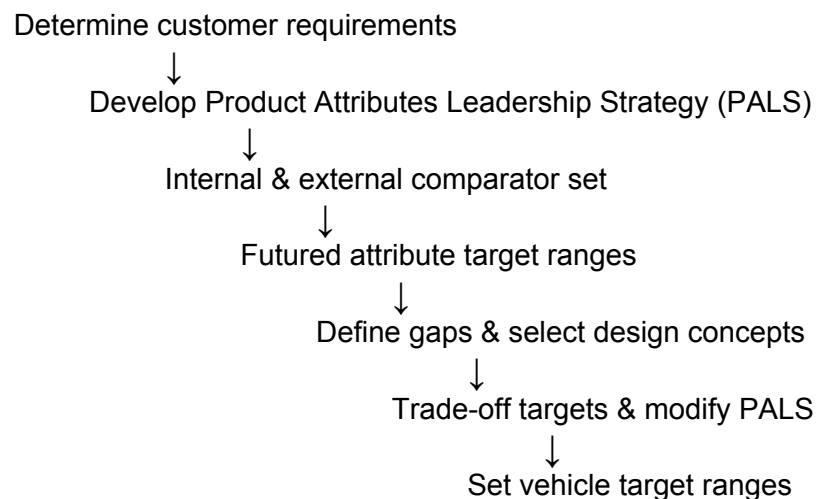


Figure 1 Target Definition

The Product Attributes Leadership Strategy (PALS) is used to manage and cascade these targets. Top level attributes (Figure 2) are used to describe the

vehicle in “customer terms”, which are then broken down into finer levels of granularity and used to define the vehicle design specification.

- Vehicle Dynamics;
- Performance, Economy & Driveability;
- Safety & Security;
- NVH;
- Perceived Quality;
- Durability & Reliability;
- Cost of Ownership;
- Environmental Impact;
- Accommodation and Usability;
- Infotainment & HMI;
- All-Weather Comfort & Vision;
- Off Road Capability (Land Rover only);
- Design & Appearance.

Figure 2 PALS Level 1 Attributes

Each of these level 1 attributes has a single owner, and an “attribute council” to manage them. A breakdown of the first three tiers of the PALS attributes is provided at Appendix D.

Each attribute is analysed in terms of their relative importance to the particular vehicle programme. The process is lead by the Market Research Office. PALS are documented at the primary brand level, the nameplate segment, the current nameplate in the market and for each development programme.

Each attribute is assigned one of three target levels:

- Leadership (L) attributes that should set the brand apart;
- Among the Leaders (A) brand must be as good as the best in the competitive set;
- Competitive (C) brand must be in line with the competitive set;

The MRO uses a number of tools to manage the PALS process, including the development of customer profiles, customer clinics and surveys. The process was developed for the Ford brand, and is successful and appropriate for mass-produced cars, but needs to be viewed through a “luxury lens” for JLR nameplates.

Overall vehicle targets are cascaded into vehicle programmes down to component level, using a defined hierarchy (Figure 3).

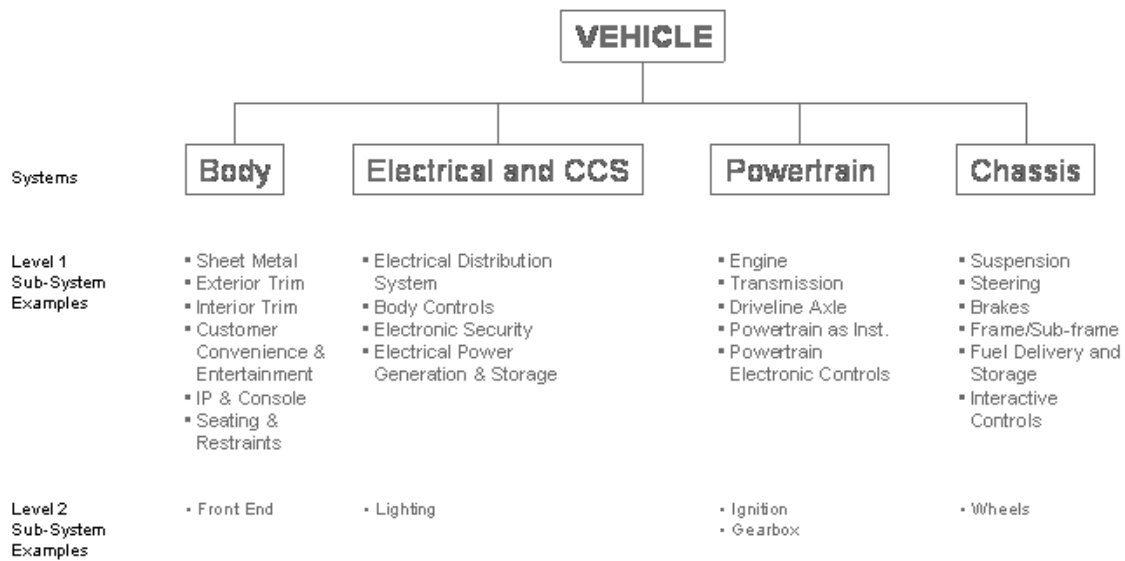


Figure 3 Typical JLR Vehicle Partitioning

Vehicle programme teams implement a matrix structure, combining system level teams to manage programme module (broadly in line with the partitioning above) and cross-functional teams that manage “whole vehicle” issues and programme attributes..

1.4 Research Scope

Luxury and premiumness are concepts that can be applied at a product, industry, market or global level. It is therefore necessary to constrain the scope of this research to a manageable size.

While an understanding of luxury and premiumness could be informed through consideration of a range of luxury products and markets, the remit of this research is concerned with articulating and operationalising luxury for the automotive industry, focussing on the UK and North American (NA) markets.

In particular, the research concentrates on JLR’s product offerings and product development processes, including those functions within JLR that impact on the product development processes.

1.5 Aims and Objectives

This EngD research project was instigated to address three main aims: to understand how consumers perceive luxury in the automotive market, to discover how to communicate this understanding within the business, and to determine how it could be integrated into the NPD process.

It was recognised that to be effective in the business the outcomes of this research needed to be embedded into the JLR mindset. The insights gained from this research needed to provide a body of evidence that could be used to reduce the need for assumptions (guesswork) about how customers perceive luxury within the NPD target management process. A more effective target setting strategy would ultimately impact the bottom line by focussing and optimising cost and resource expenditure.

A set of research objectives were therefore developed for this EngD research project:

- RO1** *Derive a flexible model of luxury in the context of the premium automotive industry;*
- RO2** *Evaluate the effectiveness and validity of the JLR PRP as a robust and useable technique for the assessment of luxury in vehicles and brands.*
- RO3** *Explore how JLR PRP datasets might be better exploited within the company.*
- RO4** *Specify and develop a toolset to enable appropriate levels of premiumness and luxury to be re-established into the Jaguar and Land Rover brands.*
- RO5** *Evaluate the toolset by implementing it within the New Product Introduction Process for at least one new vehicle development programme.*

These objectives were developed into an initial framework (Figure 4) to demonstrate the interrelation of those objectives that relate to the completion of the EngD (shown in blue), and those that are driven by JLR's needs (shown in red). Objectives that are mutually relevant are shown in purple. Bold dotted lines represent the opportunity to enable some level of direct access to data³ by designers and engineers. This framework was invaluable as a communication tool in fostering an understanding of both the research and the EngD process within JLR, giving a clearer idea of what was trying to be achieved.

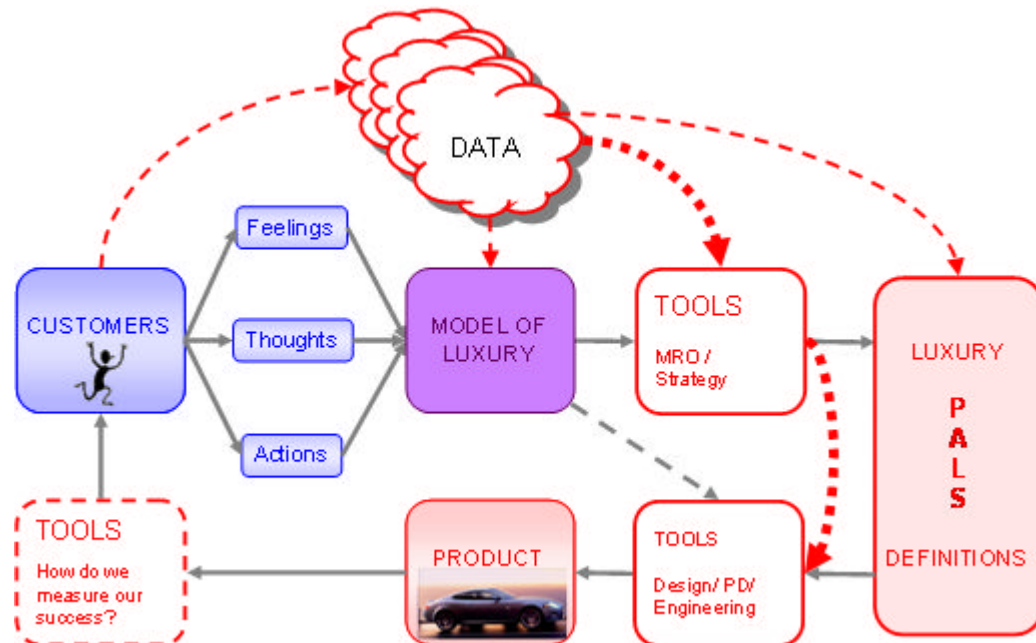


Figure 4 Initial Project Framework

³ Data in this case refers to data collected from customers by JLR's PRP, rather than data collected about the PRP by this EngD research project.

Figure 4 also provided an idea of the nature of the intended project outcomes. JLR expected the main deliverables to be a definition or model of luxury, a process for incorporating luxury attributes into NPD and a set of modifications to the PALS process. However, it was recognised that this could restrict the EngD research project and limit its effectiveness, so the exact format and content of these deliverables was deliberately left unconstrained.

1.6 Research Questions

The following research questions were developed with JLR to answer the research objectives:

- RQ1** *What makes a brand premium or luxury?*
- RQ2** *What builds luxury and premiumness, and what factors erode/jeopardise them?*
- RQ3** *How are JLR brands evaluated in terms of luxury and premiumness?*
- RQ4** *What methods or interventions can be used to improve product development such that vehicles increase their level of luxury/premiumness?*
- RQ5** *How do differences in geographical market segment, brand and model affect this understanding of luxury and premiumness and customer expectation?*

The interrelations between the Research Objectives (ROs) and Research Questions (RQs) are illustrated in Figure 5 below.

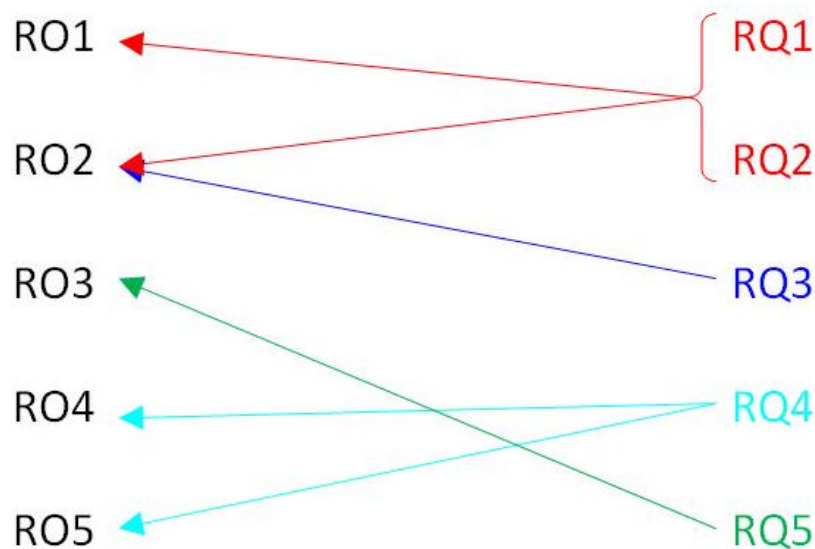


Figure 5 Linkages between ROs and RQs

1.7 Definitions

The subject of this thesis deals with subjective and intangible concepts, and uses terminology that has different meanings to individual readers in particular contexts. Sometimes the context in which the terms are used is sufficient to

1.8 Research Process Outline

Much of the literature pertaining to the voice of the customer, such as Quality Function Deployment (QFD) [7] and Kansei [8], focuses on the use of closed questions, numerical scales, and statistical methods to relate customer needs or reactions (emotions) to specific product features. Customer needs or reactions are often derived from data collected in an artificial, clinical environment, concentrating on individual product features, which fails to capture the meaning and context that accompany that data. This loss of context necessitates potentially flawed assumptions being made about the causal relationships between customer reactions and product features downstream in the new product development process.

JLR's premiumness research programme provided an opportunity to observe a mixed-method approach to investigating consumers' perceptions of luxury and premiumness in a naturalistic product evaluation setting.

The research process therefore adopted a two stage approach. The first stage was an Exploratory Study which examined the planning, implementation, analysis and dissemination of JLR's PRP process. A passive approach was adopted using observation and document analysis methods to develop an understanding of the nature of customer evaluations of luxury and premium vehicles, and the company environment in which the PRP had been conducted. The second stage was a Descriptive Study in which a number of interventions were implemented to develop a detailed understanding of how the PRP data and its findings could be used within the company environment to inform the target setting and product development processes.

1.9 Expected Areas of Contribution

The purpose of this EngD is to make contributions both to knowledge and to practice.

This EngD Research Project was instigated to address a specific set of problems for JLR: the lack of understanding of what luxury or premiumness mean to the consumer in the automotive context, and the lack of tools to manage the luxury "attribute" during the new product development (NPD) process.

The intended contribution of this research to practice is therefore is to bridge the gap between customer voice and the key functions within the business by providing a methodology by which a coherent understanding of how customers perceive luxury can be embedded in the working practices and mindsets of all parties that influence the product (Figure 6).

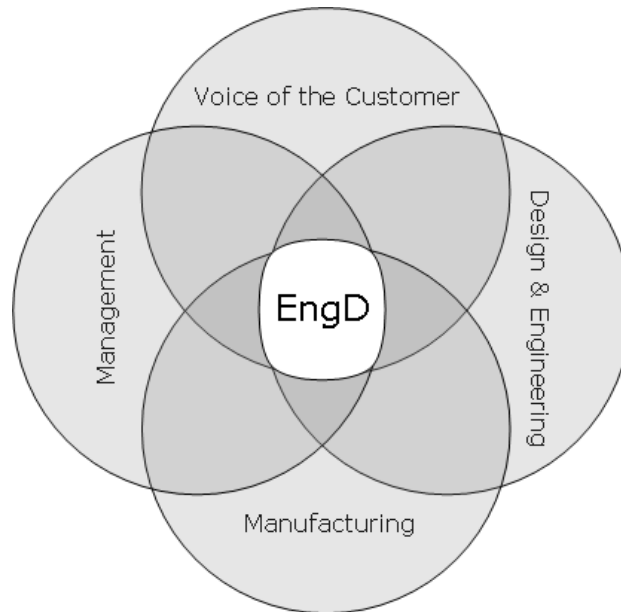


Figure 6 Contribution to Practice

The intended contribution of this research to knowledge is to generate new understanding of the complex phenomenon of customer perception of luxury and premiumness in an automotive context, using an inductive approach to develop new insights from the data about naturalistic customer product evaluation techniques, the nature of customer perception of luxury, and the use of qualitative customer data in the new product development process.

This contribution takes the form of an accumulation of a number of observations and insights. These are highlighted in the thesis as “*Research Observations*”, and appear as either introductory or summary statements as appropriate to the context in which they occur.

1.10 Thesis Structure

This thesis presents the insights and observations resulting from an EngD research project that uses JLR’s Premiumness Research Programme as a case study, and is presented in 7 chapters:

Chapter 1 - Introduction

This chapter provides an overview of the research area together with a summary of the industrial context in which the research has been conducted. The research approach and area of contribution to knowledge and practice are outlined.

Chapter 2 - Literature Review

This chapter establishes the state of the art in those research fields that help establish an understanding of luxury and premiumness and how these concepts are perceived by people, and examines existing tools for managing subjective customer views within the new product development environment. The

literature is discussed in relation to the Research Objectives and Questions, and gaps are identified.

Chapter 3 - Research Methodology

This chapter discusses the context in which this EngD research project has been designed, and outlines the process of designing a research methodology, the factors that should be considered and the decisions that must be made. Each aspect is discussed both in terms of the EngD research project and JLR's Premiumness Research Programme.

Chapter 4 - Exploratory Study - A Passive Observation of JLR's Premiumness Research Programme

This chapter provides an appraisal of JLR's Premiumness Research Programme, identifying strengths and weaknesses of the planning, implementation and dissemination approaches used. An overview of the findings of the PRP are provided in Appendix A to Appendix C.

Chapter 5 - Descriptive Study - Interviews and Interventions

This chapter describes three interventions which were conducted to establish designer, engineer and marketing needs from the research, to assess the usability of the raw data, and to develop and test new ideas to create deeper, richer and more focussed knowledge from the data. Finally it considers how the data can be shared more effectively within the NPD community.

Chapter 6 - Operationalising Luxury In JLR

This chapter describes the Premiumness Verbatims Database tool which was developed to address problems of utility of the PRP data and accessibility of the findings by non-experts. The use of the PRP approach to operationalising luxury within JLR is then discussed.

Chapter 7 - Conclusion

This chapter describes how each of the research objectives have been met by the research, and presents the novelty and contributions to knowledge that have resulted from it. The strengths and weaknesses of the work are considered and recommendations for future research are made.

2 LITERATURE REVIEW



Aim To review and critique the state of the art of the literature pertaining to luxury and premiumness, the relationship between people and product, and operationalising the voice of the customer. To identify the gaps in existing knowledge that this research attempts to address.

2.0 Chapter Structure

The chapter begins with an overview of the process used to identify the scope and sources of literature to be examined. Existing definitions and models of luxury and premiumness from both academia and practice are discussed and limitations identified. The review then considers the relationship between people and product, discussing the nature of perception, consumer behaviour, and subjective concepts such as hedonism, delight and emotion. leading the discussion to more applied concepts such as Kansei and brand attributes. Tools that capture and/or incorporate the voice of the customer through evaluation, measurement or empathy are then assessed. The review concludes with a discussion of the gaps identified in the knowledge.

2.1 Initial Exploration

This section describes the initial exploratory exercises which were conducted at the start of the literature review process. This began by attempting to frame the problem in terms of questions that could be considered. The process was informed in part through the author's previous research in the field of automotive craftsmanship [6]. Traditional definitions of luxury and premiumness were examined, and synonym maps were developed from dictionary definitions and thesaurus to extend the remit of the examination.

2.1.1 Framing the Problem

Luxury and premium are terms that can be applied to a range of products, services and markets, requiring that they be viewed from a variety of perspectives for the development of robust definitions in the automotive context.

To facilitate this, a list of the types of question that could be considered was generated. The brainstorming technique was used, and the questions categorised (Table 1).

What?	Why?	How?
<ul style="list-style-type: none"> • what is luxury? • what is premiumness? • what are the benefits? • what are the problems? • what are the antecedents? • what are the drivers? • what is the impact? 	<ul style="list-style-type: none"> • why are they important? • why are some products luxury while similar ones are not? 	<ul style="list-style-type: none"> • how are they perceived? • how are they measured (what tools are available ?) • how does luxury manifest? • how do you incorporate luxury into the design?
Who?	When?	Where?
<ul style="list-style-type: none"> • who wants luxury? • who provides luxury? • who leads the field? • who is responsible for delivering luxury? • who is the customer? • who does it affect? • who has the influence? 	<ul style="list-style-type: none"> • when in the process should it be considered? • when should you not aim for luxury? • when are they noticed? 	<ul style="list-style-type: none"> • where is luxury appreciated? • where will the most benefit be gained? • where do people look? • where do people expect/want it?

Table 1 Framing Questions

The list is not exhaustive, but was used to guide the choices as to which areas of the literature should be focused on, and thinking during the progress of the research project and the development of this thesis. It is not intended that the literature review or this research project should attempt to answer all of these questions.

Revisiting this list at the end of the research process, it is interesting to note how “forward-ended” the questions are in relation to the whole new product development process. The questions are very focused on how to acquire the customer understanding at a general and conceptual level, but not on how to use it further into the NPD process once captured. This suggests a level of fixation in what was important (and therefore on what the answer to the problem might look like) in the early stages of the project.

2.1.2 Existing Definitions

As a starting point, dictionary definitions of luxury and premium (and their derivatives) are given below [9]. Pertinent phrases are underlined.

Luxury: **1** choice or costly surroundings, possessions, food, etc.; luxuriousness (*a life of luxury*). **2** something desirable for comfort or enjoyment, but not indispensable. **3** (*attrib*) providing great comfort, expensive (*a luxury flat; a luxury holiday*). voluptuous.

Luxuriant: **1** (*of vegetation, etc.*) lush, profuse in growth. **2** prolific, exuberant, rank (*luxuriant imagination*). **3** (*of literary or artistic style*) florid, richly ornate.

Luxuriate: **1** (foll. by *in*) take self-indulgent delight in, enjoy in a luxurious manner. **2** take one's ease, relax in comfort.

Luxurious: **1** supplied with luxuries. **2** extremely comfortable. **3** fond of luxury, self-indulgent, voluptuous.

Premium: **1** an amount to be paid for a contract of insurance. **2** a sum added for interest, wages, etc; a bonus. **b** a sum added to ordinary charges. **3** a reward or prize. **4** (attrib.) (of a commodity) of best quality and therefore more expensive.
☐ **at a premium 1** highly valued; above the usual or nominal price. **2** scarce and in demand.
☐ **put a premium on 1** provide or act as an incentive to. **2** attach special value to.

The key phrases highlighted appear to invoke a feeling of personal indulgence, a sense that the chosen product or service is better than most, and more than was really needed, coupled with an exclusivity. It is to do with meeting an emotional want over and above the rational need.

Synonyms for luxury and premium are shown in Figure 7 and Figure 8 [9] [10] [11]:



Figure 7 Luxury Synonyms

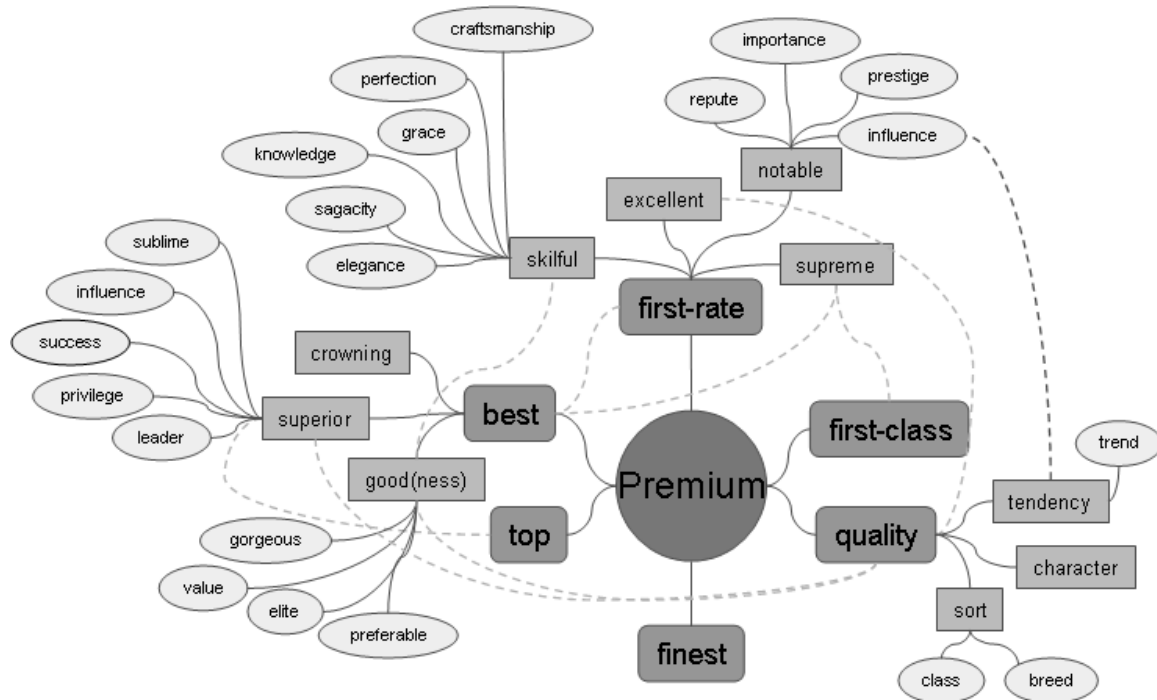


Figure 8 Premium Synonyms

Examination of these maps suggests that *luxury* is a very personal, internal concept (“how does this make me feel ?”), while *premium* concerns external factors such as product quality, and the product’s effect on how the individual is perceived by others.

2.1.3 Next Steps

This initial exploration suggests that a comprehensive understanding of luxury and premiumness should be informed by insights from a number of fields, that consider both people- and product-related topics. Figure 9 indicates the topics were therefore initially considered for this review.



Figure 9 Initial Literature Fields

The synonym maps were then used as the basis for initial key word searches in journal search databases (such as ABI/Proquest and EBSCO) and simple web searches. Further key words were then stimulated from articles found and other authors' references.

This organic approach lead to the identification of the three key themes that comprise the bulk of this review:

- Luxury and Premiumness;
- The Relationship between People and Product;
- Operationalising the Voice of the Customer.

Each of these themes is discussed in the following sections.

2.2 Luxury and Premiumness

This section summarises existing thoughts on luxury and premiumness in the literature, covering the automotive and other luxury markets.

Luxury and Premium form the two highest levels of Vigneron's 3 levels of prestige brands (Figure 10 [12]), in which "prestige" and "non-prestige" brands are distinguished according to 5 perceived values [12]:

- Perceived conspicuous value;
- Perceived unique value;
- Perceived social value;
- Perceived hedonic value; and
- Perceived quality value.

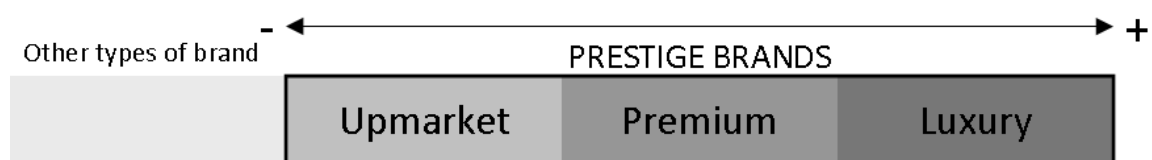


Figure 10 Vigneron's Levels of Prestige Brands

It has already been identified that premium and luxury are related but separate concepts, so the literature has been searched to identify potential answers to the questions "what is luxury?" and "what is premiumness?".

2.2.1 What is Luxury?

The technical definition of luxury lies within the economic literature. There are several complex mathematical models in the economic literature create strict distinctions between luxury and necessity, which incorporate factors such as demand, utility, profit, elasticity, risk, budget shares, income and lifetime wealth [13].

However, a simple economic definition of a luxury good is one that has a positive elasticity⁴ of demand; that is, an increase in price results in an increase in demand. This compares to a normal good which has a negative elasticity of demand; i.e. a price increase would result in a drop in demand. Such goods with positive elasticities of demand are also known as Veblen goods. [15]

Veblen [16] is credited with the economic notion that some goods are consumed for reasons not connected with their intrinsic values: demand is also driven by the belief that others will confer affluence on the consumer of that good, thus increasing the utility associated with its consumption. Utility represents value to the consumer in abstract terms. In more colloquial terms, Veblen referred to this notion of consumption intended to impress and to signal wealth as *conspicuous consumption* [15] [16] [17].

Nueno and Quelch describe a luxury good as one for which “*the ratio of functionality to price is low, while the ratio of intangible and situational utility to price is high*” [18], which translates the economic definition into more common language.

Luxury means different things to different people. Personality is recognised as a driver of luxury spending habits [19], and factors such as age, nationality, education, socio-economic background and culture have all been recognised as having a significant impact on attitudes towards luxury [20] [21]. Danziger [22] reports a strong link between luxury and the pursuit of personal, individual passion, and both Gardyn [20] and Berry [23] discuss social perception as a motivation for luxury.

Distinct behavioural mind-sets have been identified in which luxury is seen as functional, as a reward or as an indulgence. Consumer age tends to be highest among those who view luxury products as functional, and lowest among those in the “indulgence” set. [19]

Dubois et al [21] investigated attitudes to luxury in 20 countries, and developed three latent consumer segments: elitist, democratic and distant. The elitist attitude followed a traditional vision of luxury, in which it was believed that luxury is only appropriate for the few elite. This group believes that a level of education or refinement is required to appreciate such goods, which enable them to differentiate themselves from others. Luxury goods are expensive: cannot be mass-produced and shouldn't be retailed in supermarkets. The democratic group, on the other hand, believe that many people should and do own luxury products, they don't believe refinement is required to appreciate luxury, and don't believe it is a differentiator or signaller of good taste. They believe that luxury goods can be mass produced and should be available in supermarkets. The third segment represented those who viewed luxury as something for others, a different world from their own. This segment was labelled “distance”. Consumers in this segment has no personal attraction to luxury, and tended to view luxury goods as either useless or too expensive.

⁴ A numerical measure of the responsiveness of demand wrt a change in price [13]

They believe copies are as good as the original items, and feel like strangers in a luxury environment.

Berry [23] suggests that luxury goods can be categorised as either sustenance, shelter, clothing or leisure good, recognising that needs are different from desires, and derive from different motivational levels. Motivational needs differ according to personal behavioural mindset [19].

Carbonaro [24] and Berry [23] suggest that exclusivity, uniqueness rarity and desirability are fundamental principles of luxury. A defining characteristic of luxury experiences is that they are available to the few but wanted by the many [25], and a key feature of desire for a luxury product is the presence of a belief (that possession of the good is pleasing) [23]. Furthermore, people tend to value rarity over intrinsic quality [26], while also placing importance on the need for authenticity [25]. Both Gardyn [20] and Berry [23] discuss the balance made by consumers between style and conspicuous consumption against substance and quality.

According to Leadbetter [25] and Yap [27], luxury products are differentiated from the mainstream not purely because of their attributes, but because of the influence of mythology. Luxury products and brands have stories; luxury is complex, and part of the luxury experience is discovering hidden layers over time.

The perception of luxury is dynamic and moves with changing customer expectations [28]; for example, Berry [23] has identified a need for increasingly refined goods, Gardyn [20] and Danziger [22] both report a trend away from brand names (conspicuous consumption), and Graham and Matthews [28] suggest that customisation and personalisation are now becoming increasingly important in the luxury experience. Traditional definitions of luxury have changed, and the difficulties in achieving simultaneously the different types of luxury wanted by each generation have been recognised by companies such as Ford [29].

This changing perception has lead to the concept “mass democratisation of luxury” [20] [24], referring to the move from traditional luxury goods such as Gucci or Tiffany to “luxury” coffees such as Starbucks. Brand extensions from luxury producers has lead to increased availability of luxury products at lower price points. For example, Jaguar’s X-type, which was launched to appeal to a younger, aspirational market.

Vigneron et al [30] proposed a model of luxury based on the 5 values of prestige brands (Figure 11). However, this is a simplistic model at too high a level to provide any tangible support for improving luxury in a product: a deeper model to understand the drivers of each of these values is needed to guide luxury product development.

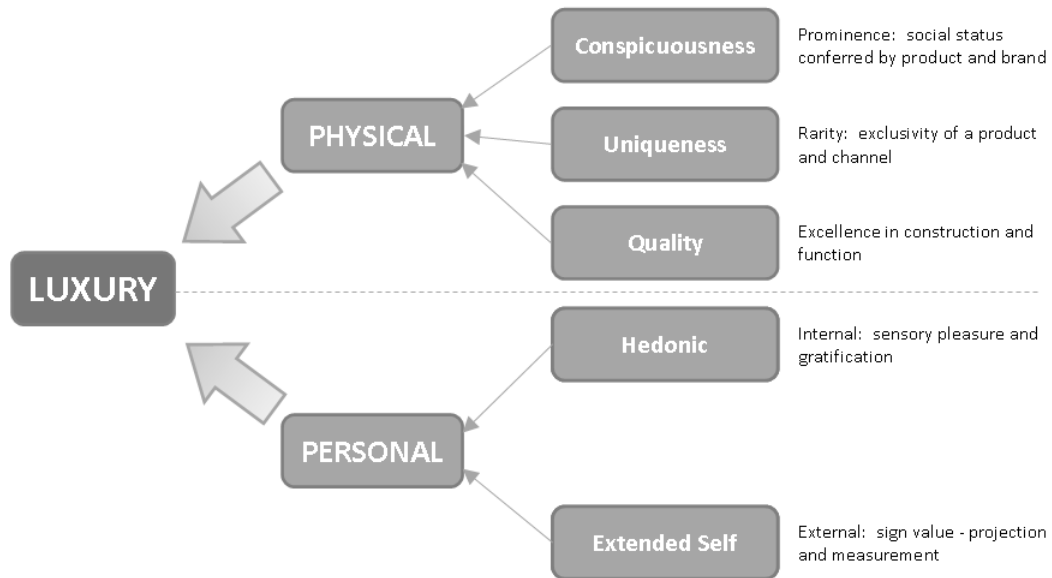


Figure 11 Vigneron's Luxury Model

2.2.2 What is Premiumness?

While there exists literature concerning the definition of luxury, the same cannot be said for literature relating to the concept of premiumness; literature about premiumness, either in academic resources or the public arena, is scarce, and what has been found is limited to retail/pricing sources.

Like luxury, premiumness is a complex concept [31], but “premium” is more commonly concerned with price. Imber [32] discusses premiumness as a tool for “persuading customers to pay for a bit more quality”, i.e. to pay more for a very similar product, and relates this to the power of branding on behaviour and attitude. Imber states that price is used as an indicator of quality when an individual’s ability or motivation is low, for example, when time or information is limited. For example, Plassmann et al found that consumers’ brains showed genuine taste preference for wines that they believed were more expensive (both when cheap and expensive wines were mis-represented, and also when an identical wine was presented twice with difference price labels); so price expectation has a physical effect on taste experience, suggesting that price can be a proxy for actual information [33] [34].

Like luxury, what is meant by “Premiumness” varies between individuals, and is dependent on their mood and experience, and some of the defining factors are similar. For example, Sodhani [35] suggests that premiumness can be viewed as the inverse of penetration, and defines it as “wanted by many but consumed by few”, and Quelch [36] suggests that premium goods are viewed as one of four things: affordable indulgences, tasteful gifts, smart investments or status symbols. The characteristics that make a product premium vary by category, but typically premium brands are of “excellent quality, high priced, selectively distributed ... and advertised parsimoniously”, but not necessarily technically superior [36]. The idea of exclusivity is raised by Misiura [37], who argues that products that are marketed on their heritage should be aimed at niche rather than mass markets to retain exclusivity and premiumness. This overlap in the

literature defining Premiumness and Luxury supports Vigneron's idea of the levels of Prestige (Figure 10).

In terms of marginal differences in the defining literature, Allsopp [31] discusses how consumers' engagement in a premium market is influenced by its importance, regardless of whether it is affordable, while a 2003 survey found a correlation between choosing "premium quality over basic quality" and "finding the experience interesting" [35].

Finally, Smith [38] examined the idea of vertical brand extension, suggesting that premiumness is critical if a mainstream brand is to become more upmarket, and identifying that a premium product (brand extension) must overcome associations with the parent (mainstream) brand in the consumers' eyes to achieve its emotional potential. In the luxury literature the idea of brand extension was considered from the opposite direction (i.e. lowering a luxury brand introducing a more mainstream offering).

2.2.3 Discussion

This section of the literature review has provided an overview of the scope and nature of literature relating to the definition and understanding of luxury.

While there are similarities in the language used to describe luxury and premiumness, a key difference between these ideas has been identified: while luxury is to do with how a product makes the consumer feel, premiumness is more about product quality, how it is marketed (including pricing) and its influence on how the individual is perceived by others. This suggests that luxury is a more personal, internal construct, while premiumness is more of an external, product-based construct.

Different attitudes to luxury have been identified, and this is important in terms of ensuring that appropriate customers are invited to review luxury and premium products: it can be argued that eliciting the views of those who are not the intended market for a product could undermine the value of market research efforts.

There are, however, substantial gaps in the literature in this area. While much has been written that describes behavioural and attitudinal aspects of luxury and premiumness (what do people think about luxury?), and plenty of opinion within the practitioner literature, there is limited evidential work identifying the drivers of luxury or premiumness in terms of actual products (what do people think of luxury products?). This is in part understandable, given the dynamic nature of customer expectations, however, it does present a limitation in the usefulness of the literature in terms of identifying actions required to improve the perceived luxury of a product.

It is therefore necessary to widen the scope of the literature review to examine other fields to understand more clearly the relationship between products and people's perceptions of them.

2.3 Relationship between People and Product

A consistent theme from the literature is the need to understand the link between people, the product and the market. This requires simultaneous understanding of two distinct views. that is:

- “people things”: how people act/think/feel; rational versus emotional;
- “product things”: product attributes, quality, design.

This section will therefore take a journey through the wide range of topics that could influence this relationship between people and product. To begin with, it will consider the concept of perception: how do customers perceive or experience ? Theories of Consumer Behaviour are then considered: what are the factors that influence the purchase intentions of customers ? Very little material exists that focuses on the affective experience of luxury, so alternative subjective concepts such as delight, Emotional Design and Kansei are also considered. Functional (rather than purely theoretical) developments such as non-quantifiable product qualities (NQPQs) are discussed in section 2.4, together with practical tools such as Empathic Design, Kansei Engineering and Quality Function Deployment (QFD).

2.3.1 Perception

To understand how consumers perceive or experience luxury or premiumness, it is firstly necessary to understand the nature of perception, together with the philosophical issues to which it relates. This section therefore introduces the key concepts that underpin perception, including *quale*, consciousness, cognition and Gestalt.

Perception is, literally, the faculty of perceiving, where to perceive is to apprehend through observation or with the mind. Philosophically, perception is the “*ability of the mind to refer sensory information to an external object as its cause*” [9].

Philosophy also provides a technical term for what a perception “feels like”, which is *quale* [39]. Jackson [40] defines qualia as “*certain features of the bodily sensations especially, but also of certain perceptual experiences, which no amount of purely physical information includes*”, while Dennett [41] suggests that qualia are ineffable, intrinsic, private and “*directly or immediately apprehensible in consciousness*”. Figure 12 [41] is often used as an example to explain this idea, by considering the question: how would one describe “redness”?



Figure 12 The Canonical Quale

Awareness is described as the totality of a person's thoughts and feelings, where the mind is the seat of consciousness [9], so consciousness relates to awareness. The mind also has an unconscious element which affects behaviour and emotions.

The philosophical concept of cognition considers perception as a faculty distinct from emotion or volition [9]. Cognition and affect are information-processing systems in the brain. The affective system makes quick judgements relating to good/bad or safe/unsafe, and works independently of conscious thought. Emotion is the conscious experience of affect. The cognitive system interprets and makes sense of the world and is therefore more rational. [9] [42]

The final concept to introduce here is Gestalt psychology. A gestalt is an organised whole which is perceived as more than the sum of its parts. Gestalt psychology is a theory of mind and brain in which the brain is holistic and self-organising, and which maintains that perceptions are gestalts [9] [43].

2.3.2 Consumer Behaviour

As well as understanding how consumers perceive luxury or premiumness, it is important to identify how this perception, together with other factors, may influence their purchasing or behavioural intentions.

Gotlieb et al define behavioural intentions as *"the subjective probability that an individual will take a particular action"* [44]. Variables that are believed to affect behavioural intentions include:

- Customer Satisfaction;
- Perceived Quality;
- Expectations.

It is recognised that there are strong relationships between each of these distinct areas of academic research, with each influencing one or more of the others. Several models have been developed to explain how these interactions influence behavioural intention, however, there is no clear agreement as to which of these models correctly represents the form or strength of the relationships [44] [45] [46] [47].

The following sections therefore provide a précis of the key variables believed to affect consumer behaviour.

2.3.2.1 Customer Satisfaction

Customer satisfaction is one of many theories that attempt to explain the cognitive processes that influence the formation of behavioural intentions. There is some debate in the literature as to whether customer satisfaction is a cognitive or affective response; for example, Giese et al define customer satisfaction as *"an affective response of carrying intensity ... with a time-specific point of determination and limited duration ... directed toward focal aspects of product acquisitions and/or consumption"* [48], and Oliver et al suggest it is *"an emotional reaction following a disconfirmation experience which acts on the base attitude level and is consumption specific"* [49].

2.3.2.2 *Perceived Quality*

Zeithaml [50] defined perceived quality as “*a consumer’s appraisal of a product’s overall excellence or superiority*”. The difference between perceived quality and customer satisfaction is described by Bou-Llusar, who suggests that perceived quality is product or service-based, while satisfaction is related to other dimensions such as loyalty, expectation and price [46]. In addition, Anderson et al believe that perceived quality can be experienced without an actual consumptive experience, while satisfaction cannot [51]. However, the relationship between perceived quality and satisfaction is not clearly understood [44].

A customer’s perception of quality can be affected by their mood, their previous experience with the product, as well as by the product’s country of origin and brand [52] [53]. Exclusivity has also been found to influence perception of quality; linking a rising market share with reduced perceived quality [54] [55]. In this respect, perceived quality shares some characteristics with luxury and premiumness.

In an automotive environment, perceived quality and the concept of craftsmanship are strongly linked, and the terms are often interchanged. [6]

Kano and Ishikawa [56] [57] [58] provide mechanisms to distinguish perceived quality from traditional (manufacturing) quality. Ishikawa separates backwards-looking and forward-looking quality, where the former considers negatives such as non-conformance, flaws and defects, and the latter focuses on positive features and characteristics. Kano’s concept of must-have quality maps in part to backward-looking quality (as the absence of defects), while his attractive quality maps to forward-looking quality.

2.3.2.3 *Expectations*

When making a purchasing decision, a customer’s expectations, representing their cumulative experience, have a strong influence [59] [60].

Expectations comprise both focal dimensions (that the customer responds to directly) and contextual dimensions (which provide a background environment) [44] [49] [61] [62].

Disconfirmation of expectations⁵ has been found to affect both perceived quality [63] [64] [65], and satisfaction [59] [66] [67] [68], and a negative disconfirmation of expectations has a bigger impact on satisfaction and purchase intention than a positive disconfirmation [47], especially in the automotive market [69]. This suggests that firms may experience greater benefits from expending effort to reduce negative disconfirmation than by focusing on trying to increase positive disconfirmations. However, while meeting expectations leads to better retention, minor negative disconfirmations do not necessarily lead to a drop in retention [60].

⁵ A positive disconfirmation of expectations occurs when the product or service exceeds the customer’s expectations. Similarly, a negative disconfirmation means that the product or service fell short of customer’s expectations.

A consumer's expectations are also affected by performance variation (inconsistency) [60], and the importance of expectations in influencing purchase intent increases as quality becomes more difficult to evaluate [70].

2.3.2.4 *Modelling Behavioural Intent*

The concepts of customer satisfaction, perceived quality and expectations have been discussed separately, and Garbarino confirms that customer satisfaction and perceived quality, as well as perceived value, trust, involvement and commitment, guide the decision making process [71]. However, the ultimate aim of understanding these ideas is to understand how they work together to influence behavioural intent, specifically purchase intent (i.e. to make the consumers buy the product or service).

Purchase intent is often used as a measure to assess the external effects of customer satisfaction and/or perceived quality [71]; loyalty is also used for this purpose [46]. Loyalty can be thought of as affective (related to the customer's attitude to product) or cognitive (related to intention), and is influenced by satisfaction, brand reputation, switching costs and search costs [72].

Many researchers have proposed models to describe the relationships between the antecedents and consequences of customer satisfaction, perceived quality and behavioural intention, including:

- Gotlieb [44];
- Parasuraman et al [65] [73];
- Qualls [74];
- Anderson [47];
- Teas [53] [75];
- Selnes [76];
- Zeithaml [50];
- Bolton and Drew [77].

The most common models of satisfaction and behavioural intent conform to the disconfirmation of expectations theory. A selection of these models are presented in Figure 13 to Figure 16 below.

Gotlieb [44] found that Figure 13 best described the relationships between expectation, perceived quality and behavioural intention, while Anderson [47] proposed the model in Figure 14.

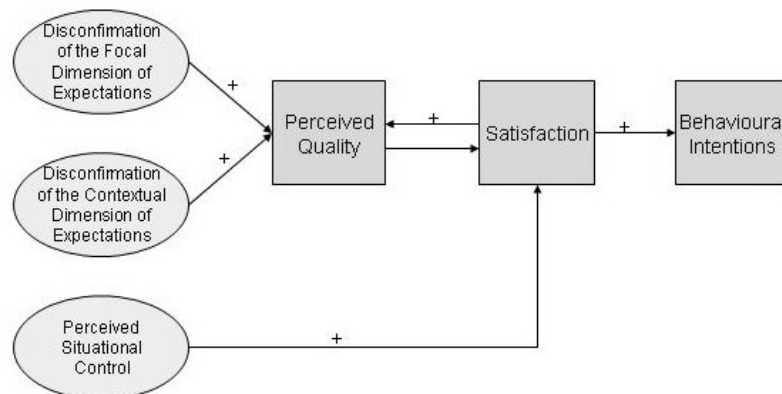


Figure 13 Gotlieb's Model

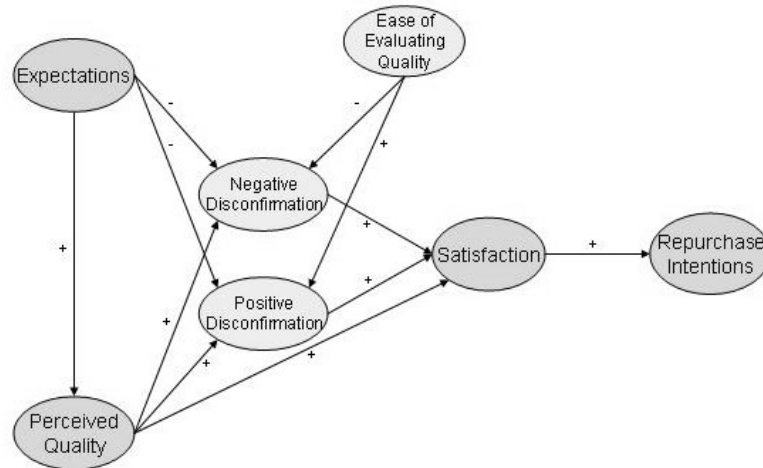


Figure 14 Anderson's Model

Gotlieb introduces perceived situational control as an antecedent of satisfaction, while Anderson suggests that disconfirmation of expectations, and therefore customer satisfaction, is influenced by the ease with which a customer can evaluate quality. Bakamitsos [78] further suggests that mood affects the decision making process when information is not easily accessible.

The European Customer Satisfaction Index (ECSI), based on the Swedish Customer Satisfaction Barometer and American Customer Satisfaction Index, was piloted in 1999 (Figure 15) [79] [80].

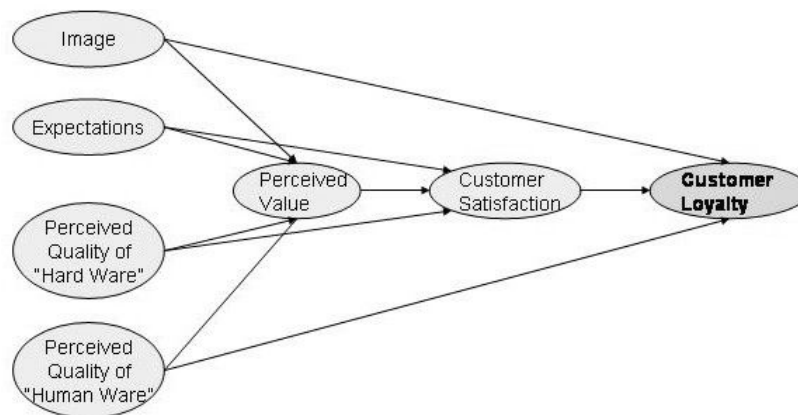


Figure 15 ECSI Model

The ECSI introduces image and perceived value as an influencing factor, but fails to incorporate the influence of control or availability of information. Teas went on to elaborate on the antecedents of perceived value, and described the relationship between country, retailer reputation, brand and price on perceived quality and perceived sacrifice [53] [75].

Zeithaml's Means-End⁶ model (Figure 16) avoids satisfaction as a antecedent of purchase decisions, introducing perceived value as a driver of purchase intent, and considers the effect of the product's physical attributes such as

⁶ See page 32 for overview of Means-End theory.

colour (intrinsic attributes), and non-physical product attributes such as price (extrinsic attributes), as well as high-level abstractions such as convenience, appreciation and prestige/image enhancement [50].

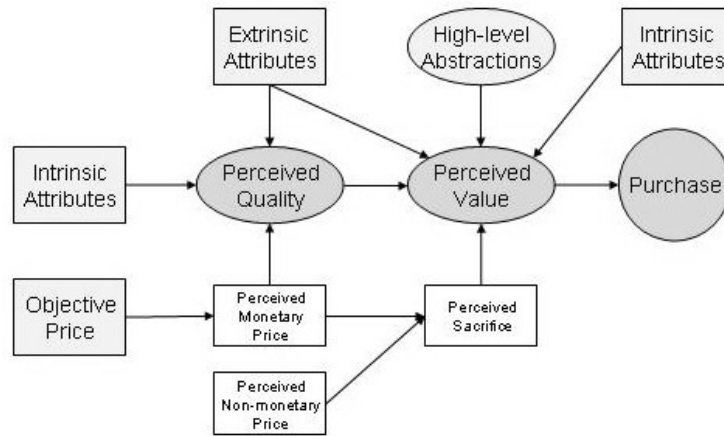


Figure 16 Zeithaml's Model

2.3.3 Hedonism versus Utilitarianism

Much of traditional behavioural decision theory is biased toward cognitive or rational decision making processes, in which consumers aim to maximise (economic) utility [81]. It neglects the impact of emotional drivers in the decision making process, and the influence of uncertainty on judgment, considering irrational behaviour to be a failure of reasoning [82]. However, it is now recognised that consumer decisions are based on both emotional and functional needs. A logical and dispassionate decision made by evaluation and trade offs of product attributes may be overruled by emotional desires. Khan [81] views this distinction in terms of experiential preferences and functional goals, which may be in conflict, and posits that the decision making process involves a trade-off between the two types of attribute:

- Emotional wants vs. functional needs;
- Hedonic vs. utilitarian choices;
- Luxury vs. necessity;
- Heart vs. mind conflicts.

Khan also discusses the distinction between affect-rich and affect-poor products in terms of the associative imagery elicited by those products: Goods consumed for hedonic purposes tend to elicit associative imagery while goods consumed for utilitarian purposes do not. The decision process involves vice-versus-virtue elements, and the choices made result in positive and negative self-attributions. [81]

The ability of consumers to process emotional information to achieve an outcome in the decision making process is known as Emotional Intelligence [83]. Tools are available that measure consumer emotional intelligence with the aim of enabling predictions to be made about consumers' choices; initial

research suggests that higher emotional intelligence results in better product choice decisions.

2.3.4 Delight

There have been several attempts in the literature to understand the emotional routes to customer satisfaction. Some of these fall broadly under the heading of “delight” as a customer reaction.

Kano was one of the first to categorise products in terms of the customers’ basic, performance and excitement needs, and to relate these to customers’ overall satisfaction. Kano also recognised the effect of changes in expectations of features over time. Figure 17 shows the Kano model, which is widely accepted as a valid model of customer satisfaction through product feature delivery. The model often appears with different descriptors, for example:

- excitement needs = attractive qualities
- performance needs = linear qualities
- basic needs = basic qualities

However, the fundamental principles remain consistent. Features appearing within the top right-hand quadrant are often referred to as *delighters*.

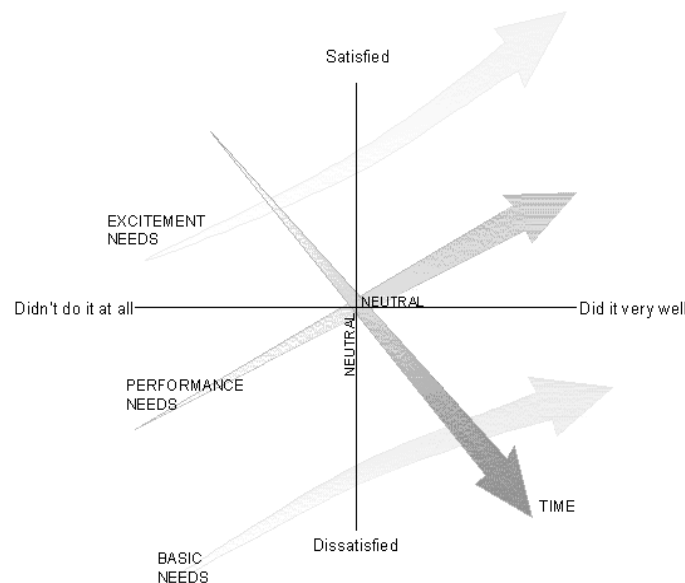


Figure 17 Kano's Model of Product Quality

Goffin represents this model algebraically [84]:

$$\text{Customer Satisfaction} = \sum [\text{Satisf}(\text{Excite}) + \text{Satisf}(\text{Perf}) + \text{Satisf}(\text{Basic})]$$

The inference is that the more performance and excitement needs that are met, the greater the level of satisfaction. However, Mukherjee and Hoyer [85] found that adding novel attributes was likely to improve product evaluation for low-complexity products, but that this was not the case for high-complexity products where product evaluation could actually reduce. This was ascribed to learning-cost inferences made by the customers about those attributes negating value inferences, leading to a net reduction.

Burns' research on the phenomenology of customer delight recognised the limitations of existing models in consumer and manufacturing literature, which focused predominantly on expectation. By integrating these existing theories of delight with a "naturalistic" view, a new model of customer delight was developed (Figure 18, from [86]).

The model derives from iterative and multi-directional coding of customer delight reactions, according to whether they relate to the product (stimulus), appraisal (cognition) or consequent experience (affect). The model provides an understanding of product appraisal reactions rather than representing a descriptive theory of customer delight.

Of particular interest for this research was the recognition that delight reactions can be evoked by single product attributes or by global evaluation of the product:

- specific attribute based reactions - a single attribute with a singular basis of appeal
- cumulative attribute based reactions - a single attribute with multiple bases of appeal
- cumulative holistic reactions - appeal of the whole car made up of several appealing attributes
- holistic reactions - the whole car, or area of it, was appealing.

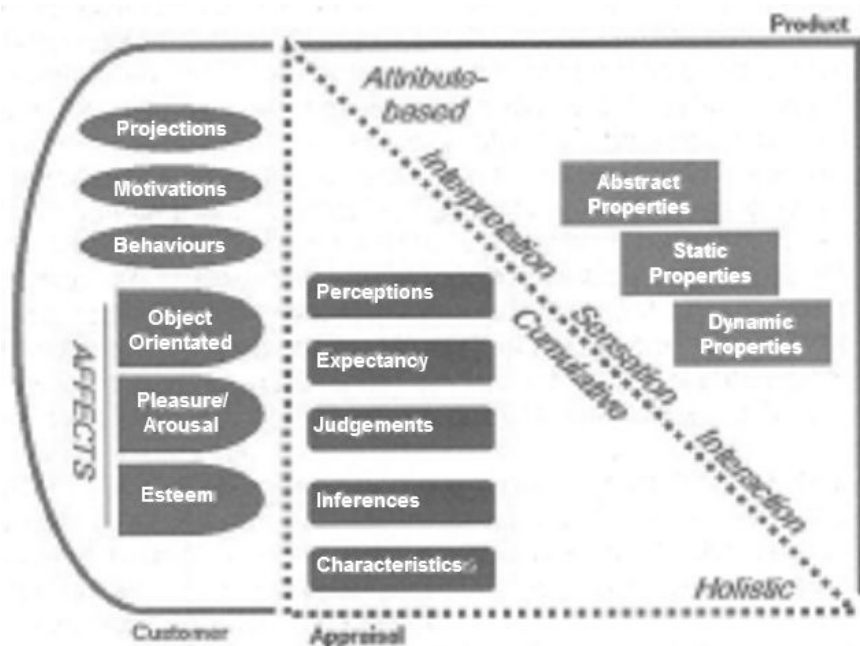


Figure 18 Burns' Model of Positive Appraisal Reactions

Delight reactions were found to be context specific, such as during dynamic and static product evaluations. Burns also found that customer delight is driven by different factors depending on whether the evaluation experience is within a pre-purchase or ownership context, which has implications for the findings of JLR's own research.

Burns was ultimately able to extend the “routes to delight” offered by the Kano model as follows:

- Unexpected features that answer latent needs;
- Unexpected levels of desirable scalar qualities;
- Optimised levels of certain scalar qualities (rather than maximised);
- Unexpected delivery of expected features;
- Delight at the level of the whole. [86]

Burns’ phenomenological approach was ultimately subjective and grounded in a limited context, but provided valuable insights that formed a robust basis for this EngD research. For example, the following mind-maps (Figure 19 and Figure 20) were created from Burns’ research [86], and these afforded guidance for the selection of appropriate academic fields for review.

PRACTITIONERS' VIEW

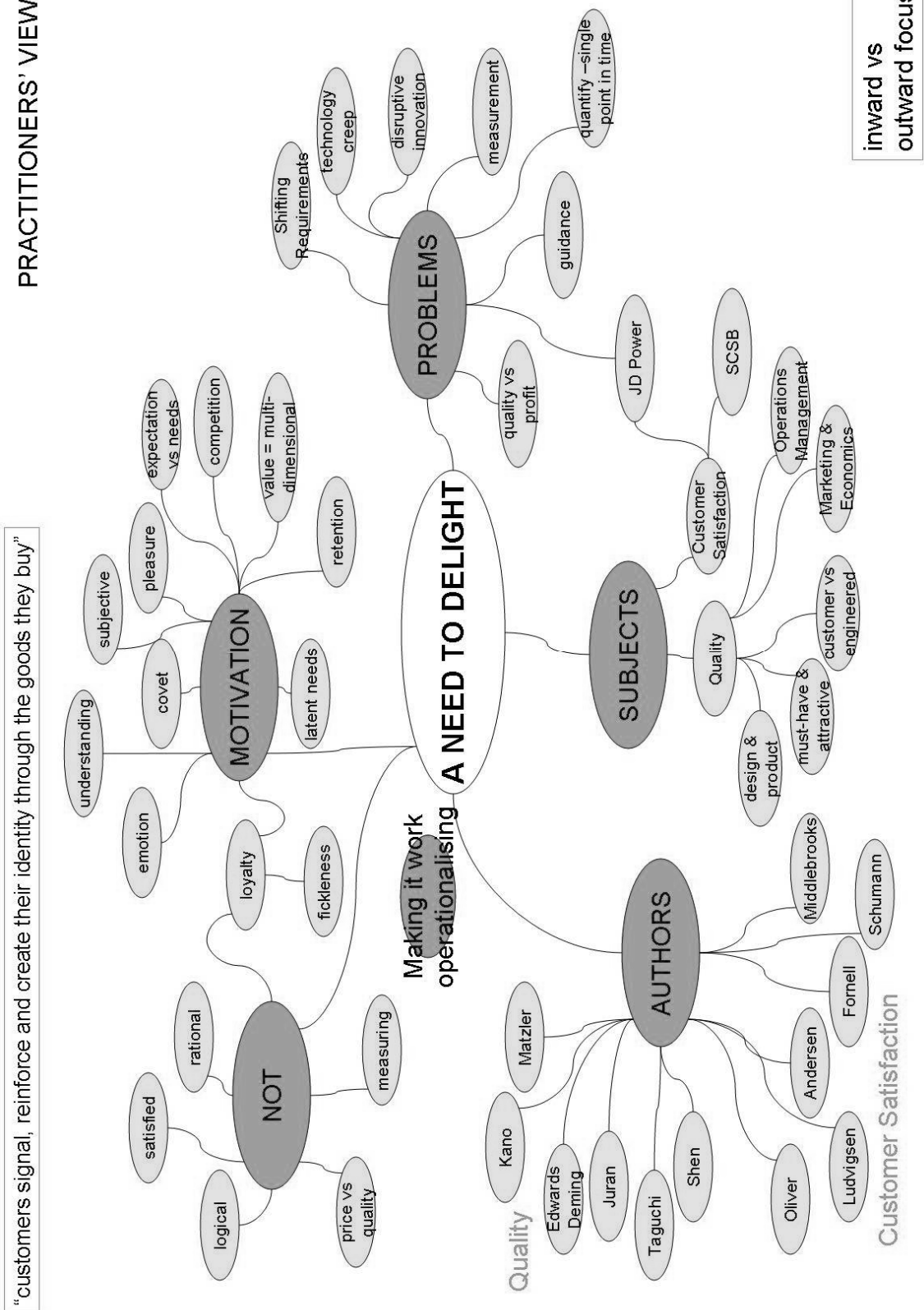
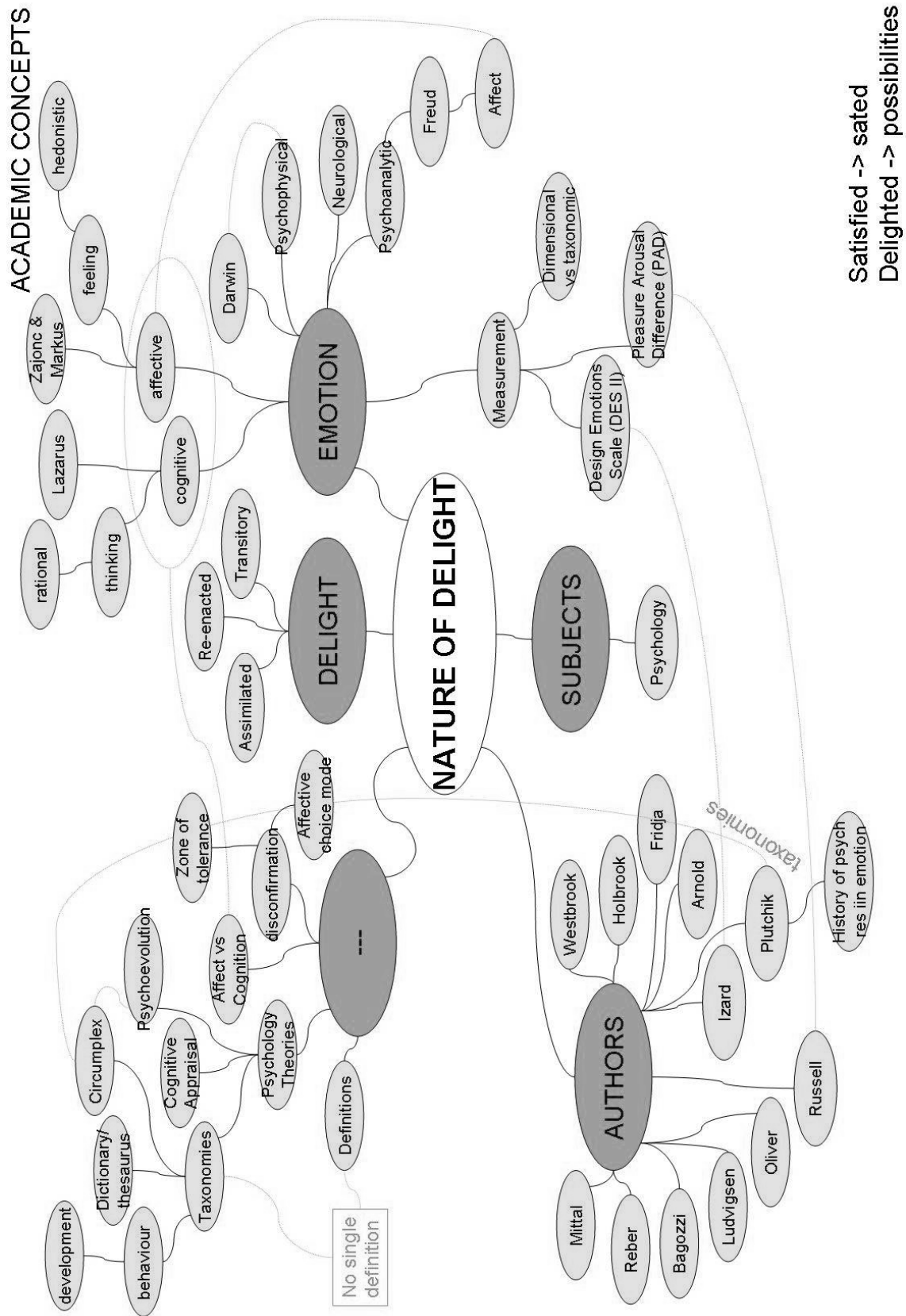


Figure 19 A Need to Delight



Satisfied -> sated
 Delighted -> possibilities

Figure 20 Nature of Delight

2.3.5 Emotional Design

Delight is not the only positive appraisal reaction that can be evoked in a consumer, and in recent years a relatively new field has emerged which focuses on deliberately designing products to evoke specific reactions within a customer. This field is generally referred to as Emotional Design. This section therefore provides an overview of this area, beginning with a discussion of emotion itself.

Emotions are “strong mental or instinctive feeling[s]” [9], that are structured in a hierarchy with three major levels of inclusiveness: superordinate, basic and subordinate [87]. Desmet compiled a list from literature comprising 347 emotions [87]. However, it is believed that six basic (core) level emotions are form the basis from which all other emotions derive:

- Surprise;
- Joy;
- Sadness;
- Disgust;
- Fear;
- Anger.

Shaver [88] posits that each emotion term refers to one of these basic terms, and then specifies the intensity of the emotion and/or the eliciting context. However, it is difficult to apply this structure of emotion to design research, because it is difficult to derive the emotions that intuitively arise from product experience from the 6 basic emotions [87]. Product experience also elicits many variations of emotion (“flavours”), which suggests that the 6 basic emotions are too simplistic. It is also suggested that negative emotions are over-represented. [87]

Desmet [87] therefore developed a typology of emotion for product experience (appearance) that comprises 25 emotions:

“admiration, alarmed, amazement, amusement, astonishment, avaricious, boredom, contempt, curiosity, desire, disappointment, disgust, dissatisfaction, eagerness, fascination, indignation, inspiration, irritation, joyful, pleasant surprise, satisfaction, softened, stimulation, unpleasant surprise, yearn”.

These emotions comprised 12 subordinates of the 6 basic emotions types (excluding fear, which was deemed inappropriate for a modern product experience context), and 13 subordinates of 6 “new” emotion types. These emotion types form the basis of Desmet’s typology (Figure 21):

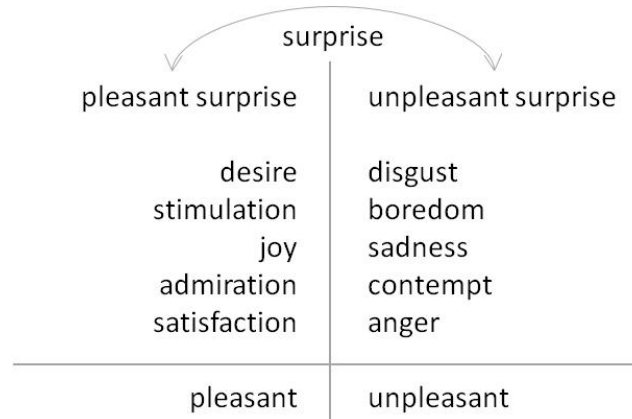


Figure 21 Desmet's Typology of Basic Product Emotions

This typology was further examined⁷ in a product-owning and use context and was found to be valid, but requiring the inclusion of *security* and *insecurity* as additional emotion types.

While luxury is not an emotion, it can be argued that in attempting to create a car that is perceived as a luxury product, there is an implicit attempt to create an emotional response in the consumer: JLR wants the customer to feel that they are in a luxury car. The emotion (or set of emotions) elicited isn't called luxury, nor is it the aim of this research to understand what those emotions are. However, understanding how to trigger specific responses through design could be used to create a sense of luxury in a car.

The idea of being able to design in an emotional response is a relatively new academic field, and research into understanding the relationship between customer's emotions and design comes under many headings including Emotional Design [42], Emotion in Design [89] [90] and Affective Design [91] [92] [93]. Interaction Design and Emotional Experience Design are also terms that are used in this context. Aesthetic Intelligence is a related concept which posits that the ability to perceive the wide range of qualities in products that shape a viewer's responses to them, is an innate or subconscious ability [94].

Specific applications of some of these concepts are represented by subject areas such as Emotional Brand Attributes [95], Non Quantifiable Product Qualities [96], Empathic Design [97] [98] [99] and Kansei [100] [101] [102] [93]. These applications are discussed further in section 2.4.

Developing ideas about Consumer Behaviour discussed in section 2.3.2 above, Bagozzi used Lazarus' general framework (Figure 22) to develop the "outcome-desire unit", whereby an activity will result in either fulfilment or conflict of the consumer's desire to meet certain outcomes through that activity. The resulting affective response (e.g. satisfaction) then leads to a coping response (e.g. favourable behavioural intentions). [103] [104] [44]

⁷ By J Witsenburg and F de Boer at Delft University of Technology in 2003, published in an internal report "Een typologie van gebruikse moties". [87]

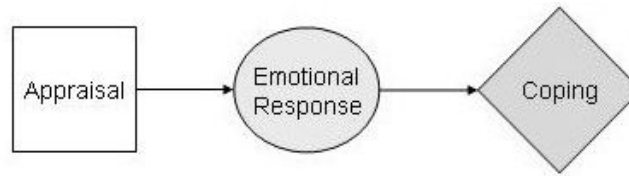


Figure 22 Lazarus' Framework

Affect has been defined as “a *pattern of observable behaviours that is the expression of a subjectively experienced feeling state*” [105].

Understanding the drivers of the customer’s coping response (behavioural intention) clearly requires an understanding of how they appraise the situation (perceive quality) and how this influences the affective or emotional response (satisfaction).

The Emotional Design community defines Emotional Design (or Design for Emotion or Affective Design) as concerning users’ emotional experiences of products, the way that users assign emotional meaning, and how users’ emotional expectations can be integrated into NPD; it recognises emotion as a subjective experience [105]. A number of attempts to model the construct have been made, including Norman [42] and Jordan [106].

Norman suggests that designs influence the brain at three different levels, and that each of these must be considered during the design process [42]:

- Visceral: to do with appearances (“pre-wired” part of the brain, results in automatic behaviour);
- Behavioural: to do with the pleasure and effectiveness of a product (part of the brain containing the processes that control everyday behaviour);
- Reflective: rationalisation of a product - to do with self-image, personal satisfaction and memories (contemplative part of the brain).

Jordan focuses specifically and intentionally on the experience of pleasure in a product (rather than emotion) and describes four types of pleasure [106] [107]:

- Physical: to do with the body and senses;
- Social: to do with relationships;
- Psychological: to do with emotions and thoughts;
- Ideological: to do with values.

Jordan also recognises that the ability to apply the concepts is more important than creating a strict definition, and identifies the need for a holistic approach to design. [107]

A study of 6 models of emotion identified a commonality in that each model contained 3 levels at which products elicit emotion [108]. For example, as well as his 4 pleasures, Jordan defines 3 levels of pleasure in terms of hedonic, emotional and practical benefits [106]. This three-way split mirrors Maslow’s

Hierarchy of Needs⁸. Van Gorp [108] suggests that each model offers a way to view the person/product interaction in terms three levels with different focuses:

- Object: e.g. the inherent properties of the object;
- Agent: e.g. how the product interacts and performs;
- Event: e.g. what the product says about us (internally and externally).

There are parallels between these models and Berry and Gardyn's considerations of luxury, in terms of the relationship between needs and desires, and the balance customers make between style and conspicuous consumption against substance and quality [20] [23].

Shedroff describes emotion as one level of his model of meaning [109] or "cognitive significance". This represents a hierarchical view of the internal reality that people create to understand their experiences [105] [109]:

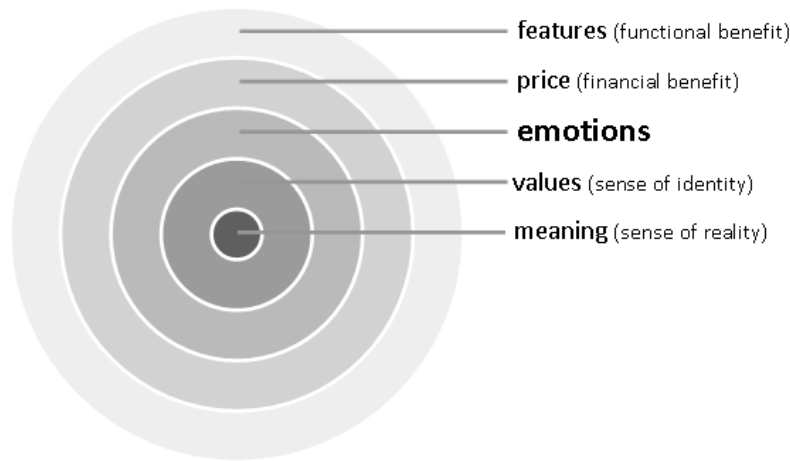


Figure 23 Shedroff's Hierarchy of Meaning

The Means-End Theory posits a link between product and self in which product meaning arises from a hierarchical chain of product knowledge (attributes), perceived consequences (benefits) and self-concept (personal values). Claey's et al develop this to suggest that the motivation to buy a "think" product is driven at the functional consequence level, while "feel" products are driven more by psychosocial consequences. [110]

Desmet [87] found that emotional responses were subjective, but that the conditions from which those emotions arise are less subjective.

The Emotional Design community is represented by groups such as the Design and Emotion Society. The Design and Emotion Society knowledge base (website) offers 60⁹ "practical tools and methods to design for emotion" [111]. The website lists tools for generating customer insights and evaluating product designs. However, a review of these tools and methods show that they are

⁸ physiological, safety, love, esteem and self-actualisation.

⁹ figure correct at the time of writing.

focused at the marketing/design stage of the NPD process, neglecting the transfer and use of the insights into the engineering domain.

The Design and Emotion Society recognised the need to develop and standardise methods by which customer's emotional needs can be captured, incorporated into the design process, and the resulting emotional response measured [112], and instigated the ENGAGE knowledge base and network project in 2004 [113].

2.3.6 Kansei

A commonly occurring presence in the emotional design literature is the concept of Kansei.

Kansei is a Japanese term for a psychological feeling or the image of a product used to express the quality of an object for producing pleasure through its use. Literally, Kan means Sensitivity and Sei means Sensibility (Figure 24). [100] [113]



Figure 24 Kansei

There is no exact translation from Japanese to English, but it comprises 3 meanings [8]:

- A feeling about a thing which may or may not exist, but which is believed will improve quality of life;
- Feelings and emotions about a product;
- Vague emotions and senses, held but not yet expressed.

Kansei has been described as the “integrated functions of the mind” (Figure 25, [115]), and refers to “total emotions” enveloping sight, hearing, taste, smell, internal sensitivity and recognition. Kansei manifests through consumer behaviours, words, facial expressions and body language and also through physiological responses such as heart rate. [8]

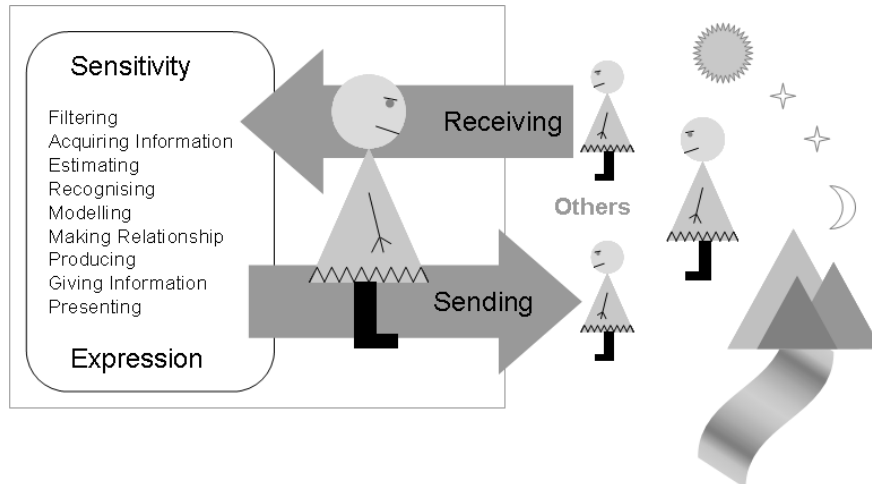


Figure 25 Integrated Functions of the Mind

Note, the logical/rational counterpart to Kansei is known as “Chisei” [113].

2.3.7 Emotional Brand Attributes

It is also interesting to consider how emotional associations are evoked in consumers’ minds from a brand perspective: how specific brand identities are perceived through evaluation of specific concept properties. Abbott [116] [117] [118] takes the view that brand is both an element of a product within a product segment/category, and also a category in its own right. Working from the premise that concept recognition is influenced by experience and arises from conscious and subconscious processing of multi-sensory inputs, Abbott’s work aimed to identify feature properties that exemplify **Bentley** as a brand, and whether those attributes could be used for “*stimulating the identification of typicality*” for interior car features (manipulated to engineer-in intended brand-related qualities).

Abbott’s emotional brand attributes separate emotional and rational drivers [95]:

Emotional	Rational
-----	-----
Brand	Price
Craftsmanship	Space/Comfort
Bespoke	Technology
Exclusive	Features
Performance	Practicality

The multi-sensory, brand specific attributes of Bentley were found to include natural materials, craftsmanship, individuality and exquisite details. In considering “What makes a Bentley?”, Abbott found that there were six distinct high-level feature categories¹⁰ that were reported by customers, for which lower-level character, detail and quality factors were developed (see also Figure 30, page 45).

¹⁰ Overall materials and appearance, trim panels, carpets, brightware, veneer, overall control functionality.

2.3.8 Discussion

The relationship between people and product is clearly important if the opportunities represented by the premium and luxury car markets are to be fully realised. The way in which the customers' influence affects the design process, through the use of quantitative and qualitative data to inform product specification, is changing. For example, there is a subtle change from passively learning from customers to actively learning about people [119].

Figure 26 illustrates this relationship as a bidirectional process: in one direction, the product evokes a reaction within the customer, customer feelings, thoughts and actions (which results from experiences of products) are then used to inform the product design process. In both cases the nature of the mechanism that operates between product and people is unclear, and this is a gap in the literature for luxury.

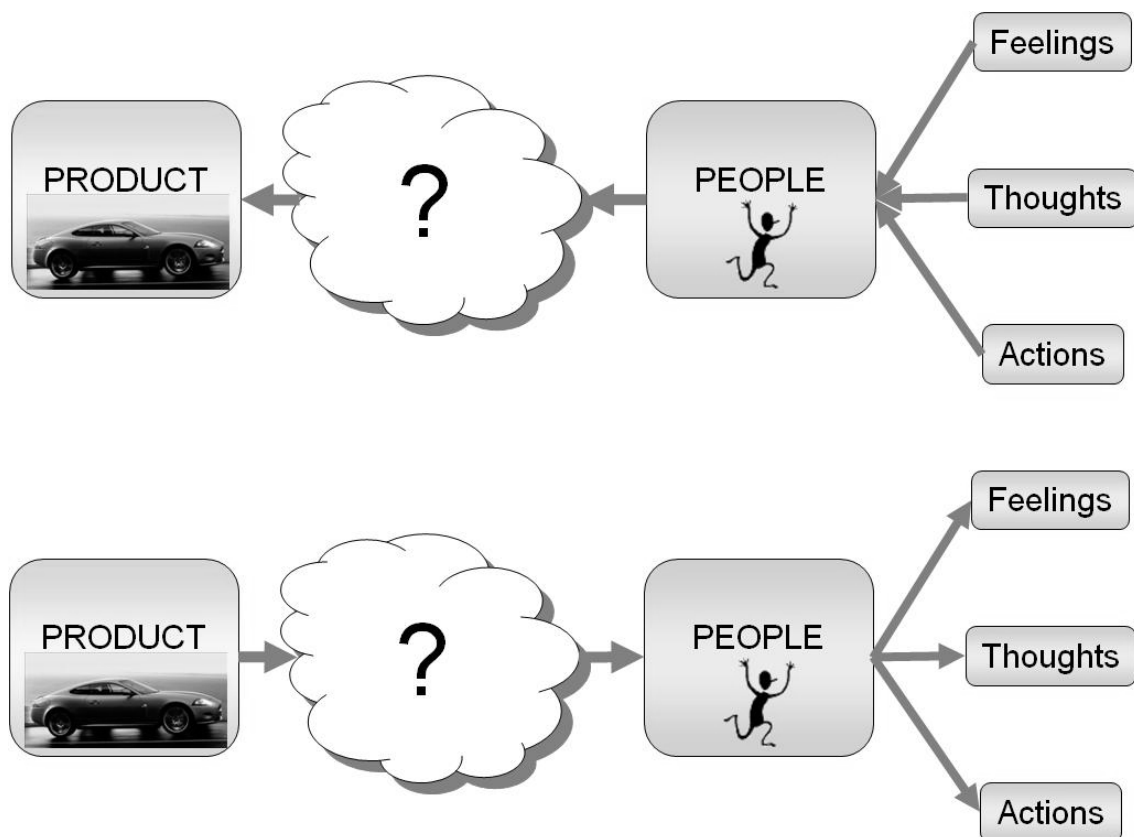


Figure 26 People and Product

Academic and practitioner research in the areas of luxury, emotional/affective design, satisfaction and delight suggest that luxury is not an emotional response, but it has an affect on how an individual feels. It is therefore proposed that the perception of luxury should be viewed as a holistic response that combines emotional responses and attribute characteristics:

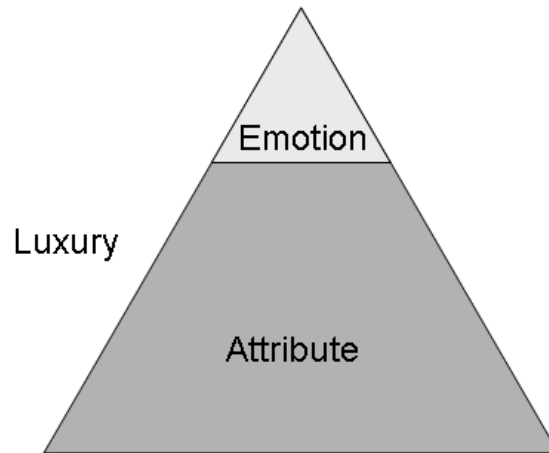


Figure 27 Luxury = Attribute + Emotion

The literature has shown that there are many elements that affect customer satisfaction and thence behaviour (purchase intent), and the models examined may also hold true in understanding the drivers of luxury. The importance of understanding the expressed and latent needs of the customer has been a unifying theme in all the research reviewed so far.

Marketing has been defined as “the management function that is involved in identifying, anticipating and satisfying customer requirements profitably” [120], suggesting a location for functional responsibility within a firm, and possible guidance for understanding how to operationalise that understanding.

There is a danger in relying on backward looking constructs, such as customer satisfaction and must-have quality, as these are post-consumption measures, and any damage through negative disconfirmation has already been done (dissatisfaction). There is a therefore a need to develop a forward looking methodology to effectively integrate the customers wants and needs, both expressed and latent, into the product development process, in such a way that the impact on the luxury experience can be managed at a sensible level.

Much of the marketing and management literature in this area concerns itself with capturing “customer insight”, but not much looks at how to use that insight effectively. The next section of this thesis therefore examines existing tools and techniques that purport to incorporate the voice of the customer into the design process, in an attempt to gain insights that can inform the development of a methodology to operationalise the voice of the luxury customer within JLR’s NPD process.

2.4 Operationalising the Voice of the Customer

There are a number of NPD evaluation and measurement tools, both in the academic literature and within industry, the most common of which relate to the use of targets and milestones in a stage gate process. These will often take a numerical form, such as size (of gaps), weight (of components) or gloss level (of paint finish), comparing product values against target requirements or design specifications. Non-numerical targets are often evaluated through subjective methods (which can be unreliable, unrepeatable or biased), or translated into

quantitative targets by imposing numerical values (which capture what can be measured but not the spirit of the target [121]), and this highlights a key difficulty in evaluating and operationalising luxury. Understanding the process by which qualitative targets are translated into measurable, relevant and appropriate targets (which may or may not be quantitative) is a critical element of this research. Additional evaluation tools are found in related fields such as quality, customer satisfaction, and brand positioning, and some of these are also discussed in this section.

2.4.1 Non-Quantifiable Product Qualities

Guldbrandsen identified common strategies by which non-quantifiable product qualities (NQPQs), which are inherently difficult to define using traditional NPD technical descriptions or numerical measures, are embedded in companies' product development processes. These investigations focused on 7 key themes [119]:

- specification and design of NQPQs
- translation of NQPQs into QPQs
- common understanding of NQPQs
- customers' impact on the embedding of NQPQs
- costing in and costing out
- decision making and responsibility
- communication on NQPQs

Guldbrandsen identified a number of problems and difficulties with management of NQPQs within the NPD process. While NQPQs are generally embedded in line with the stage-gate process, management systems for NQPQs are often informal, and managers' subjective judgments have a substantial influence on the process. NQPQs go through three phases of embedding: finding, assessing and keeping. There are difficulties in translating NQPQs from the design intent to product specification, and a tendency to transfer of NQPQs into QPQs wherever possible: those that are not translated risk mismanagement. It was observed that organisational awareness of NQPQs in the firms studied was present, but responsibility for decision making was unclear, handovers between departments problematic, and as management level increased, so the need for evidentiary support for decisions decreased: difficulty in judging and assessing NQPQs was recognised. Frequently, the customer's view is represented by firm personnel, and NQPQs are often subject to cost-downs. There is a risk that intent can be forgotten in favour of the resulting feature, and an inherent desire to measure using numbers. [119]

NQPQs are translated into QPQs by either quantifying a physical product attribute or by measuring customer or expert responses. Benchmarking, pseudo-quantified index systems and numerical measures are typical techniques by which this is achieved. QFD and Kansei are available but not used by the firms investigated.

The findings are summarised in Figure 28 (from [119]).

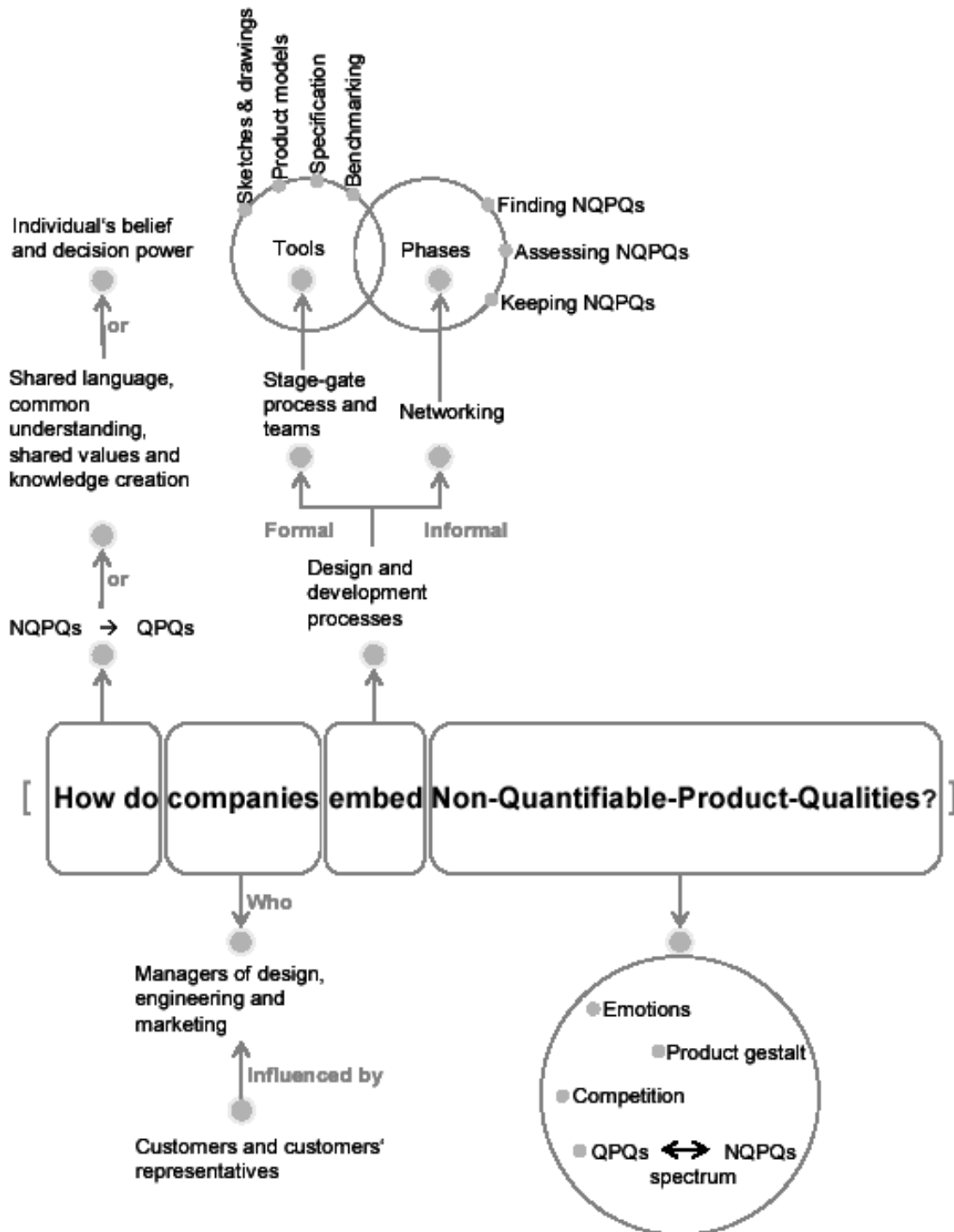


Figure 28 Embedding NQPQs

2.4.2 Empathic Design

Traditional market research methods rely on customer inquiry; that is, asking the customer about their wants, likes and dislikes. Traditional methods are also inherently limited to current solutions and technologies: the customer can't talk about what they don't know about. Their needs and wants are informed by their

experiences and constrained by their imagination. This approach is typically unable to identify the customers' latent needs: those needs that the customer doesn't know they have, and so are unable to articulate. There is therefore a level of incompleteness and unreliability in the data that is collected which needs to be overcome, as it affects a company's ability to develop products that truly meet customers' needs. [97] [122] [123]

Empathic Design is a set of techniques used to overcome the problems of traditional market research and to better understand the latent needs of the customer. Its fundamental principle is observation of the customer using products or services, but in the customer's own environment rather than focus groups or usability laboratories. In addition, empathic design is an interdisciplinary process, not a research process carried out in isolation from other disciplines. [97]

Empathy has been described as "the ability to put one's self into the psychological frame of reference or point of view of another, to feel what another feels" [105]. Empathic design is a way to achieve this to understand the experiences, aims, aspirations and desires of the customer, and then to use those insights to make opportunities for innovation [124].

Leonard et al identify a number of types of information that empathic design can yield that is not accessible through traditional research processes [97]:

- | | |
|--|--|
| • Triggers of use | what circumstances prompt customers to use a product or service |
| • Interactions with the user's environment | how does a product or service fit into the user's life |
| • User customisation | do users change a product to meet their needs |
| • Intangible attributes of the product | peripheral or intangible attributes that are rarely mentioned in traditional focus groups |
| • Unarticulated user needs | observing customers encountering problems with the product or service that may not have been recognised as problems. |

There are many tools that can be used for empathic design, but the basic process contains the following steps [97]:

- observation,
- capturing data,
- reflection and analysis,
- brainstorming for solutions, and
- developing prototypes of possible solutions.

Techniques include naturalistic observations of customers using products in context (product-in-use), interactive designer/customer workshops (scenario-in-use workshops), or discrete observation of customer evaluating products at (e.g.) trade fairs (the murmur of the customer). Tools also include customer self-report mechanisms such as ownership diaries, paper or on-line questionnaires, and disposable cameras. Other activities include needs prioritisation exercises, co-creation workshops and re-framing the design brief to remove product constraints through brainstorming, and scenario mapping. [124]

Empathic design produces subjective or qualitative results; using several of these tools increases the level of confidence in the findings by triangulation (either by source or by method). [124]

2.4.3 Kansei Engineering

Kansei Engineering (Figure 29 [8]) is a technique developed by Prof Mitsuo Nagamachi in the 1970s to incorporate Kansei into design methodology [113] by translating consumers' feelings, impressions and imagery into product design attributes [101] [102]. Kansei Engineering is defined as a *“technology for new product development that focuses on consumer feelings and emotions (Kansei)”* [8].



Figure 29 Kansei Engineering

The method requires an understanding of the market, involves the designers, and uses customer surveys and data analysis (such as factor analysis and statistical modelling) to elicit underlying traits to make predictions [125]. It uses statistical techniques to identify correlation between “measures” of feelings and product parameters, which can (in theory) then be manipulated to evoke specific emotional reactions in the consumer [105] [100].

There are 6 types of Kansei Engineering [8] [126]:

- I Category Classification: planned target broken down in a tree structure to determine physical design traits;
- II Kansei Engineering System (KES): computer aided system with (expert system), contains 4 databases (Kansei word, image, knowledge, and design and colour) and an inference engine;
- III Kansei Engineering Modelling: mathematical modelling with inference engine and databases;
- IV Hybrid Kansei Engineering System: contains both forward KES (as for Type II) and reverse KES;
- V Virtual Kansei Engineering;
- VI Collaborative Kansei Engineering.

The specific details of the Kansei Engineering process depend on the type used, however, in general the process starts with a diverse range of products and a wide range of emotional responses. Subjective responses are assessed, for example using a bipolar attribute rating scale, and each product is rated on each attribute scale. Robust analysis, using statistical comparison, then identifies which perceptual elements elicit particular subjective judgements. [100]

Kansei techniques are claimed to have been used at companies such as Mazda (cars), Sharp (video cameras), Komastu (construction equipment), Wacoals (underwear) and Milbon (hair care products) [8] [127]. Use is primarily reported in Japan [128], however, it has been difficult to find documented evidence and examples of its use in the public domain. The process used at Mazda followed the following steps [8]:

- i. Define product strategy;
- ii. Collect Kansei data (marketing);
- iii. Define “zero level” product Kansei concept (for Mazda this was “Human Machine Unity” [126]);
- iv. Breakdown zero-level concept into sub-concepts;
- v. Identify physical traits during breakdown (e.g. mass, length);
- vi. Experiment to develop more detailed design specifications;
- vii. Summarise overall specifications and review fit to zero-level concept;
- viii. Verify results with virtual and actual mock-ups;
- ix. Adjust for final decision

Schütte [113] describes the Kansei engineering process as the *synthesis* and *testing* of the association of two vector spaces (*semantic space* and *space of properties*) within a product *domain*, and lists typically used statistical tools as principal component, factor and cluster analyses, quantification theories and neural networks.

Tools such as semantic differentiation are used to bring together the Kansei data and the design process. For example, Mazda used semantic differentiation in their experiments to develop shift-lever length (step vi) [126].

Abbott’s work investigating emotional brand attributes at Bentley uses the semantic differential process to evaluate categories and sub-categories of brand attribute factors , a process illustrated¹¹ by Figure 30 [95]:

¹¹ No meaning should be read into the data points, these are purely for demonstration. Green dots represent the target, red dots represent the customers’ view.

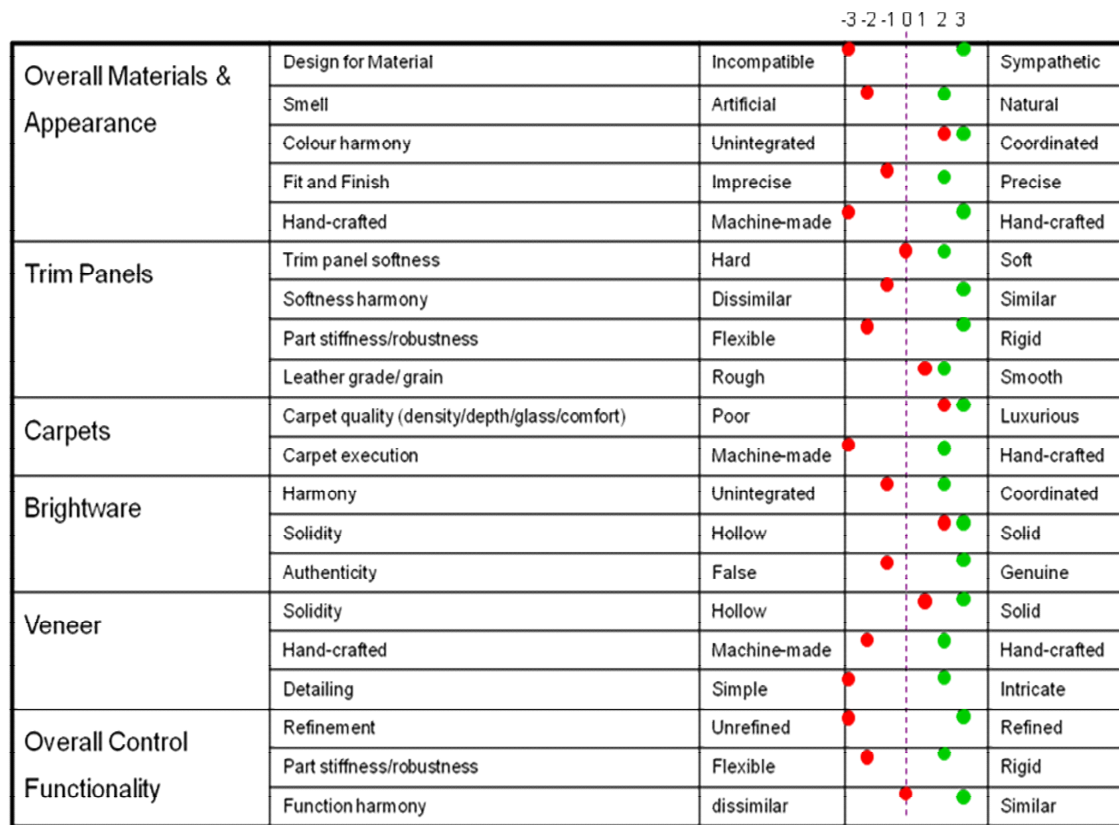


Figure 30 Measuring Brand Attributes

This work goes some way to understanding the product attributes that are important in driving the perception of luxury in a vehicle, and measuring them from a customer point of view; however, the mechanism by which this insight becomes embedded in the NPD process is still unclear.

2.4.4 Quality Function Deployment

Quality Function Deployment (QFD) was developed to assure the design quality of a product while it is in the design phase of NPD [7]. Rather than focusing on “things gone wrong” (TGW) as is typical in traditional quality approaches, QFD aims to reduce negative quality and increase positive quality [129]. However, it is now commonly espoused as a tool to embed the Voice of the Customer (VoC) into the NPD process [123].

QFD literally means “deployment of quality through deployment of quality functions”, where a quality function is “a function that forms quality” [7]. QFD aims to convert consumers’ demands into quality characteristics and systematically deploy the relationships between them:

- Develop a design quality to satisfy the consumer;
- Translate the consumers’ demands into design targets;
- Develop quality assurance points for the production phase. [7]

A QFD system must consider technology, reliability and cost. A fundamental principle of QFD is the quality chart, which shows the relationship between

customer demanded quality and the quality characteristics “by means of reasoning, translating and transferring”, together with the strength of any correlation. [7]

It has been suggested that a structured and systematic approach such as this can reduce the need for design changes and improve team working [123], and it does encourage engineers to consider customer needs (increasing “empathy”). However, QFD requires customer verbatims, once collected, to be “re-worded” [7], which immediately introduces the potential for mis-interpretation and loss of context. The nature and strength of the relationships is usually developed by experts, which introduces further potential for error [113]. This can yield products that fail to satisfy the customer, despite meeting the resulting design specification.

The effectiveness of the QFD process is also dependent on the quality and reliability of data obtained from consumers: customer responses are limited by their experience (likes and dislikes of current products, improvements to what they’ve used before), technological exposure and imagination. It is therefore difficult to capture accurate explicit needs or latent needs and those which consumers are unable to articulate. [123]

2.4.5 Perceived Quality (Craftsmanship)

There is a distinction between traditional (manufacturing) quality and perceived quality (craftsmanship). Traditional quality metrics are backwards looking: an absence of defects is a must-have for craftsmanship [6]. Superior quality products require a level of quality that may seem excessive to the manufacturer [56], but this should be viewed as attractive quality, not as surplus, and is likely to be necessary to achieve the delivery of luxury. Craftsmanship has been defined as “*the perception of quality experienced by a customer, based on sensory interaction and emotional impact*” [6].

The field of automotive craftsmanship offers potentially useful tools. Both Hossoy [130] and Wang [131] [132] derived weighted rating systems based on perceived attributes and product characteristics.

$$\begin{aligned}
 C &= \sum_{i=1}^k \omega_i f_i \\
 f_i &= f_i(x) \\
 x &= (x_1, x_2, \dots, x_n)^T
 \end{aligned}$$

Where C = craftsmanship index
 f_i = perceived attributes
 ω_i = weighting for each attribute
 x = vector of attributes
 k = number of perceived attributes
 n = number of product characteristics

Figure 31 Hossoy's Craftsmanship Index

$$CR = \frac{\sum c_i r_i}{\sum r_i}$$

Where CR = craftsmanship rating
 c_i = craftsmanship rating of metric i
 r_i = priority of metric i

Figure 32 Wang's Craftsmanship Rating

Wang also developed a product evaluation system based on Quality Function Deployment (QFD) and fuzzy set theory that aimed to capture customers' subjective desires and manipulate evaluation results using linguistic descriptors.

The Pugh Matrix and the Attribute Categorisation and Evaluation (ACE) Matrix provide evaluation and decision making tools that are useful at a practitioner level. The Pugh Matrix provides a structured comparison of a range of alternative designs, based on requirements that are weighted by importance. Like Kano, the ACE matrix, shown in Figure 33, groups attributes into 3 categories and relates these to product reaction. [6]

PRODUCT ATTRIBUTES			
	BASIC	DISCRIMINATOR	ENERGISER
+VE Customer Reaction	Non-negotiable	Differentiator	Exciter
-VE Customer Reaction	Tolerable	Dissatisfier	Enrager

Figure 33 Attribute Categorisation and Evaluation Matrix

2.4.6 Automotive Surveys

There are a number of independent and syndicated automotive surveys that assess customer satisfaction with product quality, service and design. These include the JD Power Automotive Performance Execution and Layout (APEAL) study, Initial Quality Survey (IQS) and Customer Satisfaction, and the Experian Top Gear Survey. Syndicated studies include the New Car Buyer Survey (NCBS) and US-based New Vehicle Experience Survey (NVES).

The raw data for each of these surveys is available to purchase (independent studies) or to members (syndicated studies), and the data can be analysed using the mTAB analysis tool.

The surveys provide both qualitative and quantitative data. Typical qualitative data includes demographic information, details of vehicles owned, how the vehicle is used, reasons for purchase and “good points of car”. Quantitative data is generated through use of numerical scales (e.g. 1-10 with linguistic attachments such as *not at all satisfied* to *very satisfied*) to rate named features for satisfaction or importance.

The surveys cover the entire automotive market, so are not focussed specifically on luxury vehicles, however some of the questions do provide data pertinent to the luxury market. For example (Table 2):

Survey	Question	Relevance of Luxury
NCBS (UK)	II(a) A2. Market Category of New Car	luxury/sport category.
	IV(a) C3 Reason for Purchase	responses include interior/exterior design/appearance/quality/finish, car characteristics, prestige/class of car, lifestyle.
	V Opinion of Car	reputation of make
	VIII Your Views on Motoring	societal responses to how car makes them feel.
JD Power APEAL	Q6 Factors in choosing your vehicle	responses include image vehicle portrays, interior comfort, workmanship.
	Q10 Replaced vehicle segment	Segmentation includes luxury.
	Q23 Vehicle Image	includes sub-question on vehicles reputation for luxury, and vehicle's overall reputation.
NVES (US)	Personal Emotional Desires Personal Vehicle Emotional Desires	responses include to feel powerful, feeling proud, sense of prestige, to be refined, self esteem, individuality.
	Purchase Reasons	prestige, vehicle's image.
	Brand Loyalty	loyalty to brand.

Table 2 External Survey Data Sources

An example of how these survey results can be analysed to support how customers evaluate premiumness luxury is given in Chapter 5.

2.4.7 Brand Strength

There are a number of brand “charts” within the brand management industry. These publish their results on a regular basis, and include:

- Interbrand: surveys include *The 100 Best Global Brands by Value* [133];
- Millward Brown: *Brand Z Top 100, Voltage UK* [134];
- Luxury Institute: *Luxury Brand Status Index, Luxury Brand Experience Index* [135].

Other useful sources include the internet resources Brand Republic [136] and Brand Channel [137].

2.4.8 Discussion

This section of the literature has focused on literature concerned with incorporating the voice of the customer into the design process.

This began with a review of Guldbrandsen's work on understanding how companies embed NQPs. This work identified the common practices used within the firms investigated, and identified shared language, common understanding, shared values and knowledge creation as being key factors in the process. A typical outcome of this need for a shared language is the translation of NQPs into QPs by measuring customer or expert responses or via quantifying attributes. The former approach assumes that an internal expert is a valid proxy for the customer. However, in the luxury literature it is clear that attitudes to luxury vary according to many factors, and is driven by personality, which suggests that using technical or attribute specialists as experts may not yield an accurate reflection of the actual customer response. The use of quantitative or pseudo-quantitative measures to manage NQPs assumes that the product quality can be related to a specific measurable product feature, and necessarily assumes a rational, cognitive base to the customer reaction to the quality being translated, failing to acknowledge the visceral, affective elements. An incremental process that develops benchmarks for the NPQ, then develops indexes and ultimately product measures, can introduce incremental error into the translation process: at each stage, decisions are made further away from the original context leading to potentially flawed assumptions.

The importance of understanding the customer's opinion was recognised, and techniques such as customer profiling, ethnography, focus groups and clinics are typically used by the firms throughout the NPD process. However, little was said about how that data was captured and prepared to meet the needs of shared language, common understanding, shared values and knowledge creation.

The idea of Empathic Design recognises the limitations of traditional customer research techniques in terms of capturing customer's latent needs, and adds to the customer researchers tool kit by introducing techniques to enable access to different types of information. However, a similar limitation exists in how this knowledge can then be operationalised.

Kansei Engineering claims to be a method for translating feelings, impressions and imagery into product design attributes. However, the process is very focussed on statistical analysis and the translation of the voice of the customer into measurable elements. "Traditional" Kansei engineering is very much a reductionist process [113], carrying the disadvantages of target cascade processes in which a non-holistic approach means that the view of the whole is lost. This does not create a holistic understanding for a wider audience. The use of non-naturalistic techniques such as semantic differential remove the customer from the actual product experience, affecting the validity and reliability of the findings. The Kansei Engineering process traditionally treats only tangible products [113] and assumes that a Kansei word can be attributed to a product feature. The Kansei process deliberately removes customer words from what is then used by engineers, this results in a loss of context which can prevent the engineers from understanding meaning behind the words. A further limitation of Kansei Engineering is that it is driven by existing needs, wants and products: the very limitations identified by the Empathic Design literature. It can also be argued that the Kansei process needs regular updates to reflect the

changing expectations of the customers: what was “right” at the start of the NPD process might not be right now.

Guldbrandsen [119] found that Kansei and similar tools made assumptions that were not evidentially supported for many NQPQs:

- the desired product quality was already contained in a statement of customer requirement,
- the requirement can be broken down into [numerical] technical specification
- delivery of the [numerical] technical specification will result in a satisfied customer.

Abbott’s work using semantic differential to evaluate emotional brand attributes provided a quasi-quantitative index system. However, it offers no guidance as to what actions would be needed to improve the customer’s evaluation, and can only measure against those identified attributes, so cannot capture latent customer needs.

The QFD process also purports to incorporate the voice of the customer into the NPD process by translating customer wants into design targets. However it also “re-words” customer verbatims, introducing potential translation errors and relies on experts to interpret those reworded needs into specifications. It therefore suffers from the same limitations discussed previously of loss of meaning and context through translation, and bias through personal attitudes to luxury.

Craftsmanship / Perceived Quality tools also force a quantitative approach to the process, and can only provide an evaluation of those attributes it includes. The tools highlighted also provide a static picture of the customers cognitive evaluation, but fail to capture the affective element of the evaluation process: again, the true meaning of each rating cannot therefore be captured.

Independent and syndicated automotive surveys provide a wealth of data from actual owners of vehicles. Burns identified that the antecedents of delight when evaluating a vehicle were different in pre-purchase and ownership contexts. Respondents for these surveys answer questions about their own cars, and it could be argued that they would feel obliged to defend/justify their purchase which may introduce bias in their response. Respondents are asked questions in some of the surveys to understand the cars they considered but did not buy, but these questions rely on respondent’s accurate recall of either an actual evaluation or of the reviews, brochures and websites they may have visited some months prior (rather than their actual and current experience of living with their purchase). The surveys are administered by post (some are now administered online), so represent a non-naturalistic setting, and the process of completing the form encourages a rational rather than affective response to the questions. The respondents can only answer those questions that they are asked, and the data provided to the firms omits any verbatim comments that customers may have made. Finally, the surveys are backward looking rather than forward looking. They can, therefore, provide a post-launch measure of success with respect to improvements made to a product, and can also be used

to derive a list of potential benchmark vehicles with suggestions as to which areas perform best for the different vehicles. However, this data is again isolated from context and does not provide any insight into why respondents have made their specific evaluations.

Other external surveys examine Brand Strength, which again offer the potential to track success following launched design changes, but which cannot offer insights into what drives customers' perceptions of luxury in the products.

There is therefore a gap in the literature for a tool or set of tools that capture customer thoughts about luxury during naturalistic product evaluation, and which can enable that to be embedded into the NPD process without losing meaning through translation or context through isolation.

2.5 Relating the Literature to the Research Project

2.5.1 Overall Critique

Very little material was found that pertained specifically to the area of this research. This literature has therefore provided a critique of the state of the art in those fields that most closely related to the topic:

- luxury;
- the relationship between people and product;
- operationalising the voice of the customer.

Excluding economic definitions, the literature pertaining to luxury focuses on brand and attitudinal explorations. Luxury is described as a dynamic personal construct that is driven by factors such as personality, age, and background, and whose definition changes according to mind set, attitude, experience and expectations. Conflicting views of traditional and modern luxury perceptions further complicate the issue.

Premiumness is seen as a antecedent of luxury, but a key driver of purchase intent is to signal success to others, which contrasts with the need for personal pleasure that characterises luxury consumption.

Research Observation 1 A gap in the literature has been identified which concerns the relationship between the perception of luxury and product evaluation.

The literature highlights the parallel information processing systems within the brain, which helps the understanding that both rational and emotional decision making processes may contribute to the perception and evaluation of luxury products.

A review of the consumer behaviour literature introduces the importance of expectations in influencing purchase intent, and recognises that satisfaction is driven by both product and non-product attributes. However, the bias towards cognition in traditional behavioural decision theory neglects the influence of affective decision making processes on behaviour. Even Kano's model of delight assumes a form of rational response from the customer.

Research Observation 2 A gap in the literature has been identified which concerns the influence of affective information processing systems on the perception of luxury.

Burns' research into delight¹² identifies that positive product appraisal reactions can result from cognitive and affective appraisals, and derive from feature/attribute and holistic evaluations. He also found that context played a key role in whether an evaluation resulted in a positive appraisal reaction. However, while this helps to inform the understanding of how luxury is perceived by customers, it does not inform the operationalisation of that understanding.

The relatively new field of Emotional Design is concerned with enabling emotional reactions to be designed into products or services. While a review of the literature in this field has provided insights into the nature of emotion and the importance of motivation and meaning, there was little written about the implications for practice, specifically tools that could be used to embed luxury in the NPD process. Much of the literature focused on gathering customer insight, but those tools that were available on practitioner and community websites tended to comprise numerical measures or mathematical models, derived from non-naturalistic, non-holistic customer evaluations.

Limitations of Voice of the Customer tools such as Kansei and QFD were identified. In particular, the focus on product features and attributes rather than the whole were perceived as weaknesses. The use of non-naturalistic data collection processes and closed-question research approaches reduced the value of insights obtained by failing to capture latent needs. In addition, the process of converting those customer insights into other formats introduced translation and contextual deficits that compromise meaning, leading to flawed assumptions within the NPD process.

Research Observation 3 A gap in the literature has been identified which concerns the availability of methods or tools to operationalise customer insights such as the understanding of the customers perception of luxury during product evaluation.

External data sets provide an opportunity to measure the impact of design changes once a product is launched, and can facilitate benchmarking processes, but otherwise offer limited insight into customer perceptions of luxury.

The automotive industry has a mature product with mature customers, especially and literally at the luxury extreme. This maturity amplifies the importance of smaller details and nuance to the customers. This may mean that the key to understanding how customers perceive luxury could be found in viewing it as a comparative rather than absolute construct.

¹² an emotion, being the conscious experience of affect

2.5.2 The Research Objectives

Five research objectives were identified in Chapter 1. This section discusses the implications of the literature on each of these in turn.

RO1 *Derive a flexible model of luxury in the context of the premium automotive industry.*

A traditional approach to operationalising a construct such as luxury would begin by creating a coherent and unambiguous definition. No single, comprehensive, evidentially-supported definition of luxury was found in the literature. In addition, the author has argued that such a definition would likely be flawed due to the influence of personality, attitude, demographic, and context: a definition developed to encompass the wide range of personal meanings, even among specifically targeted consumer groups, would be so vague as to be useless. In addition, the dynamic nature of customer expectations would render any definition invalid over time. The literature review has therefore supported the need to derive a flexible model of luxury for the premium automotive industry.

RO2 *Evaluate the effectiveness and validity of the JLR PRP as a robust and useable technique for the assessment of luxury in vehicles and brands.*

The literature review revealed a number of reductionist tools that could be adapted to develop a quantitative assessment of a subjective construct such as premiumness or luxury. However, the literature also clearly demonstrated the limitations of imposing such a methodology .. The JLR PRP technique proposes an alternative approach to data collection and analysis which uses rich qualitative and quasi-quantitative customer data. There is therefore a need to understand the efficiency, accuracy and usefulness of the data collection and analysis process.

RO3 *Explore how JLR PRP datasets might be better exploited within the company.*

It has been identified that much of the literature in this area is concerned with capturing “customer insight”, but a gap exists around how to use that insight effectively. Tools such as QFD and Kansei Engineering impose considerable constraints in terms of translation of the raw voice of the customer data into product feature or attribute specifications, and in terms of the loss of meaning resulting from the isolation of customer insights from their originating context.

There is therefore an opportunity to address a gap in the literature by evaluating how the PRP data is currently used within JLR to inform vehicle programmes, to understand what the wider NPD community needs from the data, and to identify how the datasets can be better exploited within the firm.

RO4 *Specify and develop a toolset to enable appropriate levels of premiumness and luxury to be re-established into the Jaguar and Land Rover brands.*

Techniques exist that purport to incorporate the voice of the customer into the design process, but there is little empirical evidence of these in operation beyond the marketing and initial design practice in firms. Existing techniques have also been shown to be predominantly product or attribute focused, while

the literature has established that luxury is also a personal and holistic experience. There is therefore an opportunity to address a gap in the literature by developing a toolset that can provide appropriately presented holistic and attribute-based customer insights to the wider NPD community, and to increase on-going value of JLR's PRP research.

RO5 *Evaluate the toolset by implementing it within the New Product Introduction Process for at least one new vehicle development programme.*

This objective relates to the application of the ultimate findings of this EngD research project to the NPD process within JLR, consequently it is not expected that the literature would be able to address this requirement.

2.5.3 Research Questions

Five research objectives were identified in Chapter 1. This section discusses the implications of the literature on each of these in turn.

RQ1 *What makes a brand premium or luxury?*

RQ2 *What builds luxury and premiumness, and what factors erode/jeopardise them?*

These first two research questions are intrinsically linked. The literature could not provide direct answers to these questions, but the key features of luxury have been shown to be intangible rather than specific product features or characteristics. Further research is required to appropriately answer these questions.

RQ3 *How are JLR brands evaluated in terms of luxury and premiumness?*

There is no literature to cover this specific question as it relates directly to JLR products. Further research is required to appropriately answer this question.

RQ4 *What methods or interventions can be used to improve product development such that vehicles increase their level of luxury/premiumness?*

The literature review revealed a number of tools that capture consumer insights, and a number of tools that purport to convert those insights into design targets. However, the conversion tools were identified as having serious limitations that exclude them for being usefully and effectively employed to embed luxury into JLR's products. The literature did not yield any guidance in relation to managing luxury in the NPD process beyond the target setting stages. Further research is required to appropriately answer this question.

RQ5 *How do differences in geographical market segment, brand and model affect this understanding of luxury and premiumness and customer expectation?*

This question was answered in part within the literature. Dubois et al [21] have identified differences in attitudes to luxury between countries; in a review of attitudes towards luxury in 20 countries on 4 continents, they identified that culture had a correlation with attitude in line with Hofstede's dimensions of culture. They also proposed, but did not test, that religion also had an effect on attitudes to luxury. In terms of their Elitist/Democratic/Distance segmentation,

the UK and USA shared similar combinations of attitudes (mostly democratic and elitist), while Denmark yielded an almost exclusively democratic attitude to luxury. Portugal, Italy and Spain's attitudes tended more towards a distance attitude than any other nation. However, this research considers attitudes to luxury and develops a segmentation rather than offering a quantitative measure of expectations and evaluations of luxury. .

The literature has also confirmed that what qualifies as luxury changes with expectations, and identified that the mass democratisation of wealth has resulted in brand extensions that offer luxury products now being available to a wider audience.

Research Observation 4 JLR follows a norm in having a very prescriptive approach to defining requirements: the language used tends to specify a solution rather than to clearly describe the problem to be solved.

This question, which was specified by JLR (MRO) at the start of this EngD research process, is prescriptive and restrictive. For JLR, the ultimate aims of this project are to improve the customers' opinion of their cars in terms of the perception of luxury, and for the EngD to make a novel, reasonable and clear contribution to knowledge. The assumption made was that these factors are important to understanding what the customer wants, at the exclusion of understanding what other teams within the NPD process need to know to effect the intended outcome.

2.6 Key Papers

Of all the papers considered within this literature review, six authors' work have significantly informed the rest of this EngD research:

- Vigneron and Johnson's modelling of luxury [12], [30];
- Norman's views on emotional design [42];
- Burns' phenomenology of delight [86], [122], [123], [124];
- Abbott's investigations of emotional brand attributes [95], [116], [117], [118];
- Guldbrandsen's work on understanding how NQPQs are embedded in firms [96], [119]; and
- Nagamachi's Kansei Engineering research [126].

2.7 Chapter Summary

The literature review has provided a critique of the state of the art in the luxury literature and related fields. Perspectives from psychology, marketing, design and engineering have been discussed: the review has covered several disparate topics, but can not be considered exhaustive.

The literature has identified that luxury is a personal and subjective construct that comprises both cognitive and affective information processing systems in the brain.

Traditional customer research techniques have been criticised for failing to capture the customer's latent needs, and empathic design tools go some way to enabling firms to capture more complete customer insights.

The tools and techniques within the wider academic environment that attempt to operationalise subjective customer insights were found to be predominated by numerical and statistical tools that rely on data collected by non-naturalistic and closed methods and which lose meaning and context in translating or converting customer verbatim into targets.

Three gaps in the literature were identified, concerning the relationship between the perception of luxury and product evaluation, the influence of affective information processes on the perception of luxury and the availability of tools to operationalise insights about the perception of luxury during product evaluation.

The literature review has therefore justified the premise of this EngD research project, and has validated the research objectives and questions.

3 RESEARCH METHODOLOGY



Aim To present the research methodologies considered for this EngD research project and to explain the choices made. To discuss the approach adopted by JLR for the Premiumness Research Programme in similar terms.

3.0 Chapter Structure

This chapter begins with a précis of the context in which this EngD research project has been designed. The process of designing a research methodology, the factors that should be considered and the decisions that must be made are outlined from a theoretical perspective, and each aspect is discussed both in terms of the EngD research project and JLR's Premiumness Research Programme, to establish the fit of the EngD within these theoretical constructs. A practical description of the actual research methodology used for this EngD research project is then provided.

3.1 Introduction

This EngD research project concerns a deeply subjective phenomenon and was specifically instigated to complement JLR's existing Premiumness Research Programme.

The research methodology therefore comprises two distinct elements: research to understand how customers perceive luxury (the PRP), and research to understand how that understanding can be captured and operationalised (this EngD). The two elements are inextricably linked, but do represent separate research efforts.

This EngD project had no influence on the design of the PRP data collection process, but an understanding of the approach adopted by JLR is needed to understand the consequent development of the EngD research design.

3.2 Theoretical Research Design Considerations

Blaikie [138] identifies several areas in which choices must be made when designing a research project, including the problem to be investigated, the questions to be answered, the strategy to be used answering the questions and the research paradigm.

Khun [139] defines the concept of the research paradigm as the “*underlying assumptions and intellectual structure on which research in a field of inquiry is based*”. It has also been described as an interpretive framework guided by a

“set of beliefs and feelings about the world and how it should be understood and studied” [140]. These beliefs can be categorised by [141] [142]:

- ontology: “the science or study of being” (the nature of reality);
- epistemology: “the theory or science of the method or grounds of knowledge” (how to gain knowledge of this reality – what can be known and what criteria must be satisfied to distinguish knowledge from belief);
- methodology: the analysis of how research should proceed (as opposed to method – the actual techniques or procedures used to gather and analyse data).

Guldbrandsen [119] summarised different aspects of research design, adapting the works of Gill and Johnson [143], Robson [144] and Blaikie [138] (Figure 34):

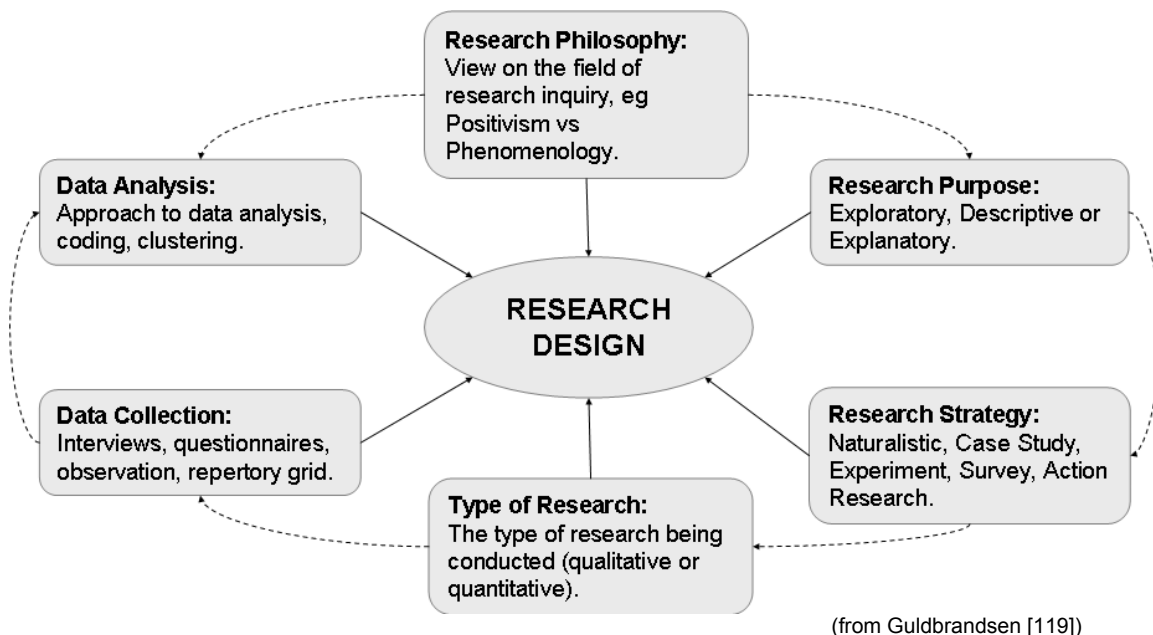


Figure 34 Issues in Research Design

Each of these aspects are considered in turn, and the theoretical considerations and decisions that have been made for this EngD project are explained; this section presents a critique of the literature for research design and how the EngD design relates to it. The specific activities that were employed (i.e., the practical application of these theoretical considerations) are discussed in section 3.3 (page 69).

3.2.1 Research Philosophy

The research philosophy reflects the researcher’s ontological and epistemological stance, the research approach and reasoning process adopted.

3.2.1.1 *Ontology*

According to Blaikie [142], research approaches fall into two ontological groups: realist or constructivist. The realist ontology assumes that reality exists independently of the observer and that this reality is ordered, can be observed and be explained. The constructivist ontology assumes that reality is produced by actors, and is an intersubjective world of cultural objects and meanings [142].

3.2.1.2 *Epistemology*

Research approaches can fall into internalism or externalism camps. Internalism is the idea that everything necessary to provide justification for a belief is immediately available in consciousness. Externalism represents the view that there are factors other than those which are internal to the believer which can affect the justificatory status of a belief. [145]

Specific theories of knowledge include Empiricism, Rationalism and Constructivism [146]:

- Empiricism emphasises the role of experience, especially experience based on perceptual observations by the five senses.
- Rationalists believe that knowledge is primarily (at least in some areas) acquired by a priori processes or is innate, e.g. in the form of concepts not derived from experience.
- Constructivism is a view in which all knowledge is contingent on convention, human perception, and social experience. Constructivism proposes new definitions for knowledge and truth that forms a new paradigm, based on inter-subjectivity instead of the classical objectivity and viability instead of truth.

3.2.1.3 *Philosophical Approaches*

Blaikie identified a number of research approaches (Table 3):

Approach	Ontology
Positivism	Realist
Critical Rationalism	Realist
Realism	Realist
Phenomenology	Constructivist
Critical Theory	Constructivist
Structuration Theory	Constructivist
Feminism	Constructivist

(adapted from Blaikie [138])

Table 3 Research Approaches

The two major research paradigms considered here are Positivism and Phenomenology.

Positivism views the world as existing externally: its properties should only be measured through the use of objective measures [86].

Phenomenology advocates the study of direct experience, in which behaviour is seen as being determined by the phenomena of experience rather than external, objective and physically described reality [147]. Phenomenology is sometimes referred to as interpretivism, constructivism and naturalistic enquiry [86].

Key differences between the paradigms are highlighted in Table 4:

	Phenomenology	Positivism
Assumptions / Beliefs	Realities are multiple, holistic, socially constructed and subjective Observers are part of what is observed Science drive by human interest	Reality is tangible, external and objective Observers are independent of the enquiry Science is value-free
Approach	Focus on meanings Explanation of subjective meaning held by subjects through understanding Describe totality of situations	Focus on facts and truths Explanation through analysis of causal relationships and fundamental laws Reduce phenomena to simplest elements
Preferred Methods	Generate theory from data through induction (theoretical abstraction) Qualitative Multiple methods/viewpoints Small samples/in depth Context-bound understanding. Trustworthiness, utility and triangulation.	Formulate and test hypotheses based on theory (statistical probability) Quantitative Measurement Large samples Generalisation Rigour and validity

(adapted from Burns and Guldbrandsen [86] [119])

Table 4 Positivism vs. Phenomenology

3.2.1.4 *Reasoning Process*

Blaikie [138] identifies four distinct types of reasoning: inductive, deductive, retroductive, and abductive. Their differences are described briefly in Table 5 below.

	Inductive	Deductive	Retroductive	Abductive
Aim:	To establish universal generalisations to be used as pattern explanations	To test theories, to eliminate false ones and corroborate the survivor	To discover underlying mechanisms to explain observed regularities	To describe and understand social life in terms of social actors' motives and understanding
Start:	Accumulate observations or data	Identify a regularity to be explained	Document and model a regularity	Discover everyday lay concepts, meanings and motives
	Produce generalisations	Construct and theory and deduce hypotheses	Construct a hypothetical model of a mechanism	Produce a technical account from lay accounts
Finish:	Use these 'laws' as patterns to explain further observations	Test the hypotheses by matching them with data	Find the real mechanism by observation and/or experiment	Develop a theory and test it iteratively
Use	For answering "what" questions	For answering "why" questions	For answering "why" questions	For answering both "what" and "why" questions

(adapted from Blaikie [138])

Table 5 Types of Reasoning

Each of the research strategies contain ontological and epistemological assumptions about the nature of reality and how that reality can be known [138].

3.2.1.5 *Adopted Research Philosophy*

The PRP is practitioner rather than academic research, so philosophical discussions regarding the nature of reality formed no part of the research design process. The difficulty with applying academic concepts such as these to JLR's research is the implicit assumption that the choices/stances are mutually exclusive, which does not reflect the reality of the situation.

JLR's cultural mindset is very positivist: reality is ordered, observable and explainable, and everything that needs to be known can be measured. However, the PRP research incorporates significant elements of the phenomenological approach. This contrast between how the business views the world and the nature of this research is a potential area of conflict, particularly in terms of how the data is ultimately analysed.

The literature demonstrates clearly that luxury is subjective, holistic and driven by personal values. Much of the existing research has adopted a positivist approach to managing subjective constructs (such as Kansei and QFD). This research posits that by reducing customer insights to simple elements and causal relationships, much of the value of the data is lost or eroded. It is

therefore valid to adopt a phenomenological approach for this EngD. The aim of the EngD is to develop new understanding of the perception of luxury and how it can be operationalised, rather than to create new theory, therefore inductive reasoning processes have been adopted.

3.2.2 Research Purpose

Robson [144] suggests that research can be distinguished according to its purpose, and lists three categories (exploratory, descriptive or explanatory). Blaikie [142] expands this list to include understanding, change and evaluation, but these do not seem to be sufficiently different to warrant separation.

Table 6 [144] distinguishes the three main categories:

Exploratory	Descriptive	Explanatory
To find out what is happening	To portray an accurate profile of persons, events or situations	Seeks causal explanation of a situation or problem
To seek new insights	Requires extensive knowledge of the situation to be researched	
To ask questions		
To assess phenomena in a new light		
Usually, but not necessarily, qualitative	May be qualitative and/or quantitative	May be qualitative and/or quantitative

(adapted from Robson [144])

Table 6 Research Purpose

3.2.2.1 Adopted Research Purpose

According to the definitions in Table 6 above, the purpose of this EngD is both exploratory and descriptive, suggesting a need for two distinct phases. The first phase of the research is to understand JLR's PRP work, to seek new insights about the nature of customer's perceptions of luxury and to assess JLR's approach in conducting the PRP. The second phase is more descriptive, aiming to portray an accurate picture of the situation in terms of what people need and want from the PRP and how that can be accomplished.

The positivist environment in which this EngD was conducted meant there was a pressure to use the data for explanatory purposes. However, an explanatory phase was not incorporated into the overall research design because the aim of the research is not to explain the relationship between product attributes and customer reactions, but to understand the nature of those reactions and how they can be used during the NPD process.

3.2.3 Research Strategy

It is suggested that there is a relationship between the strategy chosen for a piece of research and its purpose (Table 7) [144]:

Purpose		Strategy
Exploratory	---	Case Studies
Descriptive	---	Surveys
Explanatory	---	Experiments

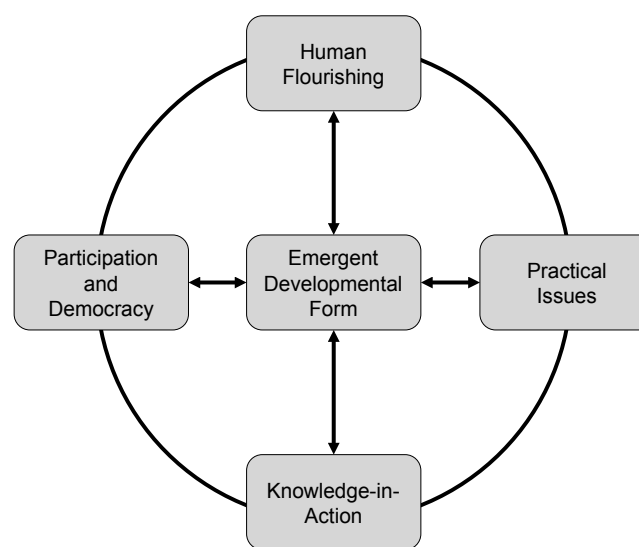
Table 7 Research Strategies

Yin [148] defines a case study as an *empirical inquiry that investigates a phenomenon in its real-life context*. They can be based on both qualitative and quantitative evidence, and can establish cause and effects, where context is recognised as a powerful determinant of both [147]. Case study methods include interviews, observation, documentary analysis and action research. Tellis [149] describes how the case study strategy can be used for exploratory, descriptive and explanatory purposes.

Robson [144] describes surveys as the “*collection of information in standardised form from groups of people*”. Data can then be presented in quantitative or statistical form. This strategy suits a positivistic approach. Survey methods include questionnaires and structured interviews.

Robson [144] characterises experiments as “*measuring the effects of manipulating one variable on another variable*”, that are used to test hypotheses derived from the theory under consideration.

Action Research is a special instance of case study research [150], described as an *iterative collaborative inquiry process that balances problem solving actions with data-driven research to understand underlying causes enabling prediction and change* [151]. It seeks to bring together action and reflection, theory and practice [151]. The researcher works in collaboration with the firm to effect real changes within the organisation. Reason [151] highlights five characteristics of action research (Figure 35):



(from Reason [151])

Figure 35 Characteristics of Action Research

Action research has two key goals: to solve problems and contribute to knowledge. The researcher and company personnel learn from each other to develop their competences and a holistic understanding of the problem.

3.2.3.1 Adopted Research Strategy

The PRP adopted methods from both the case study and survey strategies, using both scale-based surveys and unstructured, naturalistic interviews. This again reflects the conflict between the phenomenological approach (the interviews) and the positivist approach (the surveys).

The EngD adopts the Case Study strategy, incorporating interviews, observation and documentary analysis methods. Specifically, this EngD is an Action Research project: the researcher is embedded within the sponsoring firm, working within and as part of the organisation to develop and embed an understanding of luxury into the company's mind-set and actions.

The exploratory stage of the research encompasses traditional case study methods, adopting a passive observational stance. The descriptive stage then adopts an interventionist approach to develop further insights and to effect real changes within the organisation.

3.2.4 Type of Research

Research activities can yield qualitative or quantitative data, and there is a distinction between the two (Table 8):

Quantitative Research	Qualitative Research
Used in research that requires facts and figures in order to answer the research question (through verification of hypotheses)	Deals with exploration of issues and the generation of theories within emerging subject areas
Seeks to measure, test, and quantify elements in order to explain or describe something	Used to develop insight and understanding
	Seeks to create gestalt and holistic interpretations

(adapted from Robson [144])

Table 8 Quantitative vs. Qualitative Research

3.2.4.1 Adopted Type of Research

The PRP uses both quantitative and techniques. However the quantitative data obtained are actually represents numerical estimates of subjective customer opinions: they are therefore better described as quasi-quantitative.

The EngD research activities yield qualitative data from a multi-method approach that includes interviews, observation and document analysis.

3.2.5 Data Collection

3.2.5.1 Adopted Data Collection Methods

In view of the considerations of purpose and strategy above, and to enable the induction of grounded understanding, the data collection methods outlined in Table 9 and Table 10 will be used (informed in part by [152]). The research questions that each method is intended to inform are indicated in the table to demonstrate the appropriateness of the choices made.

Data Collection Method	Description	
Interviews	Short, open questions to elicit customers' emotional responses (stream of consciousness) when evaluating cars in a pre-purchase environment.	RQ1 RQ2 RQ3 RQ4
Survey	Customers rate brands and models against a 100 point scale (mass-produced to high-end luxury). Customers rate vehicles viewed on a 10 point scale (emotionally positive to emotionally negative) on subjective vehicle attributes.	RQ2 RQ3 RQ4

Table 9 PRP Data Collection Methods

Data Collection Method	Description	
Literature Review	Exploration of themes including definition of luxury, relationship between people and product, and operationalisation of voice of the customer.	RQ1 RQ2 RQ4 RQ5
Documentation Analysis	Company documentation relating to luxury message, brand, product specification, both internal and published	RQ4
Interviews	Combination of informal and semi-structured interviews with key stakeholders within the business.	RQ4/ RQ5
Observations	Attendance of team meetings and company briefings, observing PRP customer clinics, work shadowing personnel (MRO and PQ), MRO meetings with Agencies, development and implementation of interventions with targeted personnel.	RQ4 RQ5

Table 10 EngD Data Collection Methods

3.2.6 Data Analysis

Raw data often need manipulation to make them suitable for data analysis, in a process known as data reduction [152]. Table 11 lists typical reduction techniques employed for quantitative and qualitative data.

Quantitative	Qualitative
Coding pre, post	Coding open, axial, selective
Index Construction	Developing Themes
Scaling (e.g. Likert)	Typology Construction
Factor Analysis	
Cluster Analysis	

(adapted from Blaikie [152] and Strauss [153])

Table 11 Data Reduction Techniques

Data analysis techniques then fall into the following categories (Table 12):

Quantitative	Qualitative
Description distributions and dispersals	Description Conceptual Ordering
Association correlations and variances	Theory Generation analytic induction
Causation factor, path and regression analysis.	grounded theory
Inference population statistics	

(adapted from Blaikie [152], and Strauss and Corbin [154])

Table 12 Data Analysis Techniques

It has been identified that the numerical data arising from the PRP (brand standing and ratings data) are not truly quantitative data, hence the quantitative techniques suggested in Table 11 and Table 12 are not appropriate for this research. In addition, the typology construction reduction technique is typically related to an abductive research strategy [152], and so is not relevant to this enquiry.

This leaves the options of data reduction by coding and/or theme development and description or theory generation for the analysis technique to be employed. However, it should be noted that Blaikie [152] suggests that data reduction and analysis for qualitative data cannot actually be separated, but form a cyclical process.

Coding techniques are typically used in grounded theory. Coding uses concepts (labels for discrete events or phenomena) and categories (abstract groupings of concepts). Open coding has been described as unrestricted

coding that aims to produce concepts that appear to fit the data. Axial coding is described as an aspect of open coding in which analysis centres around categories, aiming to develop cumulative knowledge about relationships between categories and sub-categories. Selective coding refers to systematically coding for the core category to integrate and refine theory. [152] [153] [154]

The development of themes can be viewed as a particular application and outcome of the coding process, in which inductive analysis allows common themes to emerge from the data.

The boundaries between description and theory development are not necessarily clear [152]. Strauss et al [154] define description as “*the use of words to convey a mental image of an event, ... an experience, and emotion ...from the perspective of the person doing the depicting*”, while theory is described as “*a set of ... concepts [and] relationships, which together constitute a ... framework that be used to explain or predict phenomena*”. Blaikie [152] suggests that the development of description is often sufficient to provide understanding and sometimes explanation, while theory generation can be thought of in terms of the development of testable propositions. Conceptual ordering is seen as a precursor to theory development that is based on description. Conceptual ordering categorises data according to properties and dimensions, and clarifies those categories using description. Ethnography is an example of conceptual ordering. [154]

In summary, description depicts an event but does not interpret or explain that event; conceptual ordering classifies events but does not relate the classifications to form an overarching explanation, while theory development constructs an explanatory scheme from the data by systematically relating concepts, thus enabling explanation, prediction and guidance. [154]

An issue in qualitative analysis is the extent to which the methods “*retain the integrity of the phenomenon*” [152], by imposing concepts and categories (low stance) or adopting the language, concepts and meanings of the actors (high stance). Abductive research strategies tend to be low stance, while grounded theory generally adopts a high stance.

3.2.6.1 Adopted Data Analysis Methods

The aim of this EngD research project is to develop understanding rather than theory, and the data analysis techniques used within this project have been driven by the needs of the data as it emerges.

In terms of the PRP qualitative data, the transcripts from the Streaming™ process has been coded using a broadly open and axial coding process leading to description and conceptual ordering. This coding has been conducted manually, rather than using a software tool such as NVivo. This is largely driven by the preferences of the Agency that operated the coding process, who do not use NVivo.

The EngD data analysis has adopted a similar approach, in which the data has been subjected to detailed scrutiny to identify emerging themes and patterns.

Again, the analysis has been conducted manually; the data collected was not necessarily suitable for a tool such as NVivo, and it was considered important to use tools that were available to JLR as the sponsor of the research.

3.3 Practical Research Methodology

Figure 36 provides a summary view of the research process, representing the practical implementation of the theoretical considerations discussed in the previous section.

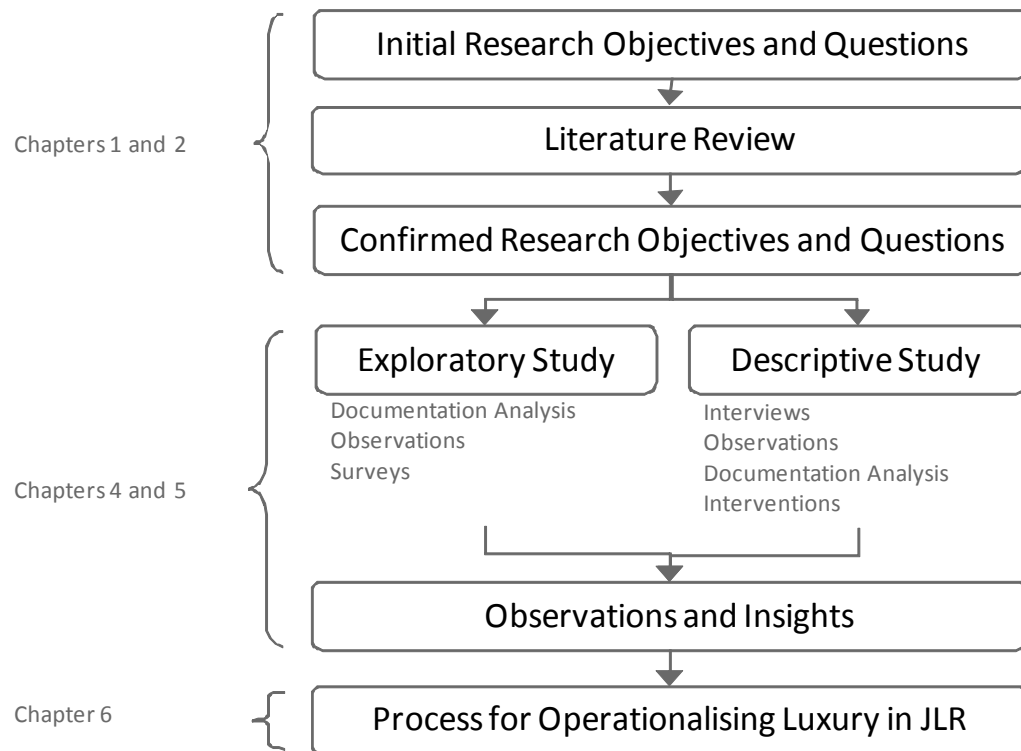


Figure 36 Research Process Diagram

A literature review was conducted to identify and evaluate existing research findings relating to the initial research objectives and questions proposed at the beginning of the project. This literature review confirmed that the initial proposals were necessary and appropriate.

This research design considerations established that two distinct studies was a suitable approach in order to achieve these stated objectives: an exploratory study and a descriptive study:

In the exploratory study, a passive approach has been used to observe and evaluate the planning and implementation of JLR's Premiumness Research Programme;

In the descriptive study, an interventionist approach has been used to probe for deeper insights into how successful JLR's research and dissemination process has been at improving the company's understanding of how customers perceive luxury, to establish how designers, engineers and marketing interact with the data, and to develop and test new ideas and tools to enhance the utility and

accessibility of the PRP data (with the aim of increasing the ultimate value of the research).

3.3.1 Exploratory Study

The exploratory study is based on the passive observation of how JLR conducted their PRP, from planning, through data collection and analysis to dissemination of findings.

The objectives for this part of the research project are as follows:

- a) Assess the process by which ad-hoc market research projects are planned;
- b) Understand the objectives for the Premium Research Programme (Stage 2 and L486/L538 projects), and the rationale behind them;
- c) Evaluate the methodology used to gather and analyse the PRP data;
- d) Review the findings of the PRP projects;
- e) Analyse the dissemination process.

A number of data collection methods have been used, including:

- Documentation analysis;
- MRO Meeting/Planning observations;
- Customer Clinic observations;
- Data Analysis Meeting observations;
- Results Presentations observations.

A series of three confidential log books were kept as a record of these observations, noting key personnel present at meetings, issues discussed and points of interest. The observations were made over a 4 year period, including at least 365 days spent on JLR sites, affording a longitudinal element to the research. Over 500 documents were reviewed, relating to processes and procedures, other MRO research projects, and activities undertaken by other departments within JLR (such as PQ and Quality).

The notes taken during the data collection process were reviewed and collated to identify those points that were interesting, intriguing, frustrating or difficult to understand. These points were inspected and analysed to identify emergent themes and patterns, which are discussed in terms that aligned with the stated aims of this study.

The specific details of the activities observed are confidential to JLR, however, the key points of interest are discussed in Chapter 4.

3.3.2 Descriptive Study

The descriptive study focuses on a series of interviews and interventions, conducted separately from the PRP and solely for this EngD, which aimed to:

- a) understand how usable the raw data is to interrogate and manipulate for further analysis;
- b) understand how well the PRP findings had been understood by its intended audience;
- c) find out what key stakeholders needed from the research that hadn't been delivered;
- d) work out how to develop deeper, richer and more focussed knowledge from the data; and
- e) identify how stakeholders could be enabled to use the data to inform their own functional requirements in a "safe" way.

Data was collected through a combination of open, unstructured interviews, interactive presentations and meetings, and group workshops. Tasks were undertaken concurrently, so learning from each activity could inform the others.

The activities undertaken informed three interventions. Each of these interventions represented an opportunity to learn about what JLR wanted to understand and how the PRP data could be used to accomplish this. As for the passive observations, notes were kept in a series of three confidential log books. The interventionist part of this research started in January 2007 and carried through to the end of the research period in December 2009, representing a three year period of interaction that included at least 332 days spent with JLR staff on site.

Some of the specific details of these activities are confidential to JLR; however, the key points of interest are discussed in the Chapter 5.

3.3.2.1 Intervention #1: Realising the Power of the Verbatim Data

The exploratory study found that while the value of the PRP verbatim data was recognised by JLR, the analyses were presented at such a high level that requests for additional reports for specific attributes and features or models were made from the NPD community.

This intervention therefore looks at how the verbatim data can be used to understand the customers' views in more detailed examples: what do specific teams within JLR want to get from the data, what questions do they want answers to, and how can the data be interrogated to provide those answers? It looks at the end-to-end process of developing detailed reports using the verbatim data as supplied by the agency, and highlights the problems and difficulties that arose.

The development of a specific report for the Seat Comfort Attribute Manager using the Stage 2 verbatim data provides the basis of the intervention activity.

From the researcher's perspective, the aim of this activity was to understand how the verbatim data could be used to understand how consumers perceive seats and seat comfort in this market, and to identify what problems could be identified from the process of conducting the analysis and creating the report.

3.3.2.2 Intervention #2: Deep Dive with Perceived Quality

Perceived Quality (PQ) is one of the 13 Product Attribute Leadership Strategy (PALS) attributes that are used to drive JLR's new product development. The PQ attribute focuses on a customer's perception of quality based on "sensory experience" and "emotional connection".

This intervention, which was proposed, designed and implemented by the researcher, therefore looks at the Perceived Quality Attribute and the team that manages that attribute within JLR.

The aim of this intervention was to establish how premiumness could be embedded effectively into the PQ work stream and to inform the design and development of a premiumness tool. In particular, it reviewed the current PQ processes, and identified the needs and wants of the PQ team in terms of the premiumness data (what did they want to get from the data, what questions did they want answers to, and how could the data be interrogated to provide those answers?).

To achieve this, several data collection tools were employed including:

- Document Analysis (of internal company documents);
- Interviews with PQ Team Members;
- Development of bespoke PQ Premiumness Reports;

3.3.2.3 Intervention #3: L486/L538 Internal Workshops

The aim of this intervention was to try a new approach to disseminating the PRP findings and to test the participants' understanding and motivation/ability to use the information. Specifically, the aims of the workshop were:

- To demonstrate customers' view of premiumness to the L486/L538 teams
- To ensure premiumness learnings get to those who can actually make a difference
- To give practical experience of the issues raised by customers for the L486/L538 competition cars
- To gauge the participants' understanding of the premiumness findings
- To get the teams thinking about what they can do to improve the premiumness of L486 and L538
- To understand what the teams see as blockers stopping them from implementing premiumness improvements

The process of planning the workshops commenced in March 2008, the workshops were conducted over two days at the beginning of April 2008 and the post-workshop report was completed in May 2008.

Five workshop sessions were conducted over the two day period, each lasting approximately 2 hours long. A total of 46 people took part in the workshops, representing 15 disciplines.

Each workshop followed the same format:

- 30 mins - Presentation:
 - Explain why Premiumness is important;
 - Overview of other MRO customer research findings
 - Summary of L486/L538 Premiumness research findings
- 1 hour- Assessing the vehicles through customers eyes (10 minutes per vehicle), completing an appraisal form:
 - what actions can participants personally implement to make a leap forward on L486/L538 premiumness based on what has been seen?
 - what actions can others in the company implement to make a leap forward on L486/L538 premiumness based on what has been seen?
- 30 mins - Group task: Flipchart presentation on how to improve Premiumness for L486 / L538

The intended outcomes for the workshop were:

- A list of suggestions to improve the premiumness of L486 and L538
- A list of blockers – what is stopping these improvements being made?
- How can these blockers be overcome?

Participants recorded their suggestions on proforma, which were collected at the end of each session. The flip chart presentations were also collected for post-workshop analysis. Finally, observation notes were recorded in confidential logbooks by the session moderators.

The workshop findings were analysed and reported to the L486/L538 Brand Manager.

3.4 Demarcation of PRP and EngD Work

For the purposes of understanding which areas of this research were part of JLR's PRP and which areas relate to the EngD research, Figure 37 has been created. Those elements within the thesis that were conducted purely by JLR are shown in **red** and those that were jointly carried out by JLR and this researcher are shown in **purple**. Elements shown in **blue** were conducted purely for this EngD by the researcher.

Please note that while the figures provided in Appendices A, B and C were developed by JLR and its agencies, the narrative within those appendices is the work of this EngD researcher: no text was developed by JLR to support or explain the figures (see Chapter 4).

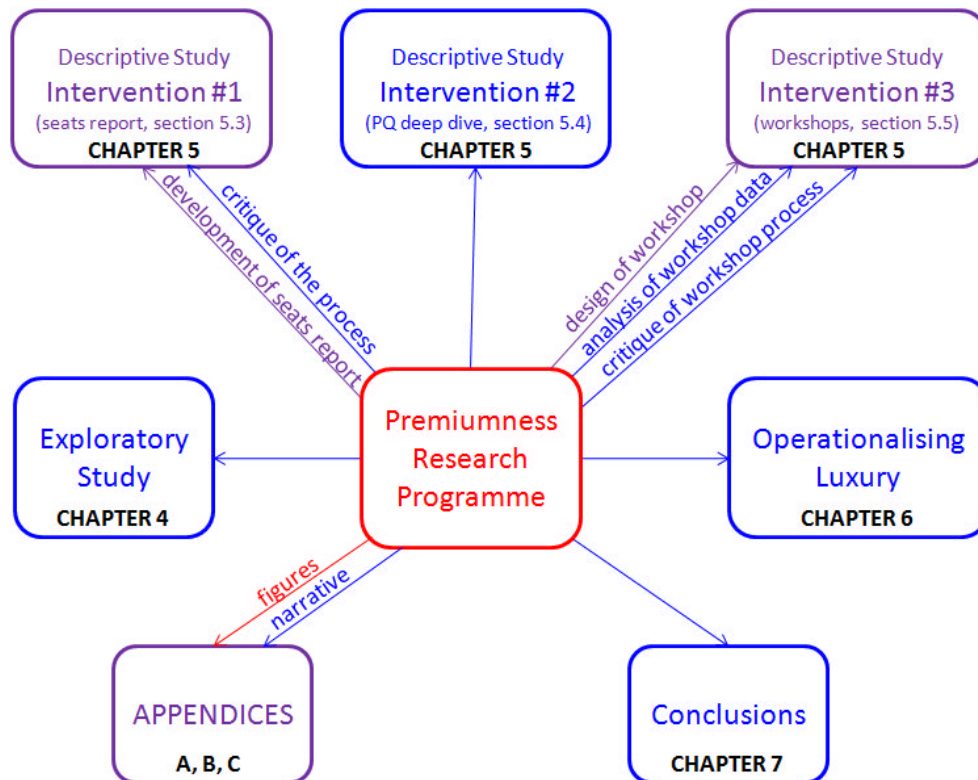


Figure 37 PRP/EngD Demarcation

3.5 Chapter Summary

The key factors of research design are considered from a theoretical perspective and discussed in the context of the EngD project. The specific actions implemented for this EngD are outlined.

This EngD is an action research project which uses JLR's PRP as a case study to build an understanding of the consumer's perception of luxury and develop a methodology by which this understanding can be operationalised within the NPD process.

An inductive, phenomenological philosophy has been adopted to reflect the subjective nature of the enquiry and the importance of context in the consumer cognitive and affective information processing systems.

The scope of the research has been identified as exploratory and descriptive, in which two phases are proposed. The first phase aims to understand JLR's PRP work, to seek new insights about the nature of customer's perceptions of luxury and to assess JLR's approach in conducting the PRP. The second phase aims to portray an accurate picture of the situation in terms of what people need and want from the PRP and how that can be accomplished.

The type of research is established as predominantly qualitative; although some of the PRP data is numerical, it represents a subjective rather than objective measure, so should not strictly be treated as quantitative data.

For this enquiry, the data is collected through a multi-method combination of literature review, documentary analysis, interview and observation. The PRP data incorporates the survey method into the process.

Coding and thematic techniques are used to analyse the data, using tools that are readily available to JLR.

4 EXPLORATORY STUDY - A PASSIVE OBSERVATION OF JLR'S PREMIUMNESS RESEARCH PROGRAMME



Aim To observe and appraise JLR's Premiumness Research Programme. To identify strengths and weaknesses of the planning, implementation and dissemination approaches adopted. To develop an understanding of the nature of consumer perceptions of luxury and premium cars in a naturalistic evaluation setting.

4.0 Chapter Structure

This chapter begins with an outline of the objectives of the Exploratory Study and the data collections methods that have been employed. The findings of the study are discussed in terms of four themes which arise from the data. A number of research observations and insights emerge from the analysis, these are drawn together to identify patterns from which three categories evolve.

4.1 Introduction

It has been identified that this project concerns the understanding of a subjective phenomenon, and that a phenomenological¹³, inductive¹⁴ approach therefore represents the most appropriate stance for this research by generating understanding that can be used to embed luxury into the mindset of the company and its NPD processes. JLR's Premiumness Research Programme is used as a case study to achieve these aims.

The research methodology for this project therefore adopts a two-part approach: in the first instance, a passive approach has been used to observe the planning and implementation of JLR's Premiumness Research Programme; secondly, an interventionist approach has been used to probe for deeper insights into how successful JLR's research and dissemination process is within the company, and to develop and test new ideas and tools to enhance the utility and accessibility of the Premiumness Research Programme outcomes (with the aim of increasing the ultimate value of the research).

This chapter presents the passive phase of the research project.

¹³ the study of direct experience: behaviour is determined by the phenomena of experience rather than external, objective and physically described reality [147] (in contrast to positivist, where the world exists externally and its properties are determined only through objective measures).

¹⁴ To establish universal generalisations to be used as pattern explanations [138].

4.2 Objectives and Data Collection Methods

This part of the research naturally follows a quasi-chronological process. It also affords a view of how similar programmes have been planned and implemented under different management regimes and for different end objectives. This is because the Premiumness Research Programme itself contained 2 distinct projects¹⁵: a cross-carline project aiming to obtain a general view, and also a programme-oriented project aiming to obtain a specific view. The observations also cover “Stage 3” of the PRP research, which was never implemented due to budget constraints.

The objectives for this part of the research project are as follows:

- a) Assess the process by which ad-hoc market research projects are planned;
- b) Understand the objectives for the Premium Research Programme (Stage 2 and L486/L538 projects), and the rationale behind them;
- c) Evaluate the methodology used to gather and analyse the PRP data;
- d) Review the findings of the PRP projects;
- e) Analyse the dissemination process.

A number of data collection methods have been used, including:

- Documentation analysis: reviewing generic process documents (Quality), the MRO intranet, the MRO shared drive, planning documents for the Premiumness Research Programme (such as the Stakeholder Analysis documents), Premiumness Research Programme results presentation documents, Ford and Volvo documents, etc.
- MRO Meeting/Planning observations: this EngD started just after the main planning phase of the Premiumness Research Programme Stage 2 project, hence observations were made during the final preparation meetings for the customer clinics for that project, but for the whole life cycle of the L486/L538 project. These observations covered both internal (MRO meetings) and also external meetings with subcontractors.
- Customer Clinic observations: observations were made during the UK legs of both research clinics, from how customers were greeted, to the data collection process and how customers were lead through that process.
- Data Analysis Meeting observations: observations were made during the data analysis meetings with the two main sub-contractors for both projects.
- Results Presentations observations: observations were made during the planning and development of the presentation materials, and then also

¹⁵ Stage 1 was planned, conducted and disseminated before this EngD research project began, so is not analysed here. Stage 2 had also been planned and approved when this EngD research began, but not the implementation, analysis or dissemination.

for examples of the delivery of those materials. The results presentations were also reviewed as a holistic process.

A series of three confidential log books have been kept as a record of these observations, noting key personnel present at meetings, issues discussed and points of interest. The observations have been made over a 4 year period, including at least 365 days spent on JLR sites, affording a longitudinal element to the research. Over 500 documents have been reviewed, relating to processes and procedures, other MRO research projects, and activities undertaken by other departments within JLR (such as PQ and Quality).

The specific details of the activities observed are confidential to JLR; however, the key points of interest have been sanitised and are discussed in the next section.

4.3 Data Analysis

The notes taken and during the data collection process have been reviewed and collated to identify those points that were interesting, intriguing, frustrating or difficult to understand. These points were inspected and analysed to identify emergent themes and patterns, which are discussed in terms that aligned with the stated aims of this study:

- The Planning and Approvals Process
- PRP Methodology
- PRP Findings
- PRP Dissemination

4.4 Discussion of Findings

4.4.1 The Planning and Approvals Process

JLR has very specific processes in place for the market research deliverables required during their Global Product Development System (GPDS), which affect all product development programmes within the firm (whether new products or refreshes of existing products). However, the PRP does not fall under the auspices of this set of deliverables; it falls into the “Ad-hoc” category, which affords some flexibility in how the research is planned and what it needs to achieve. It is also subject to a stringent justification and approvals process, separate to the “normal” Market Research Office (MRO) project approval process¹⁶. This process has a financial approvals element and a content approvals element.

Details of the financial approvals side of this work were not made available for this study, due to confidentiality. However, in high-level summary, it comprises completion of a proforma outlining budgets, supplier/contractor involvement, payment schedules, etc., and involves purchasing and financial endorsement as well as MRO, departmental and Director-level sign-off. This part of the planning

¹⁶ Details of the “normal” process not discussed due to confidentiality.

process is well managed and subject to rigorous audit procedures; the difficulty comes in obtaining approvals, which involves political and strategic considerations, and is heavily influenced by the financial status of the firm. It has been interesting conducting this research in such changing market conditions: the research began prior to the start of the world recession, and JLR's financial performance worsened during the project time-span¹⁷. In times of financial hardship, the MRO budget is one of the first to be affected, despite knowing the benefits that have been seen in product improvement already from a better understanding of how the customer sees the vehicles, and the potentially detrimental impact that not undergoing customer research would have on future products. This is a weakness in JLR's management process and business strategy, as the funds are not necessarily allocated in accordance with which projects are important to the customer, but according to their internal perception of what is important¹⁸. It is difficult to express the benefits of market research as a monetary figure (unlike other, more tangible projects that can demonstrate clear cost savings or income improvements). This issue is not directly a concern of this research. However, such restrictions do necessitate that the maximum value is extracted from each research project that does get approved, which is an aim of this EngD research.

Research Observation 5 There is a disconnect between the long term business strategy and short-term financial management in terms of being able to recognise the value and importance of ad-hoc research projects within the firm, which exposes such projects to cost-cutting measures.

The main document used in the content planning of this type of Ad Hoc research project is the *Research Stakeholder Document*. This contains two main sections:

- Overall Research Project Agreements
 - Background
 - Research Objectives
 - Visions of Success/Results
- Research and Insight Elements
 - Target Sample Consumer Groups
 - Proposed Methodology
 - Output
 - Timing
 - Other Source of Information (e.g. other MRO research projects)
 - Stakeholders

¹⁷ It has improved in the last financial year.

¹⁸ And there is an element of "he who shouts loudest gets the money".

A first observation is that these documents are very brief. There is a culture at JLR of summary-style reporting: the aim is to be as succinct as possible. 1 page, A3 reports are the norm, and market research reports are always generated as “decks” (PowerPoint slides) that are rarely supported by a more detailed written report¹⁹. The intention of such practices is to reduce the amount of time needed to read, absorb and understand the information. It has the (unwitting) advantage of allowing flexibility and creativity to be used to achieve the required results, however it has the drawback of being vague/non-specific and ambiguous and so subject to misinterpretation. It also relies on the in-head expertise of its people: the detailed design of the research is often known only by those MRO personnel who are organising the work²⁰, which presents a clear problem when those personnel leave. During the 4 years that this EngD research was conducted, the head of MRO has changed 3 times, and the persons responsible for the project have changed 6 times. None of the original PRP team remain in the MRO. Sometimes this churn is through internal redeployment (so the knowledge is not completely lost) but this also includes 4 lots of maternity leave and 3 people leaving the firm completely. This loss of expertise is a significant blow to the firm, and the current knowledge capture mechanism is not effective. This is one of the unspoken needs that this EngD attempts to remedy.

Research Observation 6 JLR’s preference for summary-style communication exposes them to the risk of misinterpretation.

Research Observation 7 JLR’s preference for summary-style communication in the absence of more detailed supporting reports necessitates a reliance on the in-head expertise of the report originators.

Research Observation 8 High levels of staff turnover undermine the informal “expert knowledge management system” that underpins the reporting process.

A further problem arising from this churn and lack of adequate handover was highlighted by a senior manager’s response to the question “why are you doing this research?”: the response received was “it’s obvious, what a stupid question!”. Answers could have included “to sell more cars”, “to justify increases to the PQ or Materials budgets”, “to counter cost-down proposals” or “to improve the brand”, for example. But without being able to articulate an answer to this question, the ultimate value of the research could be compromised.

The PRP was instigated and managed by MRO, which is part of JLR’s Marketing Sales and Service (MS&S) team. But the project was most closely associated with the Brand team²¹ than any other part of firm: the planning phase was largely separate from design, development, engineering and

¹⁹ The researcher has not observed any such supporting documents, but cannot state with certainty that they are never provided for any project.

²⁰ Detailed or supporting data is often kept on individual laptops, if at all, not in any shared (or backed up) location. There is a shared network area, but size restrictions limit the amount of information that can be stored there.

²¹ Also part of MS&S.

manufacturing teams. What was lacking from the planning process was input from these other teams: what did the “non-stakeholders” want from the output to make it useful to them?

It is interesting to note that the development of this research programme did not result from requests from within the business, but was initiated purely from individuals within the MRO team. This suggests that either the rest of the business did not perceive any problems with the way that consumers evaluated their products in terms of luxury and premiumness, or that the rest of the business was not aware that such research could be undertaken within the firm (or perhaps a combination of both factors). A knock-on effect of this impacts the identification of stakeholders and their needs: only those stakeholders who were either known by MRO to have an interest or who found out about the research and expressed an interest could have their needs accommodated in the research. In this particular case, that pool was limited to high levels within the Brand, Design and PQ teams. In fact, PQ was not listed as a stakeholder in the planning documents, despite being the attribute leader for Perceived Quality. The needs of all the stakeholders were not therefore all identified, which could have affected the impact of the research. However, in hindsight, many of the needs that were not met were not congruent with the aims of this particular research programme: typically these included requests to ask respondents specific questions about particular product features, so would have required a separate study.

Research Observation 9 The PRP was instigated and planned in isolation from those stakeholders who would arguably have benefitted most from its findings. This suggests that the wider needs of the firm are not recognised or understood by MRO, or the wider community within the firm do not recognise or understand MRO’s capabilities.

A positive aspect of the planning process was the early involvement of potential suppliers - in this case the preferred market research agencies. JLR’s market research work is largely outsourced: the MRO team comprises primarily a team of Project Managers, they no longer have the internal resources to conduct their own projects. A difficulty that arose from this was the natural inclination of the purchasing department to dictate the lowest cost provider, rather than the most cost-effective provider. In this case, the preferred suppliers were used, but time and resources were wasted justifying the choices to a team with little understanding of the needs or purpose of the research. This is a difficult issue to resolve, but is outside the purview of this project. A further difficulty is that the supplier (being the greater expert in the field) is able to direct the research, and internal personnel could struggle to see this: this is less of an issue in the planning phase, but was cause for concern during the data analysis/reporting phase of the projects (discussed later).

Research Observation 10 MRO’s dependence on third party agencies for research work exposes them to a lack of control in how the research is designed and conducted.

There were some interesting challenges to be met in setting up some of the clinics: in particular it was found that the most difficult cars to obtain were JLR’s

own. This was especially evident in arranging the L486/L538 clinics in the UK; the (pre-production) cars were delayed on the production line, which delayed the clinic, and then there was significant difficulty in obtaining the correct specifications (colour and internal trim level). For one of the clinics, the wrong colour was supplied, and this did affect the results. In this regard, there was a significant lack of support from some other parts of the firm: this suggests a lack of understanding of the benefits to themselves or to the firm as a whole in doing this type of research. There is an element of the “silo mentality” at JLR; while the procedures and processes suggest a cross-functional team-based approach, in reality there are deep-set boundaries, suspicion and protectionism in play.

Research Observation 11 Inter-departmental suspicion and protectionism together with conflicting team and project priorities compromise the effectiveness of JLR’s cross-functional team approach to NPD.

4.4.2 PRP Methodology

The methodology used for the Stage 2 and L486/L538 premiumness research is described in Appendix B and Appendix C respectively.

The Stage 2 and L486/L538 clinics differed slightly in their methodologies, due in part to the circumstances under which they were being conducted, and the specific purposes of each study.

In terms of the activities undertaken, some steps were omitted from the L486/L538 study:

- Spontaneous naming of models
- Importance/Satisfaction rating for PALS attributes for their own car
- Focus Group

In terms of steps that were common to both clinics, these comprise:

- Brand and Model Standing²² (pre and post evaluation)
- Streaming™
- PALS Rating

Of these, the Brand and Model Standing and PALS Rating exercises produce numerical outputs, while the Streaming™ process initially results in purely qualitative outputs (customer verbatims).

It has been said that JLR is an inherently positivist environment, which implies a natural inclination to latch on to numbers as a magical solution to all problems. However, even the numerical outputs of these processes are subjective rather than objective measures: the inputs are consumers’ opinions, their perceptions of the nature of truth in those situations. They are relative measures rather than absolute objective facts. It can therefore be said that the methods employed

²² note that this exercise requires participants to position brands and models on a luxury continuum, which aligns with Vigneron’s levels of luxury (see Figure 10, page 13).

provide a valuable compromise, offering a level of numerical comfort to JLR without compromising the integrity of the approach or the data.

Research Observation 12 Quasi-quantitative methods can provide a level of comfort to a positivist firm when conducting phenomenological research.

None of the three techniques is a new data collection process, they simply reflect applications of existing techniques to support the research aims for this programme.

There are many other techniques that could have been employed, including surveys and questionnaires²³ (online or postal), interviews, observation of visitors to motor shows, focus groups, and self-report diaries or cameras. Each of these techniques has benefits in terms of the type and quality of the data produced, however for this particular research process they also had significant drawbacks:

- Surveys and questionnaires would not be conducted in a naturalistic environment, and would not be representative of a pre purchase evaluation context. The aim of this research was to gather data about consumers' evaluation of vehicles, so the vehicles need to be co-located with consumers as prompts. In addition, these instruments would not capture the customer's articulation of their top of mind thoughts and feelings: a customer's written answer to a question, spoken response to an interviewer and un-prompted free-speech are likely to yield different results and use markedly different language. A cognitive response to a specific question will cause the consumer to consider and filter the data before it can be captured, losing some, if not all, of the emotional content. In addition, this approach would only obtain answers to the questions asked: there would be little scope for lateral development. Note, JLR already subscribe to many independent and syndicated market research survey instruments (JD Power APEAL, NCBS, NVES etc); these surveys offer a post-purchase view of how consumers evaluate the cars they have actually bought. They only provide the customers view of their own car (not a selection) and they don't capture the emotional elements of their experience.
- Interviews offer similar constraints. In addition they are time consuming and costly. To capture a similar breadth of data would have required circa 450 interviews, requiring transcription and coding. Even with open ended interview questions, the richness of the data would have been less than that obtained through the Streaming™ process, especially in conducted separately from actual vehicle evaluation. There is an argument that some level of guidance could ensure that respondents don't "go off track", but who is to judge what is important?
- Motor Show Observations, as implemented by Burns [86], would be problematic for this research. In the first instance, the cars being evaluated would be limited to JLR's own: it is highly unlikely that competitors would

²³ The brand and model standing and PALS rating exercises are versions of the survey instrument, this part of the PRP process was not conducted in naturalistic settings.

allow JLR to conduct research on their stands. The stands tend to be very busy at such shows, so the participants would be under time pressure to allow other people into the vehicles, and the presence of others could influence that quality and quantity of comments made. The perception of luxury is known to vary according to a person's life stage and experience, and it would be difficult to ensure that the people being observed in the cars are actually potential customers for JLR. Capturing the views of the wrong market would skew the results. Finally, there would be concerns about upsetting or off-putting potential customers: this would require discrete observation as per Burns. However, this also leads to an element of guesswork and recollection from memory, affecting the reliability of results. This approach is therefore reasonable for a background study but not to establish any level of detail.

- Focus groups were used in the Stage 2 part of the process, however these produce a consensus outcome rather than capturing individual views. Shyer customers may also be unable to get their views across, even with the most competent moderators. Finally, this again would be removed from the product evaluation environment: even if the customers had viewed the products, they would still be expressing a memory of cognitive evaluation, not the emotional top of mind view.
- Self Report Diaries would offer a valuable insight, however, they represent a more longitudinal approach to study. This could capture the individual's views of their experience of luxury, but may not elicit reliable information about evaluation of the specific cars that JLR requires. Providing cameras to participants as part of a self-report process offers similar benefits and disadvantages.
- Abbott uses a semantic differential to elicit evaluations of specific products relating to emotional brand attributes [95]. This approach forces a rational cognitive response from the participant, and limits the range of attributes that the participant can express a view over. This approach focuses on particular elements, rather than holistic evaluation: the importance of a holistic approach in automotive consumer research has been highlighted by Burns [86] and Wellings [155] among others. The data acquired would also be time- (date) and product-linked, reducing its generalisability and ultimate value.

Research Observation 13 The PRP Streaming™ approach represents a powerful process for capturing customer reactions when evaluating luxury and premium cars in a naturalistic setting that overcomes many of the disadvantages of more traditional data collection methods.

There are limitations and issues with the Streaming™ process which must be considered. The researcher is often seen as the instrument in qualitative work (as the observer), and is thus considered to introduce error and/or bias into his or her observations²⁴. An important element of the process is that the

²⁴ The moderators, transcribers and coders had no vested interest in the outcomes of the research, but a knowledge of the reasons for the research cannot be excluded.

participant's comments are unprompted and uninfluenced: a moderator was present with every respondent. Each moderator is fully trained, but there was occasional evidence of unsolicited directional prompting by the moderators, when the respondent was quiet or un-talkative. The use of voice recorders removes the risk of error (from incorrect observation) from the data collection part of the process, but cannot eliminate the influence of the moderator (bias). In fact, the very presence of the moderator could have an influence on the participant's reactions, although this was not tested.

Research Observation 14 The non-directed nature of the Streaming™ approach reduces the impact of researcher bias on the resulting verbatims compared with traditional interview techniques, but cannot be shown to eliminate it completely.

Problems were encountered during the verbatims transcription due to issues such as audio quality, accents, clarity and coherence²⁵. An independent firm was used for this process, and problems were annotated in the transcripts as they were spotted. There are a very few occasions in the transcript where the transcriber made an obvious mistake, this appears to be due to the use of colloquialism or technical words which were (presumably) outside the transcriber's experience: the firm was not an automotive specialist. A checking process was in place, but the process is clearly not without error.

There is also a risk of bias in how the data is managed and analysed, specifically with the accuracy and repeatability of coding processes. Marques and McCall [156] describe interrater reliability as the extent to which two or more individuals (coders or raters) agree, concerning the consistency of implementation of a rating system. It is often used as a verification tool in quantitative studies, but Marques posits that it should also be used as a "solidification tool" in phenomenological research, and develops a numerical measure for this. In terms of this research, the concept of reducing the influence of researcher bias by independent checks (agree or not agree) is deemed largely sufficient. The agencies involved in this part of the process had no vested interest in the outcomes of the research, but the element of personal opinion that influences the application of one code or another to each verbatim comment cannot be excluded. Even after a process of checks and balances (each script was checked by a second person after coding), there are still small areas of disagreement in how particular comments have been coded. The fact that this was an audio not video transcription means that the transcriber cannot see exactly what the participant was doing when specific comments were made, so this introduces judgment and the potential for error.

Research Observation 15 A process of independent checking during the coding process is vital to reduce error and bias, and increase interrater reliability.

The Brand and Model Standing and PALS Rating processes incorporate many of the limitations mentioned in this discussion: they require rational thought

²⁵ Note, some data was completely lost due to voice recorder failure, or data corruption.

processes and are closed instruments. They do not allow for capture of emotional reactions, or even rational reactions to unexpected product features. The Streaming™ process is open and emotional, but contains the potential for researcher bias and error in transcription and coding. However, the PRP methodology using these three approaches in combination affords a holistic and open evaluation in a naturalistic setting, which yields a rich and detailed data set.

4.4.3 PRP Findings

JLR's findings from the Stage 2 and L486/L538 premiumness research are described in Appendix B and Appendix C respectively. These are the "official" findings as presented within the firm. The findings can be grouped into 3 distinct sections: Brand and Model Standing, Streaming™ and PALS ratings. Each of these datasets can be considered in isolation from the others. They each provide 3 distinct views of the same vehicles using diverse instruments, eliciting reaction from different parts of the brain. The 3 way process elicits three perspectives that can also provide a triangulated view of the consumers' evaluation of luxury cars.

Research Observation 16 The PRP methodology facilitates validation through triangulation by collecting data via three separate instruments.

The findings of each exercise are discussed in turn.

4.4.3.1 Brand and Model Standing

The pre-evaluation brand and model standing exercise provided an important wake up call. In all, this exercise has been conducted 3 times (Stage 1, Stage 2 and L486/L538). Each time, Jaguar and Land Rover brands are positioned lower on the brand continuum than their target competitors. This provides evidence to JLR management throughout the company of the external reality of how the JLR brands are perceived by their target audience: the firm's internal view is not the one that is important.

The post-evaluation re-positioning exercise for the models reviewed highlighted that the Jaguar XK went down in people's perceptions: their expectations were much higher, and were clearly not met. This negative disconfirmation of expectations is extremely damaging to customer satisfaction, and more influential than any positive disconfirmation for their other models.

This exercise was informative, giving an idea of customers' relative expectations and preconceptions for each of the brands and models considered, both competitor and JLR. It does not, however, provide any insight into *why* consumers hold those views.

Research Observation 17 The Brand and Model Standing method elicits insights into customer expectations and preconceptions, but does not inform understanding of why those views are held.

4.4.3.2 *PALS Ratings*

The PALS ratings data was captured, but did not form a significant part of the “official” results. In fact, it was omitted entirely from the Stage 2 presentations. This may have been due to time constraints (the “full” presentation was over 4 hours long), or simply because the results were not viewed as important.

The PALS ratings provides a rational evaluation of specific product attributes, which complements the emotional evaluation captured by the Streaming™ process.

Figure 38 shows the results of the PALS rating exercise (showing mean results). Also shown are the overall NetE rankings. The figure clearly demonstrates that the rational and emotional rankings, in both sets of clinics, are different. The top 3 in the Stage 2 cars are not the same when viewed rationally (PALS rating) and emotionally (NetE), and only the BMW 5 Series features in both sets of bottom 3 cars. Only the best in class for the L486/L538 remains the same.

Again, this exercise was informative, giving consumer’s considered evaluations of how positively or negatively they viewed each of the cars that they saw. However, it again does not provide any insight as to *why* the consumers have made those judgments.

Research Observation 18 The PALS Rating method elicits insights into customer evaluations of cars, but does not inform understanding of why those views are held.

mean ratings (1= feel very negative about, 10 = feel very positive about...)	The overall visual appeal from the exterior	The design of the instrument panel	The styling of the seats	Overall visual appeal on the inside	Overall sense of harmony	Sense of quality	Materials used in this car	The way this interior smells	The way things feel to the touch overall	The feel of the switches/controls	The feel of instrument panel	Feel of the steering wheel	The overall level of equipment	How well the interior and exterior match	The overall quality of design, inside and out	This vehicle's overall 'feeling of specialness'	OVERALL PALS RANK	OVERALL NPS RANK
Mercedes-Benz S550	8.2	8.4	8.7	8.7	8.7	9.2	9.0	8.8	8.9	8.7	8.5	8.4	9.2	8.7	8.7	8.9	2	1
Porsche Cayenne Turbo	7.6	8.0	8.3	7.7	7.8	8.3	8.1	8.0	8.2	7.6	7.8	8.1	8.3	7.9	7.8	7.7	6	2
BMW 645Ci	8.7	8.1	8.3	8.1	8.3	8.5	8.5	8.2	8.4	8.2	8.0	8.3	8.4	8.6	8.4	8.4	4	3
Bentley Continental GT	8.6	8.2	8.7	8.8	8.7	9.5	9.4	8.6	9.1	8.7	8.7	8.6	9.2	8.9	8.7	9.3	1	4
Maserati Quattroporte	8.1	8.0	8.7	8.2	8.1	8.8	8.7	8.7	8.7	8.3	8.4	8.8	8.8	7.9	8.4	8.3	3	5
Mercedes-Benz R500	7.2	7.6	7.8	7.6	7.5	7.8	7.4	7.6	7.6	7.7	7.7	8.1	8.3	7.8	7.6	7.2	10	6
Range Rover Sport SC	7.6	7.0	7.9	7.7	7.6	7.8	7.7	7.4	7.6	7.5	7.2	7.8	8.2	8.1	7.8	7.4	9	7
Jaguar XJR	7.2	7.3	7.7	7.7	7.8	8.1	8.0	8.1	7.8	7.3	7.4	7.8	8.1	7.7	7.6	7.8	8	8
Mercedes-Benz CLS	8.5	7.5	7.5	7.2	7.5	8.0	7.7	8.1	8.0	8.0	7.8	8.2	8.0	7.8	8.1	8.0	7	9
Aston Martin DB9 Volante	8.9	8.2	7.9	7.9	7.6	8.5	8.4	8.6	8.3	7.4	7.6	8.4	8.3	8.2	8.4	8.7	5	10
Land Rover LR3 HSE	6.1	5.8	6.8	6.4	6.4	6.5	6.3	6.5	6.5	6.1	6.1	6.8	6.9	7.3	6.3	6.2	18	11
Range Rover SC	7.9	6.0	6.6	6.1	6.2	6.8	6.4	6.6	6.3	6.2	6.2	6.7	7.0	6.7	6.9	7.2	15	12
Mercedes-Benz SL 500	8.0	7.3	7.1	7.3	7.5	7.7	7.3	6.9	7.3	7.4	7.2	7.4	7.7	7.7	7.8	7.5	11	13
Audi A6 4.2 Quattro	6.6	6.9	6.7	6.7	6.8	6.9	6.5	6.8	7.0	7.1	7.0	6.8	7.5	6.9	6.7	6.2	14	14
Lexus RX 400h	6.2	6.8	7.0	6.5	6.4	6.5	6.2	6.7	6.6	6.8	6.7	6.8	6.9	6.8	6.4	5.7	17	15
Lexus GS 430	6.8	6.7	7.1	6.6	6.6	6.9	6.5	6.6	7.1	7.2	7.0	7.2	7.9	7.0	7.0	6.0	13	16
BMW 545i	6.9	6.2	6.9	6.2	6.2	6.7	6.4	6.8	6.7	6.6	6.5	7.1	7.0	6.6	6.7	6.1	16	17
Jaguar XK	7.2	7.2	7.3	7.0	6.9	6.9	6.5	6.8	7.1	6.7	6.9	7.4	7.4	7.3	6.9	6.7	12	18
Freelander A	8.0	7.6	8.1	7.8	7.7	7.9	7.6	8.4	8.1	7.7	7.5	7.4	8.4	7.8	7.9	7.8	2	3
BMW X3	7.3	7.3	7.9	7.5	7.4	7.6	7.5	7.7	7.8	7.6	7.2	7.8	7.8	7.7	7.5	7.7	4	6
Audi A4	7.4	7.2	7.3	7.2	7.2	7.3	7.2	7.2	7.6	7.3	7.2	8.0	7.7	7.8	7.2	6.6	5	7
Mercedes C Class	8.1	7.9	7.4	7.8	7.9	8.1	7.7	7.7	7.8	7.7	7.6	7.5	8.2	8.0	8.2	7.7	3	2
Freelander B	7.2	6.5	7.3	7.0	6.8	6.9	6.8	7.6	7.1	6.8	6.6	6.6	7.3	7.2	7.2	6.9	6	4
Mini Cooper S	7.7	5.9	7.2	6.6	6.5	6.4	6.4	6.7	6.7	6.2	6.0	7.2	6.7	7.3	7.4	7.1	7	5
Audi TT	8.5	7.9	8.3	8.0	8.0	8.2	7.9	7.3	8.1	7.9	7.9	8.3	7.9	8.2	8.3	8.3	1	1

Best in Class

Figure 38 PALS Ratings Results

4.4.3.3 *Streaming*TM

The participants' verbatims were transcribed, and every comment within the transcripts was allocated a 14 digit code.

The codeframe was developed from the transcripts²⁶ and evolved as more transcripts were coded to incorporate new themes and details. It was an organic process that came out of the evaluation data rather than a pre-formed construct that could be used to force the data to meet preconceived ideas of what customers might say. Importantly it allowed for the fact that customers talk about cars in a different way than automotive designers, engineers or researchers might want them to. Because the codeframe came from the data it is considered to be a finding of the research, not part of the research methodology.

Research Observation 19 Allowing the codeframe to evolve from the data provides a typology for the way customers talk about luxury cars, rather than forcing a translation of the data into "engineering-speak".

The code comprised the following elements:

- A four-digit code to describe the area of the car being discussed
- A four digit code to describe the theme being discussed
- A second four digit theme code (to capture comments such as "it was lovely soft brown leather" which would require both material and colour codes).
- A single digit code to denote the emotional valence (1 = very negative to 5 = very positive)
- A single digit code to denote the sense being employed.

A copy of the final codeframe is provided in Appendix F.

The value of developing the codeframe in this way is that it adapts to patterns as they emerge, and provides multiple ways to reference each verbatim. The practical implications of the way the codeframe was structured, together with a discussion of how the data was subsequently interrogated within JLR, forms part of chapters 5 and 6.

This organic development did, however require the datasets to be reconsidered as new codes were included, to ensure the most appropriate codes were used. In this way, it was something of an iterative and time consuming process.

The structure of the codeframe enabled robust interrogation of the data, allowing detailed comparisons of numbers of positive and negative comments about specific areas and themes. The decision to code for comment valence seems an obvious one: in this case it is seen as a way to identify "things done well" and "things done badly".

²⁶ In conjunction with the audio recordings, so the coders had the benefit of hearing the way the respondents said things, as well as what they actually said.

The agency responsible for analysing the data (MM-Eye) used a specialist cross-tabulations package called QPS-CL²⁷ to develop the NetE figures that form the “official” findings.

NetE is an interesting metric, and in some ways can be very powerful: it gives a simple, repeatable measure of the “balance of positivity” felt towards a vehicle. However, it has been used in isolation as the only measure to report the Streaming™ results. There are three fundamental flaws with NetE that suggest this was not an appropriate measure or the best use of the data (as currently implemented):

- 1) Each NetE score can be achieved through several routes,
 - 2) NetE has no link to meaning or context; and
 - 3) NetE assumes that E+ has the same value as E-.
- 1) It is possible to achieve the same NetE score through different routes: many positive comments minus many negative comments, or few positive comments minus few negative comments. It is therefore possible to have several cars, which may actually have been perceived at very different levels of luxury and premiumness by customers, achieving the same NetE score.

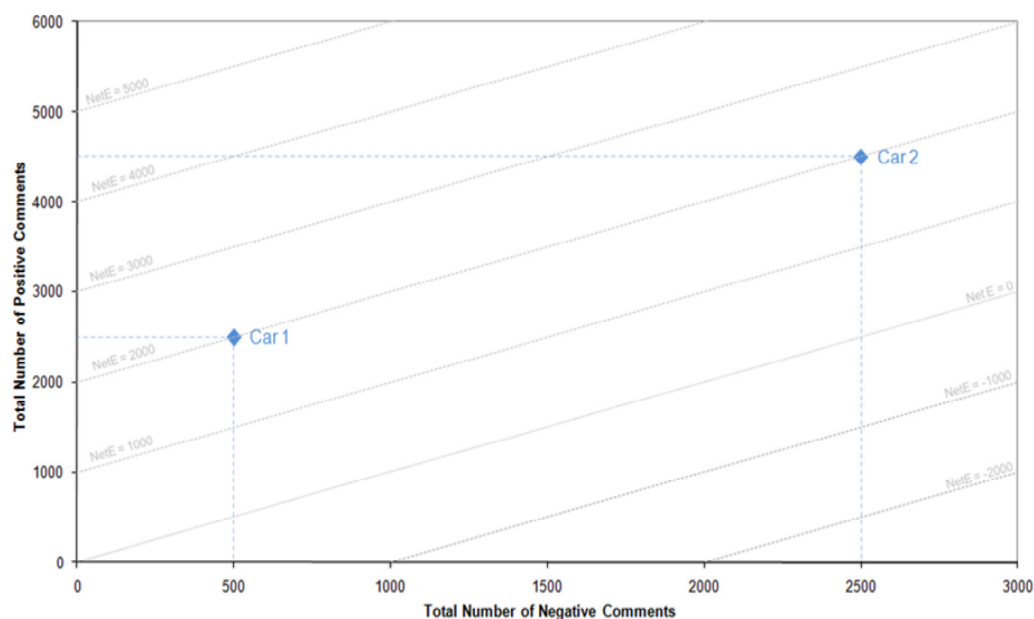


Figure 39 NetE Paradox

In Figure 39, Car 1 and Car 2 have the same NetE score (NetE = 2000). However, Car 2 elicited a significantly larger number of positive comments than Car 1 (80% more), suggesting that customers had a much more excited emotional response (assuming that the number of comments made is a measure of the emotional intensity felt by the consumer: a

²⁷ Produced by QPSMR limited.

measure of excitement²⁸). However, Car 2 also received 2000 more negative comments than Car 1 (400% more), so customers found a lot more to complain about (which could be a lot of comments about one thing, or a few comments about many things). But the NetE metric would rate these cars equally, leading designers and engineers to believe that Car 1 could be a proxy for Car 2 and vice versa. NetE as currently implemented means there is a loss of fidelity: the ability to make this distinction between these vehicles is lost. This could lead to poor engineering decisions based on bad benchmarking choices. To play on stereotypes, Car 1 could be a mass-market Korean or Japanese car (well made but uninteresting), while Car 2 might be a mid-range Italian car (beautifully styled but poorly constructed).

Figure 40 and Figure 41 illustrate this for the two sets of clinic data (overall totals).

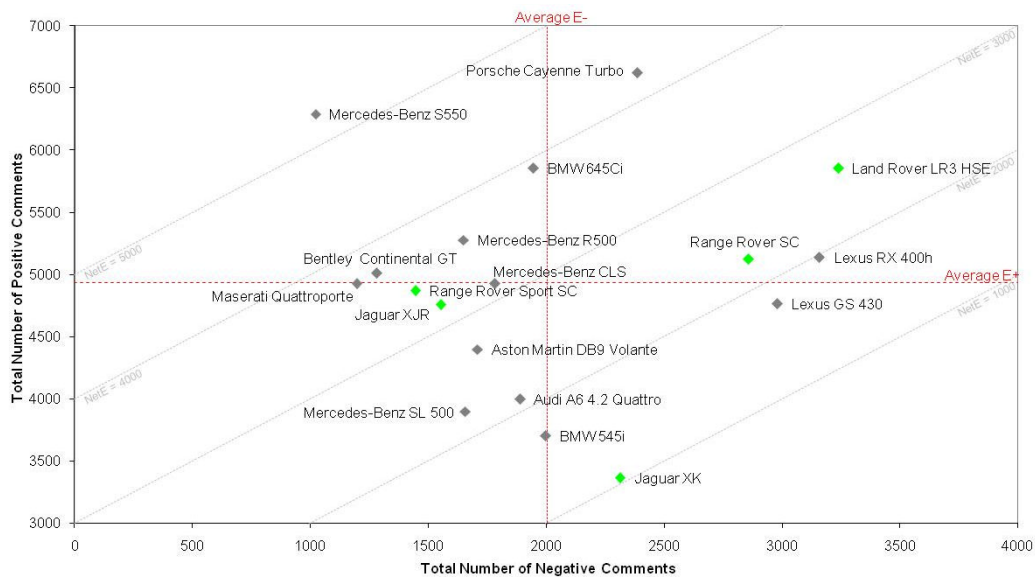


Figure 40 Stage 2 NetE Paradox

The Range Rover and the Mercedes SL had similar NetE scores, but through different routes. The Range Rover got a more excited response, eliciting a greater number of both positive and negative comments, than the SL. The Range Rover received more than the average number of positive comments, while the SL received less, and vice versa for the negative comments. This may mean that the Range Rover is well designed but poorly executed, while the SL is safe and well made. It could also mean that if a vehicle elicits a strong emotional reaction, that people are more able to articulate their dislikes as well as their likes²⁹.

²⁸ Note no comment is made about valence here.

²⁹ Developing this idea is not within the remit of this EngD project, but may warrant further research.

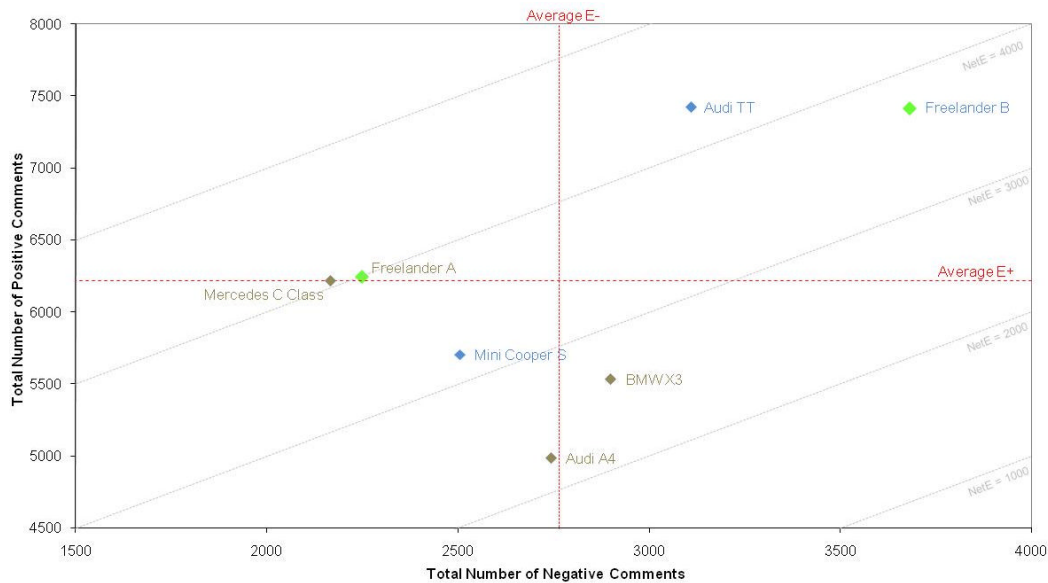


Figure 41 L486/L538 NetE Paradox

Similarly, the Audi TT and Mercedes C Class (both the class leaders in their cells), have reached their NetE figures through very different routes³⁰.

Research Observation 20 The NetE metric confers equivalence on dissimilar cars.

- 2) Looking at NetE in isolation means that context and meaning are lost. NetE only has meaning when read in conjunction with the underlying data (either the actual comments that were made, or the thematic or area breakdowns of the comment counts). It is imperative that the specific factors/drivers that elicited high emotional responses (both positive and negative) are also understood, otherwise (potentially erroneous) assumptions will be made that will embed themselves in the psyche³¹. NetE also loses meaning without reference to an absolute, such as the total number of comments made (leading to problem (1) discussed above).

Research Observation 21 The NetE metric dissociates the data from context and meaning.

- 3) The NetE logic assumes that a positive comment has the same “value” as a negative comment in the eyes of the consumer. However, the literature indicates that a negative disconfirmation of expectations has a stronger influence on perceived quality and customer satisfaction, and hence purchase intention, than a positive one: one positive comment does not therefore cancel out one negative comment.

³⁰ The TT has a higher NetE than the C Class, but they are in very different quadrants of the graph.

³¹ “It’s how we’ve always done it”. “Why?”. “I don’t know, we just have”...

Incorporating a simple weighting makes a significant impact on the “result”: in Figure 42 the E- count has been weighted by an factor of 2^{32} for demonstration purposes.

The chart is ranked by NetE, the numbers on the left of the chart show how this ranking would change with the weighting. Eliciting negative comments now carries a penalty: the arrows show the direction and magnitude of change. The best and worst cars remain the same, as do the top ten and bottom ten, but the rankings change considerably in this concept. Further research is required to establish what the weighting should be, but accommodating the concept that eliciting positive comments should be encouraged and negative comments discouraged seems to be a sensible approach to making the NetE metric more reasonable.

This weightings approach goes some way to resolving problem (1) above, but problem (2) remains. A weighted NetE metric may provide a mechanism to discover any linkage to customer satisfaction ratings.

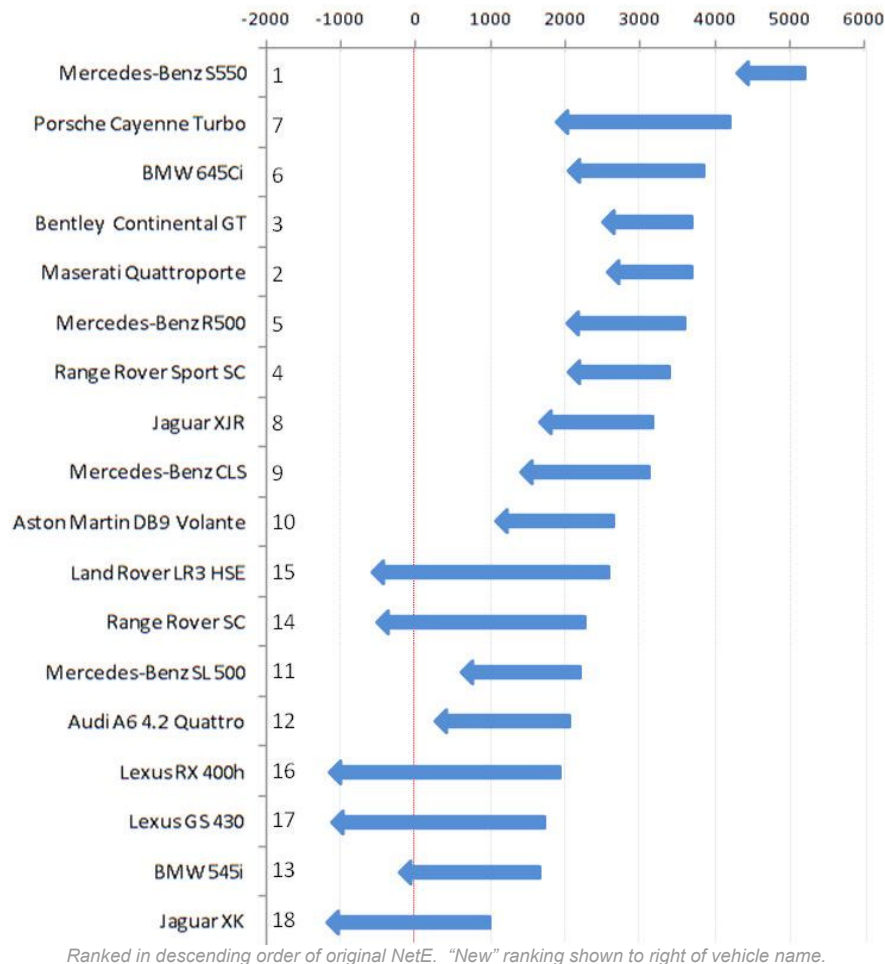


Figure 42 Impact of Weighting NetE (Stage 2 Cars)

³² An arbitrary factor chosen purely for example; in this case, one negative comment cancels out two positive comments.

Research Observation 22 The NetE metric provides a skewed measure of consumer's reactions during product evaluation by ignoring the unequal influence of positive versus negative disconfirmation of expectations.

In summary, the NetE metric is a simple score (easy to calculate), so is accessible, but holds several flaws in its logic that mean it could result in a distorted view of the way that the cars were viewed by customers, which could lead to poor design and development decisions being made.

Research Observation 23 NetE is not a valid indicator of customers' perceptions of luxury or premiumness during vehicle evaluation as currently used within JLR.

However, the NetE metric was latched onto within JLR and used as if it were a proven and robust metric. It is not, although with some modifications it could be extremely powerful and reliable. The use of this metric is likely therefore to have resulted in a somewhat biased message being disseminated within JLR.

The aim of the NetE metric was to capture what was "best". It does achieve this to some degree, but any users also need to understand how it is derived and how it works to avoid using it inappropriately and making false assumptions. Guldbrandsen identified that one of the ways in which NQPQs are embedded in firms is through pseudo-quantified index systems [119]. The NetE metric is an example of this: it provides a quantitative way of looking at qualitative data, and shows the data in a format with which JLR are comfortable (objective numbers rather than subjective suggestions). A problem with providing a numerical figure is that it assigns authority to the results, and supports the natural inclination of some to conduct statistical analyses on the findings³³. It is meaningless to do this with NetE.

A final word of caution with NetE as a principle is that it is only as accurate as coding of the verbatims: any errors in the coding process could therefore be compounded. However, if NetE is used in conjunction with the deeper dataset and the customer verbatims, this issue should be manageable.

4.4.3.4 *Overall Discussion*

The outcomes of the PRP research have been extremely beneficial to JLR in terms of providing key guidance in which cars should be benchmarked as competitors, and what to do to improve the perception of luxury when consumers evaluate their products.

The "official" findings of the PRP are reasonable. If another researcher were to take the raw data, it would be possible to replicate the analysis and draw the same conclusions.

However, that is not to say that the findings are without fault: while there are few clear errors, there are certainly omissions. There were other ways to interpret and present the data, and there were large chunks of information that were not developed. This may have been to keep the "story" simple for its

³³ It has happened within JLR, resulting in a claim of correlation and causal relationship between NetE and another metric which was entirely incorrect.

intended audience, but it limited the value and believability of the research within the wider reaches of the company. There was also a tendency for “headlining” in the reporting, including a number of statements that may have been true but could not be supported by the data that had been collected.

It is also important to consider the relative value of each of the types of data: the brand and model standing and the PALS rating exercises give a ranking result: they highlight which products or product features were “best”, but do not give any explanation as to *why*. The Streaming™ process plugs that gap. Hence all three data sets should be considered together to build a richer picture of how consumers evaluate luxury cars.

Burns’ model for delight during product evaluation includes Feature, Delivery and Holistic delighter types [86]. This research supported Burn’s findings that delighters are triggered by both features and by non-features, and that some delighters cannot be captured by product attributes: a holistic view of the product (vehicle) is also required.

The research also identifies that luxury and premiumness in the automotive context are subjective constructs which derive from a combination of quantifiable and non-quantifiable product qualities (QPQs and NQPQs) that cannot be captured or managed using traditional customer requirements management techniques.

4.4.4 PRP Dissemination

The preferred dissemination process for market research at JLR is by presentation: rather than issue reports which may not be read due to time pressure or personal interests, sessions are arranged and the findings are presented via a “deck” of presentation slides. This has the benefit of ensuring the salient points are passed on quickly, using the experience and expertise of the researcher to reduce the likelihood of misunderstanding. Questions and clarifications can also be addressed often without delay. The disadvantage is that even with the best of intentions, the decks provide only edited highlights of the findings, and can only inform on the data presented, not on those elements that may have been omitted. A further shortcoming is that the audience that is invited to these sessions is limited to particular levels of management and/or functions. It is possible for this information therefore to not reach its intended audience.

Research Observation 24 JLR’s dissemination by presentation approach reduces workload for the recipients and facilitates timely communication of findings, but reduces the depth of understanding and restricts the range of the target audience.

The dissemination process relies on a cascade from managers to subordinates. This allows mis-interpretation and bias to enter the process as the detail and nuance behind each slide is lost or distorted: sometimes the slides are made available (usually on request), and this is generally the only mechanism by which the data is captured for future use. Information once presented is effectively lost - there is no chain of custody or consistency of ownership, and there is no value gained post presentation: there is no guarantee that

information is cascaded within departments, it may be filtered by the manager's own view of what is important to share. There is also no process for checking the understanding of the data, no to see how or if the data has been used (if at all). It is therefore difficult to judge how useful the research has been in enabling design teams to make robust design decisions.

Research Observation 25 The cascade process for continuing dissemination fosters misinterpretation and bias, and lacks a quality control mechanism.

Finally, it can be very difficult to schedule these sessions, which can delay the dissemination process. Over an 7 month period in 2006/2007, over 20 separate presentations were made by MRO to more than 30 key personnel and teams for the Stage 2 findings. Despite this effort, in June 2007, pockets were still being found that are unaware of research, and several more presentations had been scheduled.

Research Observation 26 The dissemination by presentation process is reliant on "expert delivery" to time- and resource-starved managers, consequently its efficacy is undermined by scheduling conflicts.

Research Observation 27 The dissemination process is an "MRO push" not a "market pull" process which does not successfully identify or reach all potential recipients.

The data that was disseminated is explained in Appendix A to Appendix C: note that these appendices contain significantly more information than was contained in even the most detailed decks for these research projects.

The presentation format for PRP work was extremely large (the full presentation was over 4 hours long), and when these decks are reduced to save time, then the level and quality of knowledge passed out is also reduced. The process is mainly passive - the level of interaction is driven by the audience.

Research Observation 28 The quality of the knowledge disseminated is compromised by time restrictions.

Very little feedback was received from the recipients of these presentations, and requests for further information were unusual: chapter 5 discusses the outcomes of extra work that was undertaken following such requests. This level of customisation of the data is not the norm at JLR - normally the presentations are given, and the data filed in perpetuity. In fact, there is a process in place at JLR to ensure that all data that is destroyed on a regular basis (annually). In theory, only the final reports are kept; none of the supporting data is retained. The PRP data were actually retained by this EngD project in contravention of these rules³⁴.

Research Observation 29 There were very few requests for additional information from the recipients of the presentations, suggesting that they may not be aware that such an option is available, or that they do not feel a need to know more.

³⁴ In the researcher's (locked) desk draw - there is no storage space for large project files at JLR (neither hard nor soft copies).

JLR never received the raw data: they were provided with the verbatims from the Streaming™ process (in a series of Word documents), Excel spreadsheets (tabs) containing summaries of the coding results (counts of E+, E- and NetE) summaries of the PALS ratings data (mean figures cross referenced by various demographic factors), and the demographic details of the participants. The raw verbatim data, detailed codeframe and item by item coding data was only received by unusual request for this EngD project. In addition, the data that was provided was in separate, non-linked files, making further interrogation difficult and time consuming. This resulted in several detailed reporting tasks never being completed, such as specific reports for each of the JLR cars (only one was completed for the XJ).

Research Observation 30 The quality and format of the data to be provided by the Agency was poorly specified by JLR, reducing its usefulness (utility).

4.4.5 Developing the “Rules of the Road”

The MRO team recognised the value in trying to ensure that the PRP messages were received and understood by the right people. Following the Stage 2 dissemination process, an exercise was conducted by the team in which they attempted to develop a set of “Premiumness Suggestions” for a project called X250 (which was launched as the Jaguar XF, replacing the Jaguar S Type). These suggestions were developed using the verbatim data, and the exercise was undertaken independently from this EngD research.

The first stage of this process highlighted the problem in communication between JLR and its subcontractor: the MRO team spent months recoding the verbatims to a greater level of granularity than had been included in the dissemination presentations, and manually inputting data into a spreadsheet. In fact, this work had already been done, and the data was available at greater levels of detail had it been requested: MRO weren’t aware of the full extent of the analysis that had been done on their behalf³⁵. In addition, this recoding was conducted using the transcriptions, not the audio recordings, enabling context, nuance and emphasis to be lost in the translation from comment to code. A positive outcome of this potentially nugatory work is that a comparison of the resulting codeframe with the “official” codeframe demonstrated a level of concurrence (interrater reliability): the new codeframe was actually sub-set of the earlier codeframe, differing only in minor nomenclature.

Research Observation 31 Failure to communicate effectively with the Agency resulted in significant wasted effort.

The second stage of the process was to identify those cars that had scored the best and worst NetE values for a range of specific product features and then, looking at those cars again, to suggest what specific characteristics may have elicited the comments:

³⁵ See section 5.3.

- What do the competitors do?
 - Which examples were best-received?
- What do we currently do?
 - What are the issues?
- What should we consider doing?
 - Suggestions

In principle, this was an eminently sensible approach. However, this exercise was conducted several months after the clinics had been run (December 2006), and without any customer input. While the MRO researchers who did this work were very familiar with the findings, only one of them had actually been at the clinics with the customers. The cars used were not identical to those viewed by customers. This introduced an element of guesswork into the process: only the customers knew why they had said what they did, and trying to make emotional judgements on their behalf by copying their actions was likely misguided. Assumptions were made about why the class leaders did better: these may be educated guesses, but they are still only guesses. This process introduced potential errors both in terms of context and translation.

Research Observation 32 The “Rules of the Road” exercise attempted to analyse the thought processes of customers by copying their movements. However, it required assumptions to be made about context, translation and meaning that rendered the findings inaccurate and unreliable.

A second potential danger of this exercise was the nature of the suggestions. While some of the suggestions were common sense, and congruent with the literature on perceived quality and craftsmanship, others were prescriptive and likely to lead to lazy and inappropriate design decisions. In addition, there was little evidential support to prove the link between the specific suggestions and the customers’ evaluations of luxury and premiumness. The actual customer verbatims sometimes provided this support, but not all conclusions could be verified in this way.

Research Observation 33 The “Rules of the Road” tended toward prescriptive, solution-oriented specifications, rather than stating the nature of the problem to be addressed or identifying its root cause.

There was also a concern that the prescriptive suggestions would actually stifle creativity in the design process, and over time would actually erode the perception of quality: design cues that are en vogue today will look dated in the future, but the “rules of the road” do not accommodate this. For example, simple bullets points (Figure 43) were followed by annotated images (Figure 44):

- Functional areas defined by chrome / metal borders
- Plastic areas
 - Kept to a minimum surface area
 - Kept low-key through use of black satin paint
 - Highlights and "Jewellery" used to draw attention elsewhere
- Touchpoints (Switches, handles)
 - Premium materials (chrome) or finishes (satin chrome paint)
 - Solid feel (i.e. when tapped with a finger nail)
 - Solid, assured action (i.e. door release)

Figure 43 "Rules of the Road"

Even in these simple rules, inferences were made that were not derived from the evidence: for example "used to draw attention elsewhere" is a personal judgement. Prescriptive directions were given through poor choice of language and insufficient technical expertise,: for example, stating "black satin paint" when "satin finish" would have sufficed.

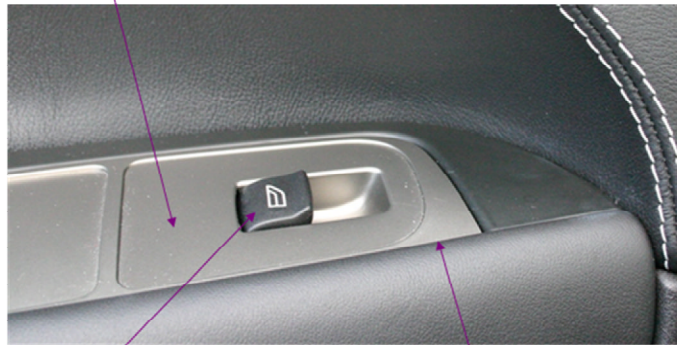
Research Observation 34 The "Rules of the Road" included personal opinions that were not supported by the evidence.



Figure 44 S Class Switch Pack Example

This exercise was extremely useful as a supplement to the main reporting, to highlight those areas (without unwarranted inferences) where the competition flourished and where JLR products did poorly.

Large expanse of plastic border, painted silver, therefore it catches the eye



Non-premium finish dolly

No break-point between areas

Figure 45 Jaguar XK Door Pack Issues

Figure 45 shows a poorly received switch pack from the XK's door. Raising the areas at fault is a useful contribution, and there is evidence from the customer verbatims to support these issues. However, Figure 46 provides prescriptive design choices, which may not be the best solution to the problem and may reduce attempts to develop better ideas.

Soft feel black paint / Piano Black finish



Chrome border

Satin chrome painted dolly

08MY veneer reduces plastic area

Figure 46 Jaguar XK Door Pack Suggestions

Research Observation 35 The prescriptive nature of the “Rules of the Road” could stifle creativity and ultimately lead to an erosion of the luxury and premium levels of the product.

There is a fine balance between useful guidance and dangerous prescriptive rules, which JLR needs to be aware of in the future.

4.5 Observations and Insights

The Exploratory Study generated 31 Research Observations and 6 other points of insight which arose from discussions within the individual sections of the work³⁶.

These Research Observations and insights have been brought together and scrutinised to identify key themes and patterns that may emerge from them. The scope and nature of the observations and insights lead to the evolution of three categories:

- Methodological issues;
- Business issues;
- The nature of consumer reactions when evaluating luxury and premium cars.

Each of these categories are discussed further below.

4.5.1 Methodological Issues

This category relates to those observations and insights that pertain to the PRP process itself, particularly to the methods employed to analyse the data and develop the findings. The study generated 15 observations (observations 12 to 23 and 32 to 34) and 4 insights, which related to the quality of the data collection process and the analysis techniques employed.

4.5.1.1 Data Collection Process

The PRP methodology facilitates validation through triangulation by collecting data via three separate instruments: the brand and model standing method, which yields subjective numerical data; the PALS rating method, which also yields subjective numerical data; and the StreamingTM method, which yields qualitative verbatim data that can be analysed to produce numerical outputs. These quasi-quantitative methods can also provide a level of comfort and familiarity to a positivist firm when conducting phenomenological research.

It is also important to consider the relative value of each of the types of data. The Brand and Model Standing method elicits insights into customer expectations and preconceptions, while the PALS Rating method captures a view of customers' emotional satisfaction with particular vehicle attributes; these exercises give a ranking result that highlights which products or product features were "best". However, neither method informs an understanding of why those views are held.

The StreamingTM process plugs that gap; it presents a powerful process for capturing customer reactions when evaluating luxury and premium cars in a naturalistic setting that overcomes many of the disadvantages of more traditional data collection methods. For example, the non-directed nature of the StreamingTM approach reduces the impact of researcher bias on the

³⁶ Section 4.4.3.4, page 85

resulting verbatims compared with traditional interview techniques. Hence all three data sets must be considered together to build a richer picture of how consumers evaluate luxury cars.

However, the costs of operating this data collection process are significant. To capture customer reactions during the evaluation of luxury and premium cars naturally requires the acquisition by hire or purchase of very expensive, high end vehicle: the purchase prices of the Stage 2 vehicles ranged from \$50,000 US to \$200,000 US, representing a total cost if all 18 vehicles had been purchased of over \$1,724,000 per country³⁷. The venue selected for the customer clinics is also important, as the location, quality and ambiance must be matched to the calibre of the vehicles to ensure that the participants feel comfortable in the research environment. The target participants are high-earning individuals, and were incentivised to attend the clinics. Nearly 450 people took part in the research (both stage 2 and L486/L538 clinics), with a minimum cash value to the incentive of \$100 each, this leads to a further cost of at least \$45,000. Similarly, a team of moderators are required a one to one basis. The Agency costs (travel and subsistence, day rates, moderator training, etc) also need to be factored in. The data analysis charges present further costs. To put these costs in perspective, the total cost of the Stage 2 research exceeded £1,000,000. The L486/L538 research was cheaper, being a smaller clinic, but costs still exceeded several hundred thousand pounds.

4.5.1.2 Data Analysis Issues

From a high-level perspective, the outcomes of the PRP research have been extremely beneficial to JLR in terms of providing guidance about which cars should be benchmarked as competitors, and which factors drive the perception of luxury when consumers evaluate their products.

The researcher's review of the data and process has found that the "official" findings of the PRP are reasonable. If another researcher were to take the raw data, it would be possible to replicate the analysis and draw the same conclusions.

However, there were other ways to interpret and present the data, and sections of information were not developed. This may have been intentional, to keep the "story" simple for its intended audience, but it limited the value and believability of the research within the wider reaches of the company. There was also a tendency for "headlining" in the reporting, including a number of statements that may have been true but could not be supported by the data that had been collected.

The brand standing and attribute rating data presented fewer analytical difficulties, and received only a cursory analysis to develop means and standard deviations that could be used to rank the vehicles considered.

The focus of the data analysis was on the verbatim data, specifically on the coding process and subsequent manipulations.

³⁷ the cars were hired.

In this regard, a process of independent checking during the coding process helped to reduce error and bias, increasing interrater reliability, and allowing the codeframe to evolve from the data provided a thematic typology for the way customers talk about luxury cars, rather than creating translation errors by forcing the data into “engineering-speak”.

However, problems were identified that relate to how the coded verbatim data were manipulated after the initial (robust) analysis.

For example, significant flaws were identified with the NetE metric that formed the basis of the majority of the PRP findings dissemination process. The NetE metric dissociates the data from context and meaning, and confers equivalence on dissimilar cars. It also provides a skewed measure of consumer’s reactions during product evaluation by ignoring the unequal influence of positive versus negative disconfirmation of expectations. NetE is therefore not a valid indicator of customers’ perceptions of luxury or premiumness during vehicle evaluation as currently used within JLR.

An attempt to help the recipients of the Stage 2 analysis also presented cause for concern. The “Rules of the Road” exercise attempted to analyse the thought processes of customers by copying their movements. However, it required assumptions to be made about context, translation and meaning that rendered the findings inaccurate and unreliable. It also tended toward prescriptive, solution-oriented specifications, failing to address the nature of the problem or identify its root cause, and included personal opinions that were not supported by the evidence.

The root of these problems can be traced back to a fundamental lack of understanding of the nature of the data that was collected and how it was coded.

4.5.2 Business Issues

A number of observations were made that relate to issues that affect JLR’s business operations, and to those of JLR’s strategies and policies that impact on the success of the PRP. The Exploratory Study yielded 16 observations in this category (observations 5 to 11, 24 to 31 and 35). The broad topics within this category incorporate business strategy, people and attitudes, the use of outsourcing, and knowledge management.

4.5.2.1 Business Strategy

At the highest level, it was identified that there is a disconnect between JLR’s long term business strategy and short-term financial management. In particular, it was clear there were difficulties in terms of being able to recognise the value and importance of ad-hoc research projects within the firm, which exposed projects such as the PRP to cost-cutting measures. For example, funding cuts have resulted in plans for future PRP clinics being dropped, which suggests that this research is no longer a priority for the firm. It is difficult to defend projects in which the dollar benefit cannot be easily quantified to the business. As a result, new JLR models such as the Jaguar XF have not yet been reviewed using this process, and there is a concern that the data has been collected so far will be

viewed as being out of date because of the cars that were evaluated. Because many of those to whom the data is useful are very product and attribute focused, there is an inherent concern that the data is no longer relevant once the cars have been refreshed. In actuality, the key learning points are expected to remain consistent over time; certainly the key learning points from the L486/L538 application of the process supported rather than changed the conclusions of Stage 2. However, the implications for benchmarking are expected to change, particularly in terms of examples of execution that drive particular reactions.

The latest JLR models, Jaguar XF, Jaguar XJ, Land Rover LR4, Range Rover and Range Rover Sport (09 and 10 model years) are the first to have been influenced by the findings of the PRP. Press and customer reaction to these new models has been very positive, and a step-change in the quality of the vehicles has been recognised. However, it is not possible to trace directly these improvements (and subsequent car sales) to lessons learned from the PRP, hence it is difficult for the firm to justify the programme using traditional cost/benefit analysis techniques.

4.5.2.2 People and Attitudes

Several observations arising from this study related to “people” issues, both at departmental and individual levels.

The study highlighted that the effectiveness of JLR’s cross-functional team approach to NPD was compromised by inter-departmental suspicion and protectionism together with conflicting team and project priorities. This results in a spiral in which levels of trust diminish and limits the individual teams’ abilities to work together.

The size of the firm, together with the regular staff turnover³⁸ and an endemic silo mentality among staff, inhibits the development of inter-team relationships, which makes identifying who should be exposed to the PRP findings difficult.

This environment resulted in the PRP being instigated and planned in isolation from those stakeholders who would arguably have benefitted most from its findings: the situation means that the wider needs of the firm are not recognised or understood by MRO, but also means that the wider community within the firm are not aware of the MRO or its capabilities.

There were very few requests for additional information from the recipients of the PRP presentations, suggesting that they may not be aware that such an option is available (because they do not understand what MRO can do for them), or that they do not feel a need to know more (silo mentality - they are the experts in their areas, and do not need help from “outsiders”). A further observation is that very few JLR staff from outside of the MRO came to observe the clinics. This suggests a lack of motivation and a failure to recognise the importance of the research, coupled with a lack of time. A consequence of an

³⁸ through natural wastage but also deliberately: JLR’s HR process for promotion/career development demands that staff work in different departments to “round” their experience. However, it also results in a loss of knowledge, experience and consistency within the teams.

overburdened, time and resource-constrained workforce is that mistakes are made and opportunities are missed.

The PRP research had a short-term influence on the behaviours of those levels of management within JLR that were privy to the results presentations. However, the long term effectiveness and utility of the research for those people actually responsible for developing and delivering the products was neglected.

4.5.2.3 Knowledge Management

The dissemination and storage of the PRP findings form part of an informal JLR Knowledge Management system. While formal software-based knowledge management systems exist for design and CAD data, and purchasing and financial systems, there is no such formality to control Market Research data. This section focuses on the way that the findings were presented and the implications of how the data was shared.

From a high-level perspective, the dissemination process is an “MRO push” rather than a “market pull” process, a consequence of which is that not all potential recipients are successfully identified or reached.

JLR’s in-house reporting style favours summary-style communication in the absence of more detailed supporting reports, which necessitates a reliance on the in-head expertise of the report originators. However, this informal “expert knowledge management system” that underpins the reporting process is undermined by high levels of staff turnover. The summary-style approach also carries the risk of misinterpretation.

The dissemination by presentation approach reduces workload for the recipients and facilitates timely communication of findings, but reduces the depth of understanding and restricts the range of the target audience. However, the process is also reliant on delivery by “experts” to time- and resource-starved managers, consequently its efficacy is undermined by scheduling conflicts. The quality of the knowledge disseminated is further compromised by time restrictions (shorter presentations require increasing levels of brevity).

The tendency of the in-house communication style toward prescriptive solutions and the assumption causal links in the absence of evidence rather than appropriately supported problem description and guidance could stifle creativity and ultimately lead to an erosion of the luxury and premium levels of the product.

The subsequent cascading of the PRP findings by these managers also fosters re-interpretation and bias, and lacks a quality control mechanism to check the accuracy or identify the reach of the cascade.

4.5.2.4 Third Party Outsourcing

There is a growing reliance on provision of expertise by external suppliers, and MRO are reliant on Market Research Agencies to support their research activities.

However, this dependence on third party agencies for research reduces the level of control that MRO has in how the research is designed and conducted.

This problem is compounded by the prescriptive approach to specifications that is prolific within the firm. It is this poor specification of requirements by JLR that resulted in the Agency (correctly) supplying the PRP “raw” data in a format that precluded its further analysis without significant additional effort.

In addition a failure to communicate effectively with the Agency resulted in significant wasted effort.

These problems suggest that the outsourcing of market research expertise is not being well managed: JLR naturally want to retain control, but poor specification of requirements results in sub-optimal outcomes by restricting the Agency’s ability to employ their expertise, and JLR’s management of the process is hampered by a lack of detailed understanding of what the Agency is doing and is capable of.

4.5.3 The Nature of Consumer Reactions when Evaluating Luxury and Premium Cars

The aims of the Exploratory Study were to evaluate the planning and implementation of the PRP process, and the way that its findings were disseminated, rather than to analyse the actual data collected by the PRP process. Consequently only two of the insights from the Exploratory Study related to the nature of consumer evaluations of luxury and premium cars.

These insights arose from the researcher’s own review of the PRP data and findings, which was conducted in parallel to the passive observations that inform this Exploratory Study³⁹. The review aimed to study the existing analyses to look for insights that had not been identified or fully realised.

The review identified that consumer reactions while evaluating luxury and premium cars were elicited by both individual features/attributes and holistic considerations, but also that consumers reacted at brand, model and product levels. This supports the Burns’ findings of the phenomenology of delight [86].

The review also lead to the realisation that luxury and premiumness in the automotive context are subjective constructs which derive from a combination of quantifiable and non-quantifiable product qualities (QPQs and NQPQs) that cannot be captured or managed using traditional customer requirements management techniques.

An understanding of the nature of this construct is necessary if any attempts to operationalise luxury are to be successful.

The coding analysis of the verbatim data revealed a thematic perspective of the nature of consumer reactions during the evaluation of luxury and premium cars. Analysing the rate of occurrence of these themes in consumers’ positive and negative comments identified salient differentiators for the “best” and “worst”

³⁹ not to support the aims of the study, but to provide the researcher with a full view of the PRP process and familiarity with the data sets.

performing cars⁴⁰. The same three differentiators appeared in the Attribute Ratings data. The PRP findings identified a potential “cause” and “effect” relationship between the three key salient differentiators, which is now used to propose an initial model of the phenomenon (Figure 47)

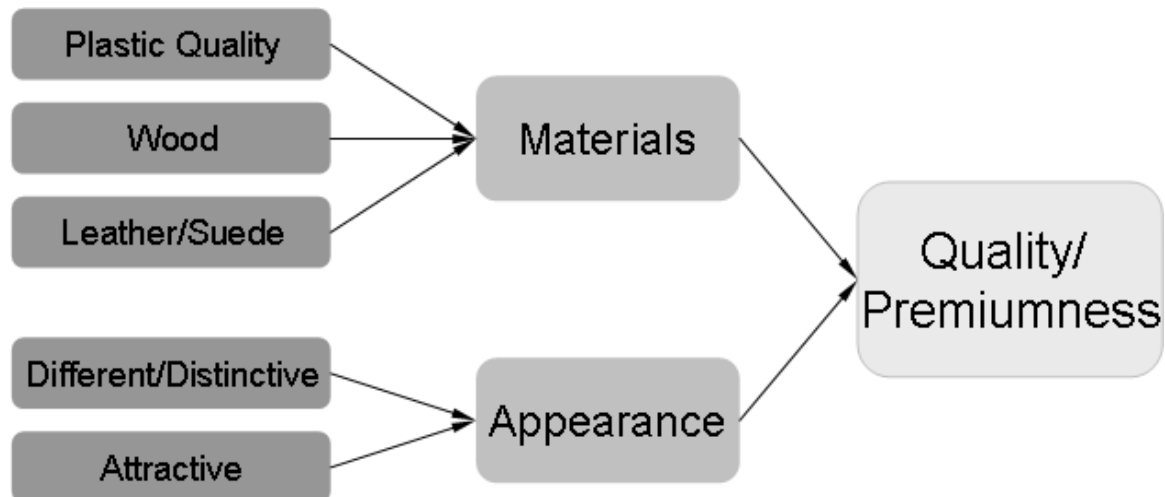


Figure 47 Initial Model of the Nature of Consumer Reactions when Evaluating Luxury and Premium Cars

Serious deficiencies in the NetE metric have been identified by this study, however the top and bottom five NetE vehicles are arguably reasonable when viewed in the context of Figure 40. The model should be validated against a more robust analysis of the data, but this falls outside the remit of this passive observational study. However, the interventionist study described in chapter 5 includes additional analyses of the PRP data that enabled the model to be verified.

4.5.4 Closing Comments

The Exploratory Study did not identify any remarkable issues with how the clinics were conducted. However, significant issues were identified regarding the way the data was analysed, the manner by which the findings were disseminated, and how the knowledge was captured for the future.

Excluding the business issues discussed, which fall outside of the remit of this EngD, the study determined that there were four main problems that needed to be addressed to optimise the efficacy of the PRP research:

- 1) To be able to identify and access the wider audience for the research;
- 2) To overcome the contextual, translational and bias limitations of post-coding manipulations such as the NetE metric and “Rules of the Road” exercise by increasing the utility of the coded data/information/knowledge;

⁴⁰ rated according to NetE, using the Stage 2 data

- 3) To address the storing and sharing of the data and knowledge, making it accessible to those to whom it would be beneficial;
- 4) To improve team and employee motivation and enthusiasm surrounding the PRP findings, and to address the lack of stakeholder engagement in the PRP process.

4.6 Chapter Summary

The Exploratory Study had five aims, which were to:

- a) Assess the process by which ad-hoc market research projects are planned;
- b) Understand the objectives for the Premium Research Programme (Stage 2 and L486/L538 projects), and the rationale behind them;
- c) Evaluate the methodology used to gather and analyse the PRP data;
- d) Review the findings of the PRP projects;
- e) Analyse the dissemination process.

A combination of data collection methods was employed to achieve these aims, including documentation analysis and observations of PRP activities such as planning meetings, customer clinics, data analysis reviews, and dissemination presentations.

The outputs of these data collection methods were collated and reviewed, and points of interest, intrigue, frustration and difficulty were identified. The points were analysed in terms of themes that aligned with the aims of this study, a process which resulted in the emergence of 31 Research Observations and 6 further insights.

The observations and insights were brought together and examined, and were each seen to fall into one of three separate categories, covering methodological issues, business issues and the nature of consumer reactions when evaluating luxury and premium cars. Each category then formed the basis for more detailed discussion.

An initial model of the nature of consumer reactions when evaluating luxury and premium cars was proposed.

Finally, four main problems were identified that needed to be addressed to optimise the efficacy of the PRP process.

5 DESCRIPTIVE STUDY - INTERVIEWS AND INTERVENTIONS



Aim To assess the success of the PRP dissemination process. To identify the nature of the actors' interactions with the data. To identify and develop methods and tools to improve the utility and accessibility of the PRP data.

5.0 Chapter Structure

The chapter begins with a discussion of the objectives of this Descriptive Study and the data collection methods employed. The rationale for each of the three interventions is introduced, together with a review of the specific aims of each activity and the approaches adopted. The results of each intervention are presented, and the findings discussed. A number of research observations emerge from the interventions, these are drawn together to identify patterns and insights.

5.1 Introduction

The research methodology for this EngD project adopted a two-part approach. The first part (see chapter 4) discussed the passive observation of JLR's research process which appraised the planning and implementation of the PRP. This chapter now presents the interventionist research activities used to probe for deeper insights into how successful JLR's research and dissemination process has been within the company⁴¹, to establish how designers, engineers and marketing interact with the data, and to develop and test new ideas and tools to enhance the utility and accessibility of the PRP data (with the aim of increasing the ultimate value of the research).

5.2 Objectives and Data Collections Methods

This part of the research focuses on what happened to the PRP once the "official" findings had been disseminated and the research had come to an end. It was observed that the normal procedure for dissemination is that the findings are shared via decks, then filed and never returned to. It is very rare for any further analysis to be conducted, or for the data to be used, once the project has "finished". The PRP is very unusual in this regard, and the additional studies are largely due to the interventions of this research. This chapter considers a selection of the activities that were conducted to:

⁴¹ in improving the understanding of how customers perceive luxury and how that knowledge is used

- a) understand how usable the raw data is to interrogate and manipulate for further analysis;
- b) understand how well the PRP findings had been understood by its intended audience;
- c) find out what key stakeholders needed from the research that hadn't been delivered;
- d) work out how to develop deeper, richer and more focussed knowledge from the data; and
- e) identify how stakeholders could be enabled to use the data to inform their own functional requirements in a "safe" way.

Data was collected through a combination of open, unstructured interviews, interactive presentations and meetings, and group workshops. Tasks were undertaken concurrently, so learning from each activity could inform the others.

The activities undertaken have been grouped into three interventions. Each of these interventions represented an opportunity to learn about what JLR wanted to understand and how the PRP data could be used to accomplish this. As for the passive observations, notes were kept in a series of three confidential log books. The interventionist part of this research started in January 2007 and carried through to the end of the research period in December 2009, representing a three year period of interaction that included at least 332 days spent with JLR staff on site.

Some of the specific details of these activities are confidential to JLR; however, the key points of interest have been sanitised and are discussed in the following sections.

5.3 Intervention #1: Realising the Power of the Verbatim Data

5.3.1 Rationale for Intervention

The Premiumness Research Programme yielded three types of data: Brand Standing (strength and focus), PALS Attribute Ratings and the coded verbatim data from the StreamingTM process. Of these, the first two provide rational, cognitive and numerical results. These results can be analysed in myriad ways (by age, gender, household income bracket, car driven, body style, etc), but the data are fixed: they represent the responses of the participants to each question at that time.

The brand and model standing data give a holistic perspective: the participants gave their responses without looking at the products, so their answers were based on their memories⁴² of the whole car or the whole brand; the data can be considered a measure of their expectations, rather than an evaluation of the actual cars.

⁴² Real or imagined

The attribute ratings contain a mix of specific and holistic questions, but signal how emotionally positive or negative the respondent feels towards that attribute - not necessarily how well an attribute has been executed. They provide a quasi-rational view of an emotional enquiry.

These data provide a numerical mechanism by which JLR vehicles can be compared against their competition set using the eyes⁴³ of their target customers. There is still an element of subjectivity about this data, as it still represents the *opinion* of the participants. However, it enables a comparison to be made without introducing the bias of the engineer, designer or researcher. In this case, the numbers provide a translation from subjective customer opinion into a language with which the designers, engineers, marketers, and manufacturers are familiar. However, what this translation can not provide is an understanding of the meaning behind those numbers, nor how they can be used to improve the product. The numbers provide a target; the automatic need to improve such numbers is driven by the deeply-held, but untested, assumption that better numbers will automatically equate to an improved perception of luxury in the eyes of the consumer. Without guidance to provide meaning to that translation, it is entirely possible that efforts to improve the numbers would not improve the perception of luxury (by changing the “wrong” things, or changing the right things the wrong way); this is especially true once the data is removed from its original context, and once assumptions are made about what motivated consumers to make particular responses in specific instances.

The verbatim data, on the other hand, provides a qualitative mechanism by which JLR vehicles can be compared against their competition set using the eyes of their target customers. It can be argued that the verbatim data provides a far richer data set than the quantitative data. The verbatim data captures what the respondents wanted to talk about, not what they were asked to talk about, and reveals what excited the respondents (whether positively or negatively), what they found interesting, intriguing, frustrating or difficult to understand. It does so from a visceral level: the respondents are yielding their non-rational, emotional views of the vehicles. However, analysing this type of data is a much more labour-intensive and specialist task compared to analysing the quantitative data. In a resource-stretched, time-starved environment, this presents a significant barrier to its use. But by understanding what truly excited, pleased, intrigued or infuriated the respondents when they looked at the cars and articulated their thoughts and feelings in their own way, it is possible to develop guidance that would ultimately support attempts to improve the rational quantitative brand and model standing and attribute rating measures.

5.3.2 Aim and Approach

Chapter 4 indicated that the value of the verbatim data was recognised by JLR: much of the decks presented were focussed on the NetE metric and the major contributory themes and areas. However, the decks also presented a fairly high

⁴³ And ears, noses, hands and other body areas

level of information, which lead to requests for additional reports for specific attributes and features or models.

This intervention therefore looks at how the verbatim data can be used to understand the customers' views in more detailed examples: what do specific teams within JLR want to get from the data, what questions do they want answers to, and how can the data be interrogated to provide those answers? It looks at the end-to-end process of developing detailed reports using the verbatim data as supplied by the agency, and highlights the problems and difficulties that arose.

This intervention was conducted during the period June to August 2007. The development of a specific report for the Seat Comfort Attribute Manager using the Stage 2 verbatim data provides the basis of the intervention activity.

The aims of the seat report were to identify:

- Which cars performed best and worst in terms of emotional response for seating?
- What sorts of things did customers actually say about seats?

The methodology adopted to develop the seats report followed a similar approach to that used to create the "Rules of the Road" discussed in section 4.4.5. Informal interviews with the team which had conducted that research identified that the data was difficult to use and time-consuming to analyse.

This intervention represents the researcher's integration into the MRO team: the researcher was asked to assist in the production of the report, and was able to use this interaction as opportunity to study what this analysis process entailed, as well as to discover the nature of enquiries that may be made of the PRP data.

From the researcher's perspective, the aim of the intervention was to understand how the data could be used to understand how consumers perceive seats and seat comfort in this market, and to identify what problems could be identified from the process of conducting the analysis and creating the report.

The following sections report the researcher's observations and findings from this intervention.

5.3.3 Critique of the Data

The data originally provided by the agency was presented in a number of files in disparate formats:

- Transcripts: MS Word documents. Two documents were provided per car, one for each market (UK & US). Each document contained all the respondents' comments for that market. For each car that each respondent viewed (3 per respondent), the verbatim is presented in 5 sections: General, Exterior, Interior, Rating,

Suggestions. Examples of transcripts are provided at Appendix E.

- “Database of Answers” Excel spreadsheet (soft copy only), listing breakdown of each code attributed to each section of each respondent’s verbatim for each car (to tier 2 for both area and theme).
- Demographic Listing Excel spreadsheet (soft copy only), listing unique ID, country, cell viewed, age, gender, luxury level and vehicle owned.
- Tabs A3 print-outs of excel spreadsheets (hard copy only), listing code counts, cross tabulating tier 1 and 2 Themes and Areas. Sheets provided for US, UK and combined UK & US results, E+, E-, N and NetE.

Of these, the transcripts, database of answers and demographic listings were somewhat linked by use of a common Respondent ID field. However, this was only unique within the specific clinic venue attended (i.e. UK or US), so had to be used in conjunction with a UK/US identifier (e.g. UK3001) to make it unique for the clinic. However this was still not unique between clinics, requiring an additional modifier to ensure a unique reference for each respondent within the PRP.

The Tabs were not traceable back to the raw data.

The aim of this report was to demonstrate best and worst in class using NetE, E+ and E-, and to support these results with specific comments from the respondents.

The first step was therefore to review the data provided by the Agency, in terms of the nature and format of the data (rather than the content), and whether it could be used to develop the seats report.

The Tabs have proved an invaluable resource for general enquiries and for supporting the main presentations, however they only present details for front seats or rear seats. This level of breakdown for area of car was insufficient for this task, especially considering several of the SUV class of cars contained three rows of seats. It also discounted comments that consumers made about seats in general, i.e. their holistic view. In terms of theme, these were presented to tier 2 level. The tabs could therefore give an indication of the emotional responses of the participants, but not to the required level of detail and with no way to link to specific supporting verbatims.

The Database of Answers presented similar constraints: the Tabs simply present a pivot table of this information. The only additional information is the section of the respondent transcript in which the code was identified.

The Demographic Listing provides background information about the participants, which is important in understanding how different consumer types respond, but was not part of the briefing for developing this seats report.

Consequently, the raw verbatims formed the basis of the analysis for the seats report.

This cursory analysis of the nature and format of the data provided presents an initial problem, in that there is no direct link between the codes allocated and the actual respondents' verbatims. The need to be able to support the coded results with specific quotations highlighted a significant problem with the way the raw data had been provided. The data had been provided in line with the contractual requirements set out between JLR and the Agency, however, as the need for this level of further analysis had not been anticipated, the formats had not been appropriately specified.

Research Observation 36 The presentation and level of the coded verbatim data provided by the Agency was not conducive to performing more detailed analyses.

5.3.4 Recoding the Verbatims

An approach was therefore developed in which the raw verbatims were re-reviewed and effectively re-coded again. The review and coding exercise was conducted jointly by the researcher and an MRO team member, splitting the cars to be reviewed equally (not all cars were required to be analysed for this report).

Each transcript was read and all pertinent seats-related comments were copied and pasted into an Excel spreadsheet. A combination of speed reading and using Word's "find" utility to isolate key words (e.g. "seat", "legroom", "headroom") were employed. The existing codeframe⁴⁴ was used as a guide to re-code each identified comment to retain a level of concurrence with the data that had already been disseminated (to undermine the data that had already been published would have been damaging to the perceived reliability of the PRP within JLR). The specific details, however, were evolved according to the data and in consultation with the report's owner.

Each comment was coded according to where in the car was being discussed and the nature of the comment (Table 13):

⁴⁴ As given in the Tabs and Database of Answers

Where	Nature	
General	Appearance	General
Front	Appearance/comfort	General/comfort
Rear	Appearance/piping	General/firmness
Suggestion	Appearance/styling	Hard to operate
	Armrest	Headrest
	Build	Materials/leather
	Driving position	Materials/plastic
	Functionality/3 rd row	Quality
	Functionality/heated	Size
	Functionality/memory	Space
	Functionality/movement	Space/headroom
	Functionality/utility	Space/legroom
		Squab

Table 13 Seats Report Code Frame

The findings were input into an Excel spreadsheet, which was agreed between the researcher and MRO team member to ensure consistency of approach:

Respondent ID	Market	Respondent	Seats	Category	+ve	-ve	Comment
UK3001	UK	3001	Front	Seats - functionality/memory	1		I see it's got the seat on the door handle interior, it's got memories, one, two and three which is quite nice and easy to get to.
UK3001	UK	3001	Front	Seats - armrest	1		In terms of storage in the front, it seems quite good, I like the idea before I look at the storage of the parking, the handbrake, nice idea that is, very clever idea, let's have a look at the storage, I'm opening up the armrest now, and it's got two cupholders, which is nice, nice and deep to get plenty of stuff into there, like that, oh my arm's killing me, very nice and it slides forward and gives you a bit of comfort, there we go, very nice, quite clever.
UK3001	UK	3001	Rear	Seats - general	1		What I would find, what I do like, is I do like the boot and I do like the rear of the back seats on this.
UK3001	UK	3001	General	Seats - materials/leather	1		It seems very, very comfortable and I do like the upholstery, because it seems like they've used real quality and there's plenty of leg room in this car, which is nice and it does seem substantial, but let down by the body design and let down by elements of the interior which are naff, to say the least, looks like, looks like they've rushed to get this out, whether that's the case, I don't know, let me see, what else? What else can I say? Is there anything you find disappointing about the car? Well I think I've waxed on enough about the interior and the shape, I have to say that screen would drive me bananas.
UK3001	UK	3001	General	Seats - space/legroom	1		It seems very, very comfortable and I do like the upholstery, because it seems like they've used real quality and there's plenty of leg room in this car, which is nice and it does seem substantial, but let down by the body design and let down by elements of the interior which are naff, to say the least, looks like, looks like they've rushed to get this out, whether that's the case, I don't know, let me see, what else? What else can I say? Is there anything you find disappointing about the car? Well I think I've waxed on enough about the interior and the shape, I have to say that screen would drive me bananas.
UK3002	UK	3002	Front	Seats - build	1		Feels nicely put together, seats are solid, got the modern controls to adjust the seat.

Figure 48 Sample of Seat Report Spreadsheet (Jaguar XJR)

Figure 48 illustrates the spreadsheet used. This spreadsheet was then analysed using Excel's pivot table function to produce the report discussed in the following section.

5.3.5 Seats Analysis Report Out

This section outlines the decks that were produced for the Seat Comfort Attribute Manager from the Stage 2 verbatim data. Two decks were produced: a second set provided additional detail following the initial report-out. This

section presents a summary of the combined report, providing a view of the type and detail of the information required by the recipient.

The decks explore JLR and competitor seats by model and zone of seats (front/rear/general), and highlight areas where they performed well, areas where they were rated poorly and suggestions made by customers. Key customer verbatims were used to illustrate the main findings.

The models included were:

- Range Rover
- Range Rover Sport
- LR3
- Jaguar XJR
- Porsche Cayenne
- Mercedes Benz S550
- Lexus GS
- Audi A6
- BMW 5 Series

The seats were ranked according to the ratio of positive to negative comments made, and also by the percentage of respondents making positive or negative comments (Figure 49 and Figure 50).

- **Best**
 - S Class best overall (including styling, materials, functionality, controls, leg room and spaciousness)
 - Range Rover SC best comfort (% respondents that commented positively about seat comfort)
 - Porsche Cayenne least worst comfort (fewest % respondents that commented negatively about seat comfort)
- **Worst**
 - Range Rover Sport worst overall
 - Range Rover Sport worst for comfort (fewest % respondents commenting positively about seat comfort)
 - XJR worst for comfort (most % respondents that commented negatively about seat comfort)



Model	Front		
	ratio +/-	comfort score (%) (+ve)	comfort score (%) (-ve)
RR SC	3	32	4
RR Sport	1.5	17	2
LR3	1.63	27	6
Porsche Cayenne	5	31	0
S Class	12.3	29	2
5 Series	5.5	25	2
A6	2.38	23	6
GS430	2.36	27	4
XJR	1.93	22	7

Figure 49 Seats Report - Overall Summary (Front Seats)

• **Best**

- S Class best overall
(including styling, materials, functionality, controls, leg room and spaciousness)
- Lexus GS430 best comfort
(% respondents that commented positively about seat comfort)
- Range Rover SC and S Class least worst comfort
(fewest % respondents that commented negatively about seat comfort)



S Class GS430

• **Worst**

- Range Rover Sport worst overall
- LR3 worst for comfort
(fewest % respondents commenting positively about seat comfort)
- Porsche Cayenne worst for comfort
(most % respondents that commented negatively about seat comfort)

Model	Rear	ratio +/-	comfort score (%) (+ve)	comfort score (%) (-ve)
RR SC		2.7	11	0
RR Sport		0.65	9	4
LR3		0.94	6	6
Porsche Cayenne		2.06	14	8
S Class		7	18	0
5 Series		1.08	15	4
A6		1.7	17	6
GS430		1.98	25	6
XJR		2.46	22	2

Figure 50 Seats Report - Overall Summary (Rear Seats)

Figure 51 refers back to the original Stage 2 data, and highlights the NetE scores for the front and rear seat areas. This provides a different picture of the “best” and “worst” seats than Figure 49 and Figure 50. However, this difference was either not noticed or not raised as an issue by JLR. The discrepancy may be explained by the different coding approach used during the development of the seats report, but it was interesting to observe the way the anomaly was handled.

Weighted base per vehicle:
100 (total), 50 (US/UK)

Models this report will cover

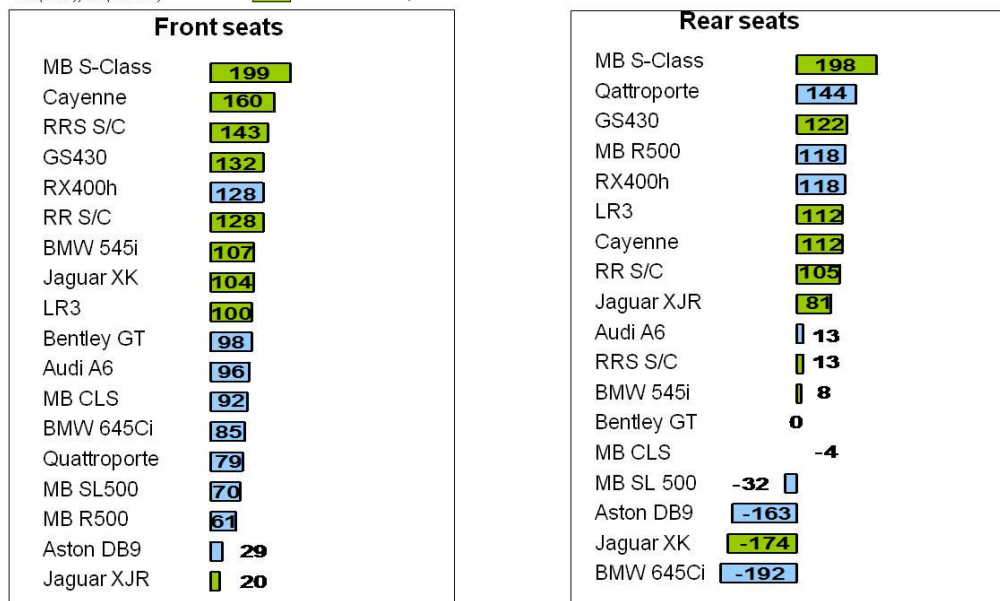


Figure 51 Seats Report - NetE (Front and Rear Seats)


Research Observation 37 Context is important when considering metrics such as NetE.

The report then presented the findings for each model in turn. Figure 52 to Figure 55 show the format used, giving the Jaguar XJR model as an example:

- 46 respondents evaluated the XJR, all but 3 mentioned seats
- Overall an emotionally positive response – 1.9 positive comments to every 1 negative comment, 251 comments made overall.
 - > 34 consumers commented on the front seats (74%). Of these, the ratio of people making positive comments to negative was 1.93:1.
 - > 38 consumers (83%) commented on rear seats (2.46:1).
 - > 25 consumers made comments on the seats in general (54%) (2.63:1).
- 48% of consumers made positive comments about comfort, 22% commenting positively on front seat comfort, 22% on rear seats and 15% about general comfort.
- 26% had positive things to say about seat adjustability (range and controls), but 11% were critical.
- Leather was generally well received, attracting positive remarks from 26% against 9% negative.
- Space was a contentious issue: 22% found the accommodation roomy but 13% found it cramped. Similarly, 30% of people liked the legroom, while 22% found it inadequate.

Figure 52 Seats Report - XJR Summary

2 Main Themes	
Seat Movement & Driving Position	Comfort
<ul style="list-style-type: none"> • 26% of respondents made positive comments on ease of adjustment and accessibility of controls. Customers were delighted by the seat moving back and forth automatically on door opening. 11% disliked the driving position, mostly the seat height and its affect on visibility. > "The seats, I'm playing around with the seat controls, they've got lumbar support, up and down, forward and backwards, the seat adjusts very nicely and I would be very comfortable driving this car." UK3004 > "As the door opens and the seat goes back so that you can easily get your legs out, that's excellent." UK3006 > "... the seat fantastic, oh wow you know, press one of the buttons on the door, and the seat was going up and down, back, forward, the steering wheel up and down, all ways, that's lovely." UK3027 > "I feel like I am struggling to see over the top actually. Just check the seat. Adjusting the seat doesn't actually make me feel that much better. It makes me higher but it just puts my head higher to the ceiling. It makes me feel - actually I can't particularly see the road too well in front." UK3017 	<ul style="list-style-type: none"> • 22% spoke positively about seat comfort, versus 7% who found the seats uncomfortable. > "The actual seat itself is comfortable. A bit rather hard on the raised parts of the seat. That's not a bad thing because it would give me the confidence that they are not going to give way in a couple of years, which quite often they did in the past in seats such as this ...". UK3017 > "The seats are very supportive and they have lots of controls it would seem.". UK3026 > "Again not terribly comfortable, I think the BMW probably tops them all for comfort.". UK3027 > "One of the first things you notice ... is that these seats are contoured seats, like, immediately grabs you in the small of the back, so that would be a very important thing if you were driving for an extended period of time..." US3006 > I feel like I'm situated in the seat as if I was laid in like poured concrete, I feel very melded into the seat and a part of the seat and that the distance to the wheel is beautiful". US3023 > "The front seat is still uncomfortable and does not allow for easy access to getting in ... the flat part of the seat was fine but coming up on the sides, my hips picked up the elevations on both sides, leaving my but to sag in the middle. I am 6 feet 2, I weight 245lbs and it's just not built for me" US3013



Quite positive – 1.93 positive comments to every 1 negative comment concerning the front seats

Figure 53 Seats Report - XJR Front Seats

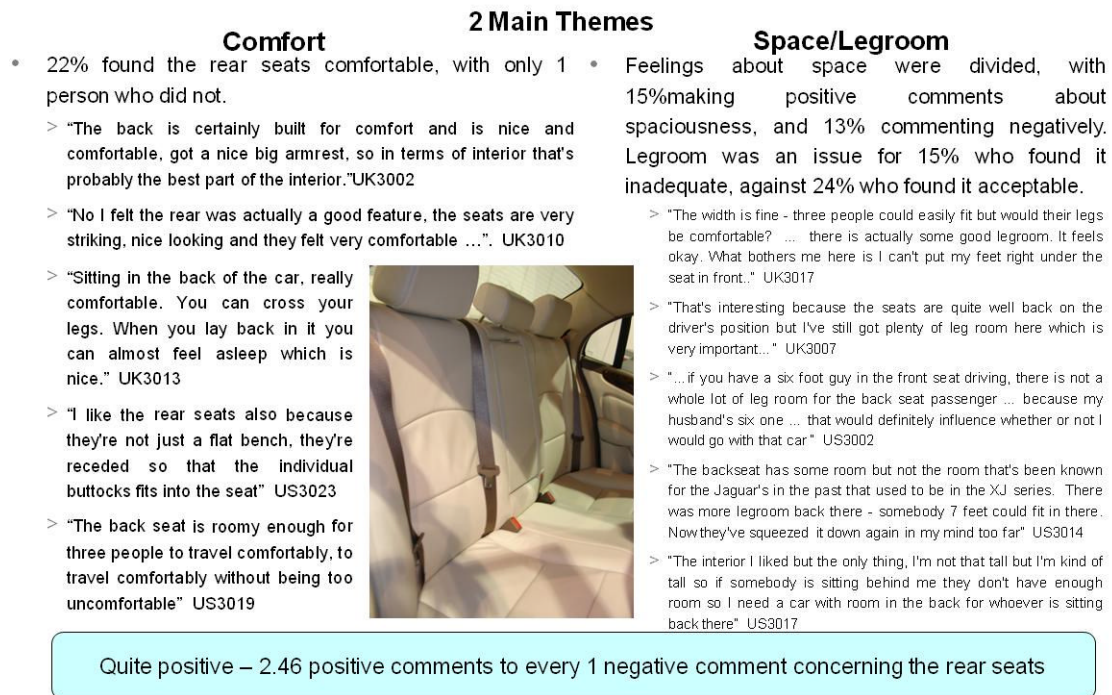


Figure 54 Seats Report - XJR Rear Seats

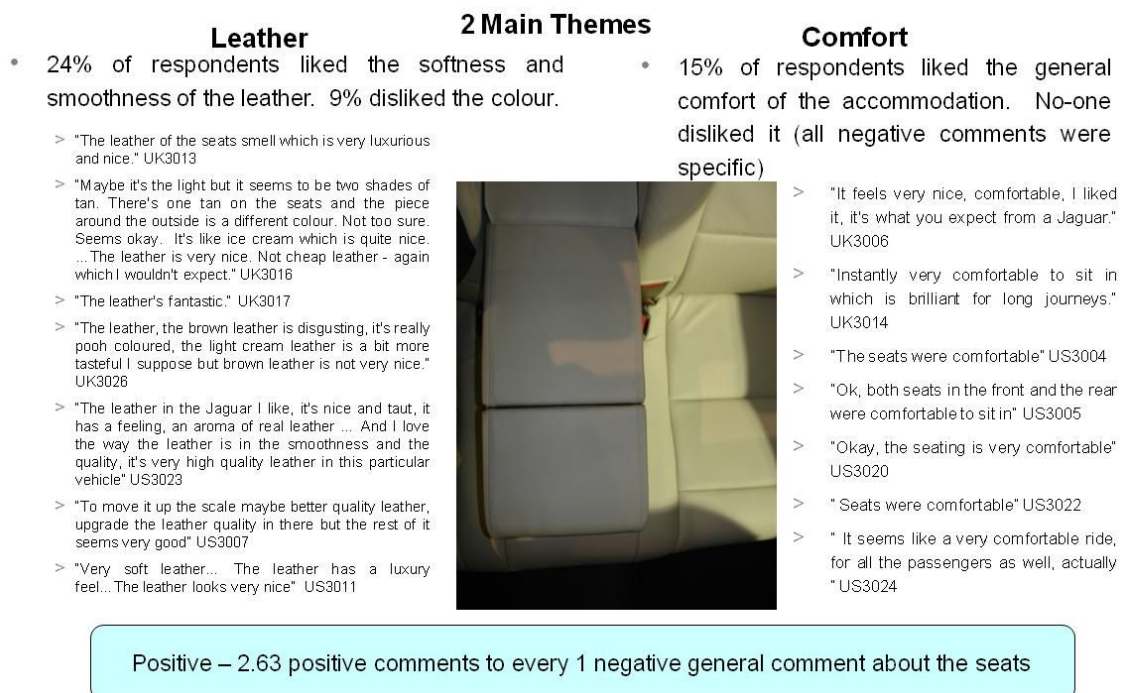


Figure 55 Seats Report - XJR General Comments

These figures demonstrate the nature of the information that was required in this case: the end-user wanted to get a feel for how participants reacted to each cars' seats and wanted to be able to relate positive and negative comments to the emotional scores. They also demonstrate some of the ways that the data can be used.

XJR	Consumer response was mostly positive, with 1.9 positive comments to every negative. 48% of consumers made positive comments about comfort (front 22%, rear 22%). 26% liked the seat adjustability, and leather was general well received (26%). Customers especially liked the automatic seat action on door opening, but found the driving position low.
Range Rover SC	Consumers made 4.15 positive comments to every negative. 15% liked the seat appearance, especially the contrast piping, and 40% said the seats were comfortable. More people commented positively on these front seats than for any other vehicle.
Range Rover Sport	Consumer response was negative (0.9 positive comments to every negative), with front and rear seats ranked worst in the group, both with respect to number of positive comments, and +ve/-ve ratio. Rear legroom and comfort were heavily criticised. 9% of consumers commented negatively about general materials appearance and quality.
LR3	1.74 positive comments were made for every negative. 31% of consumers commented positively on the third row of seats (capacity, flexibility and design). However, rear seat comfort received more criticism than any other vehicle. Consumers criticised visual appeal (leather appearance and general shape/design), and front armrest design.

Figure 56 Seats Report - JLR Model Highlights

The next part of the report looked at the NetE differentiators between the top three cars and the bottom three. Figure 57 shows the total NetE result per car, together with the key contributors to those overall scores. This identifies the top and bottom three cars.

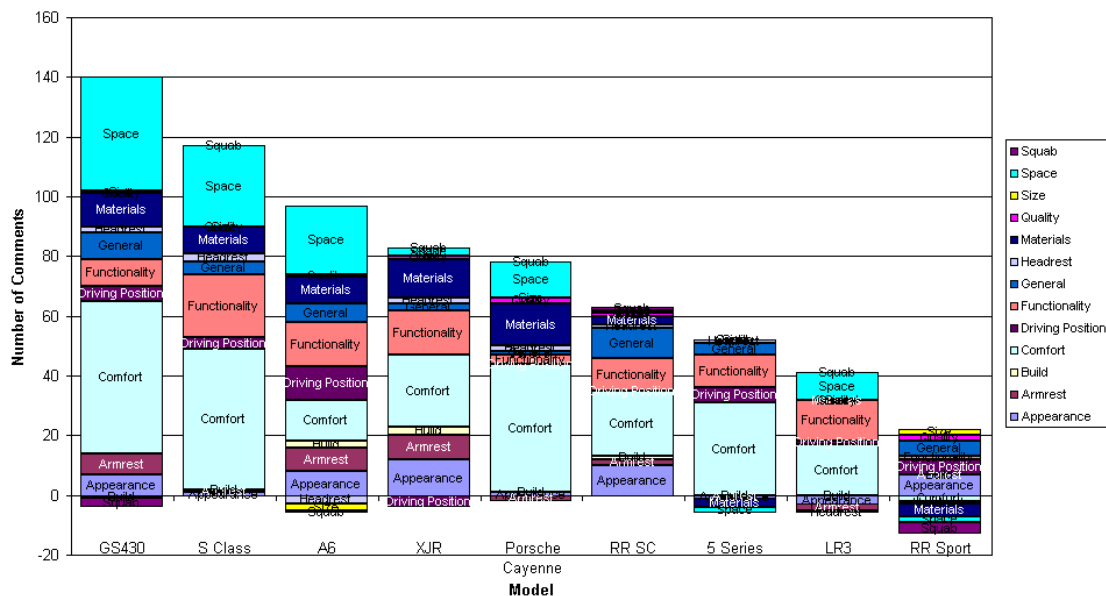


Figure 57 Seats Report - Comment-Based NetE

An additional request in this case was to understand whether the counting process affected the outcome: whether the counting the total number of positive and negative comments made for each code would yield a different result than counting the number of respondents making positive and negative comments for each code: if one person made several comments about one thing, should each comment be counted individually, or just one count made for that respondent?. It was found that the overarching message remained the

same which ever method adopted in this particular case: Figure 58 shows the respondent-based overall NetE results and breakdown. The same top and bottom three cars were identified, but the order was different for the top three.

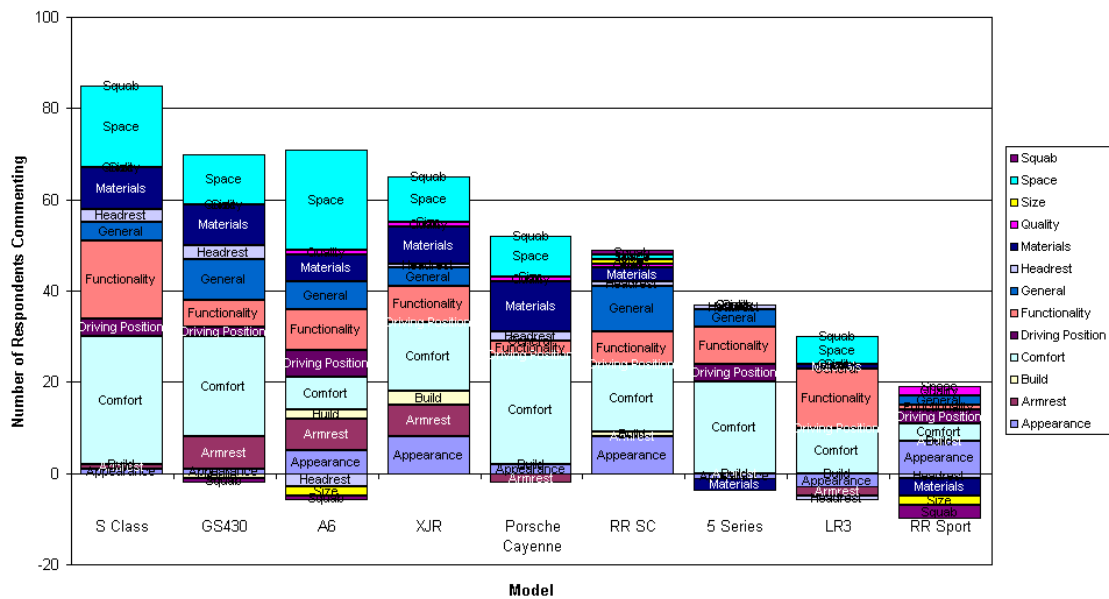


Figure 58 Seats Report - Respondent-Based NetE

The key differentiators between those cars that achieved a high NetE score and those that fared worst were identified as Space (including head room and leg room), Comfort and Materials (Figure 59). The respondent-based approach yielded a similar outcome, although the magnitude of the differences were somewhat reduced.

Research Observation 38 The respondent-based/comment-based dichotomy was not raised as an issue within the main PRP presentations, despite the TABS having been produced and provided in both formats.

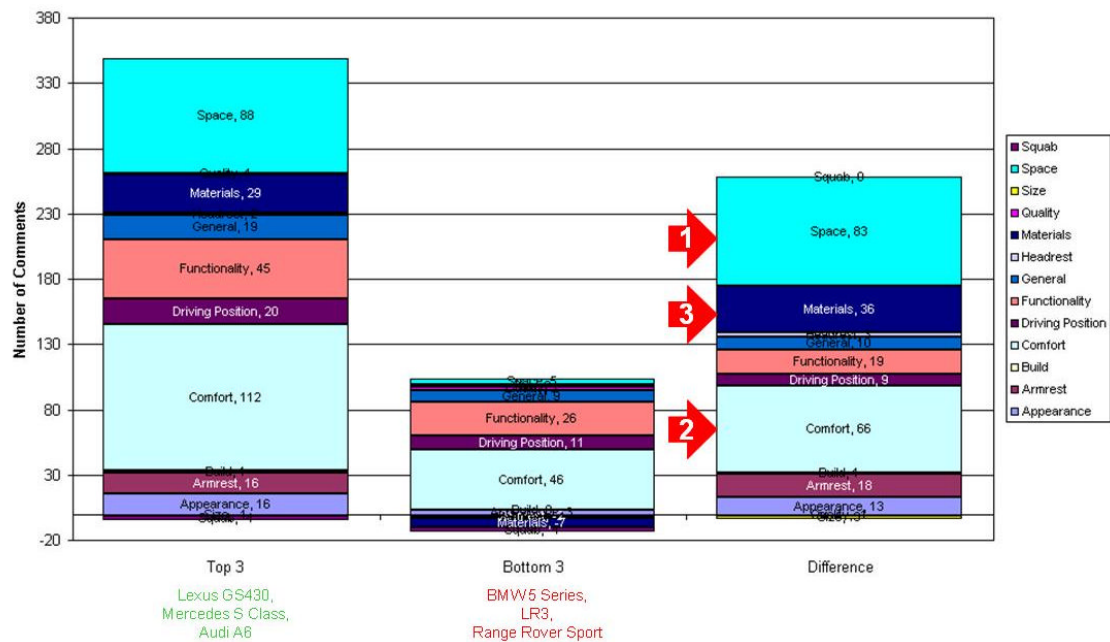


Figure 59 Seats Report - Comment-Based NetE Differentiators

5.3.6 Discussion

The purpose of this intervention was twofold: to appreciate the nature of the knowledge that the business wanted to gain from the research, and to comprehend the potential and limitations of the data in terms of providing those answers.

Developing the seat reports highlighted two clear points:

- The data provided by the Agency is not easy to interrogate;
- The data is therefore not accessible/available to those design and engineering teams who would find it most useful.

The main issues identified that made the date difficult to interrogate, thereby impacting on its utility, were:

- Time: the process of re-reading and re-coding the data took several man-months, this time delay means that teams cannot get the answers they want in a reasonable time-frame and scarce MRO resources are also tied up.
- Reliability/Consistency: the integrity of the PRP relies to some extent on consistency with previous report-outs, and a high level of inter-rater reliability.
- Expertise: a high level of understanding of how the data is stored and related is required to conduct the analyses, together with a good capability with MS Excel. Expertise is also required to be able to explain the results obtained. For example, this seats analysis yields different NetE results for Front and Rear Seats (Figure 51) compared to the main Stage 2 NetE scores (as used in Appendix B). In reality, this discrepancy

is justified due to the wider scope used in the seats coding structure, but a non-expert would not be able to rationalise the difference. Similarly, some expertise is needed to understand the impacts of using the comment vs. respondent based approaches. The comment-based approach can be used to infer strength of the emotional reaction: a level of excitement, however the respondent-based approach is useful to ensure “double-counting” has not biased the results towards the opinion of those customers who liked to repeat themselves.

- Nugatory work: re-reading and re-coding the verbatims is repetitive: it replicates work that has already been done. It is a wasteful process and each repetition increases the likelihood of error in the analysis, especially if the team members continually change.

This intervention demonstrated the limitations of how the raw data was stored (separate, non-linked files), and of the level of detail supplied by the Agency (summarised, high-level).

In the first instance, the need was therefore identified to improve the accessibility of the data to the MRO PRP team members, enabling the “experts” to optimise their time when answering requests for premiumness information. A second need, to ultimately enable the designers, engineers or researchers to conduct their own analyses thereby reducing the resource load on MRO, was also recognised.

The raw customer verbatim data do not present a language or format with which designers, engineers, marketers, and manufacturers are familiar. There is therefore an opportunity to translate the subjective customer voice into a useful language: to increase the utility of the data. The reports generated during this intervention demonstrate some of the ways in which this could be achieved.

These findings were presented to MRO during regular team meetings, and it was proposed by the researcher that a tool should be developed that would enable the verbatim data to be stored and interrogated in such a way as to increase its utility, with the ultimate aim of enabling self-analysis by non experts. This proposal was accepted and encouraged by MRO, and became the ultimate deliverable of this EngD to JLR.

5.4 Intervention #2: Deep Dive with Perceived Quality

5.4.1 Rationale for Intervention

Perceived Quality (PQ) is one of the 13 Product Attribute Leadership Strategy (PALS) attributes that are used to drive JLR’s new product development (see Appendix D for a list of the PALS attributes). The PQ attribute focuses on a customer’s perception of quality based on “sensory experience” and “emotional connection”.

The Perceived Quality team was identified by JLR at the start of this EngD research as being the likely owner of the results of the work. Consequently, understanding how such work might relate to their current working practices was recognised as being important.

This intervention, which was proposed, designed and implemented by the researcher, therefore looks at the Perceived Quality Attribute and the team that manages that attribute within JLR.

The activities that comprise this intervention took place over the period July 2007 to January 2009, and included more than 50 visits to the PQ team's offices.

5.4.2 Aim and Approach

The aim of this intervention was to establish how premiumness can be embedded effectively into the PQ work stream and to inform the design and development of a premiumness tool (see chapter 6). In particular, it reviews the current PQ processes, and identifies the needs and wants of the PQ team in terms of the premiumness data (what do they want to get from the data, what questions do they want answers to, and how can the data be interrogated to provide those answers?).

To achieve this, several data collection tools were employed including:

- Document Analysis (of internal company documents)
- Interviews with PQ Team Members
- Development of bespoke PQ Premiumness Reports

The longitudinal nature of this study led to a number of reportable outcomes. The specific techniques used for each are discussed in the following sections, which report the researcher's observations and findings from this intervention.

5.4.3 Overview of PQ Processes

An overview of the existing processes used within the PQ team as part of the JLR new product development process has been created through a combination of internal document analysis and discussions with team members.

At the time of this intervention, the team comprised 21 people. Of these, regular discussions were held with 7 team members, representing the management team, technical specialists and sub-attribute owners.

The core PQ process was originally developed as a shared venture between Ford of Europe, JLR and Volvo. The approach aims to create a "sensory delight" for customers, and espouses to recognise the need to focus on both rational and emotional factors. Figure 60 [157] illustrates the conceptual link from the customer experience to the Level 3 PQ PALS attributes (listed in Appendix D).

Customer	Interaction / Reaction Level 2		Translating to level 3 Attributes
Senses	<ul style="list-style-type: none"> • Eyes • Skin • Ears • Nose 	Crafted Technical	1. Optical Quality 2. Touch and Feel 3. Sound Quality 4. Smell
Emotion	<ul style="list-style-type: none"> • Excitement 	Design Creative	5. Interior Design Quality 6. Exterior Design Quality
Ingredients		Materials	7. Jewel 8. Superior 9. Premium 10. Competitive

Figure 60 Path from Customer to PQ Attributes

The PQ process within JLR is segregated at the Level 2 attribute: different approaches are adopted for the *crafted*, *design* and *materials* sub-attributes:

Research Observation 39 The PQ management team appears to have intuitively recognised that crafted, design and material attributes are experienced in different ways by consumers, and therefore need appropriately different treatments.

The Crafted sub-attribute is measured and monitored using the Premium Consumer Product Audit. This audit is managed by the PQ team up to the Confirmation Prototype (CP) phase⁴⁵, with support from the (manufacturing) Quality team. After CP, the process is led by Quality, with support from PQ. CP represents the transition from product design development to manufacturing development, and the difference between issues that are inherent in the design and those that result from the manufacturing process.

The Design sub-attribute does not yet have a measure. Design is currently self-evaluated by the Design team.

Research Observation 40 This design self-evaluation approach highlights the importance of a strong market research/design interaction to ensure that design can incorporate the customers' perception of premiumness into their decision making processes.

The Materials sub-attribute is managed using a "Bingo Chart" (Figure 61). The bingo chart is espoused to be a structured, objective Interior Material Benchmarking process conducted by PQ's materials Technical Specialist. Cars are evaluated against 42 component levels on a three-point scale from Best In Class (BiC) to Uncompetitive, giving both a numerical score (3, 2, 1) and comments. The components are grouped according to whether they must achieve Jewel Like, Superior, Premium or Competitive Quality. Programme Cars are evaluated against the competition set, and targets are identified by the Technical Specialist that are needed to bring the car up to competitive/BiC spec. Planned future improvements (both own and competitor vehicles when known) are also factored into the process. The chart is used by design and

⁴⁵ A Stage Gate within JLR's Global Product Development System (GPDS).

engineering to assess the impact of their proposed design changes, and facilitates trade-off when making design compromises. The Bingo Chart has been bought into at JLR director level, forming a mandatory part of vehicle review processes. The PQ team plans to expand the concept to accommodate Crafted and Design attributes. The bingo chart has also been adopted by Ford and Volvo, and there are plans to develop an automated version (the current chart is an Excel Spreadsheet which is completed manually).

		Component	JLR Car (base spec)	Competitor Car 1	Competitor Car 2	Competitor Car 3	JLR Car (requirement to be competitive)
Jewel Like Quality	1	Centre Console					
	2	Cluster					
	3	Door Handle					
	4	Finishers					
	5	Overhead Console					
	6	Tread strip					
Superior Quality	7	IP Upper					
	8	IP Binnacles					
	9	Door Top Roll					
	10	Steering Wheel					
	11	Steering wheel air bag cover					
	12	Door grab handle					
	13	IP Plastics					
	14	Door insert panel					
	15	Centre console/stack graphics					
	16	Head rests					
	17	Front seats					
	18	Seat backs					
	19	2 nd row seats					
	20	Rear Seat Armrest					
Premium Quality	21 . . . 39	[omitted for brevity and confidentiality]					
Competitive	40	Trunk Trim					
	41	Carpets					
	42	Door Seals					
		Total Rating (of 126)	87	88	65	126	101
		Rating (of 10)	6.90	6.98	5.16	10.0	8.02

Key: Red = 1pt, Amber = 2pts, Green = 3pts

Figure 61 Bingo Chart Concept

This chart is reported by the PQ team as being an effective and popular tool within JLR. However, there are a few issues that should be considered:

Research Observation 41 The Bingo Chart priorities do not appear to align with those of the customer. For example, the steering wheel is not featured as requiring “jewel-like” quality, which is contrary to the PRP findings.

Research Observation 42 There is no weighting applied, which could have behavioural implications, such as encouraging the “easy”, less important scores to be addressed to the detriment of those that most influence the perception of luxury or premiumness.

Research Observation 43 There are no attributes that are permitted to have “uncompetitive quality”.

Research Observation 44 The three-point scale is simple and should therefore be straightforward to apply without conflict. However, it could also be argued that the range within each rating is too wide, creating an unrealistic picture of the relative materials quality of some cars (especially close to the boundaries).

5.4.4 Prioritising PQ Attributes

The PQ team has attempted to assign priority to each of the PQ sub-attributes. This section outlines and critiques the techniques that have been implemented to achieve this. This has been accomplished through a combination of internal document analysis and discussions with team members.

The Level 5 PQ attributes (see Appendix D) have been plotted by the PQ team onto a Kano diagram Figure 62 [157]. It has been advised (by PQ) that the relative location of attributes on each line is insignificant.

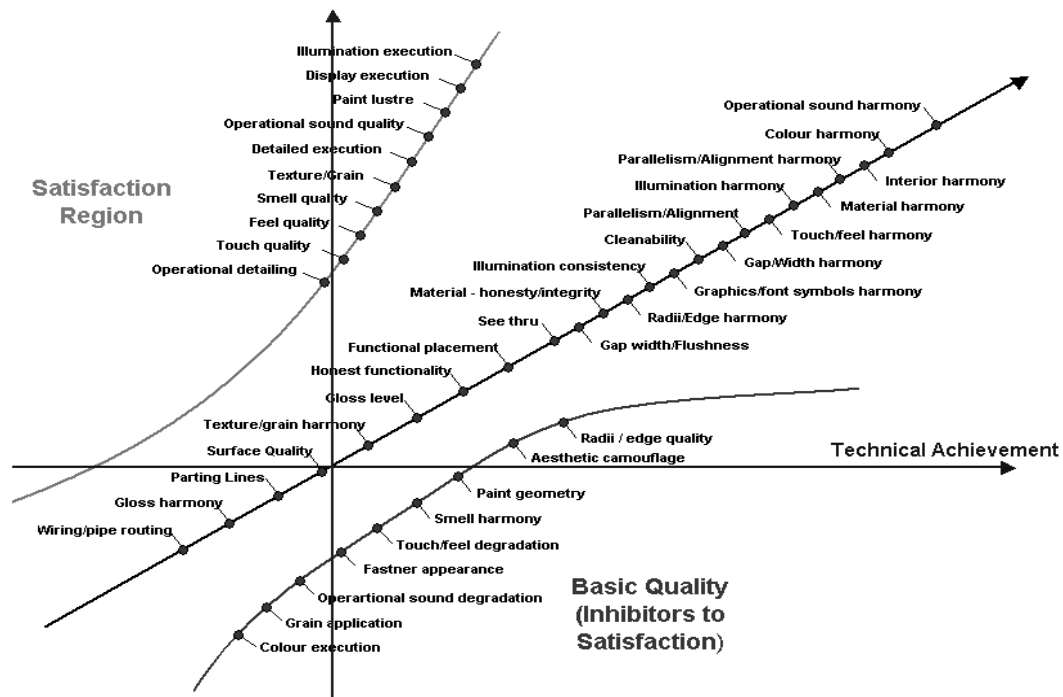


Figure 62 PQ Level 5 Attributes and Kano

While it is important to understand the relationship between the attributes and customer satisfaction/delight, the result of this exercise is questionable:

Research Observation 45 The PQ Kano diagram (ignoring annotations) is incorrectly drawn.

Poor delivery of “basic” features is likely to enrage the customer, but there are attributes located on the “delighters” line that would enrage the customer if poorly delivered (paint, feel, touch, sound quality, etc), so it can be argued these are in the wrong place.

Research Observation 46 The PQ attributes have been positioned incorrectly on the Kano diagram.

Research Observation 47 The PQ Kano exercise was conducted in the absence of empirical evidence to support the priority or importance that customers ascribe to each attribute.

PQ have also carried out an attribute weightings analysis using the JD Power APEAL survey results. This study is available as a quality metric to development teams, unlike the many other surveys used by MRO. The result is shown in Figure 63.

This analysis demonstrates that the PQ team recognises that customers may assign different priority to each attribute, however, the method used does not appear to be valid:

Superficially, data from real customers was used to develop a weighting for the importance of each attribute (per vehicle segment). However, the JD Power APEAL survey does not include questions relating to importance: it relates to execution of features within the vehicle. To establish an importance weighting from this data would require regression analysis of the overall scores and the individual feature scores. Asking the customers directly what is important to them may yield a different outcome.

Research Observation 48 The JD Power APEAL study does not directly identify the importance of attributes to consumers.

Research Observation 49 JD Power APEAL reflects only the US market, and its findings are not necessarily generalisable.

Research Observation 50 The relevance of the calculated priorities is eroded with time.

The APEAL survey is continuous, and it is not clear whether this process is repeated to keep track of evolving customer requirements through time. The chart does not refer to the date of the survey on which it is based, however, it was presented in April 2007, so is based on data no newer than 2006.

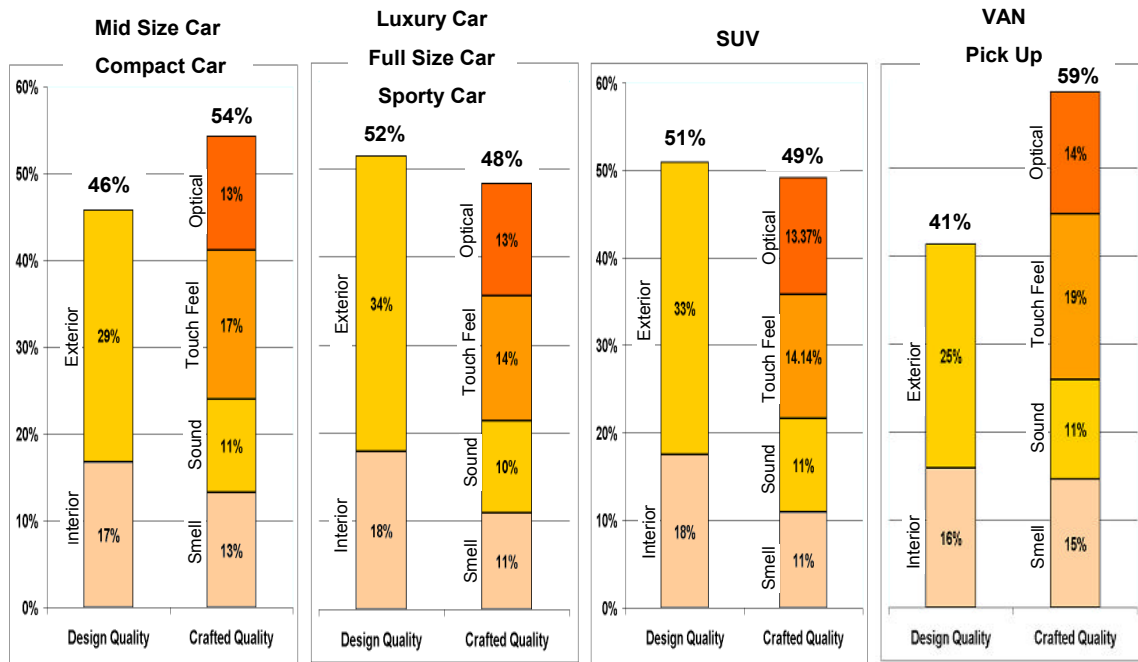


Figure 63 Attribute Weightings (derived from JD Power APEAL)

Research Observation 51 The priorities calculated from the APEAL data appear to contradict the PRP findings.

As part of the PRP Stage 2 work, respondents were asked to rate the importance of a number of attributes on a ten-point scale⁴⁶, including exterior and interior appearance. In both the US and UK, exterior appearance was rated as more important, on average, than interior appearance (Figure 64). However, while this supports the notion that exterior design is more important than interior design to the customer, it does not support the disparity in weightings attributes from the APEAL analysis. In fact, in terms of the verbatim data, customers were significantly more vocal (made more comments) about the interior of the car than they were about the exterior (by a factor of 2:1, for both positive and negative comments). This may suggest that customers rationally rate exterior as more important than interior, but emotionally the opposite is the case⁴⁷. Alternatively, it may simply be because there is more to talk about inside a car than there is about the outside.

⁴⁶ 1="not at all important", 10=very important"

⁴⁷ using "most frequently mentioned" as a proxy for importance.

	Total Sample		By Bodystyle					
	Mean (UK)	Mean (US)	UK			US		
			SUV	Sedan	GT	SUV	Sedan	GT
Exterior Appearance	8.9	9.3	8.7	8.9	9.2	9.0	9.3	9.5
Interior Appearance	8.5	9.1	8.4	8.3	8.7	8.7	9.2	9.3

Figure 64 Premiumness – Attribute Importance

Research Observation 52 A gap in the knowledge has been identified which relates to how customers assign importance to the PALS attributes.

It is important that the PQ team understand this, but this gap falls outside the remit of this research. It is suggested that the root of the problem lies in partly in the availability of time and resources to conduct such analyses, but also in the expertise required to properly understand the value and limitations of the datasets available.

5.4.5 A PQ Team Perspective

If the PQ team are expected to ultimately own the Premiumness research, it is sensible to understand how they view the research data and its findings, and to ascertain what they need from the research.

A series of 7 unstructured interviews were held with key team members (management, technical specialists and sub-attribute managers). The interviews were conducted over a 3 month period commencing in September 07.

Notes were made during the interviews in a confidential log book. Some of the salient points arising from the conversations have been incorporated into the discussions above and later in this chapter about the specific tasks within this intervention. Those points that do not fit into any of these other sections are summarised below.

- It was felt that the PQ metrics currently in use don't take into account the market in which JLR is trying to sell the cars: the processes had been inherited from Ford, whose customers prioritised fit and finish, as opposed to JLR's customers who prioritise durability, the finer details of execution and materials.
- The business has been seen to give good support to PQ to meet its requirements, but it is felt to be in danger of being eroded through other pressures.
- It is felt that PQ activities have an influence on the product, but an increasing influence is wanted. PQ doesn't have responsibility for delivering the product, so must influence the individual attribute teams to

improve their products. However their priorities are different (budget focussed), so this can lead to conflict and/or frustration.

- There is a difference between how the Jaguar and Land Rover development and engineering teams interact with PQ the Land Rover teams seem to be more proactive, while the Jaguar teams are perceived as finding PQ an irritation.
- The work carried out with JLR to understand the customer (by MRO) is recognised, but a gap is seen with respect to asking customers about the specific engineering attributes: how important is each attribute and what are the trade-offs?
- There are some internal conflicts between PQ and design, for example, relating to the choices of software used for certain applications, and a perception of duplication of effort resulting from this. This is a particular issue for virtual assessment of optical quality issues such as gaps, flushes, surface tolerancing and location strategies.
- A danger with the benchmarking process has been recognised in that it can lead to “vulgar” decisions.
- Attributes targets that are not set to “Leadership” tend to be costed down.
- It was admitted that Market Research data and feedback is often ignored.
- Despite being a holistic attribute, the PQ wants for the PRP clinics, things they would like to be included within the research, were feature-specific. This feature-based approach recurs in the lab and testing philosophies - there is not a holistic approach to the testing regime. There is therefore a need to plan in a whole car approach to execution testing.

5.4.6 PQ and PRP Correlation Testing

The PQ team have attempted to draw a correlation between the premiumness NetE results and their own internal ratings (for interior materials as per the bingo chart). The diagram below (Figure 65 [157]) has been presented widely to upper JLR management. The bars show PQ's Bingo Chart Ratings. The line is an arithmetic manipulation of NetE, and attempts to provide a prediction of the PQ rating for a given NetE.

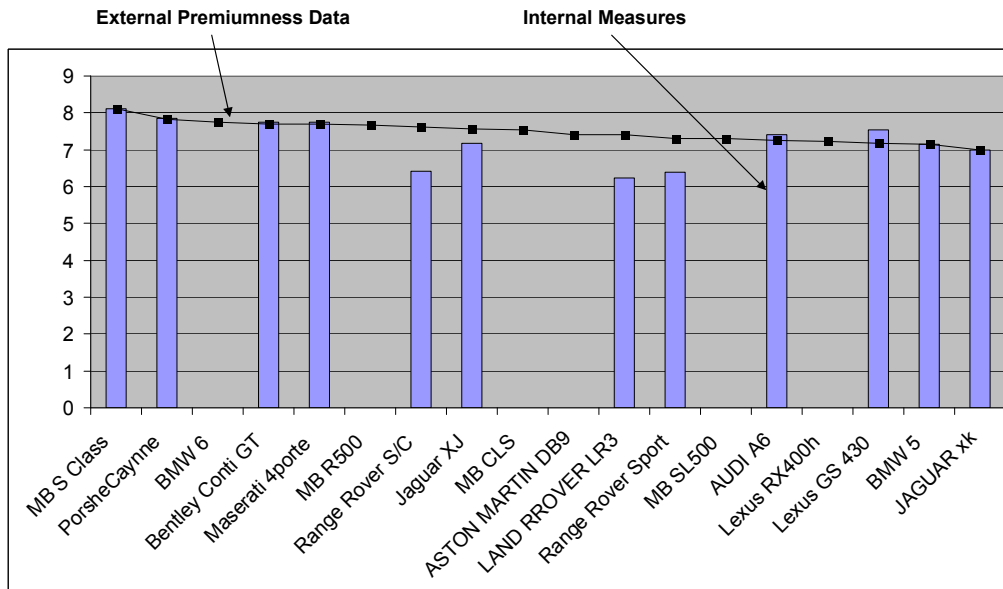


Figure 65 PQ's Premiumness Correlation

However, the basis upon which the NetE operator has been developed is flawed. Analysis of the graph shows that line points are given by the equation $Y = (NetE = 24951)/3725.7$. The equation is derived by plotting the NetE and PQ ratings for the Mercedes S Class ("top" car) and for the Jaguar XK ("bottom" car), and working out the equation of the straight line between them. There are several problems with this approach:

Research Observation 53 The PQ correlation equation assumes that PQ's rating for these two cars is a true reflection of the customers view. This is a flawed assumption.

Research Observation 54 The PQ correlation approach assumes that a materials rating will fully reflect all attributes that are contributory to the overall NetE figure that was used.

Research Observation 55 The PQ correlation approach assumes that it is appropriate to compare a rating of technical excellence of interior materials to a count of the number of comments made about the whole car.

Research Observation 56 The PQ correlation equation assumes a linear relationship between the two data sets.

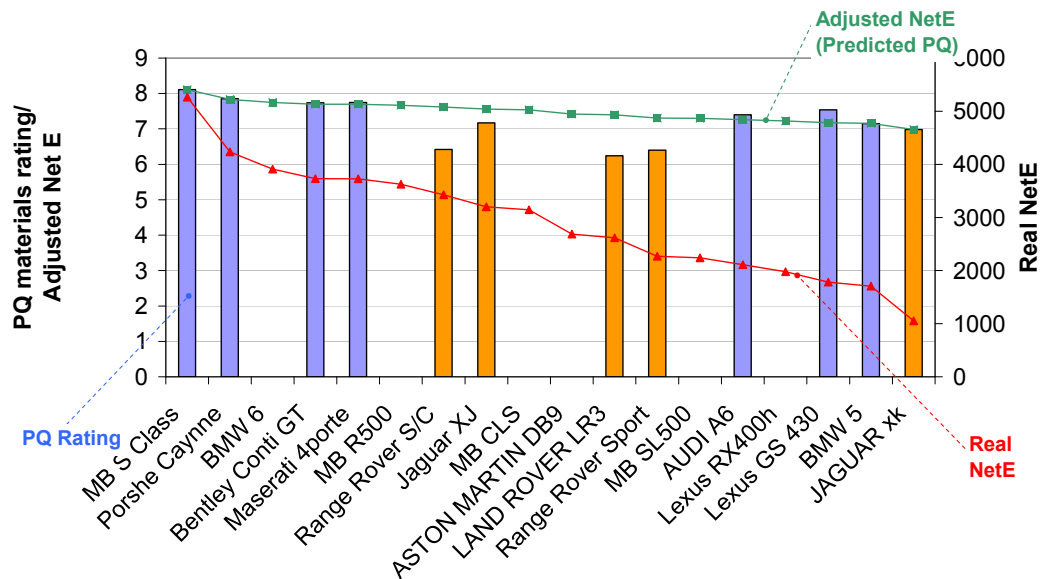


Figure 66 PQ's Premiumness Correlation showing NetE on Secondary Axis

Showing the actual NetE figures on a secondary axis (Figure 66) adds weight to the doubt over the validity of the correlation claim. In actuality, the position of the NetE line is not known: it has been assumed that zero NetE and zero on the bingo chart are equivalent.

A more correct way to test the correlation is to plot both datasets as X and Y axes on a graph, as demonstrated in Figure 67. The R^2 figure shows that only 25.7% of the variation is explained by the equation, i.e. the equation is incorrect.

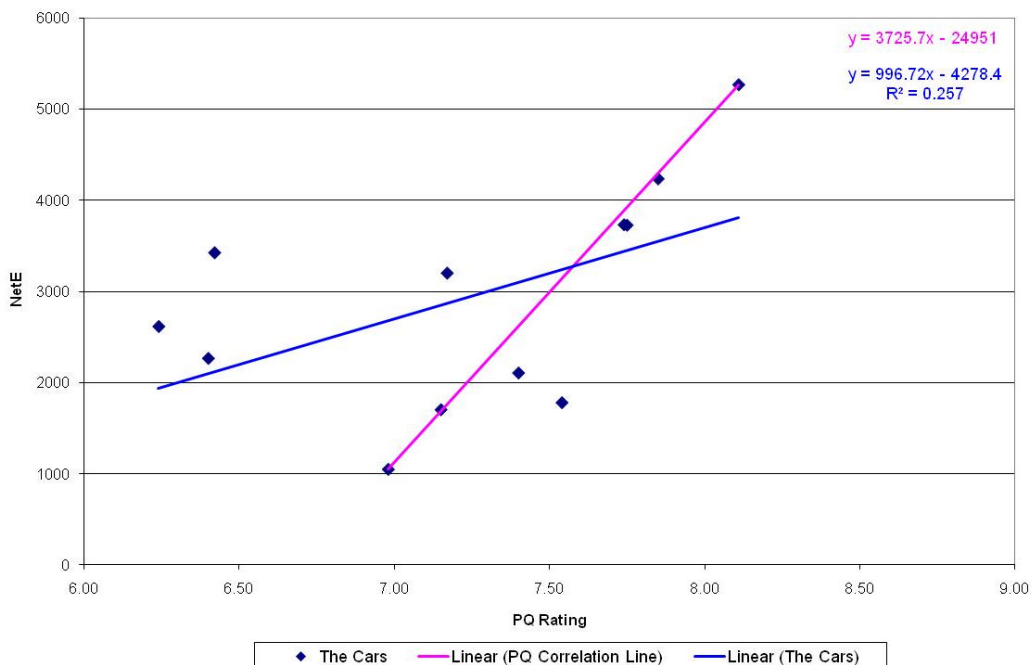


Figure 67 PQ Bingo Chart Rating vs. NetE

Research Observation 57 Flawed assumptions about the relationships between datasets can be made in the absence of their original context,

especially when the focus becomes set on the numbers rather than the meaning behind them.

For example, is it possible to create a scenario in which there is a correlation for the competition cars (excluding Lexus and including XK), which is very close to the numerical relationship claimed by PQ, and has a high R^2 (Figure 68). It could then be inferred that PQ are too harsh in their appraisal of JLR models. However, in reality this is an arbitrary selection: a case of manipulating the data to fit the hypothesis rather than a legitimate testing of that hypothesis.

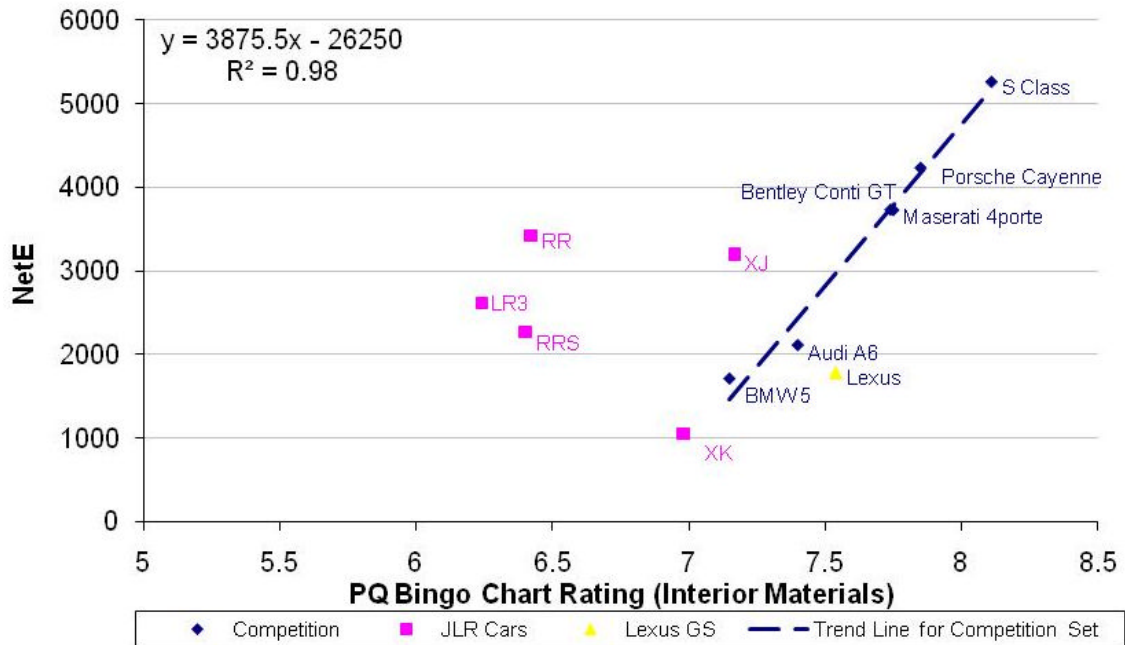


Figure 68 Reworking the NetE/PQ Rating Correlation

Research Observation 58 There is no obvious correlation between the PQ Bingo Chart figures and the PRP Data.

The exercise has been repeated using NetE “materials” figures (Figure 69) and also with the PRP attribute rating for “Materials Used” (Figure 70). In both cases the correlation coefficient is very low, indicating there is no correlation between the PQ Bingo Chart figures and the PRP Data.

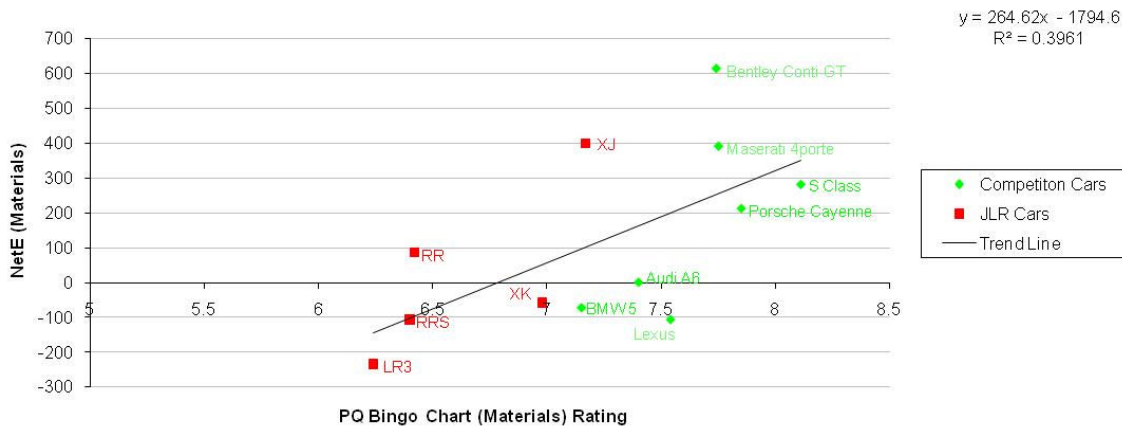


Figure 69 Net E (Materials) vs. PQ Materials Rating

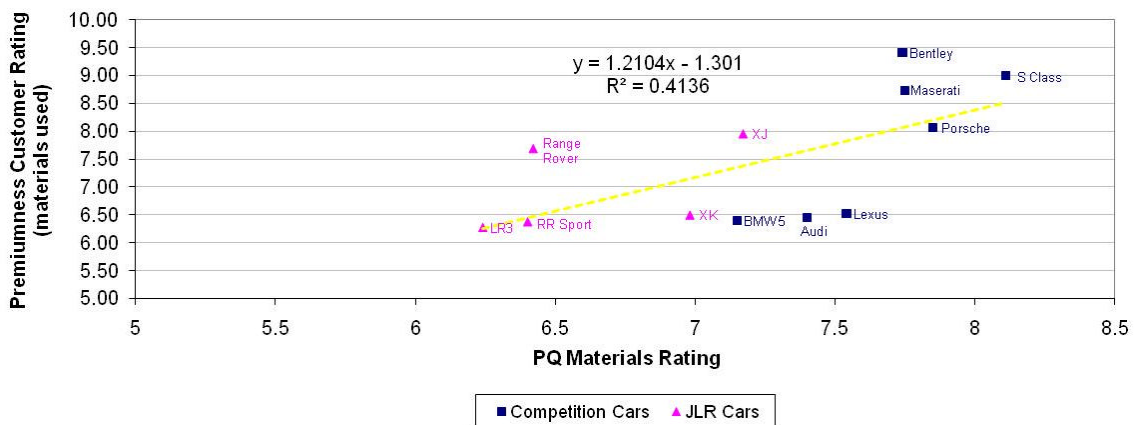


Figure 70 PRP Attribute Rating (Materials Used) vs. PQ Materials Rating

Research Observation 59 It is imperative that PQ are enabled to add the voice of the customer to their decision making processes.

It would be preferable to be able to demonstrate a clear linkage between PQ's ratings, representing JLR's internal ability to capture the customer's view, and the premiumness research (NetE and ratings), to validate PQ's authority to represent the voice of the customer. However, this brief analysis suggests that PQ's materials measurement system does not correlate with customers' rational or emotional evaluation of the vehicles. That is not to say that the PQ process is invalid, as it is focused on benchmarking against best in class for interior materials and improving the technical excellence of JLR's vehicles, only that it is not representative of the customer voice according to the PRP data. Providing a mechanism by which PQ can access and utilise the PRP data is therefore imperative to add the voice of the customer to their decision making processes.

5.4.7 PQ PALS / Code Frame Analysis

To support the preparation for the L486/L358 clinic, a task was undertaken as part of this EngD research to understand the alignment of the PQ PALS attributes and the PRP codeframe, with the aim of ensuring that all the PQ attributes were represented within the codeframe.

The PQ PALS attributes are provided in Appendix D, while the PRP coding structure is provided in Appendix F.

Comparing the two sets of information was carried out manually. A first pass review established that the PQ attributes related to the PRP detail codes rather than the area codes, which reduced the scale of the task.

A section of the PQ attributes were identified as not being directly covered. This was because they related to dynamic characteristics, while the PRP clinics were concerned with a static evaluation. However, there were certain other attributes that were not covered by a detail code, but which could be captured by interrogating the sense code (for example, smell).

To understand more clearly which attributes were “covered” and how well, a Coding Map was developed that associated a list of detail codes with each attribute. While PQ and the PRP research are both focused on the consumers’ perception of the cars, the code frame and the PQ have both arisen from different background. The PQ attributes have been developed to meet the design and manufacturing gateways, and are driven by the engineers and designers (top-down), while the PRP codeframe evolved from the data - what the consumers actually talked about (bottom-up).

An extract from the resulting comparison is shown in Figure 71. This shows clearly that the majority of PRP codes relate to the Design and Materials PQ attributes.

Based on PALS Version 11_3, and TIARA codeframe v9.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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Figure 71 PQ / Codeframe Matrix (Extract)

This matrix presented an opportunity to develop a bespoke presentation format for the PRP verbatim data that aligned with the PQ attributes. The data were therefore interrogated using this code map to produce E+, E- and NetE figures

for each of the Level 4 PQ sub-attributes. This had two benefits: it demonstrated how PQ could use the PRP data in a way that suited their needs, and provided a picture of how the PQ attributes related to the topics that people actually talked about when evaluating premium and luxury cars.

The data was presented using a Spider format, and incorporated the PALS “fast track” method to develop a “target” for Leadership, Among the Leaders and Competitive levels (L, A, C). This methods uses the means and standard deviations for the competition set:

- $C = \text{mean} - (0.5 \times \text{std dev})$
- $A = \text{mean} + (0.5 \times \text{std dev})$
- $L = \text{mean} + (1.25 \times \text{std dev})$

Spider charts were developed for E+, E-, NetE for each attribute for each of the JLR models. Initially this was done for the Stage 2 data, to test the process, and was then repeated to incorporate the L486/L538 data. The charts were presented to PQ management.

The standard deviations tended to be relatively large due to the small data sets, hence some caution should be shown when reviewing the charts. The principle, however, is sound.

Figure 72 to Figure 74 show the spiders for the JLR cars evaluated in Stage 2.

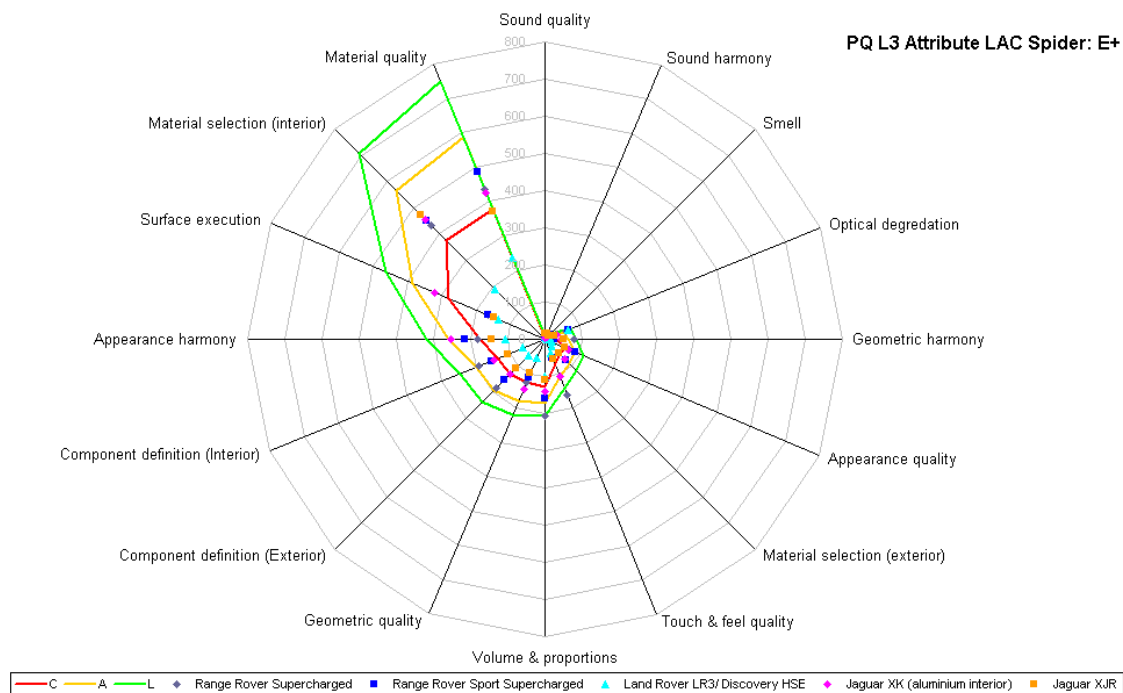


Figure 72 PQ Attribute E+ Spider (Stage 2)

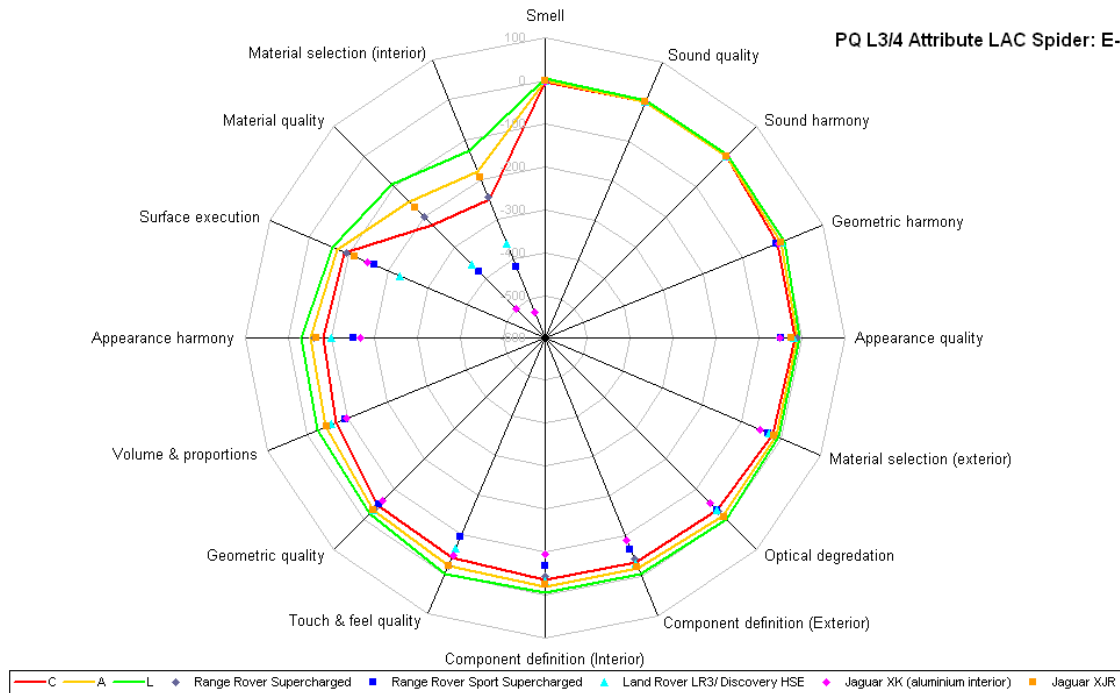


Figure 73 PQ Attribute E- Spider (Stage 2)

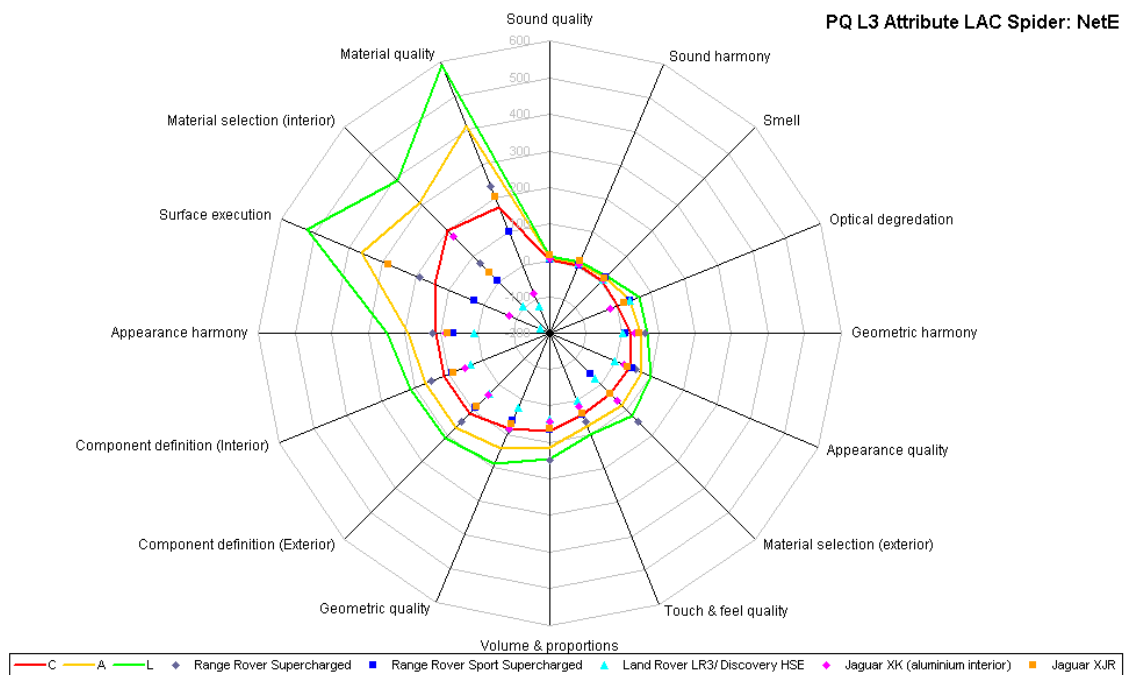


Figure 74 PQ Attribute NetE Spider (Stage 2)

Similar charts were created for the L538 data, of which Figure 75 is an example:

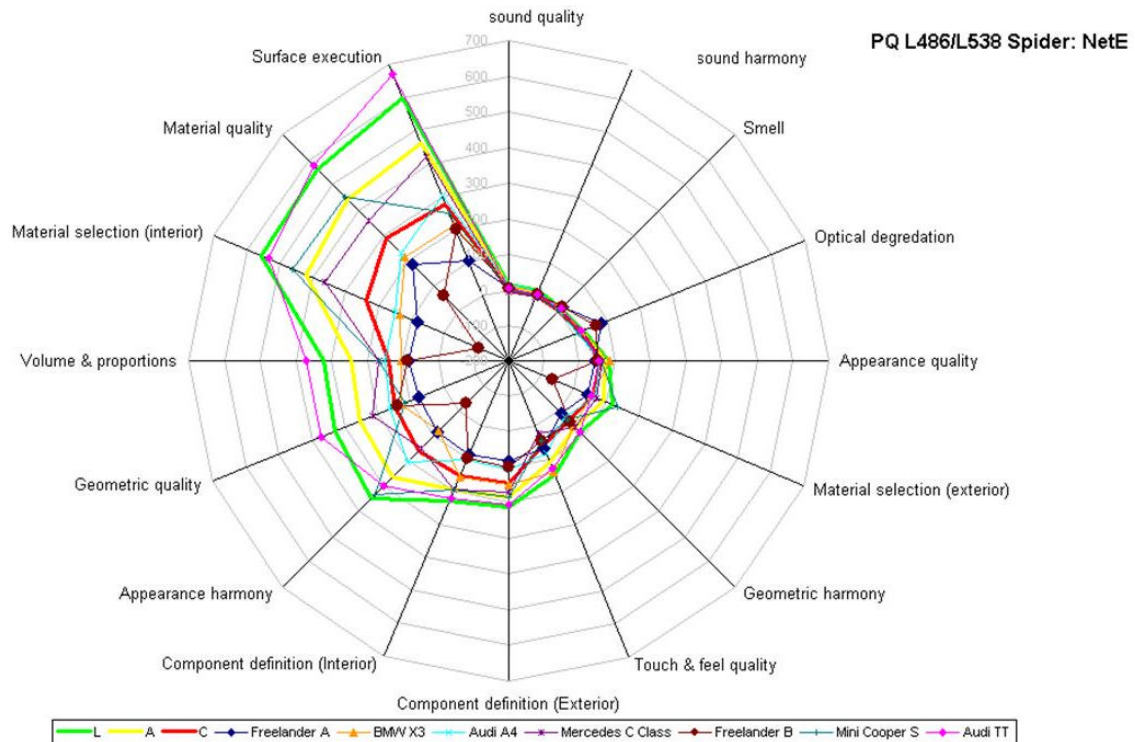


Figure 75 PQ Attribute NetE Spider (L486/L538)

Research Observation 60 JLR vehicles performed poorly against the PQ NetE LAC benchmark targets.

These spider charts provide a powerful and clear insight into the performance of the vehicles in terms of the LAC parameters, as measured through customer comments; the JLR vehicles generally performed poorly against the LAC benchmark.

Research Observation 61 The majority of PQ effort is expended on categories that elicit the fewest comments from customers.

The majority of the PQ attributes elicited very few comments from the participants: the majority of comments in the Stage 2 clinics can be seen to come from Material Quality, Material Selection (interior) and Surface Execution attributes. This pattern was repeated in the L486/L538 data (Figure 76). However, the majority of PQ effort is on elements that participants did not talk about, such as optical quality (gaps and flushes, parting lines, texture harmony). This suggests that the PQ focus is poorly directed. This may be because these attributes are easily measurable: demonstrating the tendency to measure those things that can be measured, rather than those that are important.

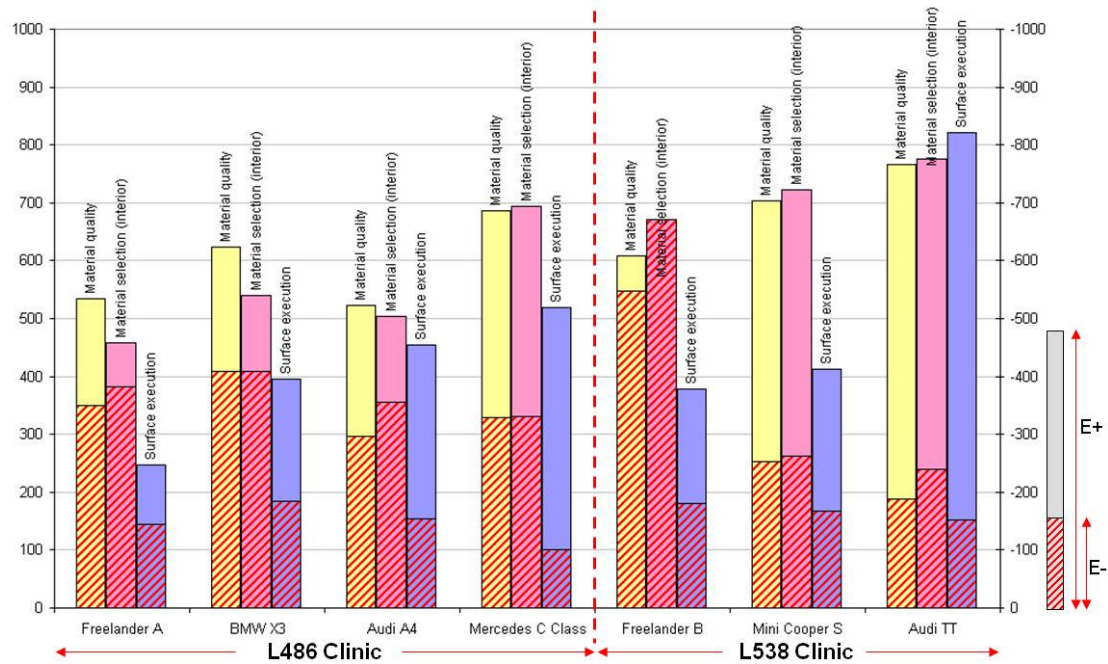


Figure 76 Top 3 PQ Attributes (L486/L538)

Spider charts were also created to show the PRP attribute ratings (Figure 77 and Figure 78). These again demonstrate the power of the chart to show performance against the LAC benchmarks.

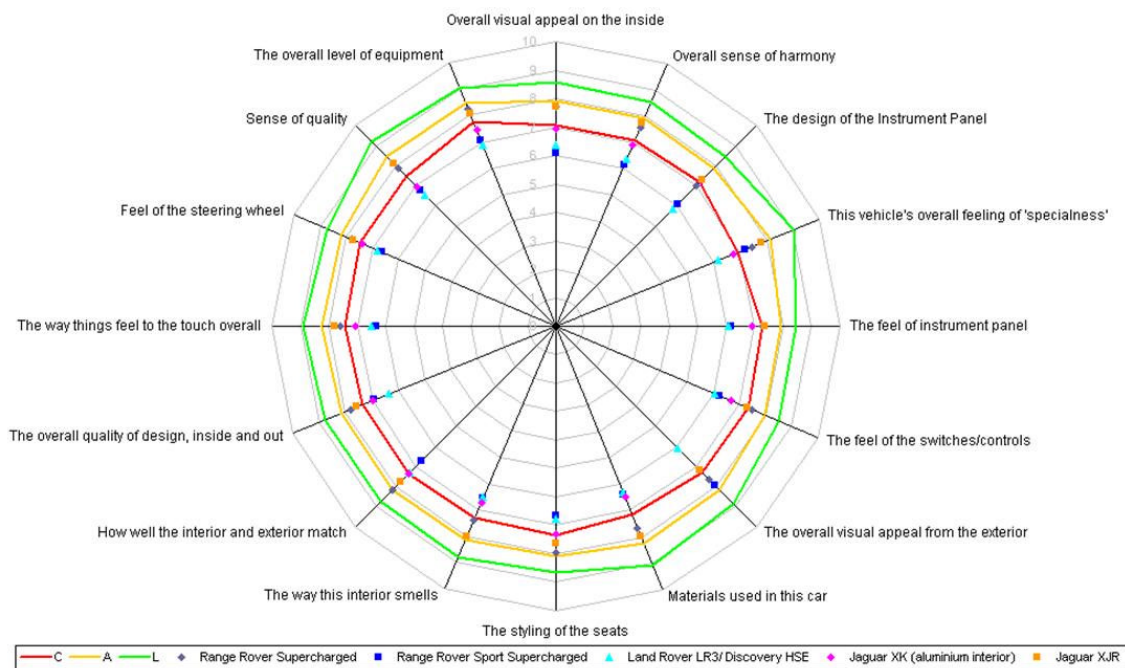


Figure 77 PRP Attribute Rating Spider (Stage 2)

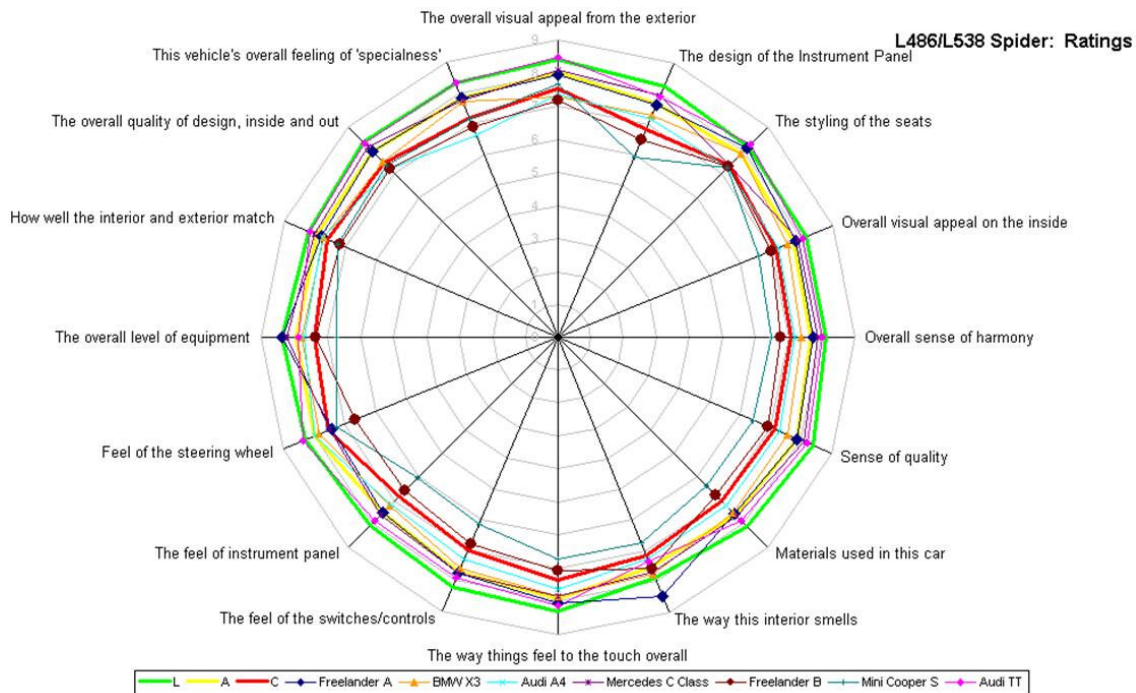


Figure 78 PRP Attribute Rating Spider (L486/L538)

5.4.8 Colour Report

A request from the PQ team for information about consumer comments relating to colour provided a further opportunity to operationalise the PRP verbatim data, and to test the utility of the verbatim data interrogation tool that was being developed (see chapter 6). PQ's aim for the study was to provide supporting evidence for a review and rationalisation of the colour palette offered to JLR customers.

At the time that this colour report was requested, a prototype tool had been developed by the researcher: the verbatims, codings and respondent data had been converted into a relational database. The tool was not suitable for general use, but this exercise provided a valuable opportunity to test its structure and function prior to the development of a non-expert user interface.

The PRP codeframe (Appendix F) was analysed and 32 individual codes pertaining to colour were identified, ranging from specific colours to colour matching and finish.

The verbatims database tool was used to interrogate the coded verbatim data to identify every occurrence of the colour codes. The extracted data was imported to an Excel spreadsheet, and pivot tables created for analysis. A sample of the extracted data is provided in Figure 79.

Respondent_ID	Car	Code_Loc	Detail1 Description	Detail2 Description	Area Description	AreaNet	AreaSubNet	AreaSubSubNet	E	Sense
31	Lexus RX	Q2Code1	Colour (unspec)		Overall exterior	Exterior (NET)	Overall Exterior (SUB-NET)		3	1
75	Jaguar XK	Q2Code1	Blue		Overall exterior	Exterior (NET)	Overall Exterior (SUB-NET)		4	1
89	Jaguar XK	Q2Code1	Colour (unspec)		Overall exterior	Exterior (NET)	Overall Exterior (SUB-NET)		2	1
97	Jaguar XK	Q2Code1	Colour (unspec)	Eyecatching/stand(s) out	Overall exterior	Exterior (NET)	Overall Exterior (SUB-NET)		2	1
103	Land Rover Range Rover	Q2Code1	Colour (unspec)		The car overall	Car Overall (NET)			4	1
107	Land Rover Range Rover	Q2Code1	Tinted		Windows (unspec)	Exterior (NET)	Overall Exterior (SUB-NET)		2	1
33	Land Rover LR3	Q2Code1	Colour (unspec)		Overall exterior	Exterior (NET)	Overall Exterior (SUB-NET)		1	6
71	Jaguar XJR	Q2Code1	Black		Overall exterior	Exterior (NET)	Overall Exterior (SUB-NET)		2	1
93	Mercedes SL	Q2Code1	Silver	NOT different	Overall exterior	Exterior (NET)	Overall Exterior (SUB-NET)		4	1
108	Maserati Quattroporte	Q2Code1	Colour (unspec)		The car overall	Car Overall (NET)			2	1
129	Land Rover Range Rover Sport	Q2Code1	Silver		Overall exterior	Exterior (NET)	Overall Exterior (SUB-NET)		2	1
17	Mercedes CLS	Q2Code1	Colour combination (inc. two tone)		The car overall	Car Overall (NET)			2	1
33	Porsche Cayenne TS	Q2Code1	Colour (unspec)		Overall exterior	Exterior (NET)	Overall Exterior (SUB-NET)		2	6
71	BMW 5 Series	Q2Code1	Silver		Overall exterior	Exterior (NET)	Overall Exterior (SUB-NET)		3	1
98	Aston Martin DB9	Q2Code1	Colour (unspec)		The car overall	Car Overall (NET)			2	1
103	Aston Martin DB9	Q2Code1	Dark		The car overall	Car Overall (NET)			4	1
108	Aston Martin DB9	Q2Code1	Grey		The car overall	Car Overall (NET)			4	1
331	Lexus RX	Q2Code1	Silver		Overall exterior	Exterior (NET)	Overall Exterior (SUB-NET)		2	1

Figure 79 Raw Data for PQ Colour Analysis (Extract)

The interrogation identified 4469 comments pertaining to colour, incorporating both the Stage 2 and L486/L538 clinic data sets. Pivot tables were used to cross-tabulate the data according to area of the car, from a general overview and for individual models. Supporting quotations were also identified to link the numerical analysis to actual participant comments. A presentation deck was produced to report the findings.

Figure 80 to Figure 84 provide an overview of the overall findings.

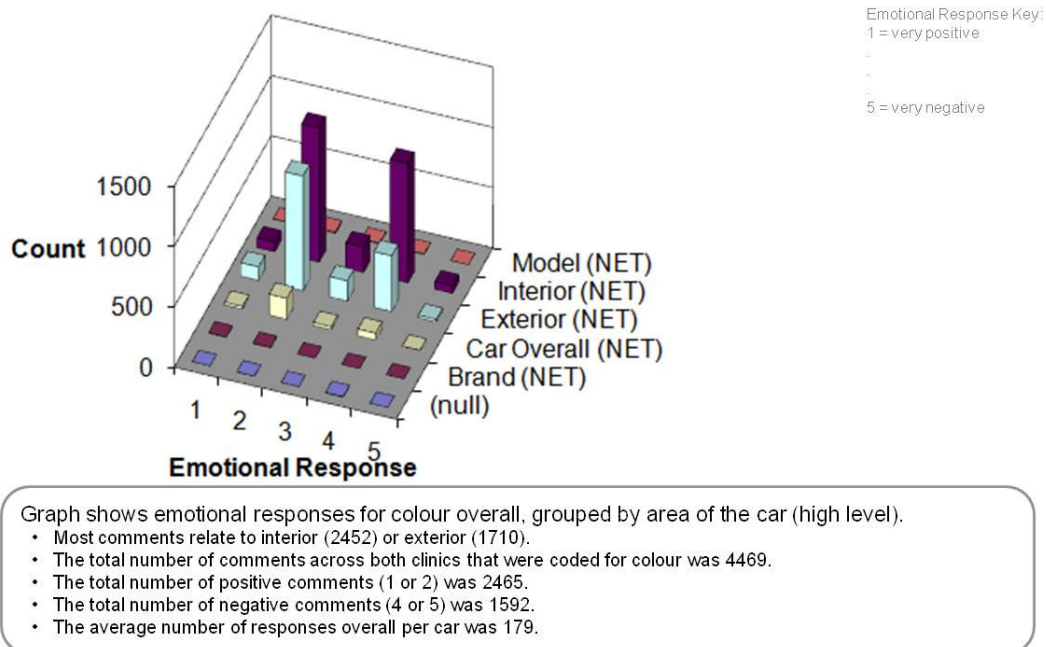


Figure 80 PQ Colour Analysis - Colour Overall

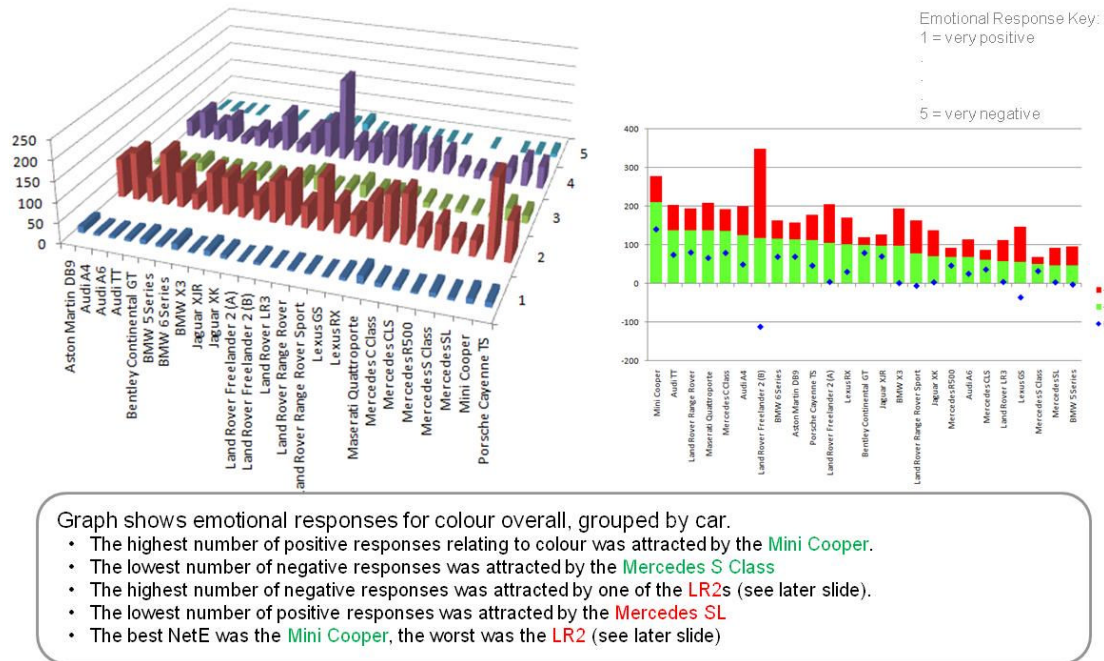


Figure 81 PQ Colour Analysis - Colour Overall by Car

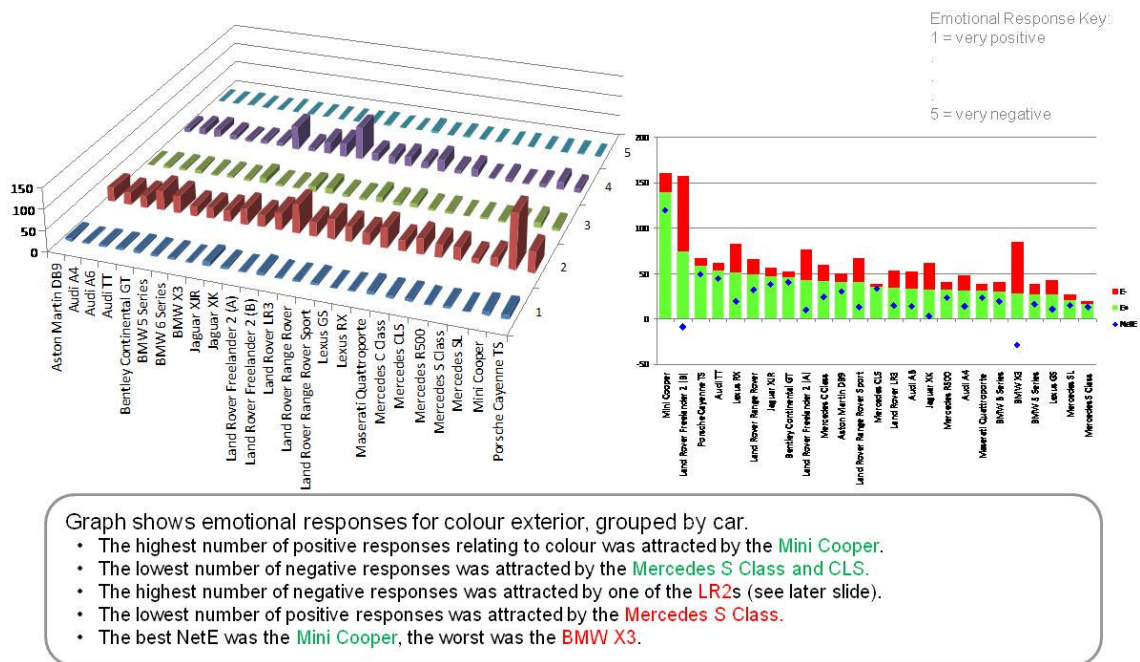


Figure 82 PQ Colour Analysis - Colour Exterior by Car

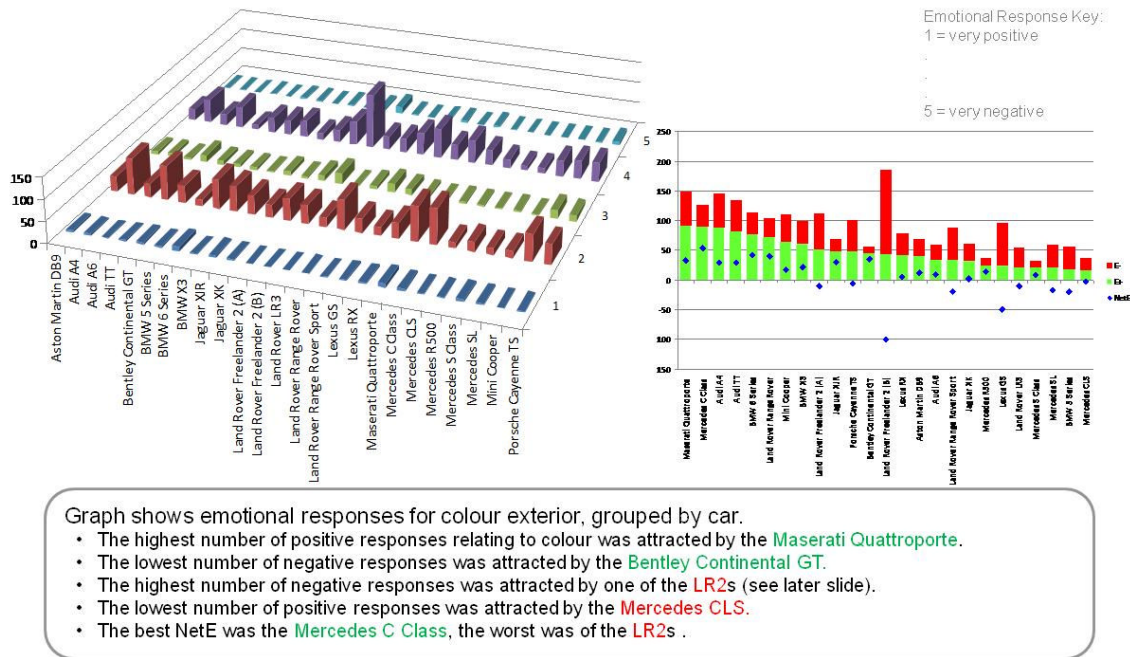


Figure 83 PQ Colour Analysis - Colour Interior by Car

	OVERALL			EXTERIOR			INTERIOR		
	+ve	-ve	NetE	E+	E-	NetE	E+	E-	NetE
Aston Martin DB9	114	44	70	40	10	30	40	28	12
Audi A4	125	75	50	31	17	14	88	58	30
Audi A6	70	44	26	33	19	14	34	25	9
Audi TT	139	64	75	53	9	44	82	53	29
Bentley Continental GT	100	20	80	46	6	40	46	11	35
BMW 5 Series	47	49	-2	27	11	16	18	38	-20
BMW 6 Series	117	47	70	30	11	19	78	36	42
BMW X3	98	96	2	28	57	-29	60	39	21
Jaguar XJR	99	28	71	47	9	38	49	19	30
Jaguar XK	71	67	4	32	29	3	32	30	2
Land Rover Freelander 2 (A)	105	100	5	43	33	10	51	61	-10
Land Rover Freelander 2 (B)	119	230	-111	74	83	-9	43	143	-100
Land Rover LR3	59	54	5	34	19	15	22	33	-11
Land Rover Range Rover	138	57	81	49	17	32	72	32	40
Land Rover Range Rover Sport	79	84	-5	40	27	13	34	54	-20
Lexus GS	56	91	-35	27	16	11	24	73	-49
Lexus RX	101	70	31	51	32	19	42	37	5
Maserati Quattroporte	138	71	67	31	8	23	91	58	33
Mercedes C Class	136	56	80	42	18	24	90	37	53
Mercedes CLS	62	25	37	36	3	33	17	20	-3
Mercedes R500	70	23	47	32	9	23	25	12	13
Mercedes S Class	51	18	33	16	3	13	21	12	9
Mercedes SL	48	44	4	21	6	15	21	38	-17
Mini Cooper	210	69	141	140	20	120	64	47	17
Porsche Cayenne TS	113	66	47	58	9	49	48	54	-6

Best Worst

Figure 84 PQ Colour Analysis - Colour “E” Rankings (data)

The report then presented a breakdown of the best and the worst vehicles for interior and exterior colour, as identified in Figure 84. Figure 85 and Figure 86

show the format used to present the findings, and the nature of the information that was given.

Most +ve Comments (140) and Best NetE (120)

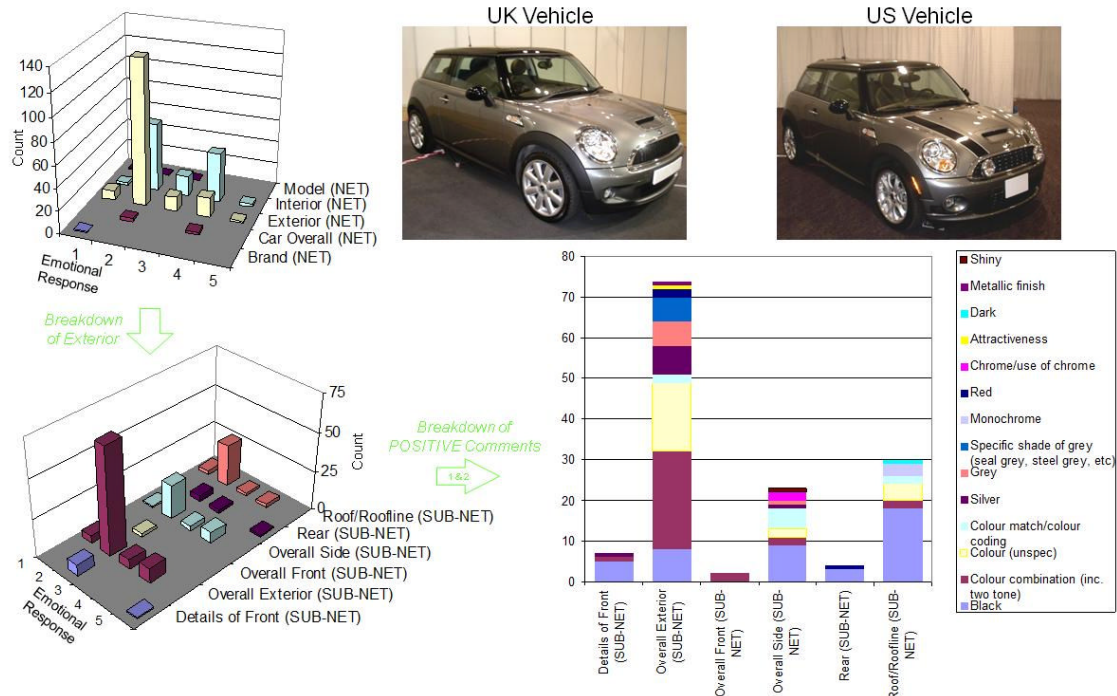




Figure 85 PQ Colour Analysis - Colour Exterior - Mini Cooper

Verbatims (+ve)



UK Vehicle

- I just love the way it looks, you just couldn't really improve on that could you? It looks great especially in the colour scheme the way they have done it. US4026
- The colour, you have chosen a really good colour as well, because the colour, I know that they all make jokes and say that it is a woman's thing, but the colour is the make or break, isn't it? It certainly would be for me. If it was a crappy colour I wouldn't even be saying what I am saying, but that is a very appealing colour. UK2014
- I didn't notice the black gloss on the top and down the support pillars, but it doesn't have it on the front. I quite like that, it's quite distinctive. It doesn't have it around the front windows. Yes, I really like that. I wonder why they chose to have all that black highlight and not put it on the door handles? There's a lot of black, you've got the roof, the pillar, the spoilers and everything. You're just colour-coordinated! UK2026



US Vehicle

- I love the wing mirrors, I think they look really great on the car, really black. They're colour co-ordinated...I think the black roof looks fantastic on it... I think the colour of the car's lovely, the black and metal grey. UK2027
- I think on this particular one, the black roof versus the black mirrors really works quite well. I do quite like colour coded mirrors, but these look quite nice. I thought about that a bit and I think that the pillars that come down on the side of the, that's black as well, so that works really nice, the contrast between that, that flows a bit. Nice use of the chrome on the side of the vehicle as well, on the S by the indicator, that's nice. UK2091
- I like the colours, it has almost like an aircraft colour look to it. Again it seems to be directed towards the male look. With the racing stripes it reminds me of a rally. US4010

Figure 86 PQ Colour Analysis - Colour Exterior - Mini Cooper Verbatims

The deck then focuses on the JLR vehicles. Figure 87 relates the E+ and E- counts to the best, worst and mean figures for the whole sample.

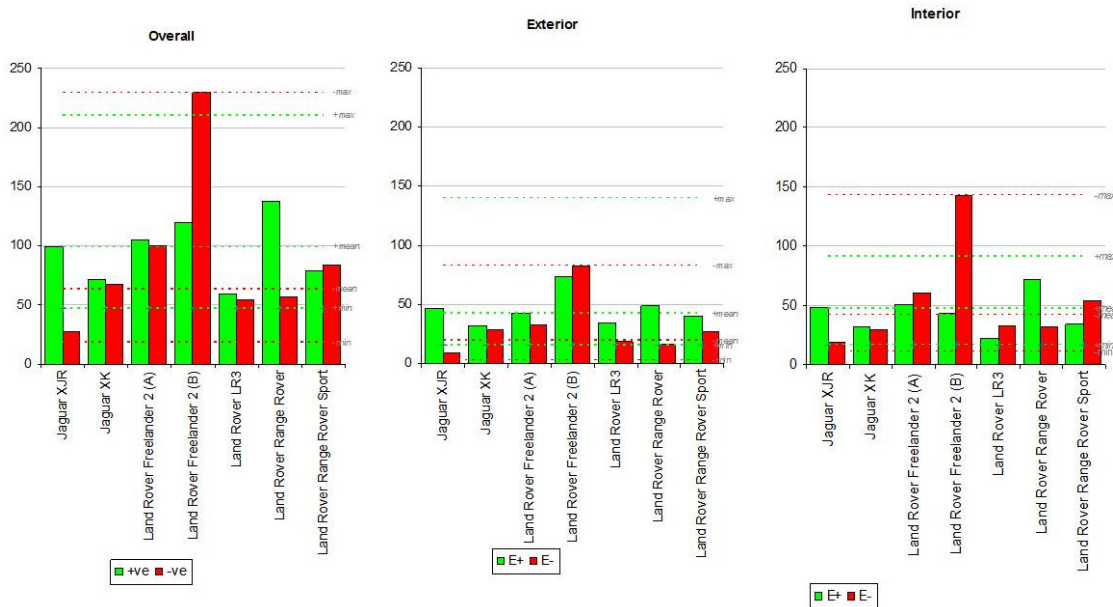
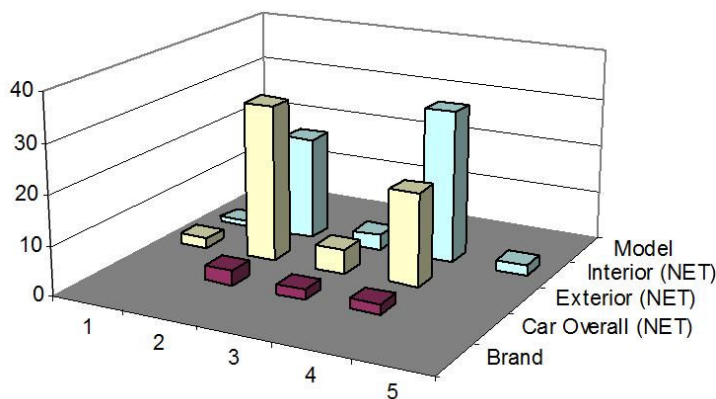


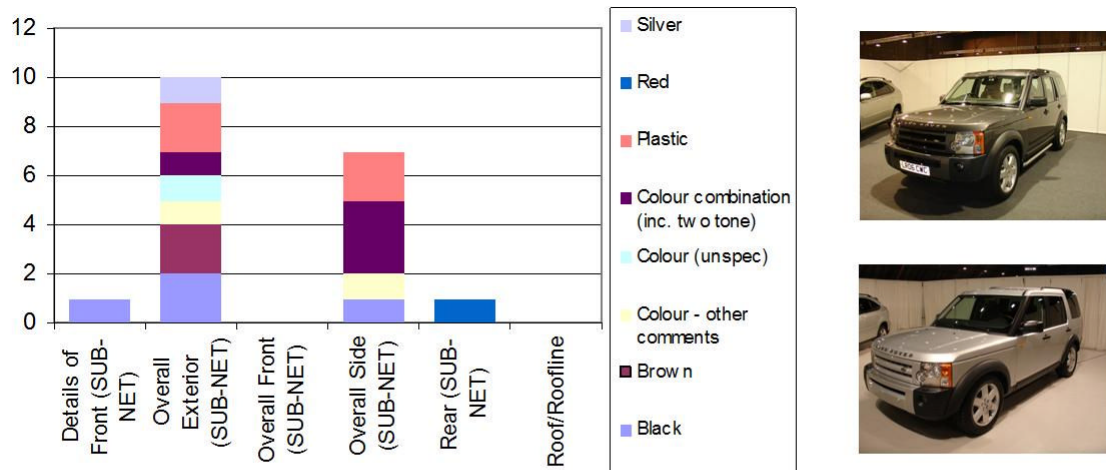
Figure 87 PQ Colour Analysis - JLR Cars Colour Overview

More detailed charts were then prepared for each of the JLR cars, looking at the overall, interior and exterior results, for both positive and negative comments. Figure 88 to Figure 92 show the format used for the overall and exterior findings, which was repeated for the LR3 Interior results. Each car received the same treatment.



- LR3 was ranked 21st for positive comments received about colour (Overall), 14th for Exterior positive comments and 21st for Interior positive comments.
- In terms of negative comments received about colour, LR3 was 11th, 17th and 10th respectively (where 1st got fewest negative comments).
- NetE for interior colour was NEGATIVE.

Figure 88 PQ Colour Analysis - LR3 Overall Breakdown



- Only 19 negative comments were made about LR3 exterior.
- The majority of negative comments came from the Overall Exterior category.
- Most comments were about black, plastic and colour combination.
- The total number of comments made about LR3 was low (123 against an average of 178 per car).

Figure 89 PQ Colour Analysis - LR3 Exterior Negative Breakdown



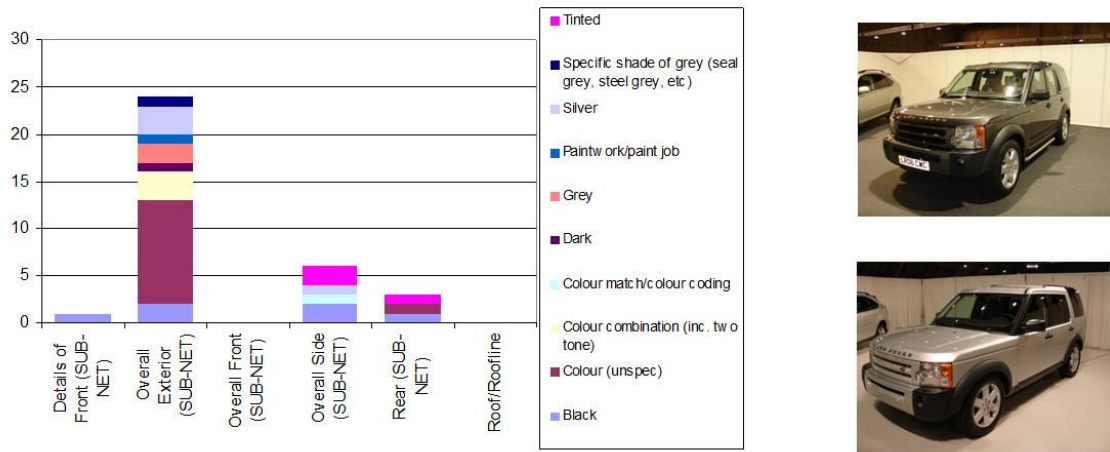
UK Vehicle



US Vehicle

- I object to the body cladding, I'm not sure what the term is but around the front fenders and the rear fenders, the black plastic is objectionable to me. US 2007
- I'm looking at the wheel wells, the flares are over the body, I don't know if that's something that's particularly, if it was more body coloured I that's something that I would prefer. US 2012
- Black plastic around the bumpers which gives a very industrial feel to it - not particularly a luxury vehicle feel which is what I believe Land Rover's marketing probably is directed toward. US 2015
- On the inside I thought it looked very cheap, I didn't like the biscuit colour of the seats, it just looks like orangey colour to me. UK 2007
- The plastic wheel arches are a little bit, better if they were colour coded, the door strips along the side, not exactly brilliant, be better if they were all colour coded and matched in with the body work but I'm sure you can have that done as an extra but this one hasn't got it. UK2026
- ... you've got bumpers with this one, you do have black bumpers, it doesn't colour code, of the three it's the only one that does that, it doesn't have colour coded mirrors. This is a small touch and it's quite nice when it does. UK 2008

Figure 90 PQ Colour Analysis - LR3 Exterior Negative Verbatims



- 34 positive comments were made about exterior colour (19 US and 15 UK).
- Most comments concerned the overall exterior.
- The most common theme was colour (unspec).
- The total number of comments made about LR3 was low (123 against an average of 178 per car).

Figure 91 PQ Colour Analysis - LR3 Exterior Positive Breakdown



UK Vehicle



US Vehicle

- I like the colour. US 2001
- I like the colour of the Land Rover, the colour appears to be some type of silver grey colour and the mesh of the colour with black accentuates the vehicle. US 2004
- This thing seems rugged and sturdy. Seems like it can take a beating. Maybe it's the silver coloured paint that gives it that strength and metallic look. But it just has a big hard-nosed look to it. US 2020
- The colour's nice. UK 2010
- On the exterior I love the colour, it was a very classy colour... I'm standing at the side of the car at the moment and the first thing I notice is this big silver thing, a big thick silver bar that runs from front to back and I really like that, I think it's very nice... UK 2007
- the chrome trim beneath the level of the body work looks very impressive ... Again the quality of the paint work looks good, there's a nice deep gloss to the metallic finish. UK 2023

Figure 92 PQ Colour Analysis - LR3 Exterior Positive Verbatims

A specific request was then made to study comments made about Beige or Cream. The pivot tables were reconfigured and additional charts created (Figure 93 to Figure 95).

- There were only 2 comments about beige for the Mercedes C Class
- The breakdown of comments made about beige (65) or cream (67) across all cars is given below:

- Freelander (B) received the largest number of –ve comments about beige/cream.
- BMW6 received the most +ve comments, Bentley Conti GT was 2nd

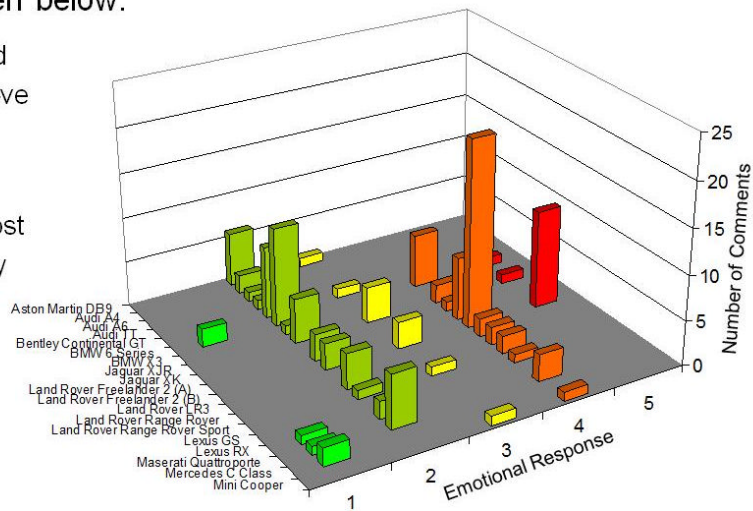


Figure 93 PQ Colour Analysis - Beige Interior Comments (across all cars)



UK Vehicle

- ...it's very modern inside, I love the interior in its browns and creams. I love the cream, I do love the light cream and the dark brown, I really love that, I think that works really nicely, it's much nicer than your average grey or black, it lightens the whole car, although the car is black on the outside, it really lightens the whole car, brings your home into your car kind of thing...Colour isn't practical but it's lovely, it's meant for sort of, it's a grown up's car, it's not for kids, this one. UK6003

US Vehicle



- I liked the colour because I like the cream, I just think cream's luxury anyway but it's just a really nice finish in there, and the trim and everything is really nice and it's got black bits...and it just finishes it off really quite nicely. UK6007
- ...and they've got cream carpet and matching cream mats, the black consul, the inside's absolutely gorgeous. UK6017
- I like the interior, I like the two tone cream and black... particularly like the two tone leather which I like the look of and the cream colour I like in particular, all my cars are black with cream leather. UK6027
- A total of 7 respondents commented positively on the beige, all from the UK.

Figure 94 PQ Colour Analysis - Beige Interior Comments (+ve, BMW 6)



UK Vehicle



US Vehicle

- First thing is that they need to lose the beige interior. Because it is horrendous and I am bit biased because I own one of these cars. However I will tell you what I feel about it... If we talk about this particular car, I am only disappointed with the fact that I don't know why they put the beige interiors in. Because they are not the best thing in the world and they get too dirty. I suppose if you are just one person who is wandering around with it and if you are the managing director then maybe perhaps it won't. But it is not practical but that is me. Everyone is different again. The only thing that disappoints me with this car is the colour scheme inside. The beige is horrendous and it isn't nice. And I think it actually spoils the car in some respect. Obviously I have got a dark interior. UK2009
- Are we finished yet? I really don't want to look at that any more it is horrible, it is disgusting. For some reason you have chosen probably the worse colour in the world. It is a disgusting colour? It is disgusting. Pretend it is a colour you like. But that is really hard. That is ever so hard because you open the door and you have got this crappy blue outside and you open the door and it is beige. It is horrible. UK2014
- I don't like the colour, unfortunately, of the leather. I don't like that at all. Again, that's the creamy colour. The creamy colour, yes. Just really for practical reasons, and same with the carpet. I'd be screaming at the kids, "Take your shoes off before you get in!" UK2027
- A total of 9 respondents commented negatively on the beige, with very strong reactions, all from the UK.

Figure 95 PQ Colour Analysis - Beige Interior Comments (-ve, LR2 B)

Research Observation 62 This exercise highlighted the importance of incorporating photos into the presentations: they provide a context against which the comments can be understood.

5.4.9 Discussion

The aim of this intervention was to understand the role of the PQ team and how the premiumness research could be used to help them inform their decision making processes and to meet their objectives more effectively.

It was observed that the PQ attribute structure provides an opportunity to accommodate the different mechanisms of consumer experience (cognitive/reflective, visceral, behavioural), however, no processes were identified that actually incorporated this need into the PQ measurement and monitoring processes.

Both the PQ processes and the wider design process are self-evaluated. While market research feedback from real customers is available (from MRO), this is largely ignored: the voice of the customer is therefore used only in so far as the team members perceive the customer.

Preliminary analyses have suggested that the internal measures, such as the bingo chart, do not correlate with customer views. In particular, the bingo chart is a valuable tool for managing the design and development process for internal materials, but suffers from a lack of weighting or priority for the features it considers.

Furthermore, these internal measures are feature-focussed: a holistic approach to PQ is espoused but not evidenced in normal operations.

Attempts to align PQ attributes with the Kano Model demonstrated a critical misunderstanding of how the model works and what drives customer

satisfaction, which can lead to flawed assumptions, ultimately undermining the PQ activities.

There is therefore an urgent need to introduce the customer's view accurately into the PQ process.

Attempts have been made to analyse external data sets, but these have been flawed, leading to further incorrect assumptions: this highlights the need for understandable data that can be safely used by the PQ team (a need to increase the utility of the premiumness data, to provide accessible and reliable data).

PQ efforts are somewhat constrained by JLR's earlier relationship with Ford: processes and techniques were mandated by the larger firm that suited its mass-market products, but which do not accommodate the more discerning luxury or premium car consumer.

The PQ team is sometimes frustrated by its level of influence (power) to protect the PQ attribute from erosion from cost cutting exercises or constraints imposed from manufacturing processes (for example). The PQ team believes it is sometimes seen as an intrusion by the attribute teams that it seeks to influence, suggesting an internal conflict in need of resolution.

It was found that the (static) PQ attributes were well represented by the premiumness code frame, but that the PQ activities were predominantly focussed on those attributes that elicited the fewest comments customers (must-have quality as opposed to attractive quality).

The PQ team were reluctant to release their own analyses and outputs either to this EngD process or to the MRO team: some process overviews and a single bingo chart was eventually provided, but visibility of the optical quality processes and outcomes was refused. This suggests a level of silo-mentality, lack of trust or protectionism within the team. However, the team was open to receive new information: the spider diagrams and colour reports were well-received by the PQ team, and demonstrate a clear way in which the premiumness verbatim data can be used by them. A tool that enables the self-analysis of the verbatim data is therefore needed.

5.5 Intervention #3: L486/L538 Internal Workshops

The final intervention was to develop a premiumness workshop for the designers and engineers on the L486/L538 programme. This intervention was instigated by MRO, but planned and implemented jointly with the researcher. The workshop analysis was carried out by the researcher.

5.5.1 Rationale for Intervention

It had become apparent, through the normal, day to day conversations and discussions between the MRO team and other teams within NPD process, that there were still pockets within JLR where the PRP findings had not yet been shared or experienced. There was also uncertainty about how successful the dissemination of the PRP data had been, and how well it had been cascaded by the management teams.

Furthermore, a criticism of the PRP dissemination had been that it was too long, not interactive and it was difficult to actually apply the information provided.

The L486 and L538 programmes were still at an early stage, presenting an opportunity to ensure that the messages of the PRP research had been received and could be incorporated into the programmes. It was therefore decided to develop a workshop for the L486 and L538 programme teams to provide guidance on the PRP findings, to enable the team members to experience the cars and attempt to evaluate them using the customers' eyes, and finally to have the team members create their own ideas for implementing the findings within the programmes.

5.5.2 Aim and Approach

The aim of this intervention was to try a new approach to disseminating the PRP findings and to test the participants' understanding and motivation/ability to use the information. Specifically, the aims of the workshop were:

- To demonstrate customers' view of premiumness to the L486/L538 teams
- To ensure premiumness learnings get to those who can actually make a difference
- To give practical experience of the issues raised by customers for the L486/L538 competition cars
- To gauge the participants' understanding of the premiumness findings
- To get the teams thinking about what they can do to improve the premiumness of L486 and L538
- To understand what the teams see as blockers stopping them from implementing premiumness improvements

The process of planning the workshops commenced in March 2008, the workshops were conducted over two days at the beginning of April 2008 and the post-workshop report was completed in May 2008.

Five workshop sessions were conducted over the two day period, each lasting approximately 2 hours long. A total of 46 people took part in the workshops, representing 15 disciplines.

Each workshop followed the same format:

- 30 mins - Presentation:
 - Explain why Premiumness is important;
 - Overview of other MRO customer research findings
 - Summary of L486/L538 Premiumness research findings
- 1 hour- Assessing the vehicles through customers eyes (10 minutes per vehicle), completing an appraisal form:

- what actions can participants personally implement to make a leap forward on L486/L538 premiumness based on what has been seen?
- what actions can others in the company implement to make a leap forward on L486/L538 premiumness based on what has been seen?
- 30 mins - Group task: Flipchart presentation on how to improve Premiumness for L486 / L538

The intended outcomes for the workshop were:

- A list of suggestions to improve the premiumness of L486 and L538
- A list of blockers – what is stopping these improvements being made?
- How can these blockers be overcome?

Participants were given the following instructions at the end of the preliminary presentation section:

Imagine you're going into a car showroom. You are looking to spend £20,000-£30,000 of your hard earned cash on a brand new vehicle. You've got a limited amount of time to look round the cars you're interested in and will test drive those which appeal most, so you take a quick walk around the exterior. Get in the driver's seat and close the door. Spend some time looking round the front interior, hands on the wheel, touching and feeling the controls, buttons and materials, getting a quick feel for the seats, checking out the interior storage, and take a quick look in the back and the boot. Imagine you're a customer as you look around each vehicle.

The tags are there to help highlight areas obtaining a lot of positive or negative comments from our customer research – they are double sided.

Make notes on the sheets provided on LEARNINGS FOR L486 / L538.

After 1 hour assessing the vehicles, you will be put into 2 groups and have 15 mins to put together a flip chart presentation to present back on what can be done on L486 and L538 to make a huge leap forwards on "premiumness"

Participants recorded their suggestions on proforma, which were collected at the end of each session. The flip chart presentations were also collected for post-workshop analysis. Finally, observation notes were recorded in confidential logbooks by the session moderators.

Name: _____	CDS: _____	Role: _____	<input type="checkbox"/> L486 <input type="checkbox"/> L538
-------------	------------	-------------	---

What actions can **you personally** implement to make a leap forward on premiumness for L486 / L538 as a result of what you have seen?

<i>What?</i>	<i>How?</i>	<i>When?</i>
--------------	-------------	--------------

What actions can **others in the company** implement to make a leap forward on premiumness for L486 / L538 as a result of what you have seen?

<i>Who?</i>	<i>What?</i>	<i>How?</i>	<i>When?</i>
-------------	--------------	-------------	--------------

☐ If you wish your comments about actions others should take to remain anonymous, please tick the box.

Figure 96 Workshop Participant Proforma

The workshop findings were analysed and reported to the L486/L538 Brand Manager.

5.5.3 Workshop Staging and Materials Used

The workshops were staged in the Design Studio viewing room at JLR's Gaydon site.

The room comprised three main zones: a presentation zone with seating and projector, a car evaluation zone and an information zone:

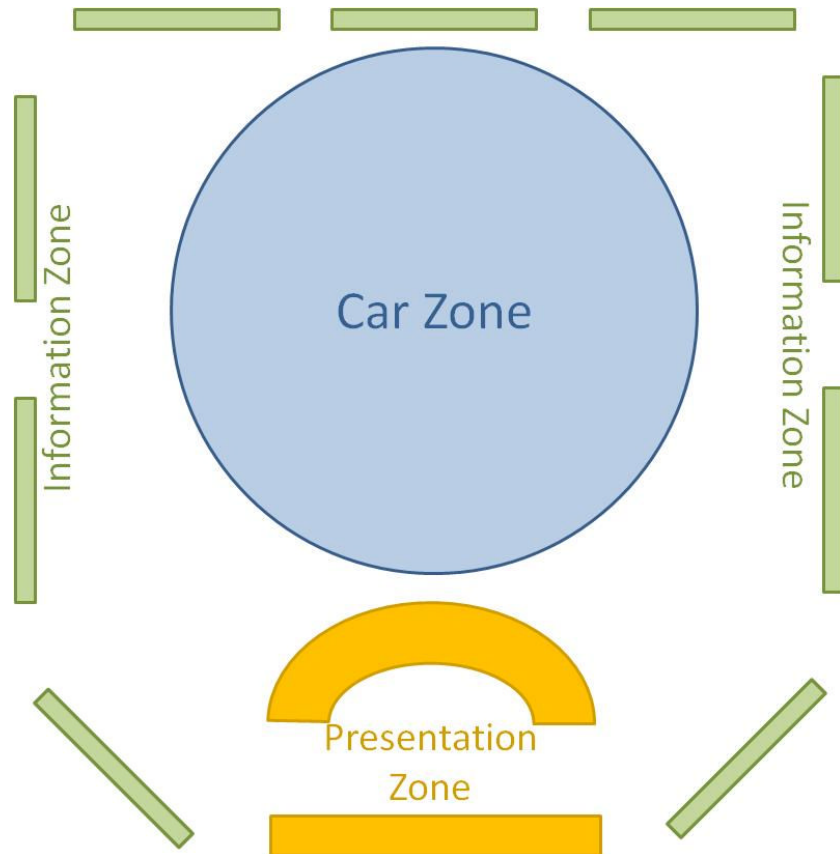


Figure 97 Workshop Staging Layout

The presentation zone comprised a projection area with seating. This is where the 30 minute premiumness overview and workshop instructions were presented.

Cars similar to those that had been evaluated during the L486/L538 clinics were acquired, and positioned within the centre area of the studio. Each car was labelled with laminated double-sided A5 tags. These tags highlighted which cars had performed best and worst in class in a range of categories:

- controls, gauges and dials
- dashboard
- centre console
- front/rear storage
- rear controls/fittings
- steering wheel
- seats
- wing mirrors
- boot/load space
- door handles
- external grilles
- doors
- seat comfort
- roof (interior)
- sun roof
- gearshift

Figure 98 and Figure 99 show a typical tag. The front of the tag showed the PRP data, while the rear of the tag supported this with customer verbatims.

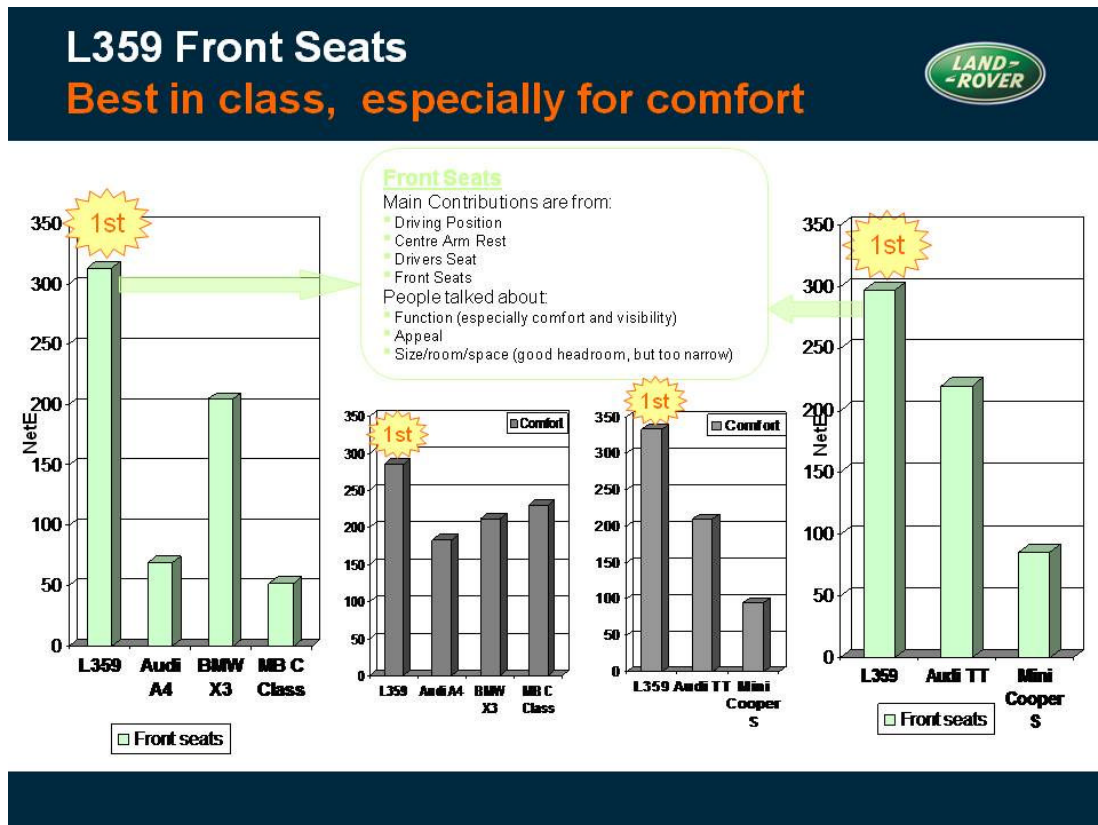


Figure 98 Workshop Tag - Front

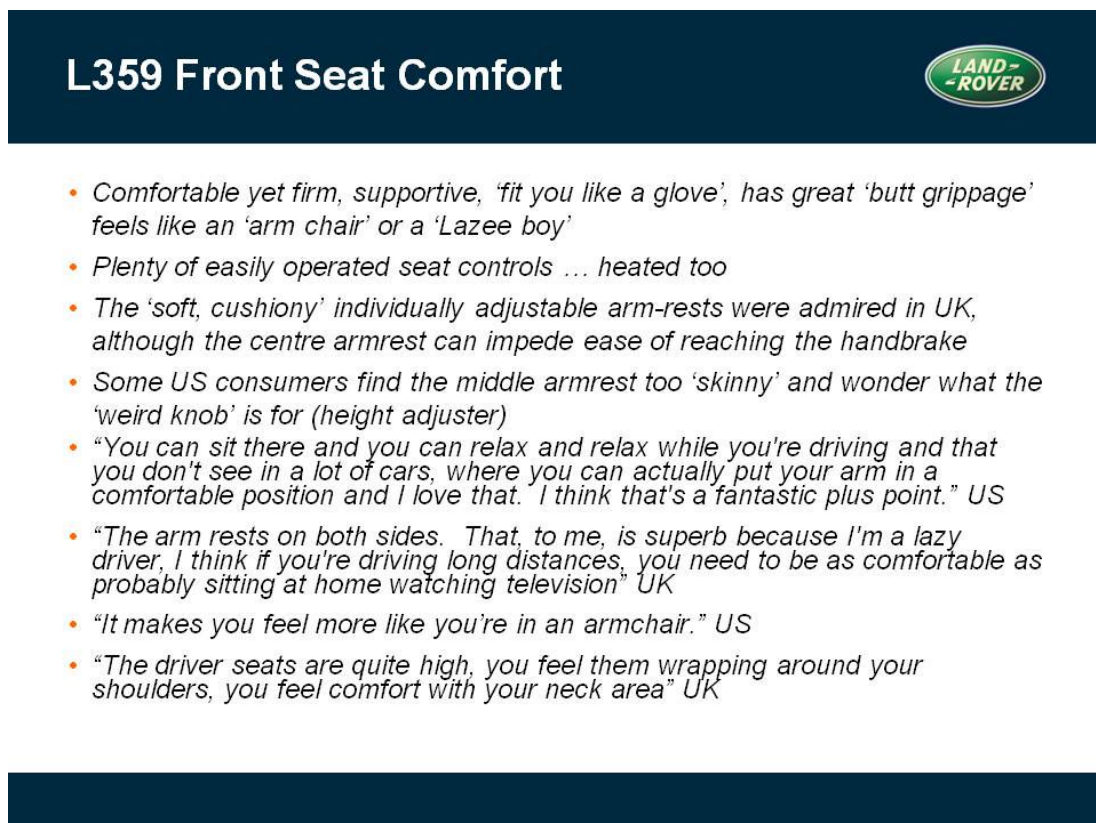


Figure 99 Workshop Tag - Back

All cars except the Mercedes C Class were acquired. The C Class was therefore represented with a photographic display.

The reason that the C Class was missing was because it had to be borrowed from a dealer, who withdrew the vehicle at the last minute. JLR did not have its own C Class for benchmarking due to budget constraints.

The information zone comprised a series of large display boards on which supporting information was placed. This included PRP information under a range of headings:

- Most talked about areas of the cars (overall)
- Most talked about areas of the interiors (overall)
- Individual Car interiors by area
- Most talked about areas of the exteriors (overall)
- Individual Car exteriors by area
- Most talked about themes (overall)
- Individual Cars by theme
- What people talked about by theme (Class leaders by NetE)
- Product strengths and weaknesses

A sample of the display charts are shown in Figure 100 to Figure 105.

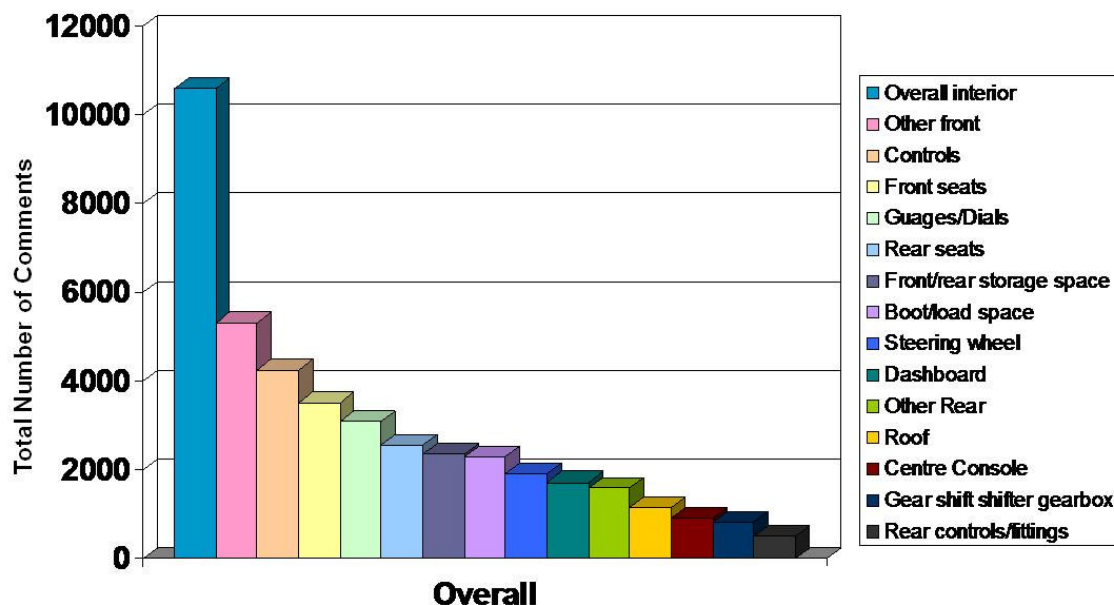


Figure 100 Most Talked about Areas of the Interiors (Overall)

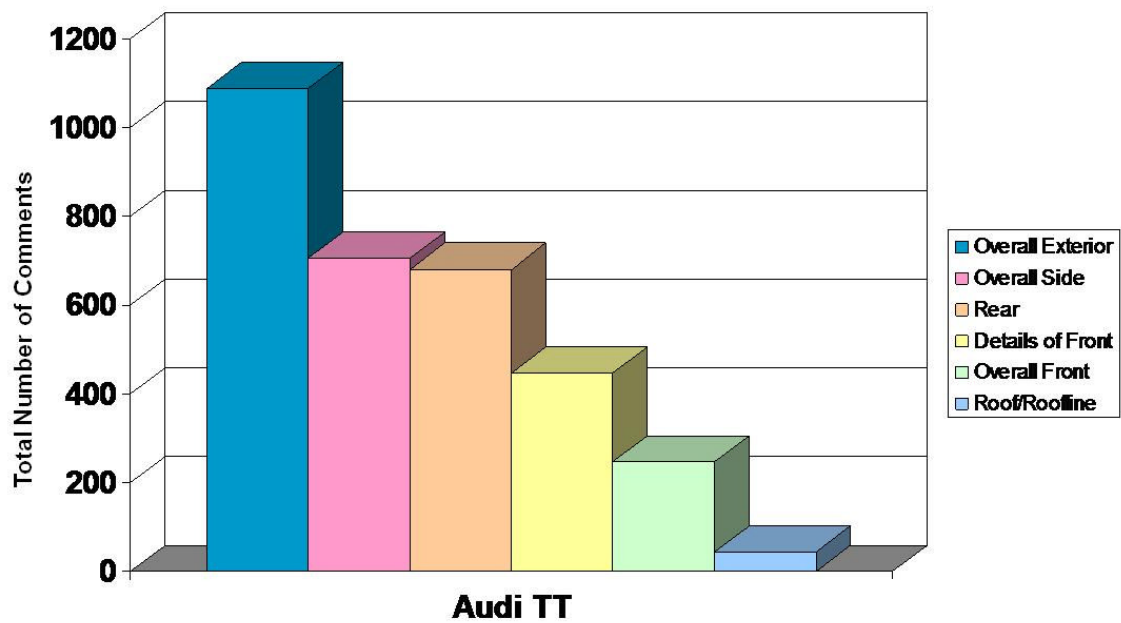


Figure 101 Audi TT Exterior

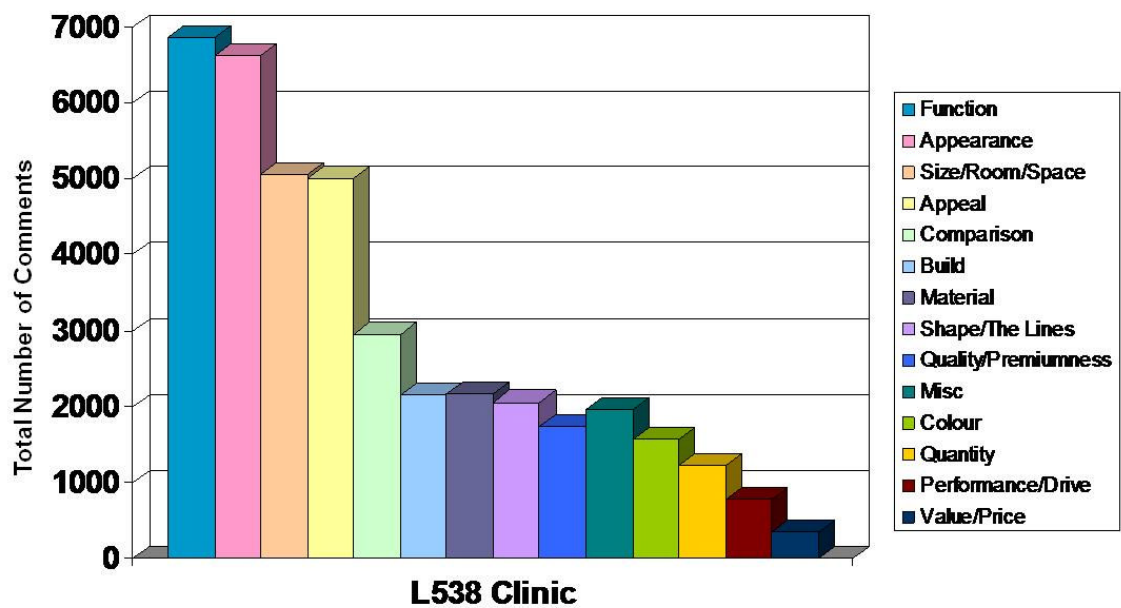


Figure 102 Most Talked about Themes (L538 Clinic)

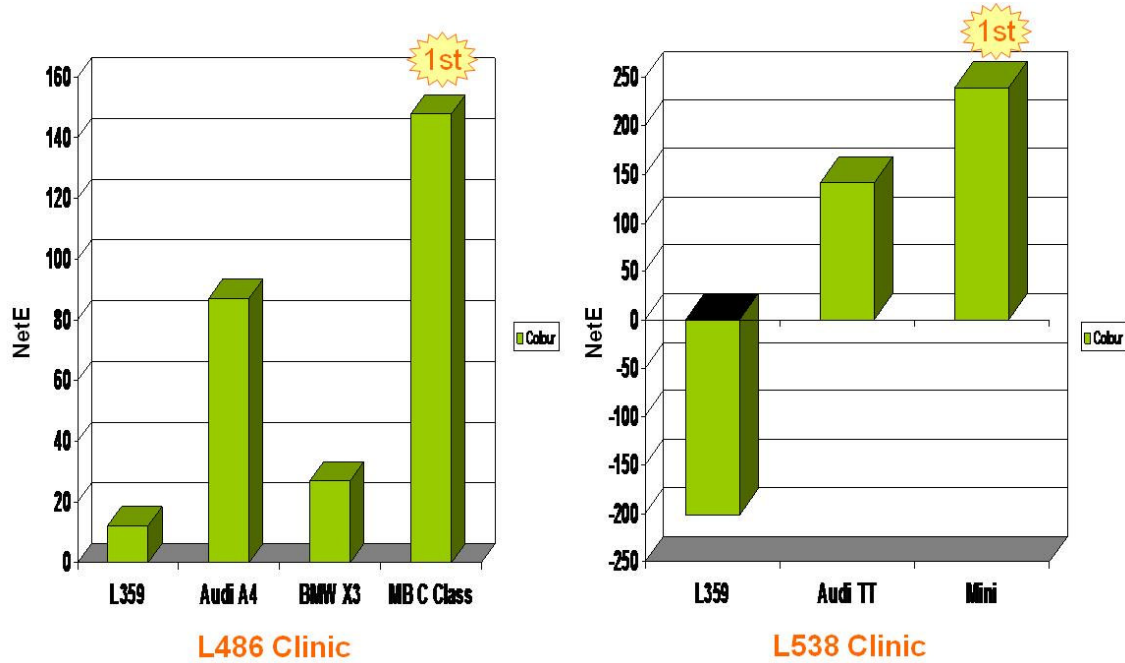


Figure 103 What People talked about: Colour

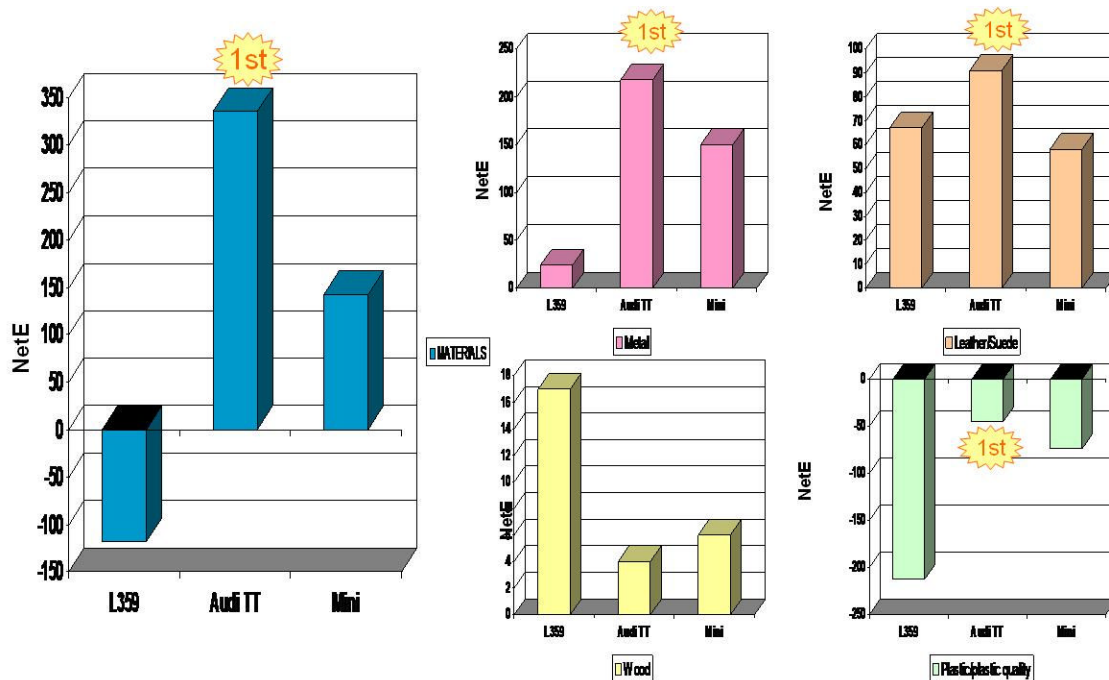


Figure 104 Materials: TT (Best in Class)

STRENGTHS

- Overall a highly attractive design
- Headlights are nicely proportioned, nice shape, crystal effect, new and fresh design
 - > Fog lights are pretty also – bezel around them looks good
 - > Repeater lights on wing mirrors good idea
- Front grille adds value and status to car: looks like it 'means business'
- Sporty exhaust (dual exhaust particularly in US)
- Well laid out dashboard: clear, easy to read, user-friendly, nicely accented dials
- Materials: nice leather ('smells good, rich'), wood finish is elegant and not overdone
- Sporty and high quality gearshift
- In UK only: pop-up SatNav with cover – innovative, and practical too
- Rear passenger cabin has own heating

WEAKNESSES

- Exterior design a little conservative, no real 'wow factor'
- Wheels seem a little small, would prefer larger alloys
- Grille seems a bit too gaudy for some
- Plastic on dash felt bit brittle
- Seats feel a bit hard

... OVERALL VERY FEW WEAKNESSES

Figure 105 Mercedes C Class: Product Strengths and Weaknesses

5.5.4 Post-Workshop Analysis

The completed individual proformas and group presentation flip-charts were collected at the end of each session. The contents were reviewed and analysed, and emerging ideas were captured in an excel spreadsheet. These ideas were rationalised to form a number of common themes.

46 participants attended the workshops representing 15 disciplines (Figure 106).

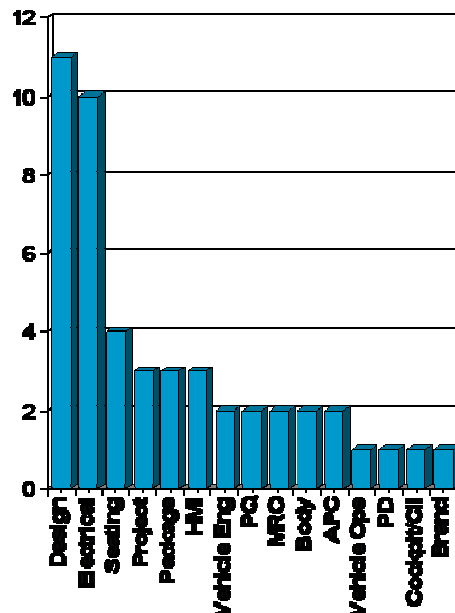


Figure 106 Workshop Participants

46 proformas were returned (4 anonymously), of which 30 were completed correctly. 14 participants recorded vehicle assessments rather than answer the questions, while 2 wrote nothing.

Figure 107 and Figure 108 provide an overview of the results of the analysis of the individual sheets.

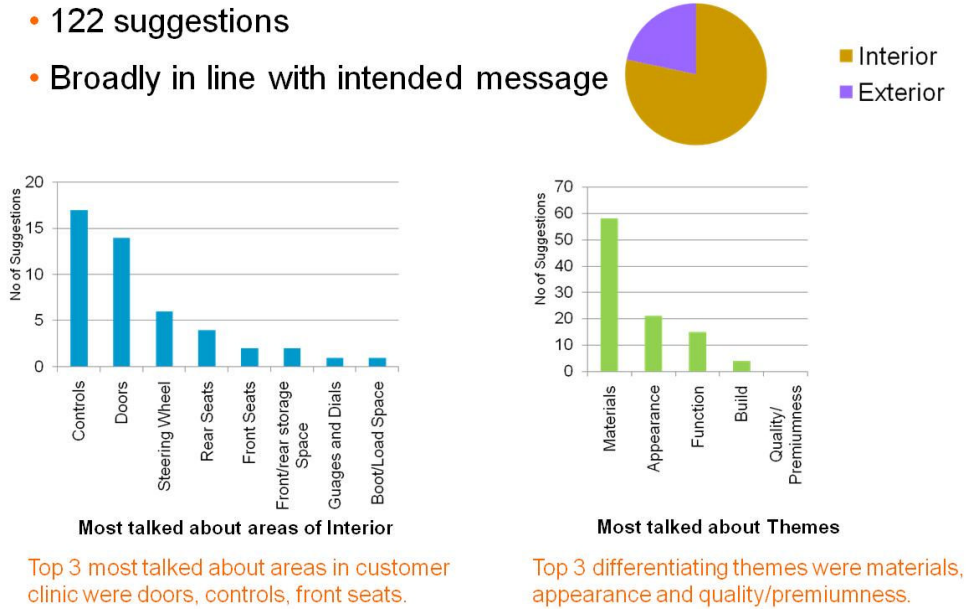


Figure 107 Individual Sheets - Personal Actions

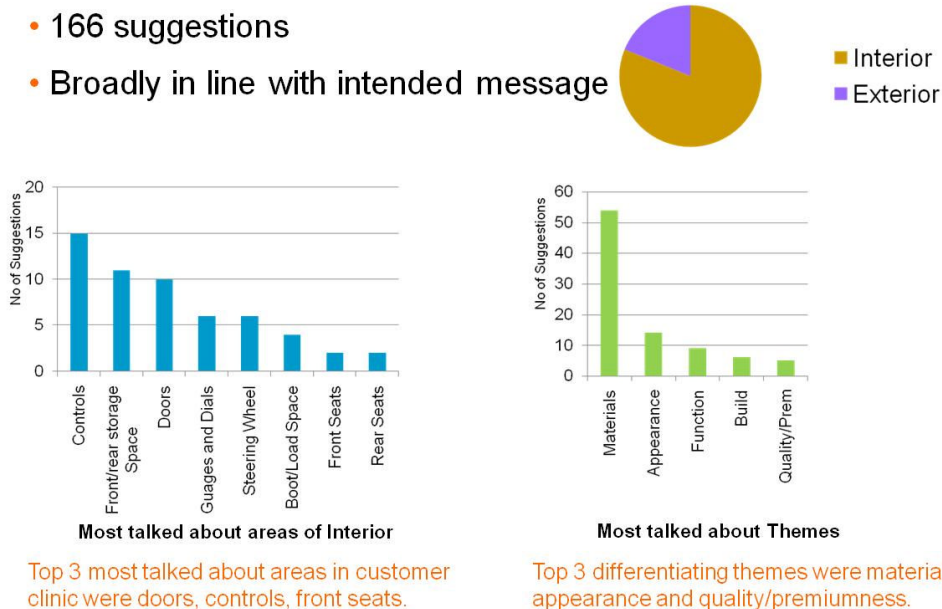


Figure 108 Individual Sheets - Suggestions for Others

The most common themes and areas mentioned were compared to those most frequently commented on by customers in the PRP research.

Despite the title and theme of the workshop, participants made very few suggestions regarding improving quality/premiumness..

Looking at the group presentations, a number of changes were suggested. For the exterior, the key points were:

- metal - if it's touched, make it metal
- body colour parts on exterior trim
- accents of metal on key areas
- no painted plastic grilles

A greater number of suggestions were made regarding changes for the interior:

- focus on touch points
- steering wheel - softer grain/more soft feel
- soft feel to rest/touch areas above seat height
- interior theme required - consistency of design theme
- simplicity
- homogenous interior materials and understated grains (rationalisation of colours and grains)
- authentic finishes - if it looks like metal it should be metal
- no hard shiny plastics - spark or non-animal grained
- small amount of high quality detail -use sparingly for dramatic effect
- simple / sleek / logical switchgear
- buttons - true push action, not edge hinged, not mixture
- reduce boldness/whiteness of graphics
- illumination / ambient lighting.

A number of blockers were identified, which formed 6 key themes: money, decision making, failure to agree, lack of planning, culture/capability and disconnects.

The need to spend money wisely was identified; it was noted that cashflow (lack of money) is a barrier, and there is an issue in creating a balance between contribution and pricing within the internal project accounting system. In particular, there is a perceived problem with sharing development costs across vehicles, as the first programme to use the technology pays; there is a lack of coherent cross-carline strategy for expensive items, nor is there a robust approach to resolving volume concerns for high investment solutions. There is a reluctance to invest in premiumness, and a tendency towards cost cutting rather than value adding.

There is a general perceived lack of decision making, and a sense that decisions once made are not upheld.

There is a failure to agree themes, importance, targets and areas of focus.

Participants felt that there was a lack of planning in general, especially with regard to developing whole of life plans and managing vehicle sharing/commonality/carry-over parts. A need to create time to plan and research integrated solutions rather than rush toward “fixes” was recognised, and participants felt that suppliers were involved too late in the process and then were over-relied upon. Participants suggested that prototypes and models were needed earlier in the process, and that while GPDS was good on paper it was proving to be ineffective in practice.

In terms of the JLR culture and capability, participants felt that there was a conflict between the requirements of a 4x4 and premium expectations that was not managed by PALS. Barriers suggested included a lack of understanding of how to execute premiumness coupled with a lack of willingness. A lack of understanding of the relevance of the customer was identified, and the PQ attribute cascade was not clear to participants. The facilities in plant and the manufacturing complexity of premium goods were viewed as problematic, with a sense that they were “always playing catch-up, not moving forward”. Participants recognised that starting at a low level then trying to “bolt-on” premiumness was not a cost-effective approach.

Finally, a disconnect was identified between what the market demands and what the programme team wants to implement, and it was suggested that the product was being priced for premiumness, but it was not being implemented.

In terms of positive observations from the clinic, participants recognised that improving materials is key to improving premiumness (not just better quality but better use), which is in line with the PRP findings. In addition, several participants showed a willingness to adopt the PRP findings: 25 participants identified actions that they could implement. These participants were recognised as potential advocates who could make a difference in their own areas and influence others; a process of attrition was developed to help recognise such people (Figure 109).



Figure 109 Premiumness Advocate Attrition

In terms of negative observations, it was noted that 30% of participants ignored the instructions, instead performing vehicle audits from their personal perspectives. There was a tendency by some to focus on things that are important to them - not what was important to the customer, and customer data tags in the vehicles were ignored. Few people suggested things that they would or could do themselves: 21 people failed to suggest personal actions, while 27 listed actions for others. 16 people made no suggestions at all. Finally, there was a general feeling of inability to overcome blockers once highlighted.

Time, cost and quality constraints were all perceived as “stopping premiumness”; some participants could only see blockers and felt powerless - they viewed this as something for “others” to remedy. Attitudes were identified as a problem, particularly not listening, silo working, cynicism and can’t do mentalities. It was suggested that the business needs to consider how it can help the programme team members overcome these barriers: what can managers do to change this, and are some managers blockers?

An outcome of the workshop was that some participants demonstrated that they understood premiumness and could make suggestions within that context, however others thought they understood premiumness but their suggestions did not relate to premiumness issues (out of context). It was suggested that further workshops should be planned to keep premiumness top of mind and current within the programme teams.

A repeated request from participants was for a list of the “top ten things we need to do”. Responding to the theory of disconfirmation of expectations, a priority to address the focus of negative customer comments was suggested:

• Customer Data from the L486/L538 Premiumness Clinic.

> Areas attracting the most negative comments:

- Boot/Trunk (44% relate to size)
- Mirrors (39% relate to plastic/ not colour coded)
- Controls/buttons (32% relate to the number/amount)
- Central Console (materials (24%), shape/lines (21%), function (22%))
- Steering Wheel (24% relate to materials, 20% to appearance/appeal)

> Themes attracting the most negative comments:

- Appeal (ext mirrors, dashboard, front arm rests, steering wheel, grille)
- Plastic (ext mirrors, central console, dashboard, boot (interior), grille)
- Positioning/Layout (window controls, front arm rests, ignition, controls/buttons, nav screen)
- Size (boot, rear window, front arm rest, centre console storage, speedo dial, steering wheel)
- Cheapness (ext mirrors, ext door handles, steering wheel, grille, central console)

Figure 110 Top 5 Things Done Badly on LR2

Comparing the workshop suggestions to the PRP findings, it was noted that the most frequently-made suggestions to improve premiumness tied in with the customer data: the top 5 suggestion categories were real metal, plastics, switches and switch layout, materials feel/quality and simple design.

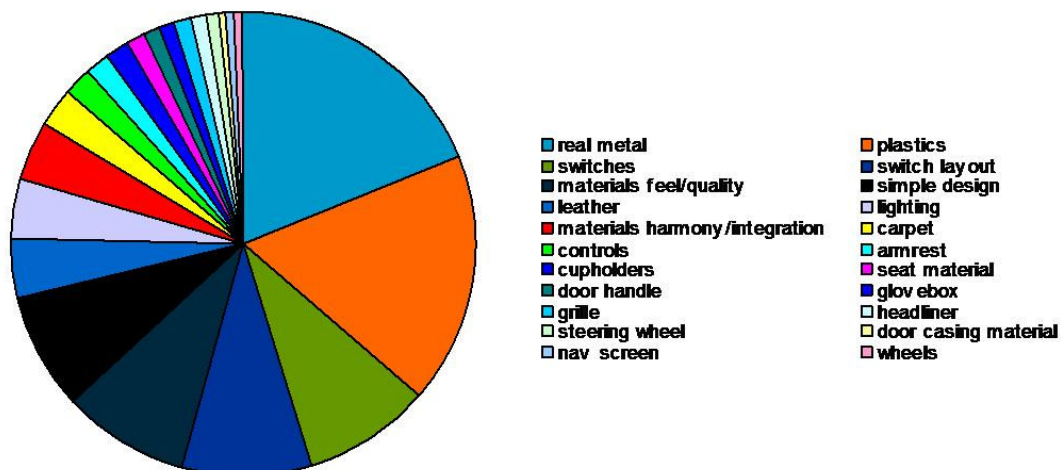


Figure 111 Workshop Suggestions: Priorities

As an example of the types of suggestions that were made, the following list gives the typical suggestions under the “Real Metal” category:

- propose materials/finishes that are not fake
- contact with real metal - where it is needed ... where customer touches
- plated exterior door handles or plated detail
- when doing metal finish, don't go over the top with effects
- less paint, more metal, even if there is less of it
- use of chrome - use with discretion
- accent real metal items rather than plastered

- drop titan paint finish from palette - if we are not going to make it in metal don't try to paint it to look like metal.
- brushed metals looked better than bright

5.5.5 Discussion

The aims of this intervention were to assess how successful the original dissemination process had been in sharing the PRP message: had it reached its intended audience, had it reached those who needed to hear it, had it been understood and were people able to use it.

The outcomes of the workshop confirmed that while the PRP research had reached its target audience (those identified within the original presentation schedule), this had not resulted in the message reaching those who needed to understand it and who were best placed to incorporate it into the product. This suggests a review is required of how people are selected for receiving the presentations. The need to present to a few people at high level and have them cascade the message is understandable: the full presentation for Stage 2 was 4 hours long, presenting constraints on both the MRO and the audience, however a review is needed to ensure that the right people are being exposed at this level. The nature of the presentation also needs to be re-evaluated, in terms of how well it prepares recipients to pass on the messages: does it enable the “train the trainer” approach that is implicit in the process? Even the most willing and pro-active participant can only ask for things that they know about: it was clear that many participants had not heard of the PRP prior to the workshop, suggesting that MRO would benefit from improving the ease with which their work can be discovered and accessed. This would have additional benefit to MRO: if greater use is made of their work, this supports the need to continue. In a resource and cash-strapped environment, market research activities have been the first to be scrapped, as their value is harder to measure and quantify in cash terms than more traditional R&D projects.

Several participants ignored the instructions during the workshop, suggesting either that they didn't listen (and so will not learn), or they decided that their approach was more important or relevant (and so will not learn). Similarly, there was evidence that some participants who followed the instructions, could or would only focus on their own priorities, even ignoring the customer data tags that were placed in the vehicles. This suggests that individual team priorities are not in alignment with those of the customer, which could lead to effort and resources being expended in areas that may be easy to improve but which will not result in improvements in the eye of the customer. Accommodating the customer's view will require a level of open-mindedness, as it is likely to be in conflict with one's own perceptions of what is appropriate. Technical excellence does not necessarily equate to a high levels of luxury or premiumness as perceived by consumers.

Many of the suggestions for improvement made by the participants were “for others” to do, and predominantly focused on specific features. Very few suggestions were made about potential holistic improvements, suggesting that the participants are not willing or able to think in those terms.

A number of blockers were identified, but the workshop failed to identify how those blockers could be overcome. There was a strong sense that the participants did not feel equipped or empowered to make changes needed to alleviate those blockers: from budget constraints, decision making and the programme and company planning processes, changes were seen as needed at a fundamental, business level before programme level changes could be effected.

Participants demonstrated an element of needing to be told what to do: a common request was to be told exactly what they needed to do to improve premiumness, rather than work it out for themselves. This is why the top 5 list was developed, even though its value is limited by the high level at which it had to be stated (in order to suit the wide-ranging audience), and the dynamic nature of customer expectations means that the top 5 today may not be the top 5 of tomorrow. Therefore, reliance on a to-do list approach does not represent the most effective or efficient use of the premiumness findings, but does reflect what designers think they need.

The materials used within the workshop, in both the information zone and within the cars, were well received. These materials comprised new ways of representing the data, and further highlighted the value of increasing the utility of the premiumness verbatim data in order to develop flexible analysis approaches to suit the specific application. Developing these new materials provided an additional opportunity to analyse the requirements for a verbatim data tool and test those requirements in a prototype tool (see chapter 6).

The workshop also raised the importance of keeping premiumness “top of mind” and current: as well as implying the need to continue to run such internal premiumness workshops, it also strengthens the need for a tool to ensure that the materials can be prepared in a timely fashion.

The value of workshop materials and the premiumness research were reinforced through reuse at a “Sticker Event” for L538: this was a whole programme design review aimed at identifying areas that needed to be protected and areas where costs could be reduced. The event included cars for review (including the L538 prototype) and the car tags were used again to guide the decision process. Unusually, the MRO premiumness team (including the author) were invited to attend this day long session to ensure that the premiumness findings were understood and to explain the implications of particular design changes on the perception of premiumness in the eyes of the customer.

5.6 Observations and Insights

The Descriptive Study generated 27 Research Observations and 30 individual insights that arose from discussions about each of the study’s activities.

These Research Observations and insights were brought together and scrutinised to identify emergent themes and patterns which are discussed in terms of the study’s aims below:

- to assess how well the PRP data has been understood within JLR;

- to understand how effective the PRP dissemination process was and how it can be improved in terms of meeting stakeholder needs and providing rich, focused knowledge;
- to evaluate the quality and format of the raw and coded PRP verbatim data in terms of its ease of use.

5.6.1 How Well has the PRP Verbatim Data Been Understood?

Part of the purpose of this Descriptive Study was to understand how well the PRP verbatim messages had been received and understood by its audience. This is important because the PRP verbatim messages represent the target customers' actual reactions when evaluating luxury and premium cars, providing an opportunity for JLR designers, engineers and marketers to develop a level of empathy with the intended customers, thus creating competitive advantage.

5.6.1.1 Self-Evaluation as a Proxy for the Customer

This study has identified that both the PQ processes and the wider design process rely on their teams' own expertise to evaluate the design of the product: self-evaluation is used as a proxy for the customer.

Customer research activities provide feedback on some aspects of the design process, however it was felt that this was largely ignored, suggesting that the MRO-generated information that is mandated by GPDS does not meet the needs of design/engineering teams, or that there is an internally-held view that customers are not considered to be able to judge adequately the quality or success of a design. The voice of the customer is therefore largely represented by the team members' own beliefs about the customers' wants and needs.

This approach is valid if the experts or expert systems in place comprise an accurate proxy for the customer; that is, the designers or engineers can correctly represent the views of the target customers. The literature has shown that people's views of luxury and premium products are highly personal and driven by factors such as background, age and experiences. This highlights the importance of strong market research/design interaction to ensure that designers and engineers, who generally have different backgrounds and experiences to JLR's target market, have access to the right information to enable them to incorporate the customers' perception of luxury and premiumness into their decision making processes.

5.6.1.2 Prioritisation of Effort as a Measure of Understanding

This research proposes that prioritisation of effort can be used a measure of how well the PRP messages have been understood and assimilated: if the designers and engineers who represent the customer demonstrate that their focus matches what the PRP participants talked about, this would suggest a level of understanding of what is important to the customer.

There was some recognition that crafted, design and material attributes are experienced in different ways by consumers, and therefore need appropriately

different treatments, and the PQ attribute structure provides an opportunity to accommodate the cognitive/reflective, visceral and behavioural mechanisms of consumer experience. It was also found that the (static) PQ attributes were well represented by the premiumness code frame. These factors suggest a level of parity between the PQ approach and the PRP findings. Similarly, the workshop showed that participants recognised the importance of materials in improving premiumness, which is line with the PRP findings.

However, the workshop experience also demonstrated that some participants could or would only focus on their own priorities, even ignoring the customer data tags that were placed in the vehicles. Furthermore, suggestions for improvement were predominantly focused on specific features rather than holistic improvements, suggesting that the participants are not willing or able to think in those terms.

In addition, while a holistic approach to PQ is advocated, it was observed that PQ internal measures are feature-focused and considerable effort is targeted on those attributes that relate to must-have rather than attractive quality (which elicited the fewest comments from consumers). The measurement and monitoring processes fail to incorporate the differing mechanisms of customer experience that the PALS attributes recognised, and an analysis of the PRP verbatim coded data against the PALS attributes identified a significant disparity between what consumers talked most about when evaluating a car, and where the focus of PQ effort is expended.

This suggests that while the nature of the drivers of luxury and premiumness are recognised in principle by the teams, the individual team priorities are not in alignment with those of the customer. This misalignment may be due to personal biases about what is important, difficulties understanding how to manage the priorities or because those areas that currently receive the majority of focus are those elements that are easiest to quantify and measure.

This mis-prioritisation could lead to effort and resources being expended in areas that may not result in improvements in the eyes of the customer, to the detriment of those areas that could make a difference: technical excellence does not necessarily result in a high level of luxury or premiumness in the consumers' eyes. Accommodating the customer's view will require a level of open-mindedness, as it is likely to be in conflict with one's own perceptions of what is appropriate.

5.6.1.3 Internal Expert Systems as a Proxy for the Voice of the Customer

If self-evaluation is to be used as a proxy for the customer, then it is necessary for the expertise, systems and processes used to develop the self-evaluation to represent a realistic reflection of the customers' perceptions of luxury and premiumness. These internal systems can be thought of as forms of "expert system" that enable the "subject matter experts" to make and record their evaluations and decisions. Expert Systems are traditionally defined as software-based tools that replace the need to consult actual experts. In the context of this research, expert systems can be viewed as a combination of experts and tools that reduce the reliance on the "in head" knowledge of

experts, ultimately reducing the level of expertise required to perform the evaluation.

The PQ team employ the Bingo Chart as part of their evaluation process, so it can be argued that they use this tool as a proxy for the customers' opinion. While the bingo chart has considerable value for managing the design and development process for internal materials, and makes the evaluation process visible and accessible to non-experts, there is no obvious correlation between the PQ Bingo Chart ratings and the PRP verbatim data, and the priorities of the Bingo Chart are contrary to the PRP findings. This suggests that the Bingo Chart is not a valid proxy for customer opinion.

Flawed assumptions about the relationships between datasets can be made in the absence of their original context, especially when the focus becomes set on the numbers rather than the meaning behind them. In this case, attempts to correlate the Bingo Chart ratings with the NetE metric suffered from critically and fundamentally incorrect assumptions: that the relationship between the two data sets would be linear, and that the scope and nature of the data sets were equivalent. The NetE metric facilitated these mistakes by providing a numerical focus that isolated the actual meaning within the verbatim data set.

The Bingo Chart is a reasonable measure of the technical excellence of the interior materials in a vehicle, but does not represent a true reflection for the consumer's evaluation of luxury cars. In particular, it fails to reflect the emotional experience of the customer, focusing on the rational aspects of vehicle evaluation. Taking the Bingo Chart as a representative sample of the PQ tool kit, this suggests that PQ expert systems are not a valid proxy for the voice of the customer.

5.6.1.4 External Surveys as a Proxy for the Voice of the Customer

Having established that PQ's internal expert systems do not provide an adequate proxy for the voice of the customer, it is appropriate to examine the use of external data sets.

External customer data are available to the PQ team, either directly or via MRO. PQ has direct access to reports from the JD Power APEAL survey via JLR's quality function, and to Continuous Study reports from NCBS, NVES and other JD Power survey instruments via MRO.

There was no evidence that PQ used the data available from MRO, but PQ's use of the JD Power APEAL to develop attribute priorities was observed to be interesting but flawed: the APEAL findings were assumed to be generalisable to the global market, despite only representing US consumers, the implications of the post-purchase context of the data were not recognised, and priorities were assumed to be causally linked to satisfaction ratings. APEAL is a continuous survey, reported quarterly and annually, but the analyses relied on only one annual report, failing to acknowledge changing customer views (expectations) over time; the relevance of the calculated priorities will therefore be eroded over time. The resulting priorities also appeared to be contrary to the PRP data.

The PQ team also attempted to represent attribute priorities using the Kano Model, however, examination of the outcome of this exercise highlighted a critical misunderstanding of the model and how it works, and what drives customer satisfaction. It was also observed to have been conducted in the absence of empirical evidence to support the decisions made.

The results of such analyses can lead to further incorrect assumptions that ultimately undermine PQ's efforts. This highlights the need for understandable data that can be safely used by the PQ team and others. This translates to a need to increase the utility of the premiumness data by making it accessible and reliable.

In terms of assessing the use of external surveys as a proxy for the voice of the customer, the Descriptive Study suggests that they are not used in this way.

However, the researcher was able to develop a reporting mechanism by which external survey data can be used to track customer opinions of luxury and premiumness issues, which could be used as a proxy for the post-purchase voice of the customer.

MRO subscribe to a number of syndicated and independent studies looking at customer opinions of the cars that they drive, covering satisfaction, warranty issues, dealer satisfaction, reasons for purchase and so on:

- Millward Brown Brand and Ad Tracking Study
- New Car Buyer Survey (NCBS)
- New Vehicle Evaluation Survey (NVES)
- JD Power⁴⁸ (IQS, APEAL, SSI and CSI)

These studies differ from ad-hoc exercises such as the Premiumness study in that they are repeated on a continual basis and report on a regular cycle (e.g. 6 monthly or annually).

While these studies are reviewed by MRO on a regular basis, and reported out to Management twice a year, they focus on satisfaction with quality (TGW⁴⁹), overall satisfaction with vehicle, reasons for purchase and rejection, loyalty, dealer satisfaction and demographics. The studies contain a significant amount of data that is not used, including questions on customers feelings about their cars and ratings of premiumness-influencing attributes. These surveys may therefore support a continuous premiumness tracking study, using data that is already available to JLR. Given the expense of the premiumness clinic (and much of the other ad-hoc research activities), this could represent a cost-effective approach.

The questionnaires for each survey were reviewed and pertinent questions identified. This reduced the number of applicable studies to four (NCBS, NVES,

⁴⁸ JD Power's range of studies includes Initial Quality Study (IQS), Customer Service Index Study (CSI), Collision Repair Satisfaction Index Study (CRSI), Feature Contenting Report (FCR), Sales Satisfaction Index Study (SSI), Escaped Shopper and Owner Loyalty Study (ESOL), Dealer Attitude Study (DAS), Vehicle Dependability Study (VDS), Component Quality Reports (CQRs), Automotive Performance, Execution and Layout Study (APEAL)

⁴⁹ Things gone wrong)

JD Power APEAL). The raw data from each of these surveys is provided in a compacted database format, and can be interrogated using the mTAB⁵⁰ analysis tool that MRO uses to create its normal continuous studies reports.

A powerful but simple technique was developed which allowed the easy identification of how specific models were rated for a range of attributes by car owners, and how these compared to their competitors. An example of the format, using the 2006 NCBS UK data, is given in Figure 112. The figures given are for the percentage of people who are “completely satisfied” with each attribute (scoring 9 or 10 on a 10-point scale). In this example, Freelander is shown to received lower ratings in general than its competitor set.

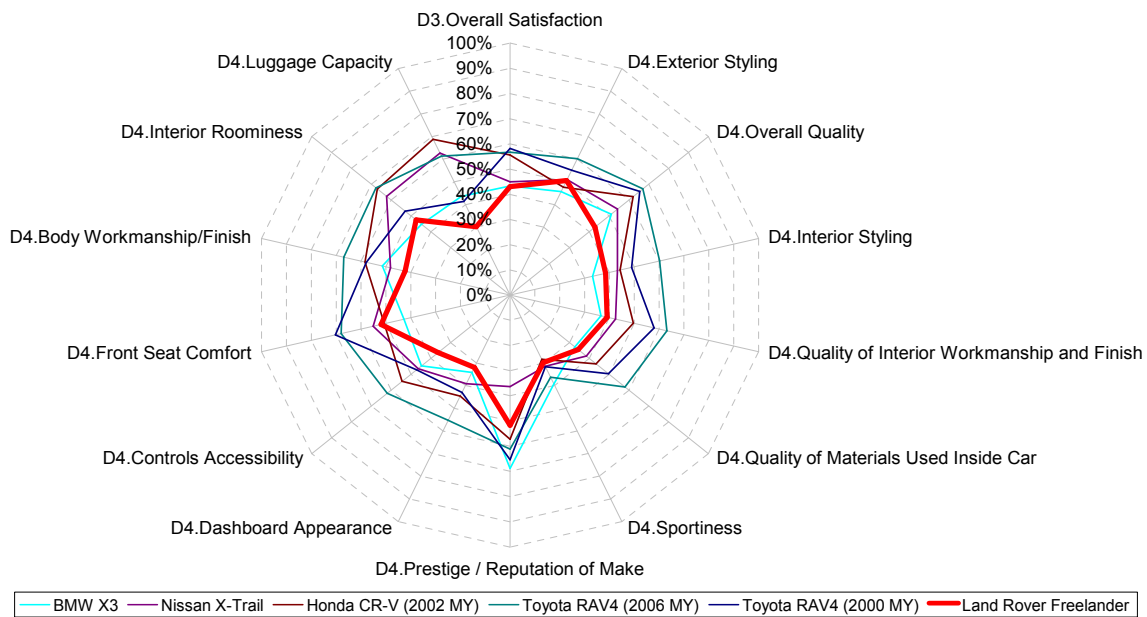


Figure 112 Continuous Studies Premiumness Report (Freelander)

This process was repeated at brand level and for each of the JLR models, and presented to the MRO team. The report format was well received, but has not been adopted into normal practice: the team have simply forgotten about it, despite the need to maximise the value of the tools that they have available.

It is interesting to note that the BMW X3 appears to perform better than the Freelander in this example, which is contrary to the PRP verbatim findings. However, there are significant differences in the data sets which may explain this: NCBS is a post-purchase survey, while the PRP simulates a pre-purchase evaluation, and NCBS requires a rational thought process to fill in the questionnaires, while the PRP captured participants’ actual reactions as they happened during evaluation. The two schemes are therefore measuring different aspects of the consumers’ perception, so should not be expected to align necessarily. In addition, the NCBS captures feedback on an older Freelander model than was evaluated in the PRP.

⁵⁰ by the GAMMA-PAI Partnership, <http://www.gamma.uk.com/mTABintro.asp>

In principle, this demonstrates that external survey data can be used as a proxy for the post-purchase voice of the customer for rational evaluations, and this could be used as a measure of the success of efforts to improve the luxury and premiumness of JLR vehicles.

5.6.1.5 Empowerment and Responsibility

During the process of conducting this Descriptive Study, a number of behavioural and attitudinal issues were identified that impact on JLR's ability to improve the intrinsic luxury and premiumness within their models.

The workshops identified a number of blockers that were perceived by the designers and engineers as preventing them from make the changes needed to implement premiumness and luxury improvements. However, there was a sense of powerlessness in terms of being able overcome these obstacles. Working with the PQ team revealed similar issues, in this case they manifest as frustrations about its real influence in terms of protecting the PQ attribute from erosion due to lack of priority by other parties, and a sense that PQ is seen as a burden rather than an integral consideration of vehicle design and development. This suggested that a the importance of premiumness/luxury within the NPD process needs stronger support from a management and strategic position if JLR is to be able to effect positive change in the consumers' evaluations of its vehicles.

A level of competitiveness between the different teams and functions was observed, and the study was somewhat hampered by a reluctance by these teams and functions to share what they held to be confidential information, even internally within JLR. This suggested a lack of trust between teams and functions, but more fundamentally indicates a fear of being exposed, or a worry that the information would be used against them.

The study also revealed that efforts to improve are constrained by the legacy processes and techniques that remain in place following Ford's ownership of the firm, which suit the needs and priorities of mass-produced low-end products rather than the lower-volume high-end products in JLR's portfolio. The process of tailoring/amending these processes to suit JLR's needs is on-going but slow. The availability of information/knowledge about customers' needs and wants with respect to premiumness and luxury evaluation to support the decision-making processes is also inadequate.

In terms of individual responsibility for improving premiumness and luxury, two key issues were revealed by the study: the ability to accept expert advice and the ability to take personal responsibility for change. Some participants in the workshop ignored instructions and customer information, indicating that they believed their personal views to be more correct or important. Participants seemed to be more willing or able to recommend changes for others to implement than for themselves, and there were also participants who wanted to be told what to do: they could not or would not make suggestions for themselves, indicating that they did not have the understanding to do so, or that they were not prepared to take the responsibility (and therefore the credit if successful or blame if not).

5.6.2 PRP Dissemination

The Descriptive Study resulted in a number of research observations and insights that pertain to the dissemination of the PRP findings, including the practical implications of the process, considerations about the way that the data can be presented to improve knowledge transfer, and future dissemination needs.

5.6.2.1 The Dissemination Process

The Descriptive Study revealed that the PRP message had not reached all those who needed to understand the findings, or those who were most able to effect the necessary changes. This indicated that the effectiveness of dissemination by presentation employed by JLR is severely limited by the process by which the recipients are selected. Key audience sectors are omitted by the current process, either by design or by error (e.g. due to lack of contact knowledge), hence a review is required.

The need to present to a few people at high level who then cascade the message to their teams is understandable, given the duration of the presentations. However, the nature of the presentation also needs to be re-evaluated to ensure that it supports the “train the trainer” approach upon which the cascade process relies.

In addition, it was observed that awareness of the PRP research was limited, suggesting that MRO would benefit from improving its self-publicity within the firm about PRP and other research activities. The workshop represents one such improvement, the exposure from which ultimately resulted in the MRO being invited to mediate a programme cost-down event by representing the voice of the customer.

5.6.2.2 Content Considerations

The materials developed for the seats reports, the PQ team and the workshop demonstrated new ways of representing the data that improved the process of knowledge transfer by better meeting the needs of recipients.

These exercises highlighted the importance of context when presenting the data; for example, the simple task of incorporating photos into the slides helped the audience relate the data to the vehicles, and reduced the likelihood of misinterpretation. The importance of context when considering the NetE metric was also confirmed.

The limitations of certain data presentation approaches were raised: for example, a three point scale for assessing the quality of materials is useful as a simple guide, but becomes unreliable at the boundaries between the points. In addition, the importance of weightings and their impact on behaviour within the NPD process were considered.

5.6.2.3 Future Needs

The Descriptive Study highlighted the need to keep premiumness “top of mind”, and confirmed the potential benefits of enabling the designers, engineers and

researchers to be able to conduct their own analyses of the PRP data, both in terms of enabling teams to develop their own premiumness improvement activities and in reducing the reliance on the MRO to access customer opinions about premium and luxury cars.

It was therefore suggested that MRO continue to facilitate Premiumness Workshops.

The study confirmed that the raw data are not in a format that is useable by the teams, and the language used by customers does not align with that used within the NPD process. It also confirmed the need to be able to develop timely reports.

The importance of a PRP verbatim database and analysis tool was therefore substantiated.

5.6.3 Utility of the PRP Data

The Descriptive Study confirmed that presentation and detail of the coded verbatim data originally provided by the Agency was not adequate. The data files were difficult and time-intensive to interrogate and therefore not accessible to those best placed to make use of the knowledge available within it.

The researcher was able to acquire more detailed raw data from the Agency, which provided full granularity of the coding structure and its implementation, however the fractured nature of the storage format necessitated a high degree of expertise, both in terms of the content of the data and how it was linked together, without which attempts at analysis would be unreliable and prohibitively time-consuming.

The study therefore confirmed the need to increase the utility of the data by improving its storage, format, linkage and accessibility.

5.6.4 Closing Comments

The interventions that formed this Descriptive Study identified discrepancies between what had been presented and what was wanted or needed by those responsible for developing and delivering a luxury product, and deficiencies in how the presented data was being used and reinterpreted by those who had been part of the dissemination process.

A common request from stakeholders was for a set of instructions about what to change; there was a reluctance to think about what improvements they could make themselves, and a reluctance to take responsibility for their potential contributions.

Personal focus was shown to affect the translation of data into priorities, and this was highlighted by the misalignment between the PALS attributes and what people focus on when discussing premiumness, and also in the choice of benchmark vehicles (the L486/L538 clinic challenged invalid assumptions about the use of BMW X3 and Mini as benchmarks).

However, an unwillingness to be exposed to potential ridicule or to lose face) has led to a culture in which data is not freely shared and so cannot easily be

checked or challenged. This facilitates an closed environment in which concepts and tools can be misunderstood and incorrectly used, and data can be manipulated to suit predetermined outcomes (forced to fit) or used out of context (rendering it meaningless or misleading).

The dissemination process was heavily reliant on MRO expertise. However, at the time of writing there is no one left in the MRO team who was involved in the Stage 2 or L486/L538 premiumness research. Therefore there is no one who understands the data, what the data looks like or how it can be used: there are no experts left to pass on the expertise.

The activities undertaken by this research within each of the interventions identified the following main issues that needed to be addressed:

- 1) The “raw” PRP data was cumbersome, and creating detailed analyses was too time consuming - data was unusable;
- 2) If information is provided to people that is not in the format they want or need then they can’t/won’t use it appropriately;
- 3) The data needs to be shared without adding to workloads, and in a way that is useful to the different functions...

These findings were presented to MRO during regular team meetings, and it was proposed by the researcher that a tool should be developed that would enable the verbatim data to be stored and interrogated in such a way as to increase its utility, with the ultimate aim of enabling self-analysis by non experts. This proposal was accepted and encouraged by MRO, and became the ultimate deliverable of this EngD to JLR.

5.7 Chapter Summary

The Descriptive Study had five aims, which were to:

- a) understand how usable the raw data is to interrogate and manipulate for further analysis;
- b) understand how well the PRP findings had been understood by its intended audience;
- c) find out what key stakeholders needed from the research that hadn’t been delivered;
- d) work out how to develop deeper, richer and more focussed knowledge from the data; and
- e) identify how stakeholders could be enabled to use the data to inform their own functional requirements in a “safe” way.

Three distinct interventions were designed to form the basis of the study. A combination of data collection methods was employed to achieve the aims, including open, unstructured interviews, interactive presentations and meetings, and group workshops.

The outputs of these data collection methods were collated and reviewed, and points of interest, intrigue, frustration and difficulty were identified. The points

were analysed for each of the three interventions, a process which resulted in the emergence of 27 Research Observations and 30 individual insights.

The observations and insights were brought together and discussed in relation to the study aims.

Three main issues were identified that needed to be addressed, and the development of the researcher's verbatim database to form a tool that could be used by non-experts was proposed.

6 OPERATIONALISING LUXURY IN JLR



Aim To introduce the Premiumness Verbatim Database tool, to discuss the design and decision making processes by which it was developed, and to discuss its utility and roll out within JLR. To discuss the process of operationalising luxury within JLR, and how the tool contributes to this process.

6.0 Chapter Structure

The chapter begins with a summary of the major findings of the exploratory and descriptive studies. The Premiumness Verbatims Database tool is described, and the design and development process and roll-out programme discussed. The success of the tool in addressing the problems identified by this research is considered.

The shortcomings of traditional market research techniques in capturing and using the voice of the customer regarding luxury and premium vehicles are highlighted, and the process of operationalising luxury within JLR is discussed.

6.1 Introduction

The exploratory and descriptive studies have generated a number of insights that challenge conventional wisdom about how to capture and use the voice of the customer in the NPD process.

The passive observation of JLR's Premiumness Research Programme revealed a powerful multi-method technique which acquired data about consumers' expectations of luxury automotive brands and products, their reactions when evaluating luxury and premium vehicles, and their emotional satisfaction with features and attributes of luxury and premium vehicles. The process by which this data was analysed and the emerging knowledge shared within the NPD community identified significant limitations in JLR's ability to process and operationalise such data, which meant that the opportunities afforded by the research are not being fully realised.

A series of interventions enabled the researcher to develop a rich understanding of the NPD community's needs and wants regarding the provision of information about the customers' perception of luxury and premiumness, and provided first-hand experience of the nature of the raw data which gave a deep insight into its potential utility.

This chapter introduces the Premiumness Verbatims Database tool that the researcher developed to overcome these difficulties by facilitating the analysis

of the verbatim data and improving its utility and accessibility to the NPD community.

6.2 The Premiumness Verbatim Database

The complex mechanics of analysing the original raw verbatim data identified by the Descriptive Study, together with the limitations imposed on the utility of the data by the manner in which it was stored/formatted, prompted the researcher to look for ways to improve and simplify the process.

6.2.1 Initial Database Design

The process of developing a database for the premiumness verbatim data began in July 2007.

As a first step, the researcher was able to obtain the raw data, by communicating directly with the Agency, which provided a greater level of detail than had been provided to JLR. This removed the initial problem of pre-translation of the data, in which only high-level codes were reported.

The raw data were provided in 3 different formats, similar to those described in chapter 5 section 5.3.3. The transcripts were still provided as tables within MS Word documents, and the respondent demographic data was provided in an MS Excel spreadsheet. The significant change was that the “Database of Answers” and Tabs were superseded by new Excel spreadsheets (see Figure 113)

	A	B	C	D	E	F	G	H	I	J	K
	RESPID	CO	CAR	Q2 code1	Q2 code2	Q2 code3	Q2 code4	Q2 code5	Q2 code6	Q2 code7	Q2 code8
1	1001	2	11	30017009000016	50017712000021	50917009000021	30018012000026	54607202000026	52357301000026	54877202000025	521180
2	1002	2	11	30018101000026	42118028000026	40017401000021	40018210000021	52988075000026	52427234000021	50017708000046	500177
3	1003	2	11	30017021000016	30018101000016	30017006000026	30107700000026	50017301000023	30017100000026	30017801000026	300170
4	1004	2	11	21017002000036	10017306000036	30017439000036	20018406000036	30017202000036	30108406000036	52417420000036	524177
5	1005	2	11	21017202000021	20017006000021	30017401000011	30017501000021	30017033000026	50107901000026	50107442000026	546080
6	1006	2	11	30017401000021	21017503000021	42657202000021	42658001000025	52937801000025	52938008000025	52938010000025	529380
7	1007	2	11	30017036000016	30017401000021	50018075000026	30018210000026	20017401000011	20018405730426	44318022000015	443180
8	1008	2	11	30017202000026	30017008000026	30018405700846	30017304000026	30017007000026	54017212000045	30017401000021	300184
9	1009	2	11	30018093000026	30017306000026	30018219000035	42118045000046	30017202000036	30017210000036	50917226000036	300170
10	1010	2	11	21017001000026	30017401000021	30017501841836	52617301000026	52618011000025	52507232000025	52618002000025	526170
11	1011	2	11	40017006000011	50017432730411	50017009000021	50917223000021	50107801000026	50107901000026	50108212000026	500174
12	1012	2	11	30017023000021	30017401000021	52987301000026	54018012000026	54877201000026	50017008000021	52547301000041	525470
13	1013	2	11	30017006000011	44017301000041	44018418000031	30017401000011	30107901000016	30017708781126	50017600000021	500177
14	1014	2	11	30017304000026	30017202000026	20017424000026	41017401000011	44017401000011	42617401000031	41017504000021	410175
15	1015	2	11	30017202000021	30018105000021	30018104000021	30017009000021	21017006000021	30017401000021	23207202000026	426572
16	1016	2	11	21017444000046	30018219000041	30017207000041	30017401000041	50107901000041	50107442000046	54918036000041	445174
17	1017	2	11	30018405000041	30017207000031	44017226000031	44017202000031	42617202000031	42617412000031	50017210000026	500170
18	1018	2	11	30017401000011	30017301000016	30017006000011	30017009000016	30017302000026	11018101000021	51017006000011	110173
19	1019	2	11	40018406000036	20017425000021	40017006000036	30018090000036	30018219000036	40018405730441	50107424790126	508080
20	1020	2	11	30017001000026	41018406000031	42017304000021	41517460000021	50017401000011	52417715750921	52428036000021	524172
21	1021	2	11	30017006000016	50917301000022	50918075000026	52387445000026	52387445000026	54607905000026	30017301000016	300173
22	1022	2	11	30017401000021	30017207000021	30018101000021	50017401000021	50017703000021	52477301000021	50017611000021	528973
23	1023	2	11	30017302000026	54018210000026	30107901000026	30107901742036	50017708000026	52167301000016	41517301000041	415184
24	1024	2	11	30017401000021	30017202000046	30018094000046	50017401000021	52417712000021	54877210000025	54607301000026	546080
25	1025	2	11	30017301000026	30018005000026	21017000000026	52987301000021	50017214000021	54877301000026	20018405000041	300180
26	1028	2	11	10017001000026	20017001000026	30018106000026	30017202000026	30018202000026	30017006000016	30107901000026	200173
27	2001	2	21	30018435000031	52548015000045	52547901000045	52448061000025	52987211000046	52647227000045	54007213000025	540072
28	2002	2	21								
29	2003	2	21	40017401000031	30017203000046	10017202000026	30018406000026	30018101000026	30018105000046	10018105000026	521077
30	2004	2	21	30017710000046	30018042000046	42617202000045	54877210000045	54917210000026	52987227000046	52417801000046	300184
31	2005	2	21	40017601000031	50018075000021	50917301000026	50917601000041	30017301000016	54877210000021	50918075000016	548772
32	2006	2	21								

Figure 113 Sample of Raw Coded Data (UK)

Each record contained sufficient fields to capture all the codes recorded for each comment⁵¹, per respondent, per car.

MS Access was chosen as the software in which this tool would be developed. This was because it was a tool that was already available to all JLR employees, so is accessible, but also because it is compatible with the existing data sets, and it is possible to use the resulting database with no prior knowledge of MS Access. NVivo is often used to code and interrogate verbatim data; however, it is not particularly user friendly, and more importantly costs over £1000 per licence. NVivo was therefore not a viable option.

The three sets of data were examined in detail, and the relationships between the datasets identified. A relational database structure was then developed (see Figure 114).

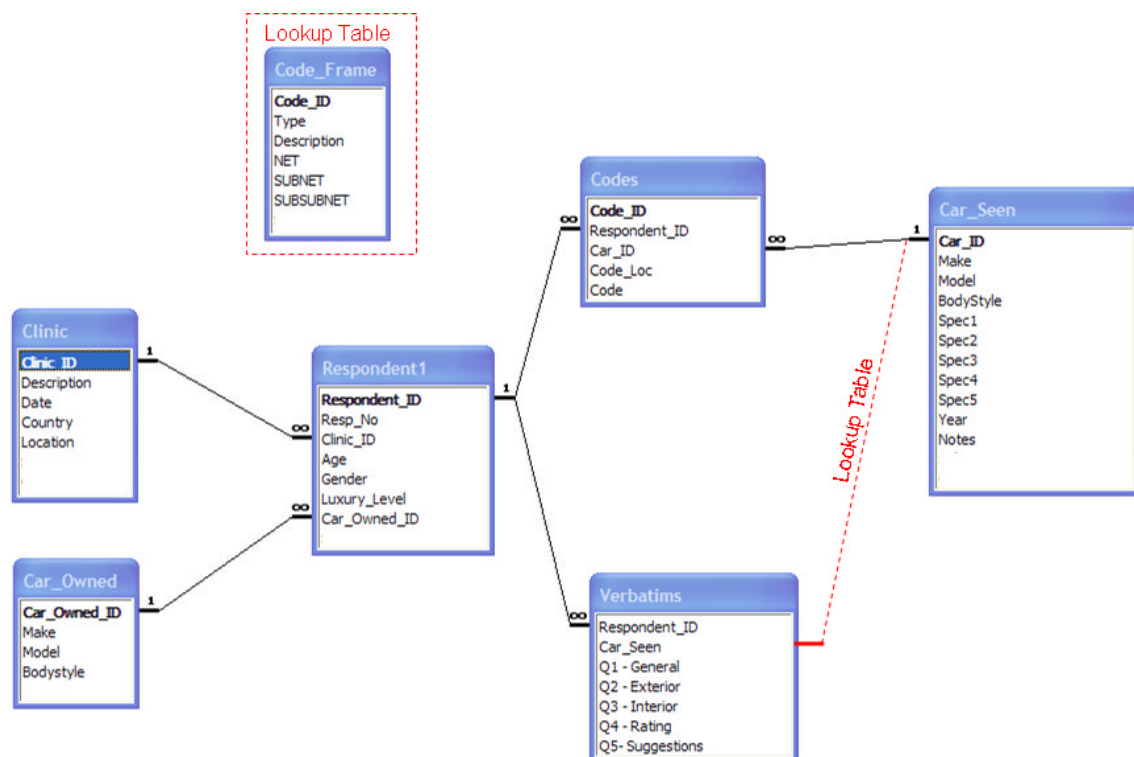


Figure 114 Database Relationships

The key purpose of this structure is to store the various data sets that form the PRP data, without repetition, while enforcing the relationships between the types of data and ensuring consistency of approach.

The ideal solution would have been to split the transcripts into fragments that related to each code. This would have been a more simple and elegant solution that would have reduced the number of data tables and linkages required. However it was found that the way that the respondents actually spoke precluded this: they did not express themselves in easily fragmentable sentences. The sentences were not always complete, and often related to prior

⁵¹ in practice this reached up to 130 codes per "question" (general, exterior, interior, ratings, suggestions)

commentary: separating the verbatims into sentences would therefore have damaged the integrity of the data, exacerbating problems of translation and context. It was therefore decided to use the verbatim as already transcribed, as the questions represented clean positions to separate the data. This results in larger verbatims sections, which requires more effort (and time) to read, however, it was found that the “code location” field of the coding data provided a rough guide to where pertinent comments could be found within the verbatim sections.

The Excel spreadsheets and Word files were used to populate the database, and were migrated using automated macros and queries within Access to minimise error.

No changes were made to the data: for example, typos and errors in the transcripts have not been corrected. This was to ensure that the researcher did not introduce any bias and to ensure consistency with earlier dissemination.

6.2.2 Testing the Initial Design

Listening to the types of questions that were asked by the Seat Comfort Attribute Manager and the PQ team allowed a rich picture to be formed of the real life and singular enquiries that the database needed to be able to support. The progression of the interventions that formed the Descriptive Study therefore allowed the basic structure and functionality of the database to be tested.

The outputs of database queries were compared to the Tab data provided by the Agency, and were found to be consistent. For example, the Tabs give the total weighted⁵² number of positive comments about the Mercedes S Class relating to colour as 100, and negative as 35. The database yields total unweighted counts of 51 and 18 respectively, i.e. weighted counts of 100 and 35.

However, the initial design of the database interface required a detailed knowledge of how the database was constructed and the tables related in order to extract information and knowledge, together with a strong working knowledge of MS Access queries. A user interface was therefore required to enable the database’s intended audience to be able to interrogate the data effectively and safely.

6.2.3 Developing a User Interface

Typically, research data such as this is held by MRO, and reported out to a select audience. Additional enquiries of the research data are conducted on request. This adds to the workload within MRO, potentially resulting in denial of requests, or delays in providing answers. The initial intended audience for this database was therefore the MRO team, so that they could more quickly and easily respond to requests for additional information from the PRP verbatim data.

⁵² Weighted to 100 people, to enable comparisons across the cars, which were viewed by different numbers of people. 51 people viewed the Mercedes S Class, so the weighting to be applied to the database figures to achieve equivalence is 1.96.

However, the value of the research is also limited by the ability of enquirers to couch their requests in terms that MRO can respond to, and by MRO's ability to determine what is important. In the same way that customers cannot articulate latent needs (they can't talk about what they don't know about), without a clear view of the data, it is difficult to judge what the data is capable of revealing: opportunities to maximise the value of the data may be missed. It therefore seemed appropriate to design the user interface such that it was accessible to the wider NPD community.

Enabling access to the verbatim data raises issues of version control and data corruption. It therefore decided to make the data read-only to ensure that accidental or intentional changes were not made. The data can be copied or exported for use in other packages such as Word or Excel, which is necessary to produce decks of the sort developed during the interventions. There is the potential for misuse or misinterpretation of the data once it has been separated from the database, however the utility of the database would be severely comprised without this copy and paste/export facility.

It is possible to add new data to the database in the future by using queries and macros, using the same process with which the tables were originally populated. Adding data does require expert knowledge of the database construction and required formats. However as there are no plans to conduct additional research, a user interface to support this aspect was not created.

The user interface was designed to provide step by step guidance to creating the types of data queries that arose during the Descriptive Study. This interface enables users to select transcripts to view according to the vehicle seen or by respondent demographic (age, gender). Verbatims can also be called up according to the car owned by the respondent, enabling comparisons between JLR owners and non-owners, for example. The interface also enables users to interrogate the coded data to produce tables, enabling users to identify the number of comments made by area, theme and emotion (positive, negative or neutral), by car seen, car owned and by respondent demographic. Elements of such searches took weeks to complete without the database (as evidenced in the Exploratory and Descriptive Studies), and search criteria such as demographic and car owned were not attempted due to the difficulties in aligning the disparate datasets. Now detailed and specific searches can be conducted in minutes, and by non-experts. Finally, the interface simplified the process of identifying pertinent customer quotations to support specific findings in the data.

A User Manual and Training Manual were developed to accompany the database, these are attached at Appendix G. These explain the nature of the queries that can be made, the types of output that can be created, and how these can be achieved.

6.2.4 Premiumness Verbatim Database Roll Out

The database was tested internally within MRO prior to wider release. This included running training programmes to test the effectiveness of the training

manual. Comments received were incorporated into the database interface and documentation as appropriate.

The database has been published on the MRO intranet as a zip file containing the database and the user and training manuals. This intranet site is available to the NPD community and is a valuable but under-publicised resource.

To support the roll-out of the database to the wider NPD community, a CD was created which contained the database, the user and training manuals and also photographs of the vehicles that were evaluated. The photos could not be added to the intranet site due to severe storage space restrictions that are imposed. The use of a CD to roll out the database ensures the “master” is not corrupted, and imparts a level of “safe” portability (it can be shared, but only with the accompanying supporting documentation).

The researcher organised and taught a series of one-to-one training sessions to begin the wider roll-out, leaving a copy of the CD with the trainees. A total of 5 sessions were conducted; recipients included the Seat Comfort Attribute Manager, a PQ technical specialist, two quality managers, and a materials specialist. These sessions were conducted over a period from July 09 to October 09. The training sessions were well received, and feedback has been positive.

6.2.5 Addressing the Problems

The Exploratory and Descriptive studies identified a total of 7 problems that needed to be addressed to improve the effectiveness of the Premiumness Research Programme, relating to the utility of the raw data, the impact of translation and context on the meaning and understanding of the reported findings, the need to share the data and knowledge in a useful format without adding to workloads, to identify the wider audience for the research, and to overcome the lack of stakeholder engagement and motivation in the PRP process.

The database has increased the utility of the PRP verbatim data by enabling non-exert users to access and interrogate the coded verbatim data in a safe and meaningful way, without the need to make the request from the MRO team. This has the added benefit of releasing MRO resources to focus on new market research activities, and helps to keep the premiumness research “top of mind” in the wider NPD community, thus increasing the value obtained from this very expensive research.

The issues of identifying the wider audience falls without the scope of this EngD research project, however, the use of more innovative activities such as the internal workshop described in chapter 5 section 5.5 have improved the wider NPD community’s awareness of the work, and a greater understanding of the findings was passed on through the “learn by doing” approach.

The researcher was able to make some impact on the issue of stakeholder engagement through a process of extended contact. By liaising on a one-to-one basis with key stakeholders, a rich understanding of their needs and wants was developed, resulting in a database that was tailored to suit their

requirements. As a consequence, the database has helped to improve engagement by enabling designers and engineers to make their own enquiries of the data, and because they can use it to address the issues that are important to them, it has also improved motivation to incorporate the PRP findings into their day to day work.

6.3 A Process for Operationalising Luxury

Greenwood states that operationalising a concept requires the identification of *“those variables in terms of which the phenomenon represented by the concept can be accurately observed”* [158]; luxury cannot be directly measured, so must be observed via observation of representative variables.

The literature review identified luxury as a personal and subjective construct that comprises both cognitive and affective information processing systems in the brain. This research has further identified that consumers’ reactions when evaluating luxury and premium vehicles are driven by both holistic and product features.

The need to capture the target consumers’ perceptions of luxury and premium cars and use this to inform JLR’s NPD process has been recognised as critical. However, traditional market research efforts often focus on negative consumer experiences such as TGW [123] [129], and more recent tools that purport to capture the voice of the customer are predominated by numerical and statistical tools that rely on data collected by non-naturalistic and closed methods. Existing techniques have therefore been found to be insufficient, as they:

- fail to capture the subjective and personal nature of a consumer’s experience of luxury,
- focus on the cognitive (rational) aspects, ignoring the affective (emotional) influences, and
- focus on product features at the expense of holistic perspectives.

The ability to operationalise (“measure”) luxury therefore represents an opportunity for JLR to create significant competitive advantage.

JLR’s Premiumness Research Programme is an innovative and powerful process for collecting rich and deep data from customers about luxury vehicles, which addresses many of the shortcomings of traditional market research techniques.

The multi-method approach captures data about consumer pre-evaluation expectations, subsequent disconfirmation of expectations, emotional reactions during naturalistic product evaluation (data which approaches the Gemba⁵³) and self-reported rational ratings of satisfaction with specific product attributes. Both qualitative and numerical data is collected.

The numerical data is clinical, rational, and predominantly but not exclusively feature/attribute based. It provides a robust basis for comparison and/or

⁵³ A Japanese term for the true source of information [129].

benchmarking of competitor vehicles, and for longitudinal tracking of performance, but the significant short-coming of numerical data in this context is that it offers no justification for why consumers hold particular views. Numerical data provides no context from which to derive meaning.

The qualitative data is emotional, rich in detail, naturalistic and captures both holistic and feature-based reactions. However, it cannot be used effectively in the NPD environment without some measure of translation, the quality and accuracy of which directly impact on its reliability and validity.

JLR therefore had a rare and unique opportunity to gain competitive advantage from their operationalisation of luxury. However, meeting the academic definition of operationalisation is not sufficient to realise this opportunity: operationalisation in practice was also required.

This research, Burns [123] and Guldbrandsen [119] have each identified difficulties in the transfer of customer information from the market research domain to the design/engineering environment. Burns highlighted the fact that translation and summarisation decreased the quality of data and provided a diluted view of the customer. Guldbrandsen identified that confidence in the commutability of translations from the voice of the customer to technical specifications (“what” to “how”) was adversely affected for NQPQs.

This research found that while the significance of the qualitative verbatim data was recognised by JLR, its value to the NPD process was eroded by summary reporting and over-translation⁵⁴ which ultimately led to a reliance on an inappropriate quasi-quantitative metric as a measure for luxury.

Tools such as QFD and Kansei, which purport to manage this transfer from market research to design, assume causal relationships between subjective constructs and product features, and assume that these relationships can be represented by quantitative measures. They do not therefore provide a useful vehicle for managing those non-quantifiable elements of the voice of the customer.

This research challenges the view that only translated and summarised data should be provided to the NPD community by developing a database analysis tool that enabled designers and engineers to develop more focused and deeper insights from the data to better inform the vehicle attributes for which they were responsible, while retaining context and meaning.

The Premiumness Verbatims Database therefore represents a valuable addition to the Premiumness Research Programme toolkit (Figure 115), that enables the wealth of data available from the research to be incorporated into day to day design and development activities within JLR, thus enabling the opportunity to gain competitive advantage to be realised.

⁵⁴ Confirming Burns' view.

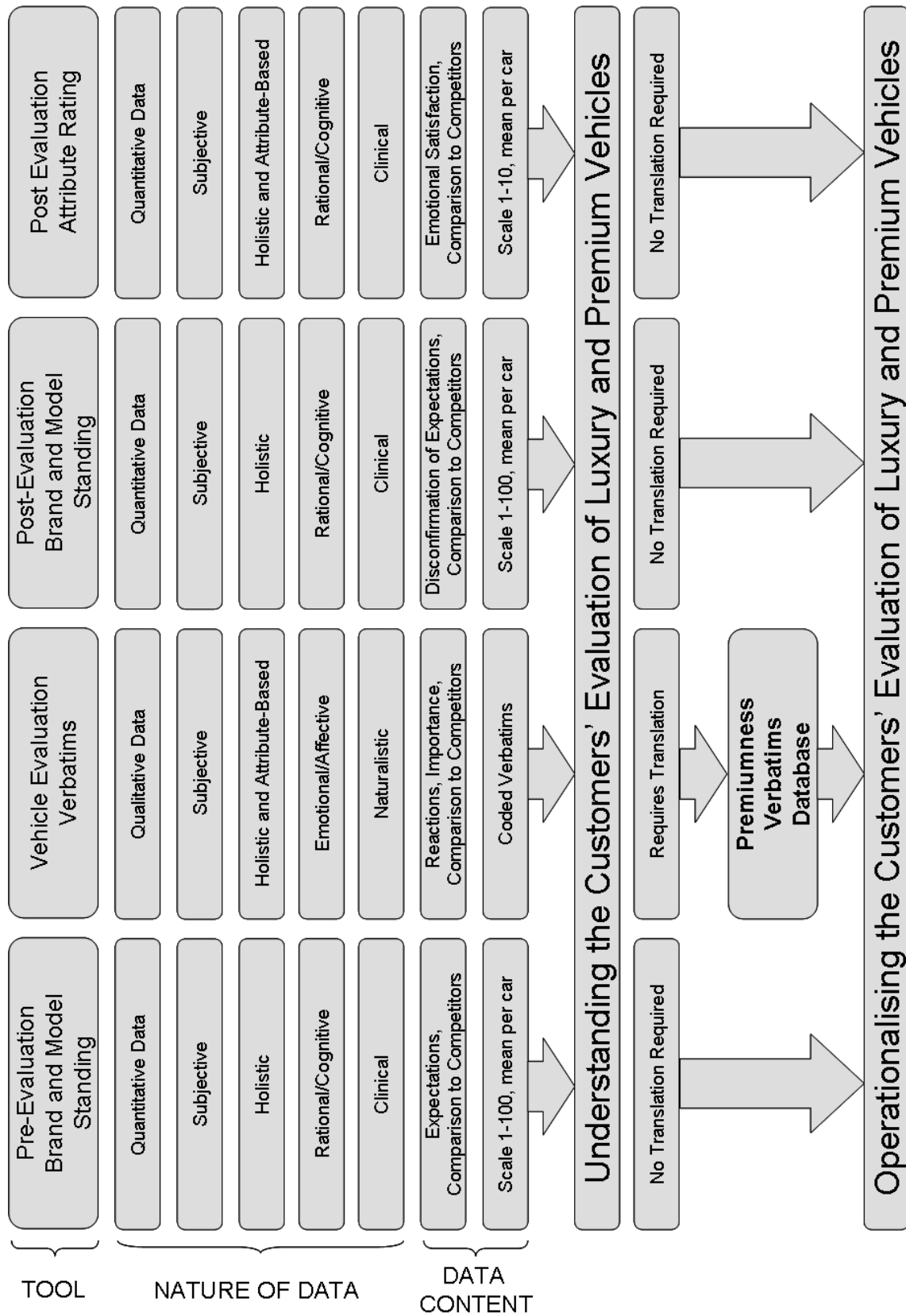


Figure 115 Operationalising Luxury in JLR

6.4 Chapter Summary

The major findings of the exploratory and descriptive studies were confirmed, which were that the value of the PRP process was eroded by limitations in JLR's ability to process and operationalise the resulting data and knowledge.

The Premiumness Verbatims Database tool was developed to resolve the issues identified. The organic process by which the tool was designed and developed was discussed, this was based on the rich and deep understanding of both the raw data and the needs of the NPD community that were revealed during the Descriptive Study. The decision processes employed during this process were described and lessons learned were discussed.

The development of the user interface to enable non-experts to use the tool, and the implications for the utility of the data were considered.

The training and roll-out programme by which the tool was deployed within JLR was described. The tool was found to be well received within the pilot group.

The success of the tool in addressing the problems identified by this research, such as improving the utility of the data, sharing the PRP findings in a useful and meaningful way, and engaging stakeholders was confirmed.

The shortcomings of traditional market research techniques in capturing and using the voice of the customer regarding luxury and premium vehicles were highlighted

The opportunity presented by the JLR PRP approach in operationalising luxury was discussed, and the difficulties in making the transfer of such knowledge from the market research domain to the design environment were raised. The limitations of existing tools for preparing the voice of the customer for use by the NPD community were stated.

The contribution of the Premiumness Verbatim Database tool to the Premiumness Research Programme toolkit was acknowledged, and the success of the modified PRP approach in capturing the customer's perception of luxury when evaluating luxury and premium cars and embedding that understanding in the NPD process was confirmed.

7 CONCLUSION



Aim To review the success of this research in meeting its objectives, to identify clearly its contributions to knowledge and practice, and to reflect on its strengths and weaknesses. To make recommendations for future research.

7.0 Chapter Structure

The chapter begins by reviewing the research objectives and how they have been met by this research. The research's contribution to knowledge and practice are presented, and the strengths and weaknesses of the work are discussed. Recommendations for future research are then made, and the thesis is concluded.

7.1 Research Objectives

A measure of the success of this EngD research project is whether its Research Objectives have been met and how this has been achieved. The delivery of each of the Research Objectives is therefore discussed in turn.

7.1.1 RO1 - Derive a flexible model of luxury in the context of the premium automotive industry

Luxury has been identified as a subjective and personal construct, evaluations of which are driven by both product attribute and holistic factors that comprise both rational and emotional brain processes. A “one size fits all” model of luxury that attempts to create a “ $x + y - z = \text{luxury}$ ” approach is restrictive and inappropriate, and could ultimately lead to the erosion rather than improvement of consumer evaluations of JLR’s luxury and premium product offerings. A more flexible approach is therefore appropriate.

Vigneron’s model (Figure 11, page 19) provides a robust basis for understanding luxury as a general concept, and the PRP research enabled the research to propose a model of the nature of consumer reactions when evaluating luxury and premium cars (Figure 47, page 107). This model can be used to extend Vigneron’s proposal to create a specific model for luxury automotive products (Figure 116):

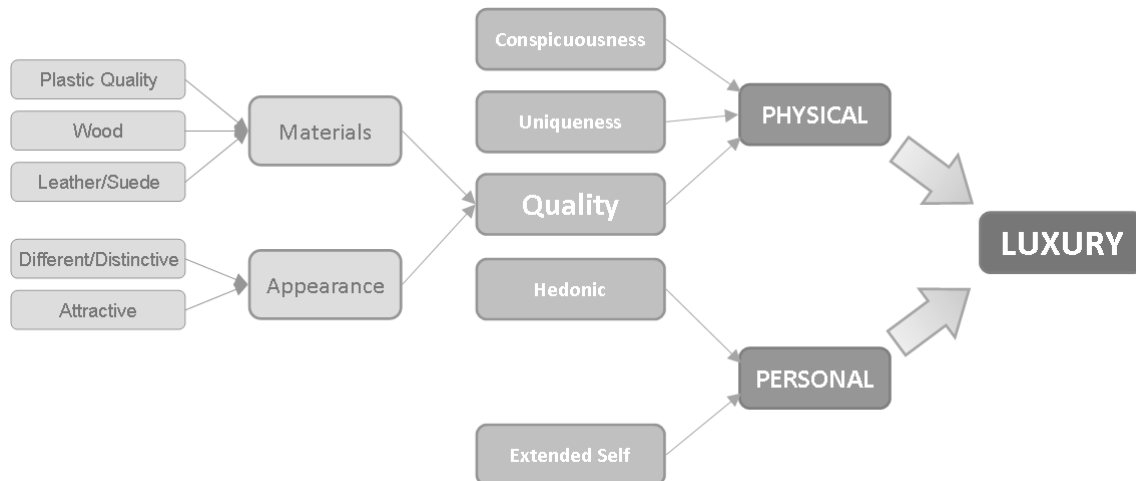


Figure 116 A Luxury Car Extension for Vigneron's Model of Luxury

7.1.2 RO2 - Evaluate the effectiveness and validity of the JLR PRP as a robust and useable technique for the assessment of luxury in vehicles and brands

The Premiumness Research Programme implemented a powerful multi-method approach that captured customers' rational evaluations and emotional reactions during the pre-purchase and post-consumption evaluation of luxury and premium vehicles, allowing both feature/attribute-based and holistic influences to be observed within clinical and naturalistic settings.

The brand standing exercise provides a robust view of consumers' assessment of Jaguar and Land Rover brands relative to competitor and non-competitor brands, both luxury and mass-produced. This complements existing external brand studies that are already available to JLR through the MRO, such as specific luxury studies from Ledbury and Millward Brown.

The model standing exercise provides a robust view of consumers' assessment of specific JLR models relative to competitor and non-competitor vehicles. The repetition of this exercise pre- and post- vehicle evaluation gives a measure of consumers' expectations before seeing the vehicles and a measure of their disconfirmation of expectations on experiencing the vehicles. The benefit of this approach is that it captures a perspective on consumer's unconscious and expectations, reducing bias due to personal preconceptions towards specific brands.

The non-directed vehicle evaluation exercise elicits powerful insights into the nature of customer evaluations of luxury and premium vehicles (how consumers assess the cars and what things they talk about), capturing a naturalistic perspective of their unprompted emotional reactions, and the codification of the verbatims provides a strong basis for comparing competitor vehicles at a holistic and product feature level.

The PALS attribute rating exercise provides a view of consumers' rational assessment of specific product features and characteristics.

Individually, these tools offer few advantages over some of the tools discussed in the literature review. However, in combination, these exercises capture a rich, multi-perspective picture of consumers' assessments of luxury vehicles. This specific approach also avoids the significant limitation of the tools discussed in the literature review in that the outcomes of the vehicle evaluation exercise retains meaning and context by not forcing numerical translations onto the data.

7.1.3 RO3 - Explore how JLR PRP datasets might be better exploited within the company

The PRP was validated as a powerful tool for the collection of multi-perspective data about consumers' assessments of luxury and premium vehicles. However, it was found that the analysis of that data and dissemination of resulting knowledge was inadequate, particularly with respect to the verbatim data. The interventions conducted for the descriptive study uncovered the nature of information required by the wider NPD community, identifying the types of questions they needed answers to, and the formats in which they needed the information to be presented. The manner in which the interventions were conducted yielded both explicit and latent needs.

The interventions, coupled with the development of the Premiumness Verbatims Database tool, further established that it was possible to manipulate the data in a way which met these needs, by enabling the coded verbatim data to be interrogated at the required levels of detail.

7.1.4 RO4 - Specify and develop a toolset to enable appropriate levels of premiumness and luxury to be re-established into the Jaguar and Land Rover brands

A critical factor for the successful re-establishment of luxury into the JLR brands is the level of the NPD community's understanding of the PRP

This EngD research identified that the main obstacles to JLR's successful integration of the PRP research into the NPD environment related to their ability to use and share the verbatim data. These issues included the poor utility of the raw data, the detrimental impact of translation and context on the meaning and understanding of the reported findings and the need to share the data and knowledge in a useful format without adding to workloads.

The Premiumness Verbatim Database tool has addressed these issues, complementing the existing PRP toolset and enabling JLR to take advantage of the opportunities that the PRP research affords.

JLR's ability to maximise the opportunity presented by this research was also constrained by their reach and visibility within the NPD community, and by that community's reluctance to engage in the process. This was resolved in some part by the Internal Workshop activity which this EngD was instrumental in developing, and which now also forms part of the PRP toolset.

7.1.5 RO5 - *Evaluate the toolset by implementing it within the New Product Introduction Process for at least one new vehicle development programme*

The Premiumness Verbatim Database tool has been introduced to the NPD through one-to-one training sessions and is freely available to the wider community via the MRO intranet website. The database has proved to be a valuable resource to the researcher in developing the many reports that have been delivered during the course of this EngD research. The flexibility of the database has increased the utility of the data and has enabled engineers and designers to extract pertinent data and quotations to support their decision making processes.

7.2 Thesis Contributions

The contributions of this thesis in terms of novelty, contribution to knowledge and contribution to practice are discussed below.

7.2.1 Novelty

The concept of luxury has been the subject of academic debate for centuries. More recent enquiries in the field have been predominantly concerned with luxury at brand level, and are centred around the marketing aspects of gathering and using customer insights to direct business and marketing strategic developments. The emerging field of Emotional Design attempts to bring this focus to the product development environment, but remains focused at the marketing/design interface, neglecting the downstream engineering and manufacturing functional boundaries, and has so far failed to establish a consistent and standardised approach to gathering and using customer insight about luxury effectively in the NPD environment. Existing tools and techniques either fail to consider the transfer of customer insight to the engineering domain completely, or enforce numerical and/or pre-determined translations that erode context and meaning, and lead to flawed assumptions and poor decision making.

This research is novel for the following reasons:

- It focuses on understanding the fundamental nature of customer evaluations of luxury vehicles rather than attempting to establish a link between product features or attributes and resulting customer reactions/emotions.
- Insights about customer evaluations of luxury cars are developed using a bottom-up approach rather than imposing a pre-determined framework on the data.
- The scope of the research focuses on the transfer of customer insights beyond the industrial design phase of NPD, and considers how they can be used to inform the detailed design, development, engineering and manufacturing processes.
- It establishes a methodology by which non-translated customer data can be utilised in a robust and safe manner by the wider NPD community,

rather than restricting the dataflow to codified and summarised information that lacks context and meaning.

7.2.2 Contribution to Knowledge

The phenomenological approach adopted by this research has resulted in the following contributions to knowledge:

- A multi-method technique for capturing customers' cognitive and affective reactions when evaluating luxury and premium vehicles is proposed, implemented and validated.
- The limitations and dangers of over-translation and abstraction of data are demonstrated. In particular, the conversion of non-quantifiable, context-reliant data to numerical metrics was shown to be inaccurate and misleading.
- A bottom-up framework for the coding of customer comments that encapsulates the nature of customer evaluations of luxury and premium vehicles is presented.
- An extension for Vigneron's model of luxury is proposed to incorporate the key drivers of customers' perceptions of quality and premiumness when evaluating luxury and premium vehicles.
- A methodology for embedding an understanding of the nature of customer evaluations of luxury and premium vehicles within the wider NPD community, and enabling self-analysis of the data by non-experts, is proposed, implemented and validated.
- The assumption that internal company experts can act as a proxy for the luxury consumer is challenged.
- The importance of strategic alignment and upper-management support to the successful integration of luxury improvement efforts is demonstrated.

7.2.3 Contribution to Practice

The interactive nature of this research has resulted in a number of contributions to practice that are currently being used within JLR.

- The PRP multi-method approach for collecting and recording data about customers' rational evaluations and emotional reactions during the pre-purchase and post-consumption evaluation of luxury and premium vehicles has been validated.
- New techniques for creating insights from the qualitative and quasi-quantitative data and presenting that knowledge within the wider NPD community have been created and tested.
- A Premiumness Verbatims Database tool has been developed and published which enables non-experts within the wider NPD community to access and interrogate customer information about luxury and premium cars.

- A means of maintaining links from numerical target-like data to consumer responses has been provided.
- A mechanism to enable better exploitation of existing market research data within JLR has been developed and tested.
- The PRP data has been permeated to a much wider audience within JLR, as a result of this EngD research.
- A mechanism for continued and non-expert interrogation of the PRP data has provided JLR with the ability to maximise the value and benefit of its expensive customer research activities.

7.3 Reflection on Strengths and Weaknesses

7.3.1 Strengths

This research has integrated cognitive and affective approaches to gaining customer insights that has created a richer and more reliable picture of the nature of customer reactions when evaluating luxury and premium cars.

The non-directed nature of the vehicle evaluation stage of the PRP methodology elicits consumers non-rational reactions without bias.

The findings of the research are grounded in the customers' experiences of evaluating luxury and premium cars, rather than being driven by preconceived notions about the nature of those experiences.

The action research approach of this work allowed the researcher to gain deep insights into the wants and needs of JLR, which enabled a tailored solution to be developed for them.

The findings of this research are revealing and practical, such that they can be implemented without further study.

The researcher's interactions with the L486/L538 vehicle development programme allowed the research to have an immediate impact on the NPD decision making processes. The influence of the PRP findings on the 2010 model year Land Rover and Range Rover offerings has been acknowledged.

7.3.2 Weaknesses

The phenomenological nature of the research means that traditional measures of reliability are not appropriate.

This research has deliberately avoided being drawn into detailed and statistical and numerical analyses of the (quasi) quantitative data that has been collected, instead focusing on the nature of the data rather than its specific content. The subsequent lack of understanding of the relationships (or not) between the different data sets is therefore an area of weakness, especially where there appear to be conflicts.

The research is entirely focused on one company within the automotive industry. While this has resulted in deep insights into this particular firm, it may

also impact on the generalisability of the findings to other luxury industries or the broader industrial context.

7.4 Recommendations

7.4.1 For Future Academic Research

Further academic research is recommended in the following areas:

- What is the priority that consumers' place on the drivers of luxury and premiumness that have been identified by this research, and how are these influenced by contextual parameters?
- The relationships between the rational and emotional aspects of customers' evaluations of luxury and premium cars.
- Is there a correlation between pre and post consumption evaluations of luxury: for example, how do independent or syndicated studies such as JD Power APEAL, NCBS and NVES (which are post-purchase surveys) relate to pre-purchase evaluations?

7.4.2 For Practitioners

There are several addition research activities which are recommended to JLR:

- To conduct a further PRP clinic to assess the impact of newer competition and JLR models. For example, the Jaguar XF has not been subjected to this study, nor the Land Rover 2010 Discover, Range Rover or Range Rover Sport models. The competition has also advanced in the three or four years since the PRP data was collected. This is of particular importance as feedback was already being received from the engineering community that the data was being perceived as irrelevant due to the model years that it included. Additional research is therefore also needed to see if the PRP messages change over time (i.e. are they product feature/attribute related, or driven by something else?).
- To continue to conduct internal workshops for new model programmes to ensure the wider NPD community is exposed to the PRP findings.
- To continue the roll-out of the Premiumness Verbatims Database tool training programme to ensure the wider NPD community is able to personalise the research findings to suit their needs.
- To ensure that market research efforts are more effectively publicised within the firm, so that the wider NPD community becomes aware of the capabilities of the MRO group (avoiding duplication of effort, optimising the expertise available in-house, and reducing the risk of failure due to methodological errors).
- To adopt the Premiumness Tracker technique that was developed for use with the APEAL/NCBS/NVES data, to track longitudinal premiumness performance in a post-consumption/ownership context, thereby increasing the value of their existing research instruments.

7.5 Closing Remarks

The original aim of this EngD research project was to investigate how customers' perceptions of premium and luxury cars could be operationalised within JLR. Using JLR's Premiumness Research Programme as a case study as a basis for action research interventions, the findings of this research have provided new insights into the nature of customer reactions when evaluating luxury and premium vehicles, and established a methodology by which such knowledge can be utilised within the wider NPD community in a safe and meaningful way. The EngD research project has therefore achieved its objectives. Suggestions for further academic and practitioner research have been made.

8 REFERENCES



- [1] Laursen, M, Sommerfield, B; *"Premium vs Luxury" (presentation)*. Volvo / ASW Roper Study. 2002. Internal Ford document (unpublished) from Ford Intranet, www.automotivestrategy.ford.com.
- [2] Volvo; *"Volvo: defining 'premium' across generations of the modern family"*. Iconoculture, Inc, September 2001. Internal Ford document (unpublished) from Ford Intranet, www.automotivestrategy.ford.com.
- [3] JLR; *"Luxury: Qualitative Research Debrief" (presentation)*. JLR Market Research Office, 19th February 2000. Internal JLR document (unpublished).
- [4] JLR; *"What makes a premium brand premium ? Output from WPP multi-disciplinary workshop" (presentation)*. JLR Market Research Office. Internal JLR document (unpublished).
- [5] JLR; *"What is premiumness? Qualitative findings from UK and USA research – executive summary" (presentation)*. JLR Market Research Office, June 2005. Internal JLR document (unpublished).
- [6] Law, B; *Defining Craftsmanship in the Premium Automotive Industry*. MSc Thesis, Warwick University, 28th January 2005.
- [7] Akao, Y (ed); *Quality Function Deployment. Integrating Customer Requirements into Product Design*. Productivity Press, Oregon, 1990.
- [8] Nagamachi, M; *Kansei Engineering and New Product Development. A Special Seminar on Kansei Engineering. The 11th Symposium on QFD*, Novi, Michigan, USA, June 12 1999.
- [9] *The Concise Oxford Dictionary*, 2nd Edition, 1989.
- [10] *The Original Roget's Thesaurus of English Words and Phrases*. Longman, 1987.
- [11] *Thesaurus*, Microsoft Word 2002.
- [12] Vigneron, F, Johnson, K; *A Review and a Conceptual Framework of Prestige-Seeking Consumer Behavior*. *Academy of Marketing Science Review*, Volume 1999, No 1, 1999 .
- [13] Besley, T; *A Definition of Luxury and Necessity for Cardinal Utility Functions*. *The Economic Journal*, Vol 99, No 397, pp 844-849, Sept 1989.
- [14] Nellis, J, Parker, D; *Principles of Macroeconomics*. Prentice Hall, 2004.
- [15] Rickard, S; *The Economics of Organisations and Strategy*. McGraw Hill, 2006.

- [16] Veblen, T; *The Theory of the Leisure Class*, New York: Macmillan, 1889.
- [17] Piccione, M, Rubinstein, A; *Luxury Prices: An Expository Note*. Working Paper No.19-2004, June 2004. The Foerder Institute for Economic Research and The Sackler Institute of Economic Studies, The Eitan Berglas School of Economics, Tel-Aviv University.
- [18] Nueno, J, Quelch, J; *The mass marketing of luxury*. Business Horizons, Nov–Dec 1998, pp 61–68. (from [30])
- [19] National Tour Association; *The Psychology of Travel – What is Luxury?*. January 2003, http://www.ntaonline.com/staticfiles/psychtravel_luxury.pdf (no longer available online).
- [20] Gardyn, R; *Oh, the Good Life*. American Demographics, 1st Nov 2002. http://www.findarticles.com/p/articles/mi_m4021/is_2002_Nov_1/ai_93089467/print
- [21] Dubois, B, Czellar, S, Laurent, G; *Consumer Segments Based on Attitudes Toward Luxury: Empirical Evidence from Twenty Countries*. Marketing Letters, Volume 16, Issue 2, pp115-128, 2005.
- [22] Danziger, P; *Motivators to Buy Luxury – the Drive for Self-Actualisation*. 2Q2004. <http://www.unitymarketingonline.com/reports2/luxury/luxury2Q2004.html>
- [23] Berry, C; *The Idea of Luxury. A Conceptual and Historical Investigation*. Cambridge University Press, 1994.
- [24] Carbonaro, S; *The Pyramid of Luxury and “Democratization” of Luxury* (abstract). Designing Designers 2006 Conference, Milan, Italy, 6th April 2006.
- [25] Leadbetter, C; *What is luxury?*. <http://www.charlesleadbeater.net/cms/site/news/what-is-luxury.aspx>
- [26] Gault, A, Meinard, Y, Courchamp, F; *Consumers' taste for rarity drives sturgeons to extinction* (original pre-publication title: *Less is more: rarity trumps quality in luxury markets*). Conservation Letters, Volume 1, Issue 5, pp199-207, 5 November 2008.
- [27] Yap, L; *What is Luxury?* Driven, October 4th 2006. <http://www.drivenmag.com/599.0.html?&nid=2128> (no longer available online)
- [28] Graham P and Matthews, R; *The Changing Face of Luxury*. Know, Spring/Summer 2004. http://www.knowledgenetworks.com/know/2004/spring/KNOW_CHANGINGFACEOFLUXURY.pdf
- [29] Eisenstein, P; Q&A: Ford's Peter Horbury. The Car Connection, Oct 4th 2004. http://www.thecarconnection.com/Auto_News/Daily_Auto_News/QA_Fords_Peter_Horbury.S173.A7618.html (no longer available online).
- [30] Vigneron, F, Johnson, L; *Measuring Perceptions of Brand Luxury*. The Journal of Brand Management, Vol 11, No 6, pp 484-506, July 2004.

- [31] Allsopp, J; *Premium Pricing: Understanding the Value of Premium*. Journal of Revenue and Pricing Management, Jul 2005, Vol 4, No 2.
- [32] Imber, A; *Turn your Brand Premium*. B&T. <http://www.bandt.com.au/news/71/0c031d71.asp>
- [33] Anonymous; *Science and Technology: Hitting the spot; Pricing and the brain*. The Economist, Vol 386, Iss 8563, pp79, Jan 19 2008.
- [34] Plassmann, H, O'Doherty, J, Shiv, B, Rangel, A; *Marketing actions can modulate neural representations of experienced pleasantness*. Proceedings of the National Academy of Sciences of the United States of America, Volume 105, Issue 3, pp 1050-1054, 22 January 2008.
- [35] Sodhani, V; *Target your "truly consuming" homes better with Household Potential Index (HPI) from IRS*. http://www.exchange4media.com/e4m/media_matter/matter_130705.asp
- [36] Quelch, J; *Marketing the Premium Product*. Business Horizons, May/June 1987, Vol 30, Iss 3, pp 38-45.
- [37] Misiura, S; *Heritage Marketing*. Butterworth Heinemann, November 2005.
- [38] Smith, R; *Key to Tapping into a Premium Market*. Marketing, London, Apr 4 2002, pp 25.
- [39] Pratchett, T, Stewart, I, Cohen, J; *The Science of the Discworld II, The Globe*. Ebury Press, 2003.
- [40] Jackson, F; *Epiphenomenal Qualia*. Philosophical Quarterly, Vol 32, pp 127-136, 1982.
- [41] Dennett, D; from *Qualia*. Wikipedia, <http://en.wikipedia.org/wiki/Qualia>
- [42] Norman, D; *Emotional Design*. Basic Books, 2004.
- [43] Wikipedia; *Gestalt Psychology*. http://en.wikipedia.org/wiki/Gestalt_psychology
- [44] Gotlieb, JB, Grewal, D, Brown, SW; *"Consumer Satisfaction and Perceived Quality: Complementary or Divergent Constructs ?"*. Journal of Applied Psychology, Vol 79, No 6, pp 875-885. Dec 1994.
- [45] Teas, R Kenneth; *"Expectations, Performance Evaluation, and Customer's Perceptions of Quality"*. Journal of Marketing, Vol 57, Iss 4, pp 18-34, Oct 1993.
- [46] Bou-Llusar JC, Camison-Zornoza C, Escrig-Tena A B; *"Measuring the relationship between firm perceived quality and customer satisfaction and its influence on purchase intentions"*. Total Quality Management, Vol 12, No 6, pp 719-734, Sep-01.
- [47] Anderson, EW, Sullivan, MW; *"The antecedents and consequences of customer satisfactions for firms"*. Marketing Science, Vol 12, No 2, pp125-143, Spring 1993.
- [48] Giese, J, Cote, J; *"Defining Consumer Satisfaction"*. Academy of Marketing Science Review, Vol 2000, 2000.

- [49] Oliver, R; "Measurement and Evaluation of Satisfaction Processes in Retail Settings". *Journal of Retailing*, Vol 57, Iss 3, pp25-46, Fall 1981
- [50] Zeithaml VA ; "Consumer perceptions of price, quality and value: a means-end model and synthesis of evidence". *Journal of Marketing*, Vol 52, Iss 3, pp 2-22, Jul-88.
- [51] Anderson, E, Fornell, C, Lehmann, D; "*Customer satisfaction, market share, and profitability: findings from Sweden*". *Journal of Marketing*, Vol 58, Iss 3, pp 53-56, Jul 94.
- [52] Chebat, JC, Filiatrault, P, Gelinas-Chebat, C; "*Impact of Waiting Attribution and Consumer's Mood on Perceived Quality*". *Journal of Business Research*, Volume 34, Iss 3, pp 191-196, Nov 1995.
- [53] Teas, RK, Agarwal, S; "*The effects of extrinsic product cues on consumers' perceptions of quality, sacrifice and value*". *Journal of the Academy of Marketing Science*, Vol 28, Iss 2, pp278-290, Spring 2000.
- [54] Hellofs, LL, Jacobson, R; "Market Share and Customers' Perceptions of Quality: When can Firms Grow Their Way to Higher Versus Lower Quality ?". *Journal of Marketing*, Vol 63, Iss 1, pp 16-25, Jan 1999.
- [55] Porter, ME; "Competitive Strategy: techniques for analyzing industries and competitors". The Free Press, New York, 1988.
- [56] Kondo, Y; "*Customer Satisfaction: How Can I Measure It ?*". *Total Quality Management*, Vol 12, No 7&8, pp867-872, Dec 2001.
- [57] Ishikawa, K; "*Introduction to Quality Control*". Chapman & Hall, London, 1990.
- [58] Kano, N, Seraku, N, Takahashi, F, Tsuji, S; "*Attractive Quality and Must-Be Quality*". *The Best on Quality*, edited by John D. Hromi. Volume 7 of the Book Series of the International Academy for Quality. Milwaukee: ASQC Quality Press. 1996.
- [59] Swan, JE & Trawick, IF; "*Disconfirmation of expectations and satisfaction with a retail service*". *Journal of Retailing*, Vol 57, Iss 3, pp49-67, 1981.
- [60] Rust, RT, Inman, JJ, Jia, J Zahorik, A; "What you Don't Know About Customer-Perceived Quality: The Role of Customer Expectation Distributions". *Marketing Science*, Vol 18, No 1, pp77-92, 1999.
- [61] Grewal, D & Monroe, B; "*The effects of contextual information cues on buyer's product evaluations and behavioural intentions*". *Enhancing knowledge development in marketing* (ed P Bloom et al), Vol 55 pp 274, American Marketing Association, 1989.
- [62] Lichtenstein, D & Bearden, W; "*An investigation of consumer evaluation of reference price discount claims*". *Journal of Business Research*, Vol 17, Iss 2, pp189-200, Sep-88.
- [63] Bolton, R & Drew, J, "*A multistage model of customer's assessments of service quality and value*". *Journal of Consumer Research*, Vol 17, Iss 4, pp 375-384, 1991.
- [64] Brown, S & Swartz, T; "*A gap analysis of professional service quality*". *Journal of Marketing*, Vol 53, Iss 2, pp92-98, Apr-89.

- [65] Parasuraman, A, Zeithaml, V and Berry, L; *"SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality"*. Journal of Retailing, Volume 64, Number 1, Spring 1988.
- [66] Churchill, G & Surprenant, C; *"An investigation into the determinants of customer satisfaction"*. Journal of Marketing Research, Vol XIX, Iss 000004, pp491-504, Nov-82.
- [67] Oliver, RL; *"A cognitive Model of the antecedents and consequences of satisfaction decisions"*. Journal of Marketing Research, Vol 17, Iss 4, pp460-469, Nov-80.
- [68] Oliver, R and De Sarbo, WS; *"Response determinants in satisfaction judgements. Journal of Consumer Research"*, Vol 14, Iss 4, pp495-507, Mar-88.
- [69] Oliver, R & Swan J; *"Consumer perceptions of interpersonal equity and satisfaction in transactions: a field survey approach"*. Journal of Marketing, Vol 53, Iss 2, pp 21-35, April 1989.
- [70] Anderson, EW, Fornell, C; *"A Customer Satisfaction Research Prospectus"*. From:- Service Quality: New directions in Theory and Practice, Ed R Rust & R Oliver, Sage Publications, 1994.
- [71] Garbarino, E & Johnson, M; *"The different roles of satisfaction, trust, and commitment in customer relationships"*. Journal of Marketing, Vol 63, Iss 2 pp 70-87. April 1999.
- [72] Methlie, LB, Nysveen, H; *"Loyalty of Online Bank Customers"*. Journal of Information Technology, Vol 14, Iss 4, pp375-386, Dec 1999.
- [73] Parasuraman, A, Berry, L and Zeithaml, V; *"An Empirical Examination of Relationships in an Extended Services Quality Model"*. Marketing Science Institute, Report 90-122. 1990
- [74] Qualls, WJ, Rosa, JA; *"Assessing Industrial Buyers' Perceptions of Quality and their Effects on Satisfaction"*. Industrial Marketing Management, Vol 24, Iss 5, pp 359-368, Oct 1995.
- [75] Agarwal, S, Teas, RK; *"Perceived Value: Mediating role of Perceived Risk"*. Journal of Marketing, Vol 9, Iss 4, pp1-14, Fall 2001.
- [76] Selnes, Fred ; *"An examination of the effect of product performance on brand reputation, satisfaction and loyalty"*. European Journal of Marketing, Vol 27, Iss 9, pp 19-35, 1993.
- [77] Bolton, R, Drew, J; *"Linking Customer Satisfaction to Service Operations and Outcomes"*. From:- Service Quality: New directions in Theory and Practice, Ed R Rust & R Oliver, Sage Publications, 1994.
- [78] Bakamitsos, G; A; *A Cue Alone or a Probe to Think? The Dual Role of Affect in Product Evaluations*. Journal of Consumer Research, Vol 33, Issue 3, pp 403-412, December 2006.
- [79] Gronholdt L, Martensen A, Kristensen K; *"The relationship between customer satisfaction and loyalty: cross-industry differences"*. Total Quality Management, Vol 11, No 4/5&6, pp S509-S514, Jul-00.

- [80] Kristensen K, Martensen A, Gronholdt L; "*Measuring the impact of buying behaviour on customer satisfaction*". Total Quality Management, Vol 10, Nos 4&5, ppS602-S614, July 99.
- [81] Khan, U, Dhar, R, Wertenbroch, K; "*A Behavioural Decision Theoretic Perspective on Hedonic and Utilitarian Choice*". INSEAD Working Paper Series 2004/66/MKT, August 2004.
- [82] Khaneman, D; *Judgement and Decision Making: A Personal View*. Psychological Science, Vol. 2 Issue 3, p142-145, May 1991.
- [83] Kidwell, B, Hardesty, D, Childers, T; Consumer Emotional Intelligence: Conceptualization, Measurement, and the Prediction of Consumer Decision Making. Journal of Consumer Research, Vol 35, June 2008.
- [84] Goffin, K; Innovation Management: Key Tools and Techniques. June 2005.
<http://www.som.cranfield.ac.uk/som/research/centres/cips/downloads/poster.pdf> (no longer available online).
- [85] Mukherjee, A, Hoyer, W; *The Effect of Novel Attributes on Product Evaluation*. Journal of Consumer Research, Vol 28, pp 462-472, December 2001.
- [86] Burns, A; The Phenomenology of Customer Delight: a case study of product evaluation. PhD Thesis, Cranfield University, 2003.
- [87] Desmet, P; *A Basic Typology of Product Emotions*. Proceedings of the 4th International Conference on Design and Emotion, Ankara, Turkey, 12-14 July 2004.
- [88] Shaver, P, Schwartz, J, Kirson, D, O'Conner, C. *Emotion knowledge: further exploration of a prototype approach*. Journal of Personality and Social Psychology, Volume 52, Issue 6, pp 1061-1086, 1987.
- [89] van Hout, M; *Design & Emotion*. www.design-emotion.com.
- [90] Design & Emotion Society. <http://www.designandemotion.org/>
- [91] Childs, T, de Pennington, A, et al; *Affective Design (Kansei Engineering) in Japan*. DTI International Technology Service Mission Report, December 2002.
<http://www.faradaypackaging.com/docs/AffectiveDesignReport.pdf> (no longer available online).
- [92] Jiao, J, Zhang, Y, Helander, M; *A Kansei Mining System for Affective Design*. Expert Systems with Applications, Vol 30, Iss 4, pp 658-673, May 2006.
- [93] University of Leeds, School of Mechanical Engineering; *Design and Manufacture Research Group: Affective Engineering*. http://www.mech-eng.leeds.ac.uk/res-group/dandm/affect_eng.html
- [94] MacDonald, A; Aesthetic Intelligence: optimising user-centred design. Journal of Engineering Design, Vol 12, No 1, pp37-45, March 2001.
- [95] Abbott, M, Page, R; *Bentley – Creating Emotional Brand Attributes*. Automotive Comfort Seminar Proceedings, IMechE, London, 25th September 2007.

- [96] Guldbrandsen, M, Evans, S; *Embedding Non-Quantifiable Product Qualities in Products and Product Development*. 4th Design and Emotion Conference, Ankara, Turkey, 2004.
- [97] Leonard, D, Rayport, J; *Spark Innovation Through Empathic Design*. Harvard Business Review, Vol 72, Iss 6, pp102-113, Nov-Dec 1997.
- [98] Barrett, R; Customer driven ideation : an exploratory study of empathic designs' impact on industrial design practice. Thesis, Cranfield University, 2004.
- [99] Centre for Innovative Products and Services, Cranfield University School of Management.
<http://www.som.cranfield.ac.uk/som/p1402/Research/Research-Centres/The-Centre-for-Innovative-Products-and-Services/Research>
- [100] Ergosoft Laboratories; *What is Kansei Engineering?*
http://www.ergolabs.com/kansei_engineering.htm
- [101] Mazur, G; *What is Kansei Engineering?* QFD Workshop Details, QFD Institute. http://www.qfdi.org/workshop_kansei.htm
- [102] European Kansei Engineering Group; <http://www.kansei.eu/>
(http://kansei.iei.liu.se/kansei_hemsida/kansei/wike.html)
- [103] Lazarus, RS; *"Emotion and Adaptation"*. 1991, Oxford University Press.
- [104] Bagozzi, RP; *"The self-regulation of attitudes, intentions and behaviour"*. Social Psychology Quarterly, Vol 55, no 2, pp178-204, 1992
- [105] ENGAGE Consortium, *"Engineering Emotional Design. Report of the State of the Art"*. July 2005.
www.designandemotion.org/society/knowledge_base/documents.html?rot=36
- [106] Jordan, P; *Designing Pleasurable Products*. Taylor & Francis, 2000.
- [107] Van Hout, M; *"Getting Emotional With... Pat Jordan"*. <http://www.design-emotion.com/2006/12/04/getting-emotional-with-pat-jordan/>, 4th December 2006.
- [108] Van Gorp, T; *"Understanding Design for Emotion Models"*. <http://www.affectivedesign.org/archives/199> , January 17, 2008.
- [109] Shedroff, N; *"Meaningful Innovation: Interaction and Service Design"*. Keynote Speech, Interaction10 Conference, Feb 4-7 2010, Savannah, GA.
<http://interaction.ixda.org/videos-slides/>,
<http://www.nathan.com/thoughts/IXDA2010.pdf> .
- [110] Claes, C, Swinnen, A, Vanden-Abee, P; *Consumers' means-end chains for "think" and "feel" products*. International Journal of Research in Marketing, Volume 12, pp193-208, 1995.
- [111] Anon; *Tools and Methods to Design for Emotion*. The Design and Emotion Society,
http://www.designandemotion.org/society/knowledge_base/tools_methods.html.
- [112] ENGAGE, *designing for emotion, international knowledge base and network*. www.engage-design.org

- [113] Schütte, S; *Engineering Emotional Values in Product Design - Kansei Engineering in Development*. Dissertation, Department of Mechanical Engineering, Linköpings Universitet, Sweden 2005.
- [114] Cañada, J; *Kansei Engineering: incorporating affection and emotion into the design process*. March 14 2003. <http://terremoto.net/kansei/>
- [115] Japan Society of KANSEI engineering; *What is Kansei Engineering?* <http://www.jske.org/whatiskansei.html>
- [116] Abbott, M, Shackleton, JP, Guest, P; “*Engineering emotional product identities in high-luxury vehicles*”. 5th. International Conference on Design and Emotion, Chalmers University of Technology, Gothenburg, Sweden. September 2006.
- [117] Abbott, M, Shackleton, JP, Holland, R; “*‘Brand’ as Category; An Analysis of Categorisation and Branded Product Concepts*”. International Association of Societies of Design Research, The Hong Kong Polytechnic University, 12th to 15th November 2007.
- [118] Abbott, M, Shackleton, JP, Holland, R; “*Measuring the Brand Category Through Semantic Differentiation*”. Journal of Product and Brand Management, Vol 17 Issue 4 pp223-234, 2008.
- [119] Guldbrandsen, M; How Companies embed Non-Quantifiable Product Qualities through their Product Development Process. PhD Thesis, Cranfield University, 2006.
- [120] Chartered Institute of Marketing; Knowledge Hub, *Marketing Glossary*. <http://www.cim.co.uk/resources/glossary/home.aspx>
- [121] Boyle, D; *The Tyranny of Numbers. Why counting can't make us happy*. Harpers Collins, 2001.
- [122] Burns, A, Evans, S, Johansson, C, Barrett, R; *An investigation of customer delight during product evaluation*. 7th International Product Development Management Conference, Leuven, Belgium, May 29th-30th 2000.
- [123] Burns, A, Evans, S; *An Investigation of Customer Delight During Product Evaluation: Implications for the Development of Desirable Products*. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, Vol 221, No 11, pp1625-1638, 2007.
- [124] Evans, S, Burns, A, Barrett, R; *Empathic Design Tutor*. Cranfield University, 2002.
- [125] Coleman, S, Pearce, K, van Lottum, C; *Statistics supporting the design process via Kansei Engineering*. 1st I*PROMS Virtual International Conference on Intelligent Production Machines and Systems, (http://conference.iproms.org/iproms_2005_conference), 4-15 July 2005.
- [126] Nagamachi, M; *Kansei Engineering and its Applications in Automotive Design*. SAE Technical Paper Series 1999-01-1265, SAE International Congress and Exposition, Detroit, Michigan, March 1-4 1999.
- [127] Design and Manufacturing Studios, University of Strathclyde; *Kansei Engineering and KENSYS (Report on Past Events)*. 11th Nov 2004.

- [128] Mantelet, F, Bouchard, C, Aoussat, A; *Integration and optimization of KANSEI engineering in the process of design of new products*. 6th Asian Design International Conference, Tsukuba International Congress Center, Japan, 14-17 October 2003.
- [129] Mazur, G; Voice of Customer Analysis: A Modern System of Front-End QFD Tools, with Case Studies. Proceedings of AQC 1997, Orlando, May 5-7, 1997.
- [130] Hossoy, I; Papalambros, P; Gonzalez, R; Aitken, TJ; “*Modelling customer perceptions of craftsmanship in vehicle interior design*“. Tools and Methods of Concurrent Engineering Conference, Lausanne, Switzerland. Millpress, Rotterdam. Apr 12-16 2004.
- [131] Wang, Jye-Hone & Holden, Jennie; “*Craftsmanship Evaluation in Automotive Products*“. International Journal of Industrial Engineering, Vol 7 Iss 4, Dec 2000.
- [132] Wang, JH , Vasudevan, A; “*Developing a Craftsmanship-based Product Evaluation System*“. 2000 International Forum on DFMA, Boothroyd Dewhurst. 12-14 June 2000.
- [133] Interbrand Surveys and Research; <http://www.interbrand.com/surveys.asp>.
- [134] McCawley, I; *Google tops first UK Voltage brand growth rankings list*. marketing Week, Vol 29, NO 16, pp3, 20 Apr 2006.
- [135] Luxury Institute; <http://www.luxuryinstitute.com/contact/contact2.cgi>
- [136] Brand Republic. www.brandrepublic.com
- [137] Interbrand’s Brand Channel. www.brandchannel.com
- [138] Blaikie, N; *Approaches to Social Enquiry*, 2nd Edition. Polity Press, Cambridge, 2007.
- [139] Kuhn, TS; *The Structure of Scientific Revolutions*. 2nd Edition. Univ. of Chicago Press, Chicago, 1970.
- [140] Guba, E; *The Paradigm Dialogue*. Sage Publications, Newbury Park, CA, 1990.
- [141] Denzin, K & Lincoln, Y (eds.); *Handbook of Qualitative Research*. 2nd Edition. Sage Publications, Inc, Thousand Oaks, CA, 2000.
- [142] Blaikie, N; *Approaches to Social Enquiry*. Blackwell Publishers, Cambridge, 1993.
- [143] Gill, J. & Johnson, P; *Research Methods for Managers*, 3rd edition. Sage Publications, London, 2002.
- [144] Robson, C; *Real World Research*. Blackwell Publishers Ltd, Oxford, 1993.
- [145] Anon; *Internalism and Externalism*. http://en.wikipedia.org/wiki/Internalism_and_externalism. Accessed 09/11/07.
- [146] Anon; *Epistemology*. <http://en.wikipedia.org/wiki/Epistemology>. Accessed 09/11/07.

- [147] Cohen, I, Manion, L, & Morrison, K; *Research Methods in Education*, 6th Edition. Routledge, Oxon, 2007.
- [148] Yin, RK; *Case Study Research – Design and Methods*, 3rd Edition. Applied social research method series Volume 5. Sage Publications. California, 2002.
- [149] Tellis, W; Introduction to Case Study. The Qualitative Report, Vol 3, No 2, July 97. <http://www.nova.edu/ssss/QR/QR3-2/tellis1.html>. Accessed 10/11/07.
- [150] Evans, S; *Action Research*. Presentation, Manufacturing and Technology Management Research Methodology Workshop 2007, University of Cambridge, March 2007.
- [151] Reason, P & Bradbury, R (eds); *Handbook of Action Research*. Sage Publications, London, 2001.
- [152] Blaikie, N; *Designing Social Research. The Logic of Anticipation*. Polity Press, 2001.
- [153] Strauss, A; *Qualitative Analysis for Social Scientists*. Cambridge University Press, 1995.
- [154] Strauss, A, Corbin, J; *Basics of Qualitative Research. Techniques and Procedures for Developing Grounded Theory*. Sage Publications Inc, 1998.
- [155] Wellings, T, Williams, M, Pitts, M; *Customer perception of switch-feel in luxury sports utility vehicles*. Food and Quality Preference, Volume 19, pp737-746, March 2008.
- [156] Marques, JF, McCall, C; The application of interrater reliability as a solidification instrument in a phenomenological study. The Qualitative Report, Volume 10, No 3, pp 439-462, 3 September 2005.
- [157] JLR/Ford of Europe/Volvo; *EMM Product Strategy*. Internal Presentation, April 2007, Gaydon.
- [158] Greenwood, E; New Directions in Delinquency Research: A Commentary on a Study by Bernard Lander. Social Service Review, vol. 30, no. 2, pp. 152, 1956

APPENDIX A PRE-RESEARCH PILOT CLINIC - “PREMIUMNESS STAGE 1”



Introduction

JLR commissioned a qualitative study which was effectively a pilot for part of the methodology used for the main Premiumness Research Programme. The purpose of the study was both to gather data from customers about their views of what premiumness means and which cars they perceive as being premium. This study became known as Premiumness Stage 1.

This appendix provides an overview of the study and its findings, and is adapted from the internal JLR “What is Premiumness?” presentation⁵⁵ (June 2005), Acknowledgments must be made to the MRO team, in particular Suzanne Baylis who authored the presentation.

Aims and Objectives

Stage 1 was a qualitative study conducted in 2004/2005. Its findings were communicated within JLR mid-2005. The study comprised 21 focus groups: 9 in the UK and 12 in the US. Participants were organised by lifestage and wealth. Groups were held in London, Leeds, Birmingham, Denver Dallas and New York.

Developers	30-50 years, least affluent, own cars that are just premium (£18-25k)
Aspirers	30-45, ambitious/on the way up. Have achieved a good deal already, driving cars valued £25-£40,000 but are still on the up and keen for others to notice their success
Heartland	higher up the ladder, driving cars valued £40-£60,000 1 group younger (30-45) + 1 older (50-64). Feel they have ‘made it’ ... though some could make it to the next level ...
Luxuriators	the top of the tree, driving at least one car valued £60-£150,000. Plenty of money to spend and enjoy spending it on the finer things in life –1 group younger (<50) + 1 older (50-64)

The aims of the study were:

⁵⁵ Reports with JLR are made as presentation “decks” rather than as formal written reports. This has the advantage of being quick to digest, but the significant downside is that much of the knowledge that accompanies the presentations remains in the authors’ heads, and mis-interpretations can be made with such incomplete data sets.

- Overall to understand what makes a brand premium: what makes a brand premium, what builds premiumness and what factors erode/jeopardise it ?
 - what are the dimensions that define premiumness?
 - in automotive terms, what is the relationship between the brand and the models offered by the brand?
 - how are JLR brands evaluated in terms of premiumness ?
- Ultimately, the aim was to propose a means of evaluating and tracking JLR brands in terms of their “premiumness”.

Methodology

The discussion flow is outlined in Figure A - 1:

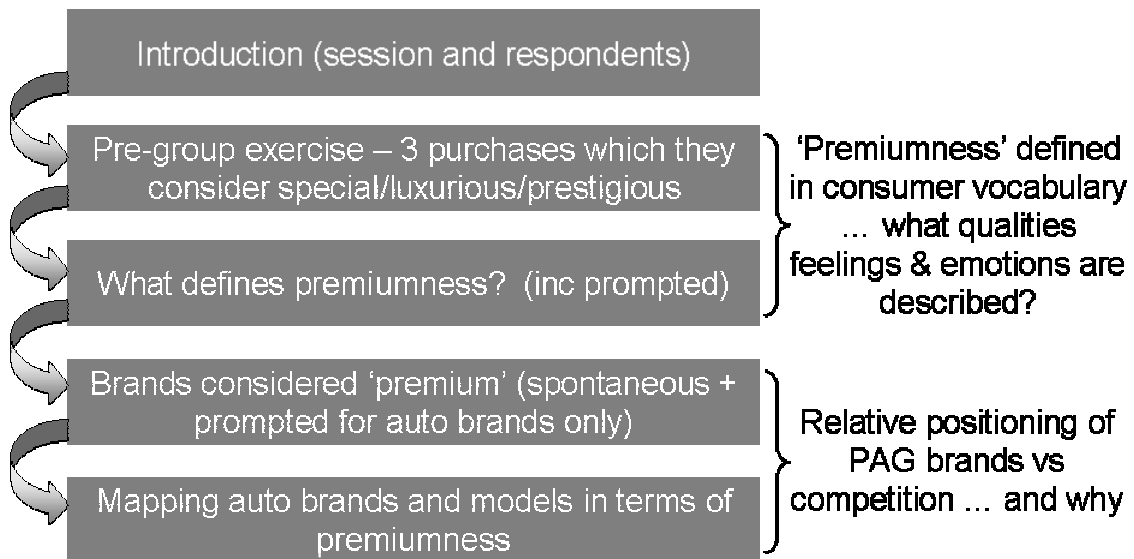


Figure A - 1 Stage 1 Discussion Flow

Following the introduction session, the first two exercises required the respondents to choose 3 objects that they owned or experiences that they'd had which might be described as special, luxury, select, classy or sophisticated. They then discussed premiumness as a concept in their groups, both spontaneously, and with prompting from the moderators.

The next exercise required individuals to record brands they could think of from any product field that they considered premium. They were then asked to consider a pre-defined list of auto brands and asked to categorise these as premium or not premium.

The final exercise required the groups to create an automotive map, positioning brand logos and models on a premiumness continuum (high end to mass market).

Overview of Results

Pre Group Exercise

Respondents mentioned premium products and experiences that could be categorised as either transitory experiences or possessions, but also in terms of rewards/significant markers or treats/indulgences. The study found that the respondents evaluated premiumness in the same manner. Premiumness was seen to be both *relative* (i.e. “better than”) and *absolute* (has a minimum threshold), but the threshold for what constitutes a treat moves up as income increases.

It was recognised that yesterday’s premium will become today’s standard, so it was suggested that perhaps older wealthier people define the minimum standards for premiumness but that younger people define the style of execution.

What Defines Premiumness?

This study found that customers’ definitions of premiumness included elements of rarity, quality and status (Figure A - 2).



Figure A - 2 Stage 1 Defining Premiumness

Three areas emerged as the essence of premiumness:

- > Exceptional quality
- > Feeling rewarded/pampered – sensual gratification
- > Feeling special, individuality, standing out from the crowd

What the product is
How it makes you feel

A range of “must have” and “must void” factors were identified:

	Must be/have ...	Must avoid ...
EXCEPTIONAL QUALITY	<ul style="list-style-type: none"> • Handmade/craftsmanship • Attention to detail (nice little extras/goes beyond the call) • Inspires confidence • Authenticity • Exceptional functionality (UK) 	<ul style="list-style-type: none"> • Mass produced/churned out • Flat pack • Raises doubts/disappointment • Fake/copy/ersatz
REWARD & PAMPERING	<ul style="list-style-type: none"> • Feel rewarded/treats • Pampering • Sensual/gratifying • Extravagant/special • Generosity (USA) 	<ul style="list-style-type: none"> • Everyday • Cold/unsatisfying • Cheap • Penny pinching
INDIVIDUALITY	<ul style="list-style-type: none"> • Not for everyone • Individuality • Tailored products & services – treated as an individual 	<ul style="list-style-type: none"> • Common • Faceless/mass • Faceless call centres/automated ‘press 1 now’ systems

Figure A - 3 Premiumness Must-Haves

A key finding of this part of the study was that emotional benefits are at least as important as product qualities, and that premiumness cannot simply be engineered into a product. The emotional needs were both inner-directed (e.g. the brand living up to expectations, how it makes me feel), and outer-directed (being admired by others, how others perceive me). True premium brands satisfy both head (rational) and heart (emotional).

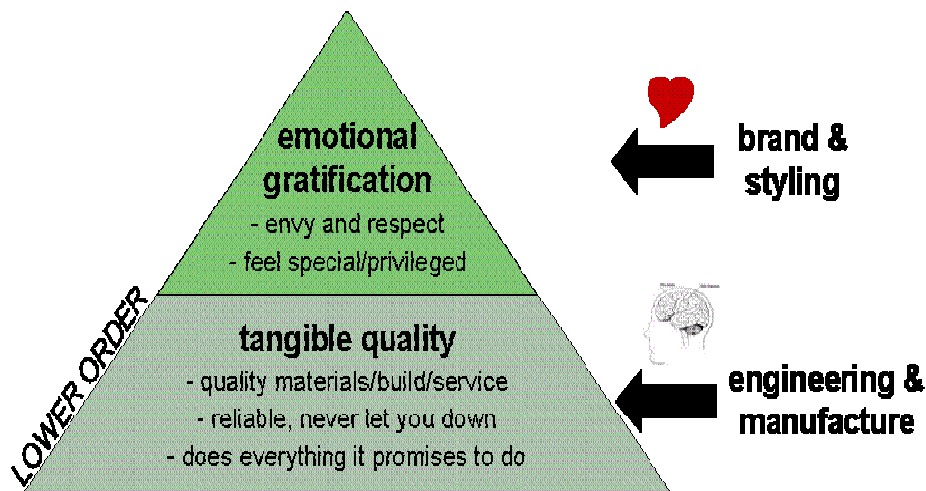


Figure A - 4 Must Satisfy Head and Heart

The tangible qualities provide a foundation, the minimum requirements that must be met for a product to be perceived as premium. However, emotional benefits must be delivered to satisfy the sense of reward, achievement and indulgence.

Premium Brands

Hundreds of brands were mentioned in both the UK and US markets. In the UK, five of the top ten most mentioned brands were automotive, while three were automotive in the US:

UK	USA
Mercedes Benz (43%)	Mercedes Benz (42%)
Aston Martin (33%)	Rolex (41%)
BMW (33%)	Gucci (33%)
Porsche (30%)	Armani (30%)
Armani (28%)	BMW (30%)
Jaguar (26%)	Four Seasons (29%)
Gucci (22%)	Prada (26%)
Bang & Olufsen/Rolex/Hugo Boss (17%)	Lexus/Ritz (21%)
	NB Jaguar (17%) 13th place

Figure A - 5 Stage 1 Most Mentioned Brands

In terms of spontaneously-mentioned automotive brands:

	UK (n=61)		US (n=69)	
Mercedes Benz	43%	1 st	42%	1 st
BMW	33%	=2 nd	32%	=4 th
Aston Martin	33%	=2 nd	8%	23 rd
Porsche	30%	4 th	18%	12 th
Jaguar	26%	6 th	17%	13 th
Lexus	(1 mention!)		21%	8 th
Bentley	15%	11 th	11%	14 th
Rolls Royce	11%	17 th	15%	19 th

(ranking in list of most mentioned premium brands)

Figure A - 6 Stage 1 Top Automotive Brands Mentioned

Note Land Rover was not included in these mentions.

Figure A - 7 shows the results of respondents' views on the premiumness of the prompted automotive brands. This chart shows the net agreement for each brand - the total number of people who perceived the brand as premium minus those who believed it was not premium.

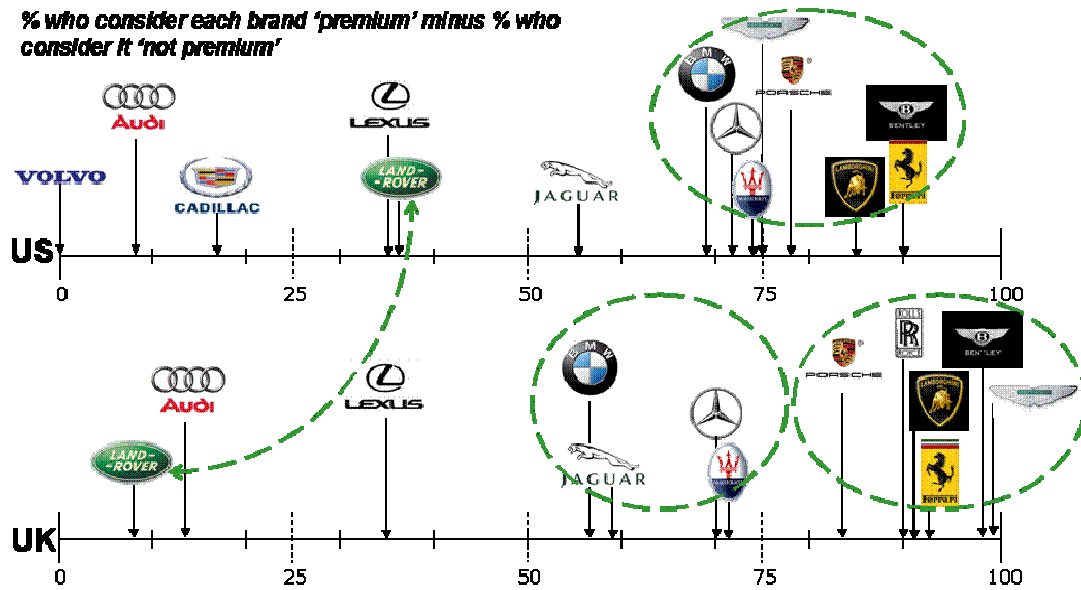


Figure A - 7 Prompted Automotive Brands

Automotive Brand/Model Map

The final exercise was a group activity to position brands and models on a premiumness map ranging from “mass market” to “high end” (Figure A - 8). Variables that were discussed when evaluating the brands included price range, scarcity, quality and heritage. Specialness also feature, but was much less definable.

Consumers found it easier to agree on the brands lying on the extreme. For example, there was an agreement that Ford, Mazda, Toyota and VW were not premium (although VW was perceived as marginally better), while Bentley, Rolls Royce, Maybach and Aston Martin were agreed as luxury brands.

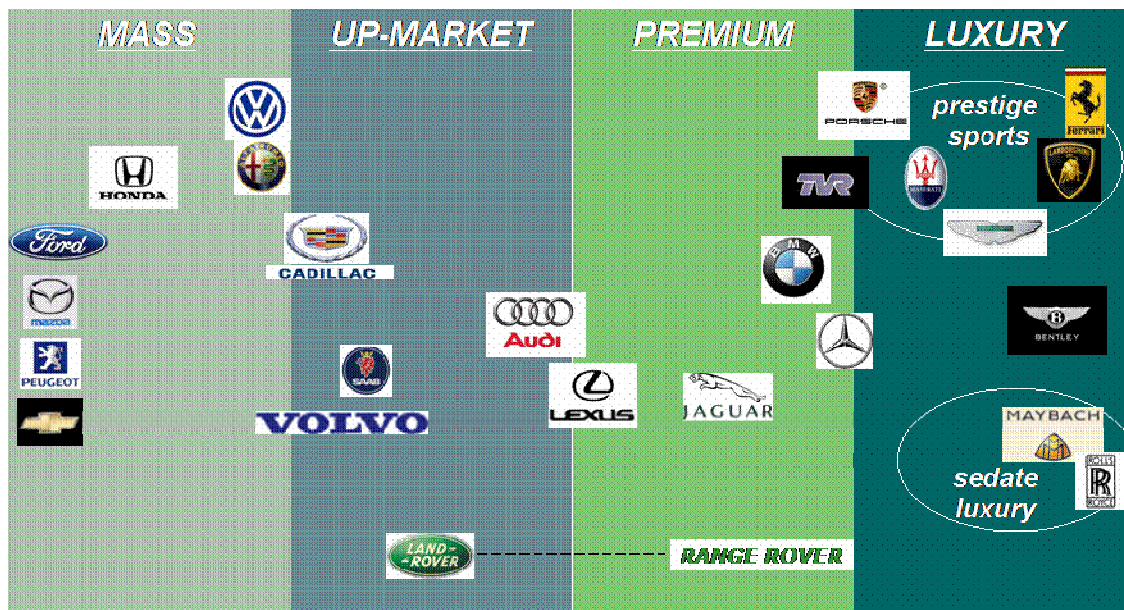


Figure A - 8 Stage 1 Automotive Brand Map (Auk + US view)

This demonstrated that Jaguar and Land Rover were not being perceived as Luxury or Premium brands by their target markets. This represents an unacceptable competitive disadvantage and lead to the Phase 2 of the premiumness study.

Looking at the models as well as the brand highlighted a balancing effect:

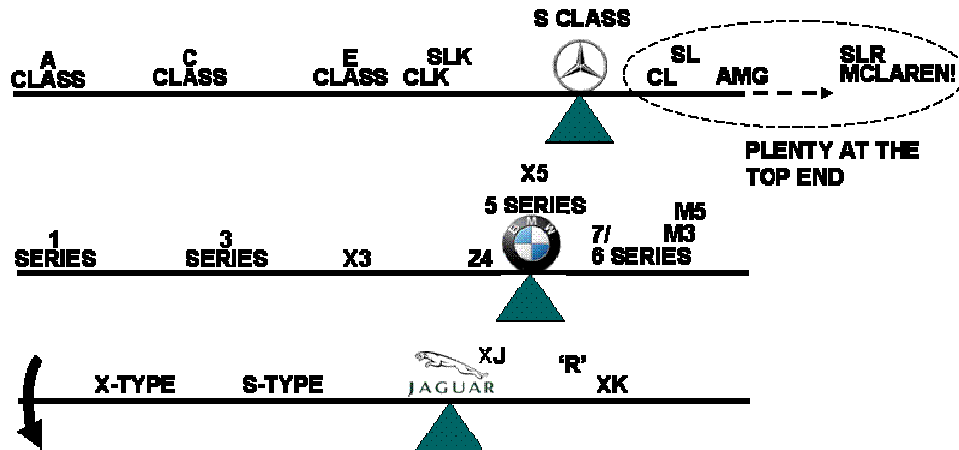


Figure A - 9 Stage 1 Brand/Model Balancing Effect

Mercedes were able to counter-balance their low-end, entry model A-Class with the models at the top end of their brand, similarly BMW were able to do this with their 1 Series, while still remaining premium brands.

For Jaguar, the brand/model balance is not being met - there are too many products being perceived as being below the standard of the brand. The decline of the brand standing was considered to be likely to continue to decline without rescue by thrilling, expensive, top-end product of 'exceptional quality' that provides 'sensual gratification' and makes buyers 'feel special'... makes them individuals that stand out from the crowd. Jaguar's position has been damaged over the last 10 years by the S-Type, X-Type (and its Ford Mondeo links), the diesels and estates, and the new (but unchanged) XJ; these failings were often attributed to Ford ownership in the UK - a perceived failure of the mass-market parent to understand the brand or market that Jaguar operates in.

For Land Rover (not shown), the disconnect between Range Rover and the Land Rover brand means that they are perceived as different brands and therefore RR couldn't balance out the LR products⁵⁶. Land Rover is being torn in two directions by the duality of a brand that is actually two different things: RR is more indulgent so more up-scale, while Land Rover is more practical and less up-scale.

Finally, it was found that a brand can't be premium without a coherent brand vision.

⁵⁶ At the time this study was conducted, the Land Rover product line comprised Range Rover, Discovery 3, Freelander and Defender (Defender is not sold in US, so was not considered as part of this research).

APPENDIX B WHAT CUSTOMERS SAY ABOUT LUXURY CARS - “PREMIUMNESS STAGE 2”



Introduction

Stage 2 of the Premiumness Research Programme continued from the pilot exercise described in Appendix A. The aim of the research is to develop the idea of what gives a vehicle a higher standing in the eyes of the customer at the mid to top end of the automotive market.

This appendix provides an overview of the study and its findings as presented to JLR management circa November 2006. It provides a passive review, and does not include a critique of the methodology, analysis or dissemination process. It also does not incorporate observations from the research interventions that were conducted as part of the EngD research project (these are described in the main body of the thesis).

Acknowledgements are given to MM-Eye and Synovate research agencies, who conducted the research for JLR, and to Suzanne Baylis, Rebekah Loftus, Bommé Stüber and Helen Connelly (JLR MRO) who managed the process and disseminated the findings.

Aims and Objectives

Stage 2 was a qualitative and quantitative study conducted in 2006 to look specifically at product; the clinics were conducted in April/May 2006, and its findings communicated from November 2006.

The aims of the study were:

- To understand, based on a static appraisal, what makes for a luxury/upscale product in the automotive market.
 - How does the consumer differentiate between the good and the exceptional?
 - What are the key product and brand DEFINERS which create or erode perceptions of premiumness (Exterior? Interior? Overall product perception? Brand perception?)
- Within an understanding of BRAND STANDING – what is the luxury brand ‘pecking order’ in the eyes of the consumer?
- Help to define and support a LEADERSHIP ‘LUXURY ASPECT’ to PALS

Methodology

Clinics were held in Los Angeles (US) and London (UK). The study comprised 152 participants in the UK and 157 participants in the US. Participants were organised by lifestage and wealth.

Aspirer/Developers driving cars valued £20-£40,000;
 Heartland driving cars valued £40-£60,000;
 Luxuriators driving at least one car valued £60- £150,000, many seriously wealthy, especially in the US.

The number of participants in each of these categories was approximately equal.

Each participant was allocated to one of 6 evaluation cells, each cell contained 3 different vehicles: (Figure B - 1 to Figure B - 4). The cars in the UK and US clinics contained small variations in colour and specification only. Note that JLR's high-end cars are included. X Type, Jaguar's entry level model was excluded from the research. Similarly Land Rover's Freelander model was not studied. Land Rover's Defender model is not marketed as a premium or luxury product, nor is it sold in the US, so was also excluded.



Figure B - 1 Stage 2 UK Cars - Exteriors



Figure B - 2 Stage 2 UK Cars - Interiors



Figure B - 3 Stage 2 US Cars - Exteriors



Figure B - 4 Stage 2 US Cars - Interiors

Each clinic followed the structure shown in Figure B - 5.

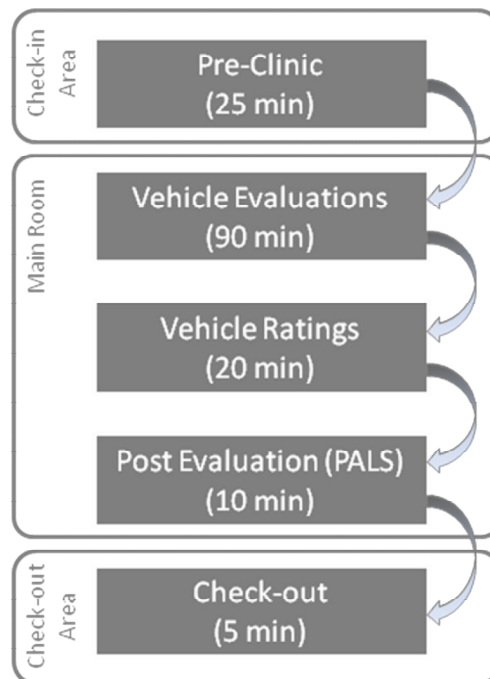


Figure B - 5 Stage 2 Clinic Process Flow

Having been re-screened on arrival, participants began with “pre-clinic” brand exercises in which they were asked a series of questions about their experiences and opinions of vehicles (including familiarity and favourability). They were asked to position brands they would be evaluating on the premium “continuum”, and also to name then position models for those brands. They were also asked to do this for the PAG brands and models.

Next, respondents were asked to consider the importance of and satisfaction with a range of PALS attributes in relation to their current car.

Participants were taken into their evaluation cell and were asked to view each of the 3 vehicles in turn. Respondents were asked to give their initial top-of-mind response (look at the car for 2 minutes, then talk to me in your own words), then a more detailed look at the car (interior, exterior, etc, but still respondent directed). Their movements were recorded by observers, and everything that they said (the stream of consciousness) was captured on voice recorders. The order in which respondents viewed the cars was rotated.

Participants were then given the opportunity to re-position the vehicles that they had seen on the brand continuum, to capture post-evaluation thoughts and compare pre and post-evaluation positions.

Participants were finally asked to evaluate each vehicle by rating against a number of attributes that reflected the PALS structure.

Participants were then invited back to the last day of the clinic in each country, and asked to debate their views on brand issues, what the customer would pay a premium for, brand mapping, what did they think about the cars that they saw? They were asked as a group to select premium brands from a stack of cards and arrange them according to their chosen criteria. The whole process was video-recorded, and relayed to an observation room.

Overview of Results

The participant breakdown was as shown in Figure B - 6 and Figure B - 7:

	US (157)	UK (152)	Total (309)
Sedan owners	32% (51)	31% (47)	32% (98)
SUV owners	32% (50)	34% (51)	33% (101)
GT owners	36% (56)	35% (54)	34% (110)
Luxuriators	32% (50)	32% (50)	32% (100)
Heartlanders	32% (50)	34% (51)	33% (101)
Developers/Aspirers	36% (57)	34% (51)	35% (108)

Figure B - 6 Participant Breakdown

	US (157)	UK (152)	Total (309)
% Male	76% (119)	66% (100)	71% (219)
% children in HH	32% (51)	64% (98)	48% (149)
Mean age	53.8	46.3	50.0
Average HH income	\$211,580	£136,570	
By Luxuriator	\$283,250	£170,450	
By Heartlander	\$207,190	£144,790	
By Aspirers/Developers	\$161,460	£98,270	

Figure B - 7 Participant Demographic Data

It was found that the results for the US and UK samples were similar and so were presented combined (improving the sample size). Where there were differences between markets, these were stated. The main difference between the US and UK is that the UK respondents were more openly critical than the US, making more frequent negative comments and giving lower scores. The US respondents tended to talk more freely.

The clinics have yielded a wealth of data in three categories:

- Premiumness Continuum:
 - Brand standing & brand strength;
 - Nameplate (awareness, pre and post evaluation position).
- Ratings:
 - PALS Ratings;
 - Brand Imagery (familiarity/favourability).
- Stream of Consciousness.

Brand and Model Standing

Respondents were shown a screen with a single horizontal line (continuum), calibrated from 0 “low end”⁵⁷ to 100 “high end”⁵⁸. Respondents used a stylus to drag brand names from the top of the screen into position on the line according to their personal perception, leaving any brands they didn’t know to one side. Respondents were able to refine their positioning until they were happy with the relative position of each of the brands they were familiar with.

This process yielded the following results:

⁵⁷ Low end, ordinary, mass market, less special

⁵⁸ High end, upmarket, luxury, special

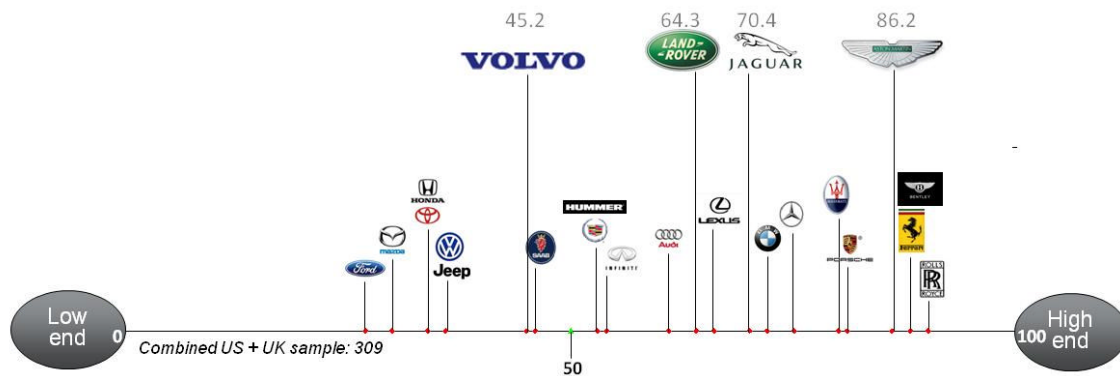


Figure B - 8 Brand Strength (US & UK)

14% of respondents claimed not to have considered Range Rover when positioning Land Rover. These few respondents were then asked to position Range Rover as its own brand, this resulted in a somewhat higher position (70.9 vs. 64.3). Land Rover was rated higher in the US than in the UK, but Jaguar was placed similarly.

The chart above presents the mean average positioning. The standard deviation data was also reviewed; this dispersion around the average signifies how well defined or focussed the brand standing is. The smaller the standard deviation, the better. As a comparison, the most focussed brand was Rolls Royce, while the least focussed was Hummer. Samples of these results are presented in Figure B - 9 to Figure B - 11.

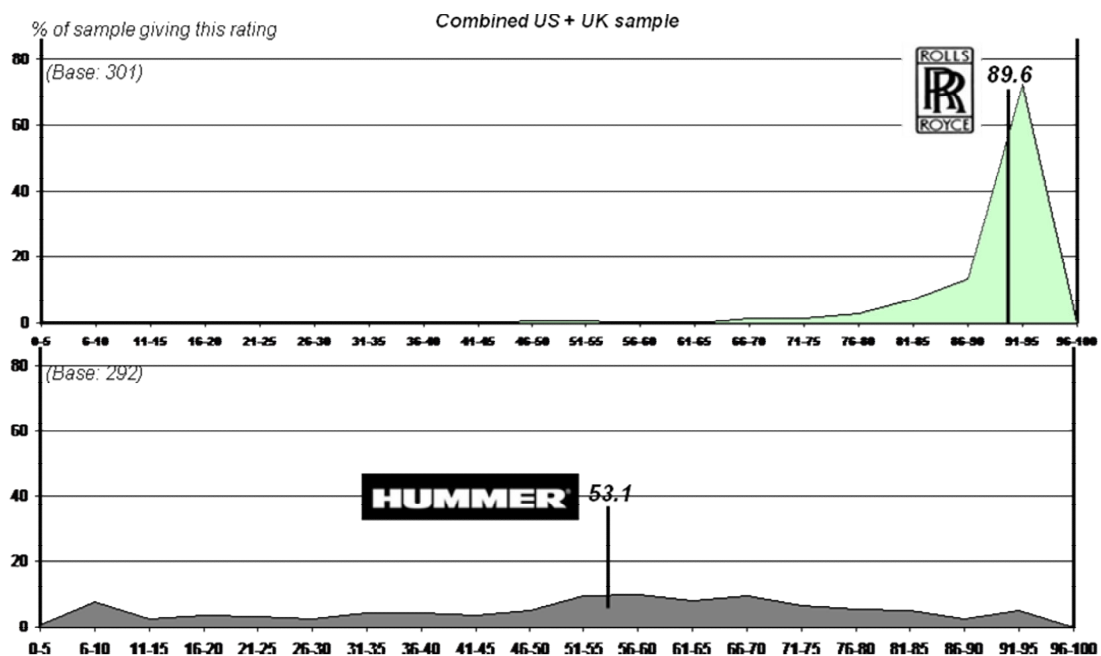


Figure B - 9 Brand Focus - Best and Worst (US & UK)

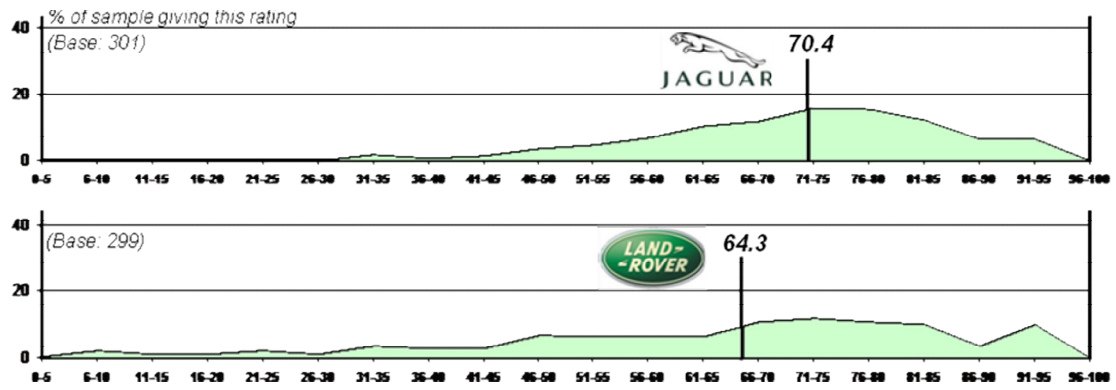


Figure B - 10 Brand Focus - Jaguar and Land Rover (US & UK)

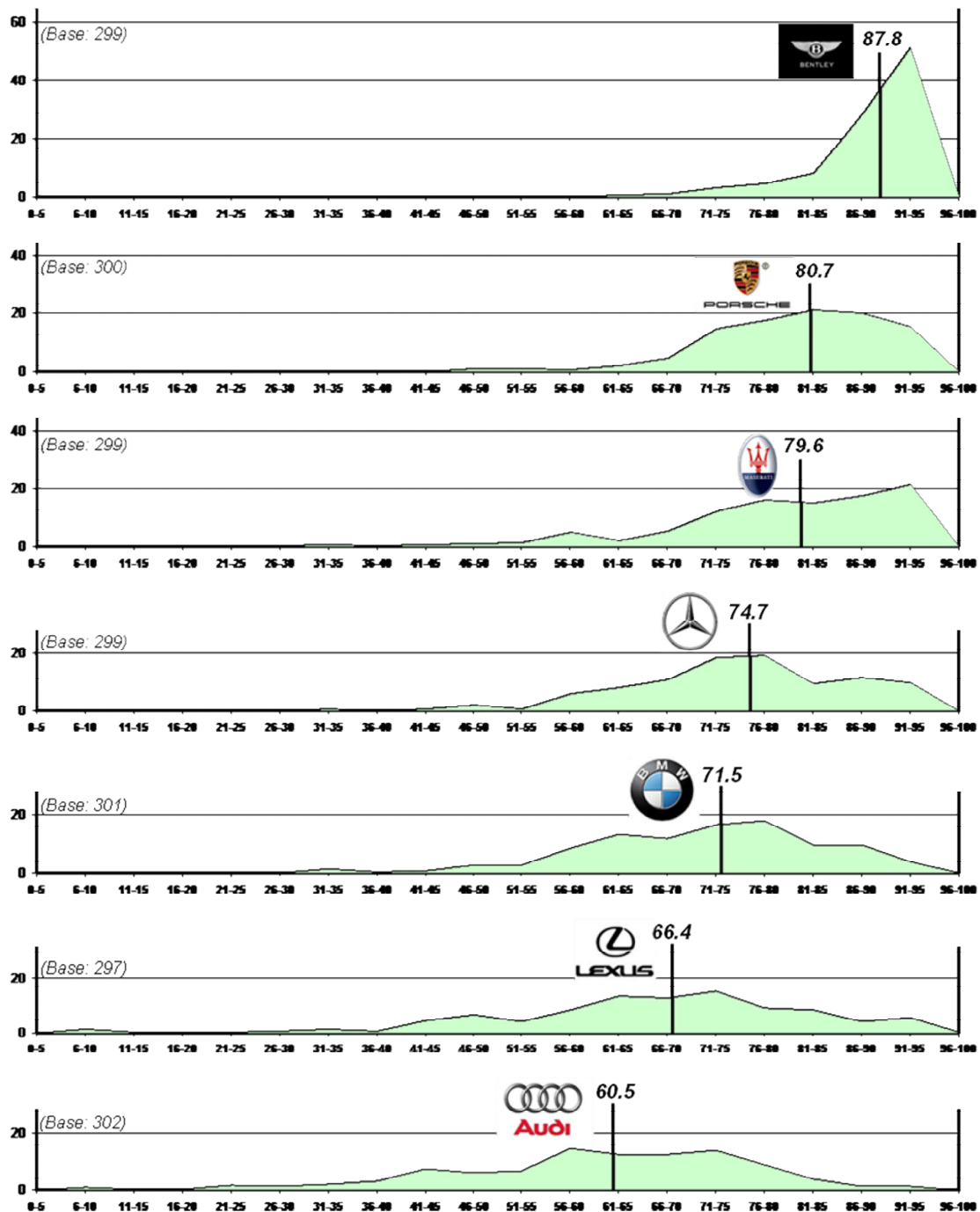


Figure B - 11 Brand Focus - Competitor Brands (US & UK)

These data show that while the brand strength for Jaguar and Land Rover is low compared to its competition set (higher only than Lexus and Audi), and its brand focus is also poor. Land Rover's brand focus is especially poor, being second worst of those brands tested. The overall brand standing is therefore not acceptable for either marque.

Next, respondents were asked to name any models they could think of for selected brands (Figure B - 12).

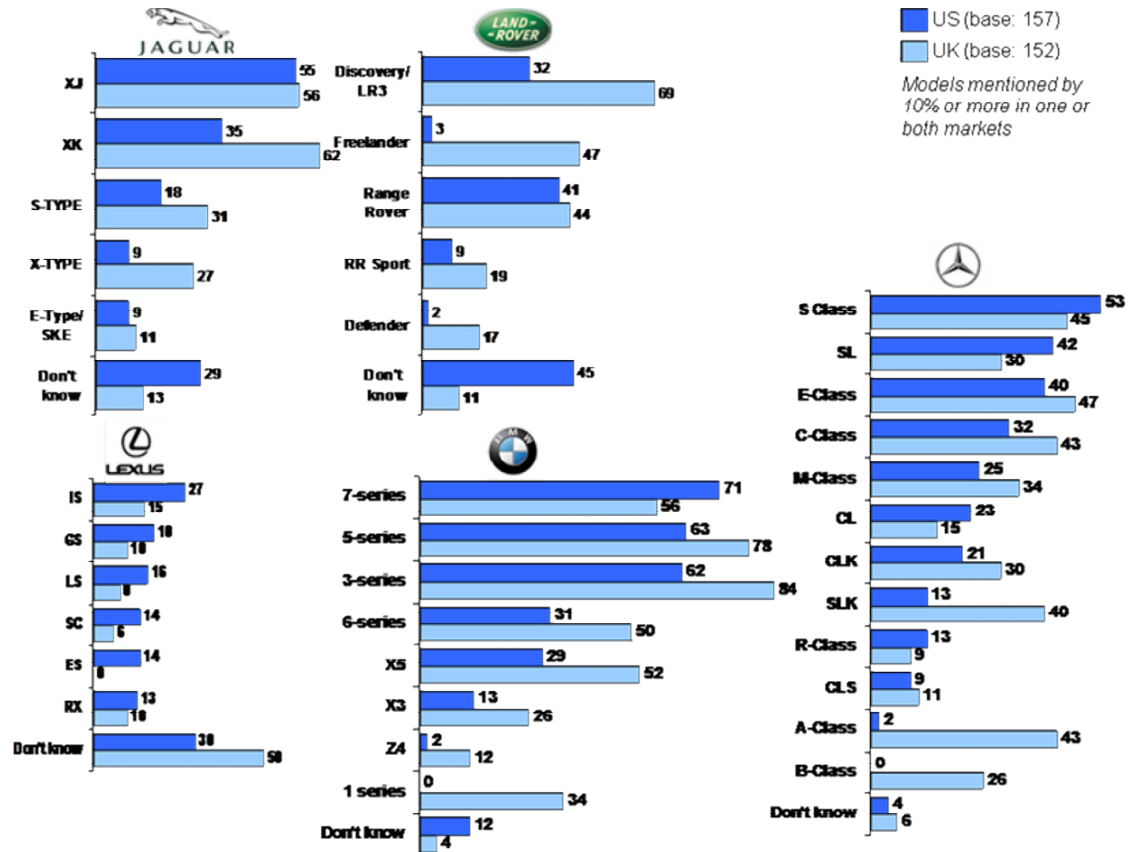


Figure B - 12 Spontaneous Model Familiarity (US & UK)

They were then given current model names and asked to position those they were familiar with relative to where they had previously positioned the brand on the continuum. This refers back to the brand see-saw concept introduced in Stage 1. (Figure B - 13 and Figure B - 14)

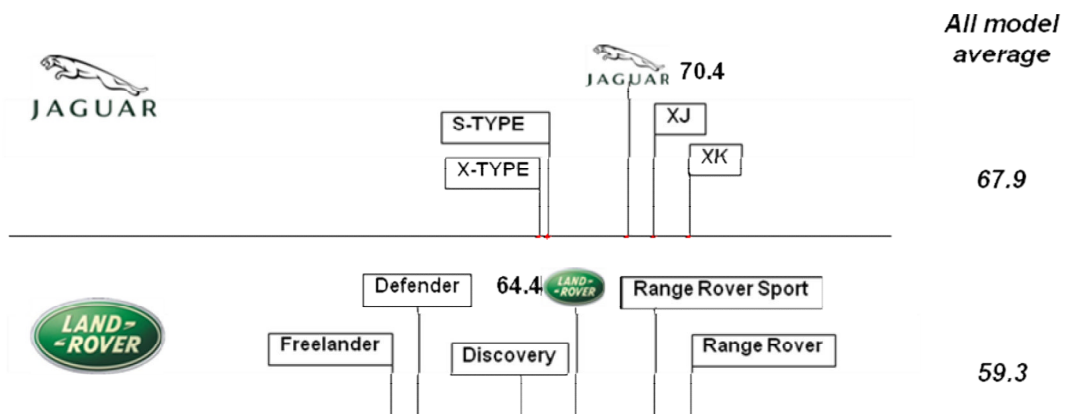


Figure B - 13 JLR Model Standing (UK & US)

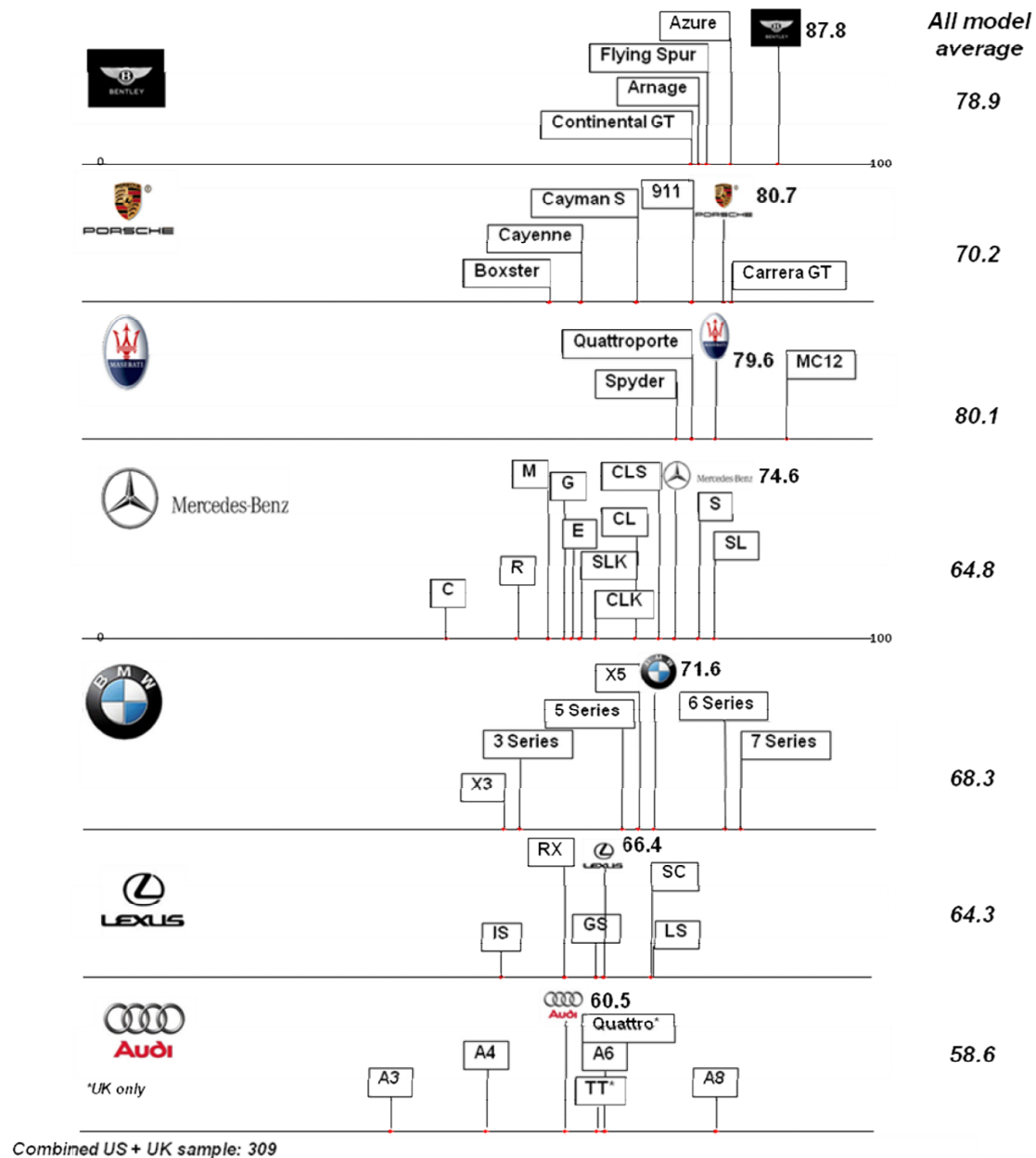


Figure B - 14 Competitor Model Standing (UK & US)

It was found to be rare at the high end to find a model placed above the brand: this supports the Stage 1 idea of a brand having “mythic status” where its image lies beyond the sum of its parts.

The results for Land Rover go some way to explain the poor brand focus: it is a brand that is pulled in two directions by the disparity between Range Rover products and Land Rover products.

After the respondents had viewed their three vehicles, they were asked to review their positioning for those models they had looked at (Figure B - 15).

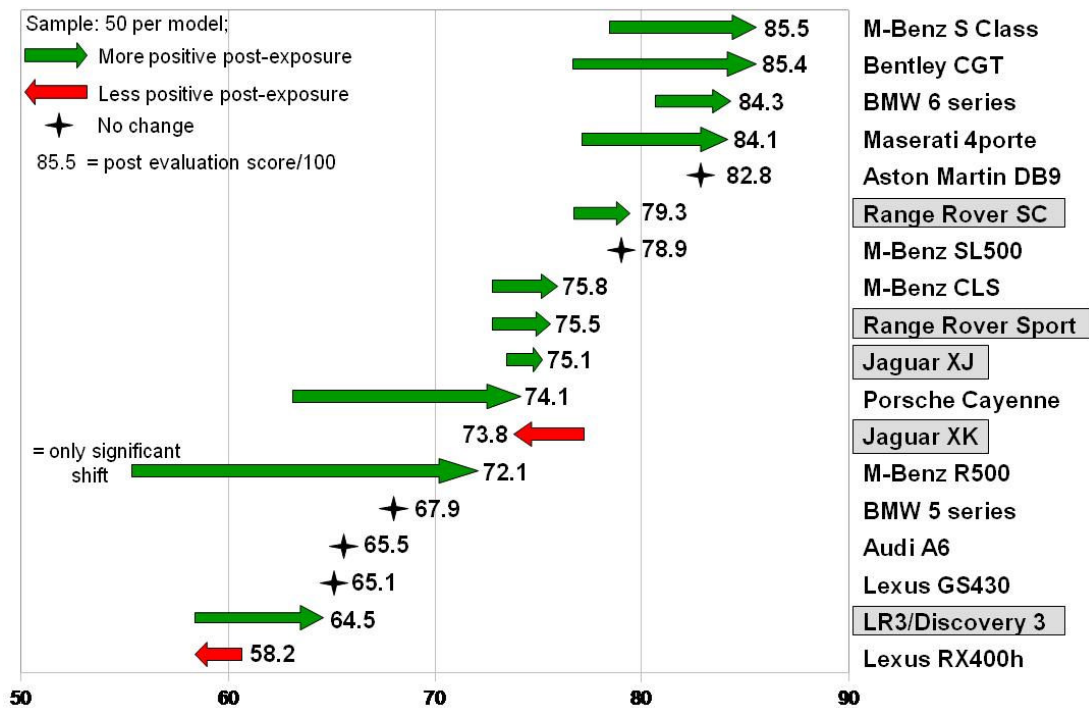


Figure B - 15 Post-Evaluation Model Strength (UK & US)

Of particular note is that fact Jaguar XK moved *down* the scale post-evaluation, clearly indicating that this model did not meet consumer expectations.

Product Evaluation

The product evaluation phase was conducted as a static exercise only. It was suggested that this has implications for some vehicle attributes; a static clinic cannot replicate everything a car stands for. The next part of the process required respondents to look at the importance of and satisfaction of a range of PALS attributes, including dynamic and ownership attributes missing from the evaluation. This task focussed on their current and future cars, not the clinic vehicles:

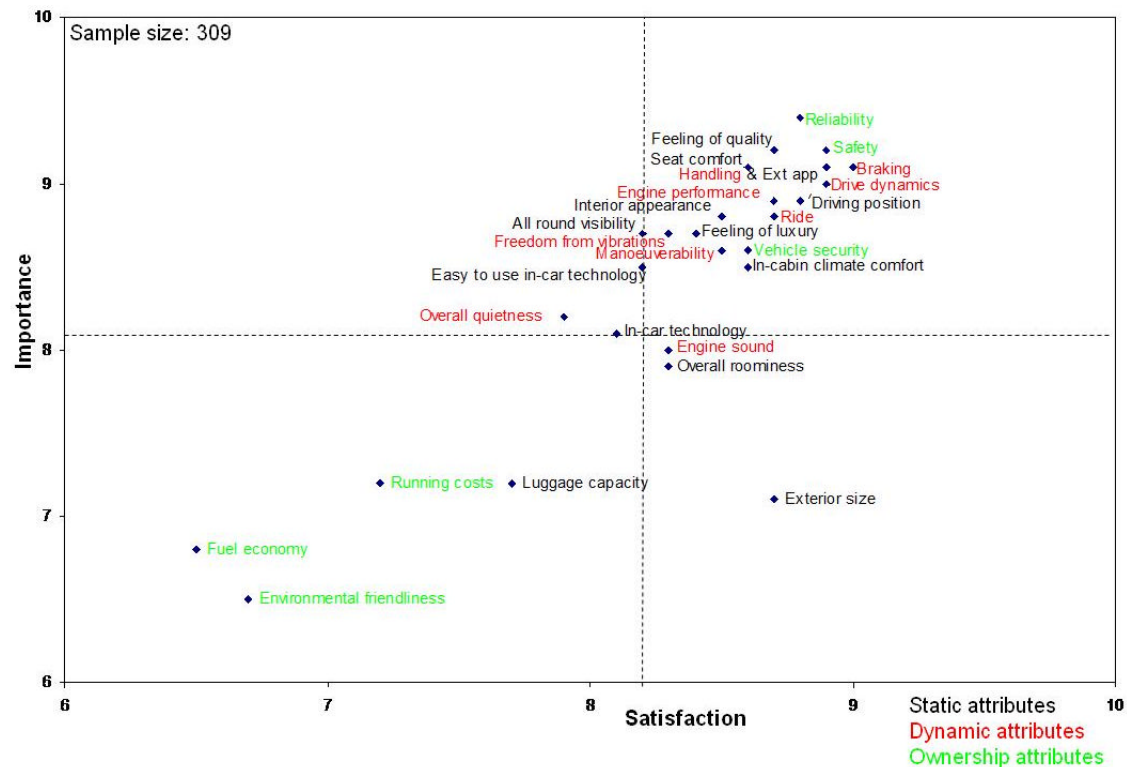


Figure B - 16 Attribute Importance/Satisfaction Matrix (US & UK)

Figure B - 16 shows the total sample result. These results varied according to the type of vehicle owned by the respondents. For example, for SUV owners, reliability and safety continued to be the most important attributes, but by a larger margin, and satisfaction with fuel economy disappeared off the left hand side of the chart. For GT owners, features such as luggage capacity were not important, exterior appearance was the most important and most satisfying attribute. Saloon owners varied less from the “total” view. See Figure B - 17.

The next phase was the evaluation of the actual vehicles. Each respondent viewed three vehicles in one cell. Respondents spoke freely, without direction from the moderators. The only prompts were open responses such as “talk to me” or “tell me what struck you”. The respondents were not aware of the aim of the exercise (premiumness) other than to find out what they thought. Their commentaries were captured on voice recorder. The aim was to capture what people naturally talk about, what language they use and with what degree of emotion (positive or negative). The recordings were transcribed and a coding system developed from and for the transcripts. The coding system captured the area of the car being discussed, the nature or subject of the comment (theme), the emotional valence and the sense being used. In this way, the number of comments could be counted and ascribed a meaningful code, and a measure of emotional value could be created from the data. The process was managed by the contractor (then called Arnold & Bolingbroke, now called MM-Eye). The technique is described as StreamingTM.

Because comments have been coded according to whether they were emotionally positive (E+) or negative (E-), the verbatims can therefore be interrogated to compare E+ and E- for particular areas of the cars or for particular themes. A metric called NetE was introduced as a measure of appeal, and represents the balance of E+ and E-⁵⁹.

The charts discussed below represent what was disseminated within JLR. There is more supporting data, but this was not provided to them.

Figure B - 18 shows the total number of positive and negative comments made by all respondents, normalised to 100 respondents per vehicle (this excludes neutral comments). This gives a measure of the emotional reactions to each of the 18 cars: which cars got the greatest number of positive comments, which got the largest number of negative comments, and which had the greatest balance of positive comments (highest NetE).

⁵⁹ NetE = number of positive comments - number of negative comments

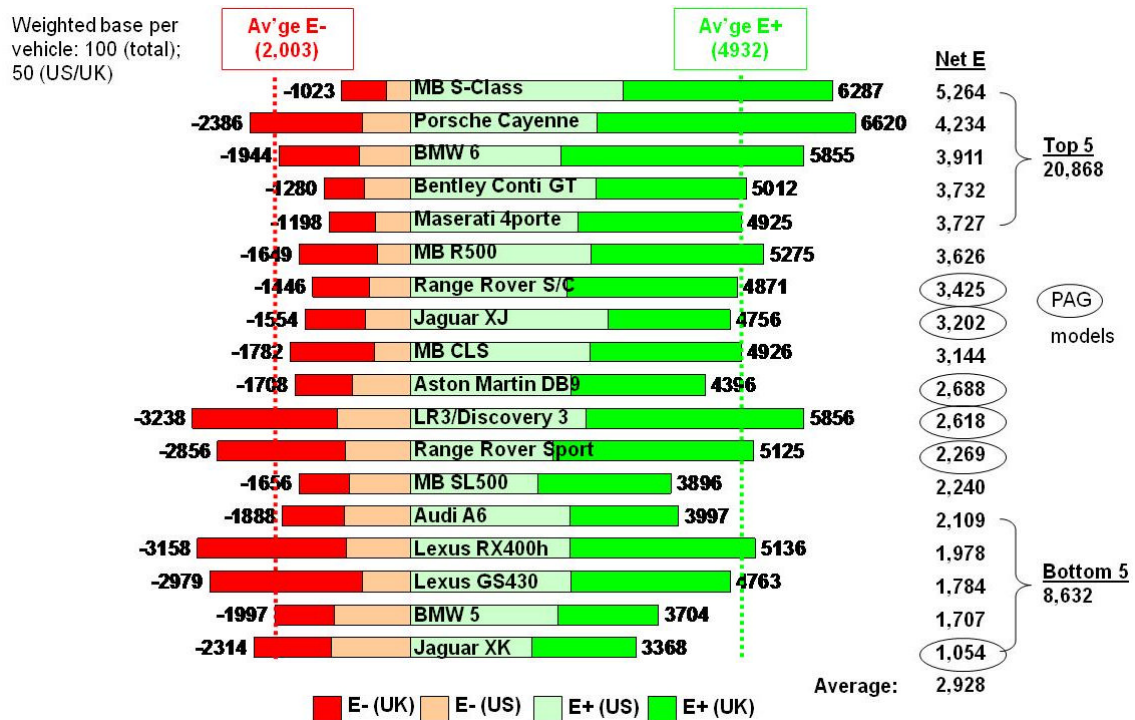


Figure B - 18 Total E+ and E- Scores - All Vehicles (US & UK)

There were some differences between the UK and US results, remarkably for the BMW 6 Series, Jaguar XJ, Mercedes CLS, Mercedes SL500 and Lexus GS430. For example, the BMW was more commonplace in the US, but was rarer in the UK. The XJ was perceived as outdated in the UK but its traditionalism was popular in the US.

The top 5 and bottom 5 cars were identified (according to their NetE scores), and their comments interrogated to establish which areas caused the differences. Comparing reactions to these two groups enables understanding of which factors create and erode premiumness.



The top and bottom 5 each include SUVs, GTs and Sedans, suggesting body style is not the key driver of emotional reactions, although without further detail, the nature of each body styles' comments are not evident.

The main themes were organised into Tiers to facilitate this comparison and analysis: each tier contained several sub-theme (each individually coded). Figure B - 19 shows the more commonly occurring tiers. Other tier 1 themes include colour, performance/drive, value/price and quantity.

Tier 1 themes	Sub-themes included (tier 2)
MATERIALS	Quality of materials used; wood (& not wood); plastic/plastic quality; leather/suede; stitching/piping; metal; other materials
SHAPE/LINES	Shape/overall lines; sleek/aerodynamic/clean; boxy/square/hard; moulding/sculptured; others
QUALITY/ PREMIUMNESS	High end; luxury/plush; quality; classy/special/elegance/ sophistication; premiumness/prestige; desirability/enviability; expensiveness; others
BUILD	Paint/finish; well designed/thought out; craftsmanship/handmade; solid/robust/reliable/safe
SIZE/ROOM/ SPACE	Big/wide/bulk; small/narrow/compact; spaciousness/room; passenger capacity/room; legroom, headroom/high/tall; low; light; lack of light; others
APPEAL	Impressiveness; likelihood of owning; meeting/exceeding expectations; others
APPEARANCE	Attractiveness; aggressive/masculine; old fashioned/classic/heritage; new/modern/futuristic/innovative; different/distinctive; exciting; interesting; rugged; sexy; fast/sporty; balance/integration/harmony; others
FUNCTION	Comfort; easy use/understand; positioning/layout/display; ease of ingress/ egress; adjustability/adaptability; visibility; practicality/convenience; others

Figure B - 19 Voice of the Customer Themes

Comments for each theme could then be cross tabulated according to which area of the car they related to (e.g. exterior, interior, car overall, model or brand). This process was then used to identify the gaps between the best and worst performers for NetE.

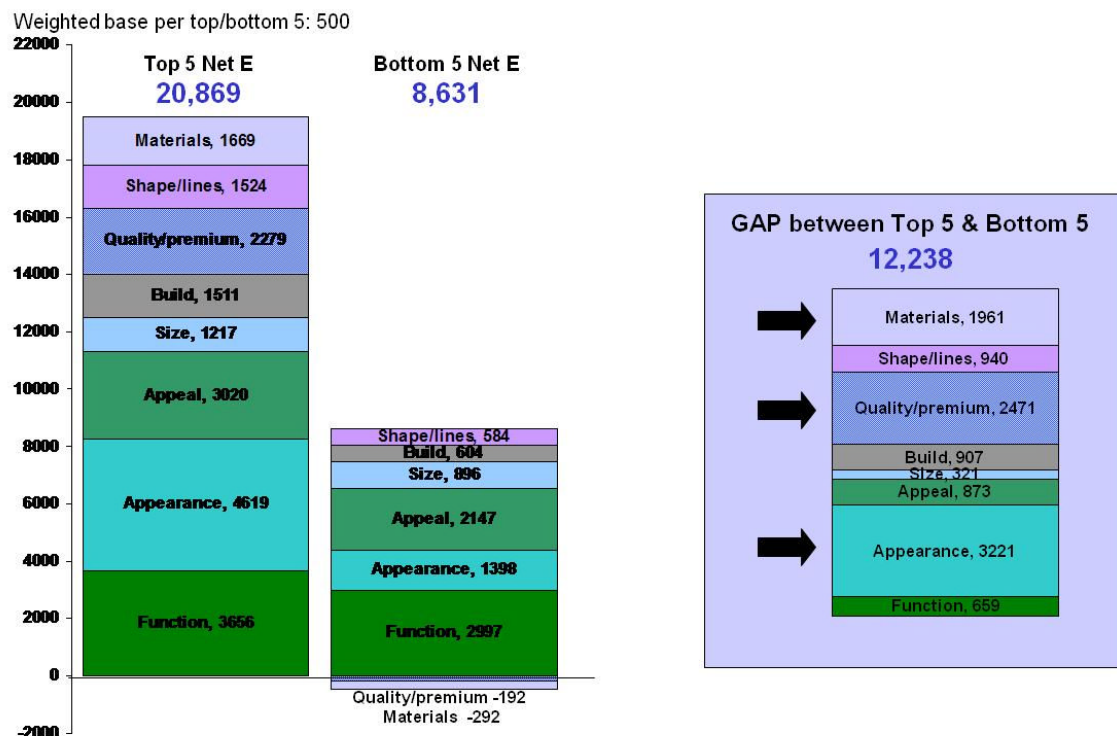


Figure B - 20 Top 5 vs. Bottom 5 Salient Differentiator by Theme (US & UK)

Appearance, Quality/Premium and Materials are the three tier 1 themes that show the biggest difference in NetE. This suggests that how well a vehicle performs in these categories determines the overall positive or negative perception.

It was found that Functionality, while accounting for a large number of the comments, had similar NetE for both the top and bottom 5 cars (i.e. not an emotional differentiator). The same pattern was found for Appeal.

It was suggested that Materials and Appearance represent “causes” (inputs) that result in an “effect” (output) of Quality/Premiumness. There was a close correlation between the quality of materials and design appeal, and perceptions of how classy/special/upscale/premium a product is seen to be (Figure B - 21).

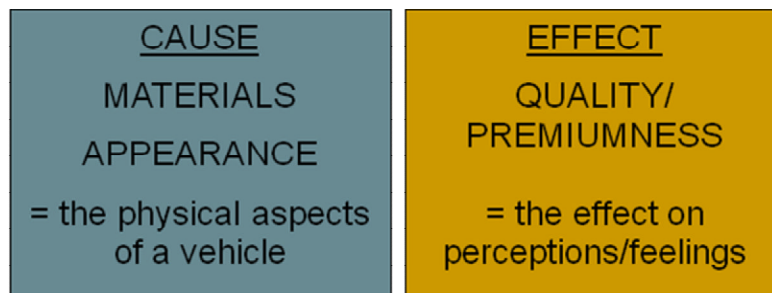


Figure B - 21 Cause and Effect (NetE)

Respondents were also asked to rate how they felt about PALS attributes (emotionally negative or positive) for the cars that they saw. The results for the top 5 and bottom 5 cars (ranked by NetE) are compared in Figure B - 22, and a similar pattern of cause and effect was found in this data too (Figure B - 23):

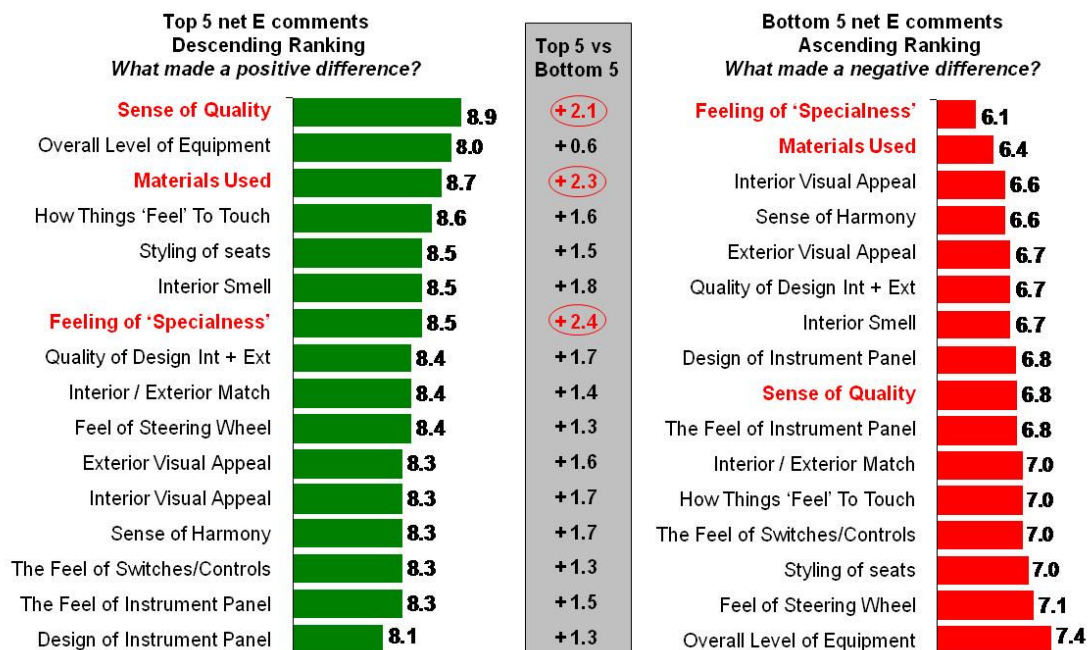


Figure B - 22 Top 5 vs. Bottom 5 Salient Differentiators by PALS rating (US & UK)

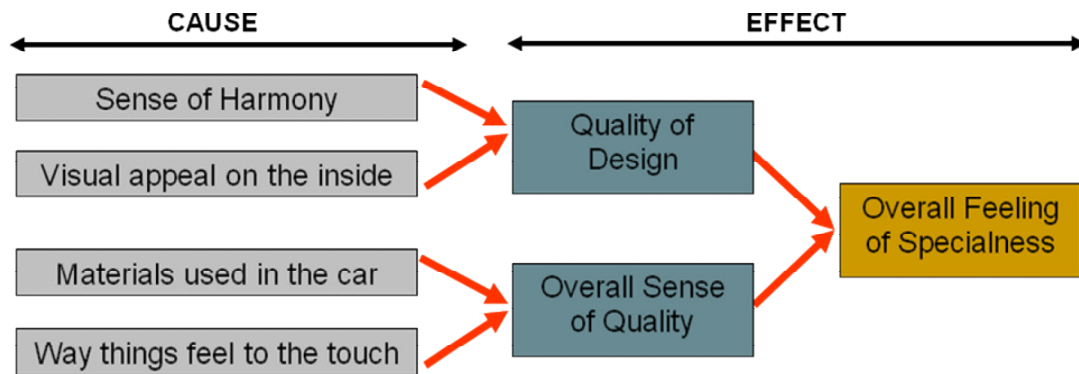


Figure B - 23 Cause and Effect (PALS Rating)

Having identified these three salient differentiators, the next stage of the analysis looked at how the comments within each theme were built up (Figure B - 24 to Figure B - 26).

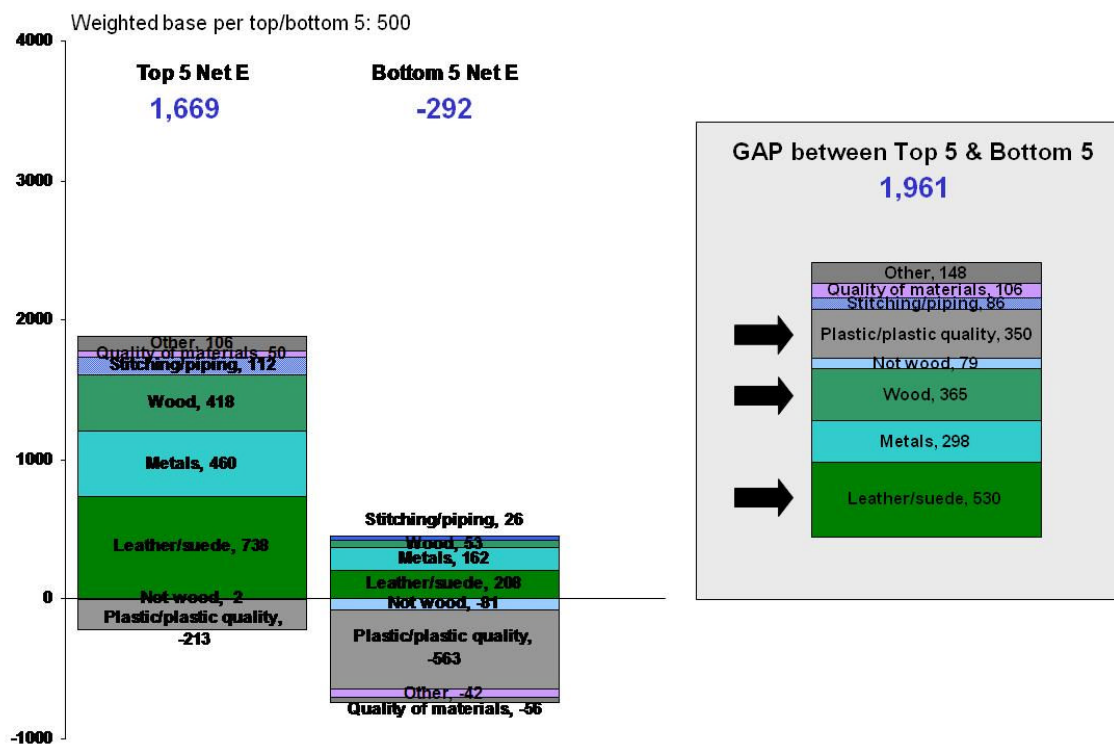


Figure B - 24 Top 5 vs. Bottom 5 Salient Differentiators - Materials (US & UK)

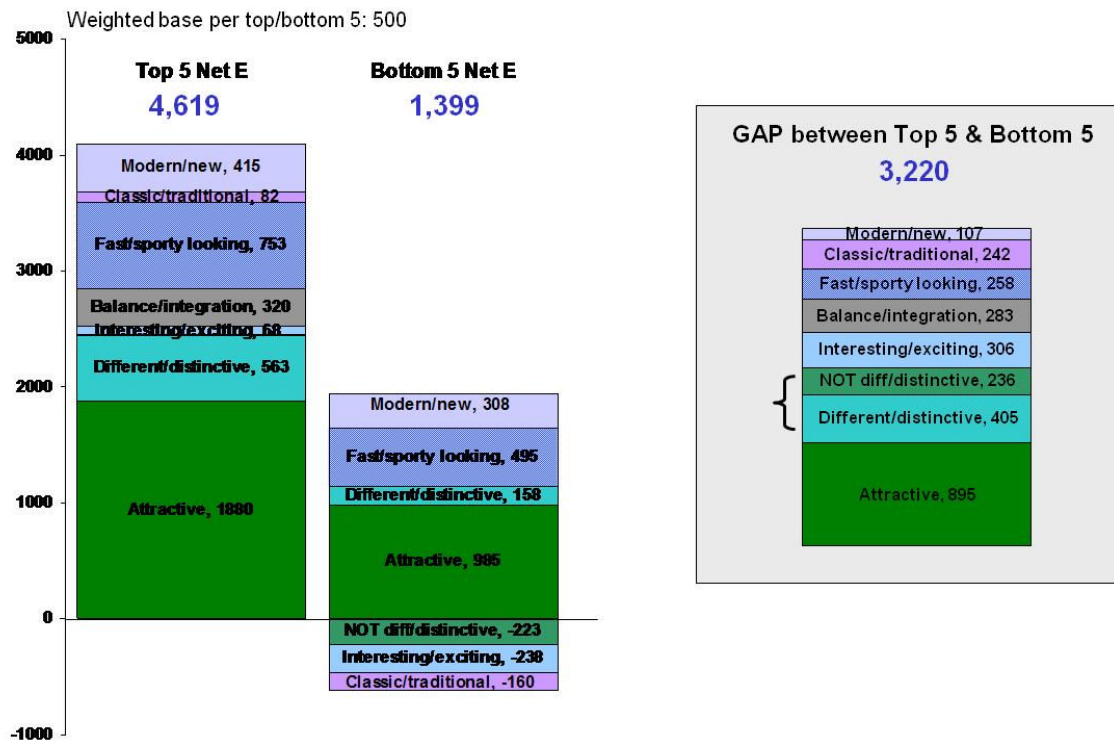


Figure B - 25 Top 5 vs. Bottom 5 Salient Differentiators - Appearance (US & UK)

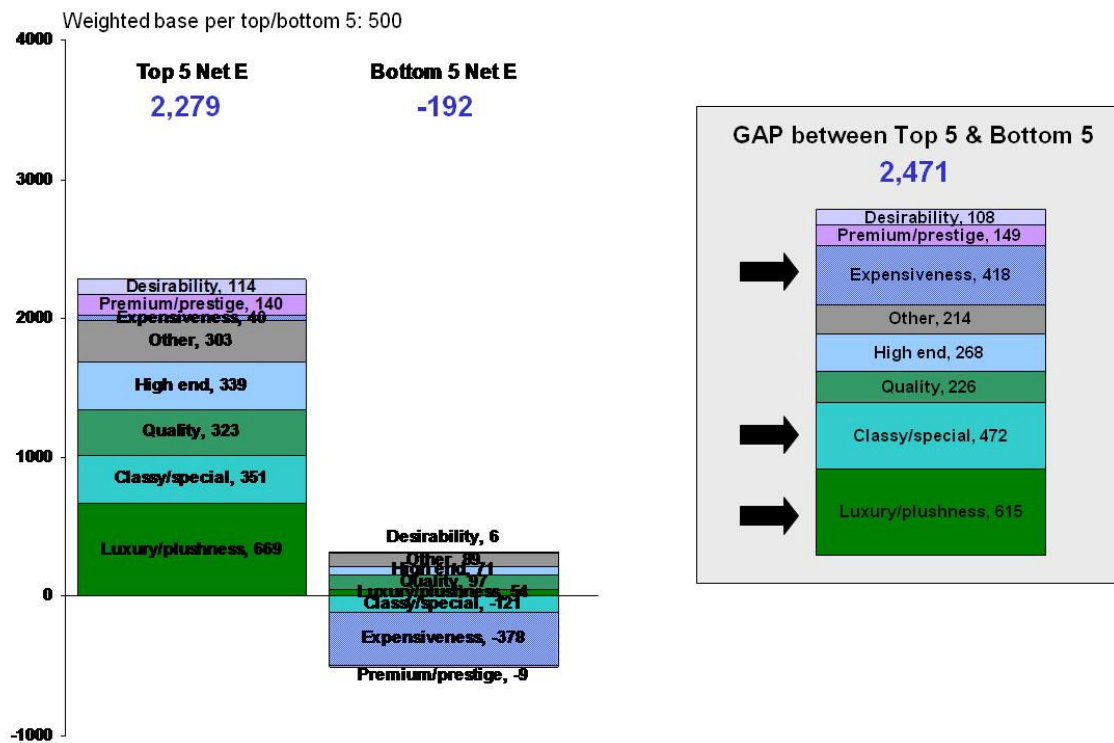


Figure B - 26 Top 5 vs. Bottom 5 Salient Differentiators - Quality/Premiumness (US & UK)

Figure B - 27 summarises these findings:

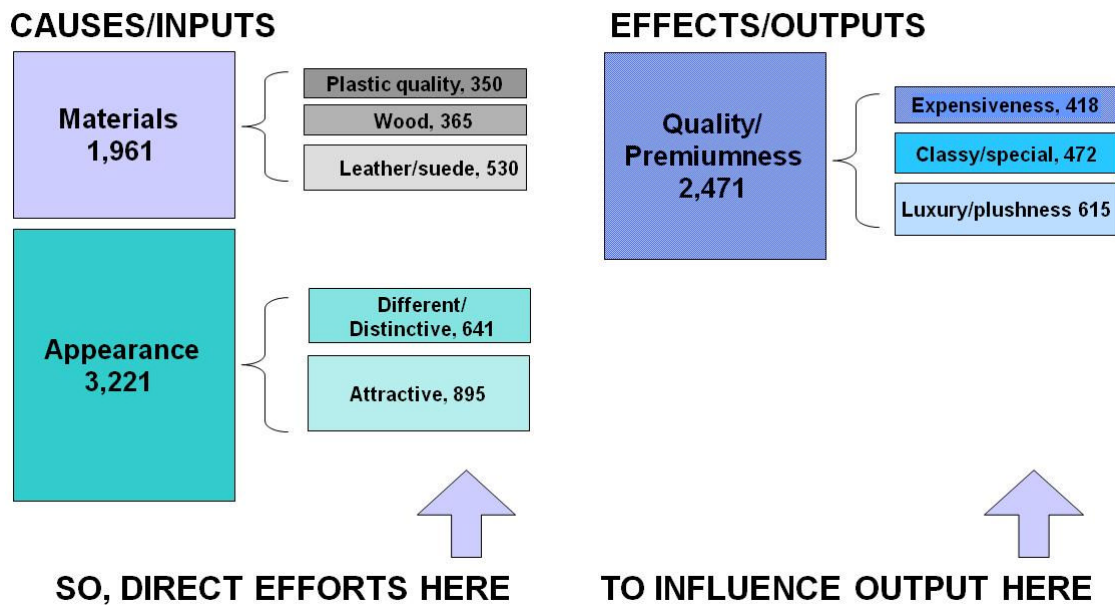


Figure B - 27 Cause and Effect Summary

The salient differentiators were also analysed according to area of the car: does interior or exterior elicit more positive or negative reactions from the respondents? Figure B - 28 illustrates the results.

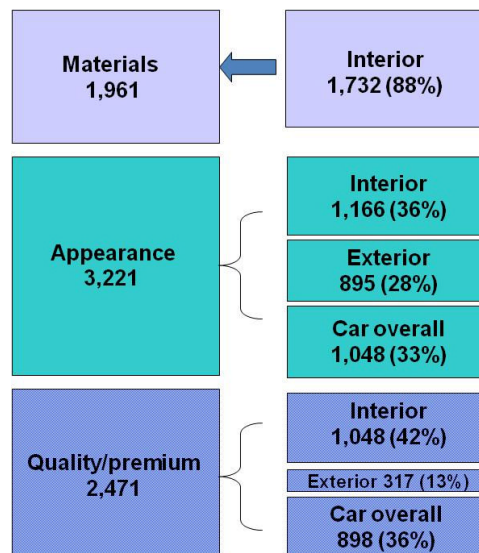


Figure B - 28 Top 5 vs. Bottom 5 Salient Differentiators by Car Area (US & UK)

Moving away from the themes to focus on which areas of the car generate positive and negative comments, the top and bottom 5 cars were again compared

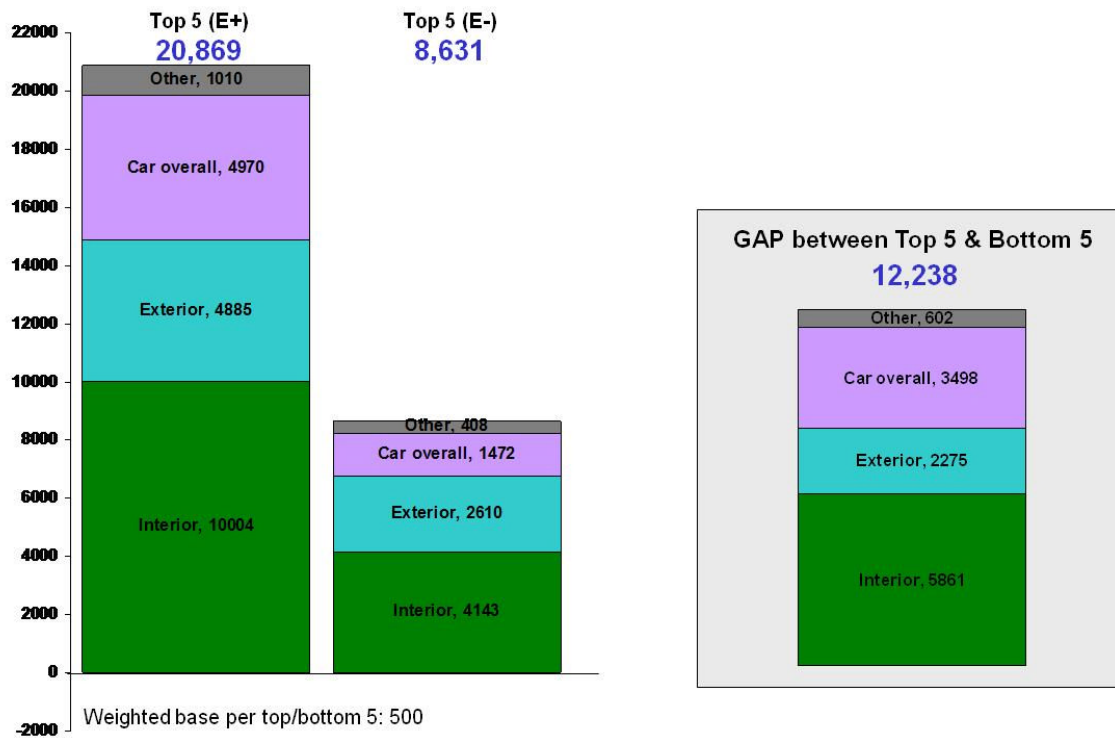


Figure B - 29 Top 5 vs. Bottom 5 NetE by Car Area (US & UK)

This shows that the interior has the biggest influence on eliciting a high NetE is the interior. Further drilling down demonstrates that Overall Impressions is significantly the biggest driver of this result. Figure B - 30 shows the differentiators after Overall Impressions:

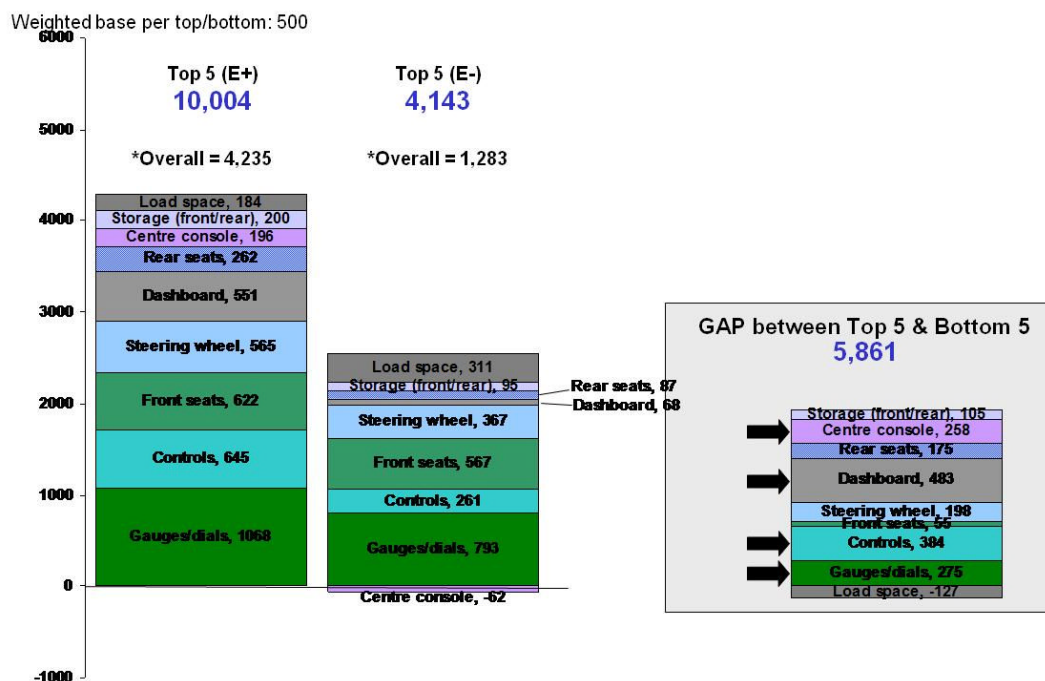


Figure B - 30 Top 5 vs. Bottom 5 NetE by Car Area - Interior (US & UK)

Cross comparing the interior with theme yields the results in Figure B - 31.

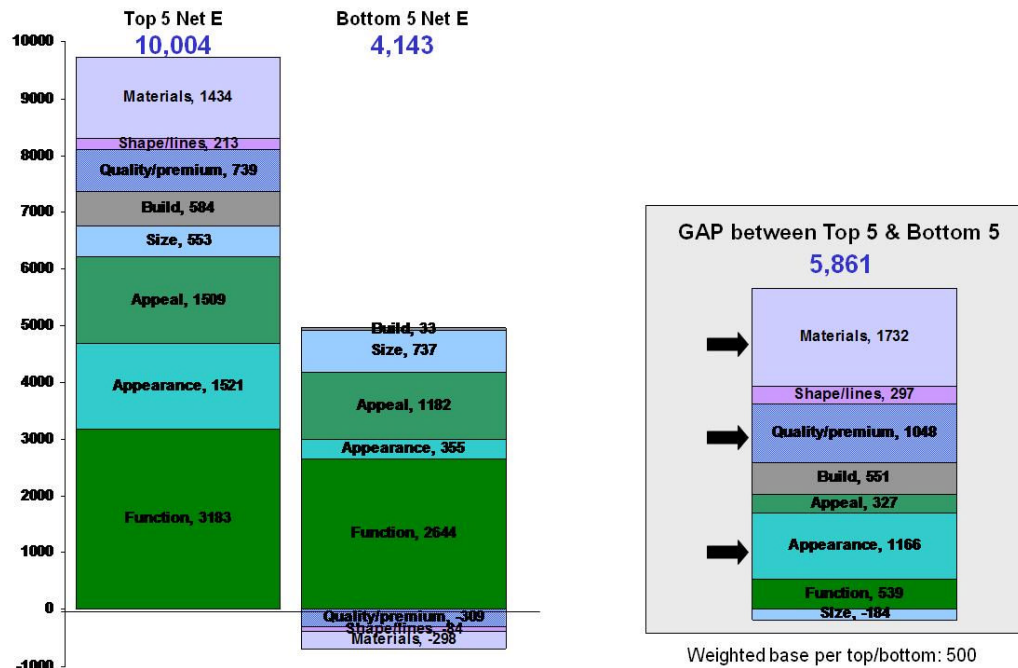


Figure B - 31 Top 5 vs. Bottom 5 Interior NetE by Theme (US & UK)

This again shows that materials, appearance and quality/premiumness are the salient differentiators. Breaking each of these yields corresponding sub-tier drivers:

- Materials: leather/suede, wood, plastic/plastic quality;
- Appearance: attractiveness;
- Quality/Premiumness: luxury/plushness, expensiveness

Looking specifically at the exterior shows that the overall exterior, then front and rear are the areas of biggest difference in NetE between the top 5 and bottom 5 cars. This superficial glance at the data suggests that a somewhat holistic appraisal is taking place.

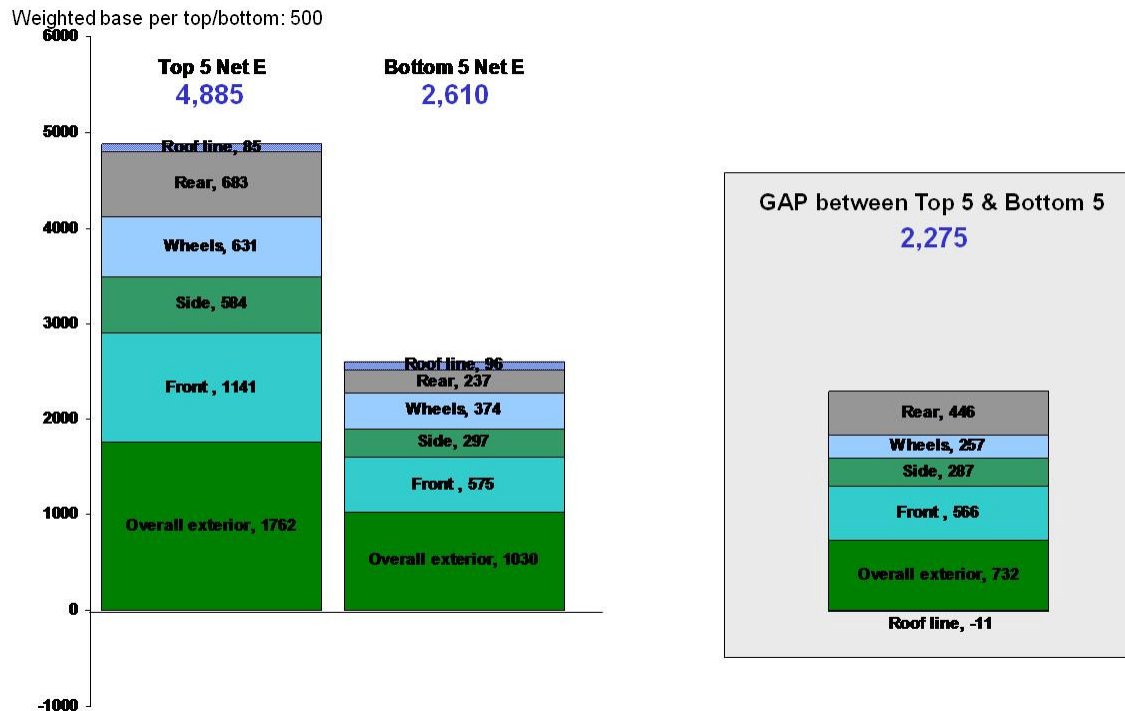


Figure B - 32 Top 5 vs. Bottom 5 Exterior NetE by Car Area (US & UK)

Cross comparing the interior with theme yields the results in Figure B - 33.

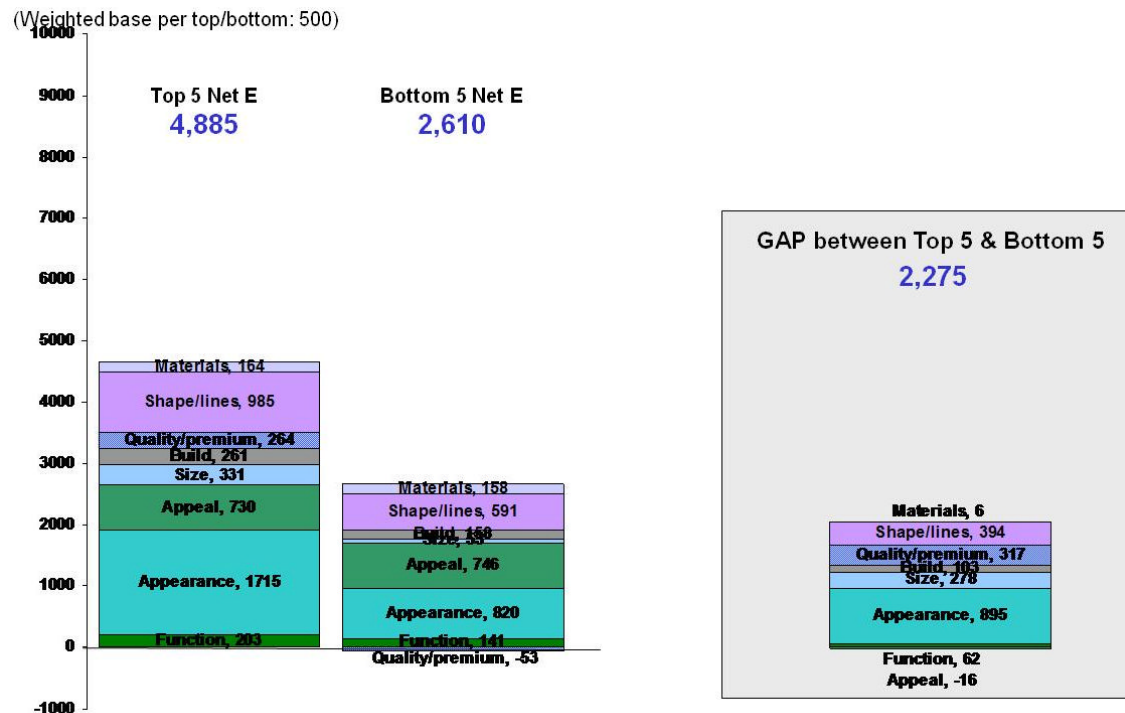


Figure B - 33 Top 5 vs. Bottom 5 Exterior NetE by Theme (US & UK)

A further level of breakdown shows that a high NetE score for appearance is driven by different/distinctive and balance/integrations, while shape/lines is

driven by sleek/aerodynamic. Quality/premiumness NetE is drive by comments about expensiveness.

Similar breakdowns can also be made for the car overall (salient differentiators are quality/premiumness and appearance), reinforcing the message.

The need to take a holistic view to benchmarking was highlighted, that is not to view or develop specific details in isolation.

As a final note, the best in class for the various salient differentiators were identified. The Bentley Continental GT, Jaguar XJ and Maserati Quattroporte were highlighted as having the best Materials NetE scores (both overall and for interiors). Figure B - 34 shows the best and worst in class for the identified materials (interior), appearance (whole car) and quality/premiumness differentiators:

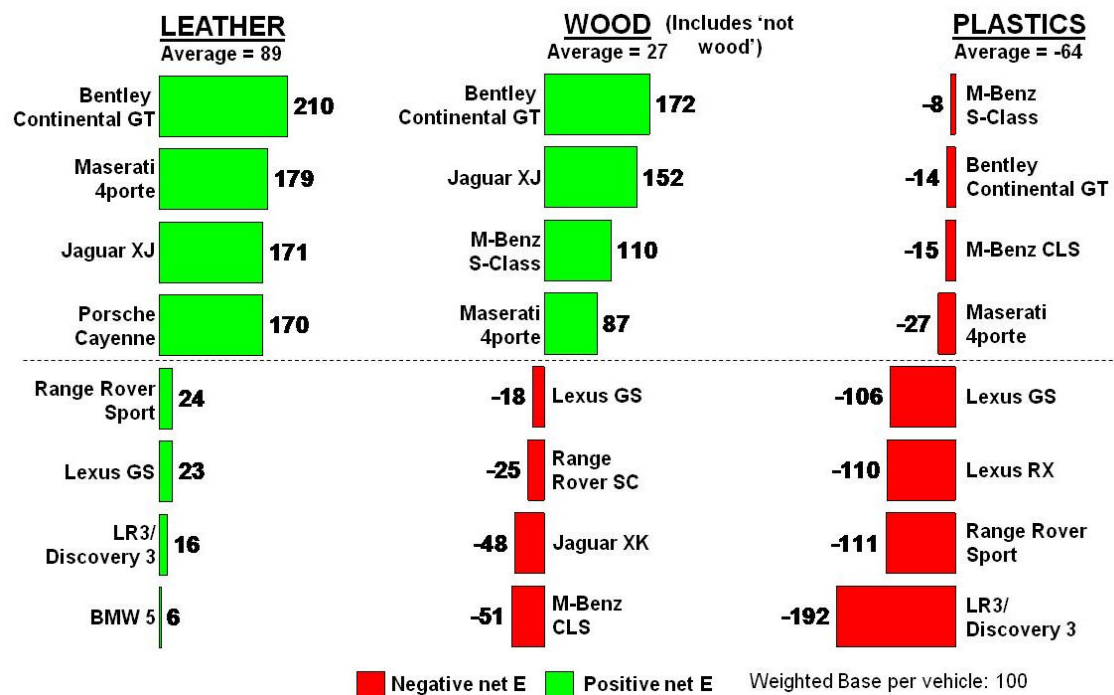


Figure B - 34 Interior Materials NetE BiC/WiC (US & UK)

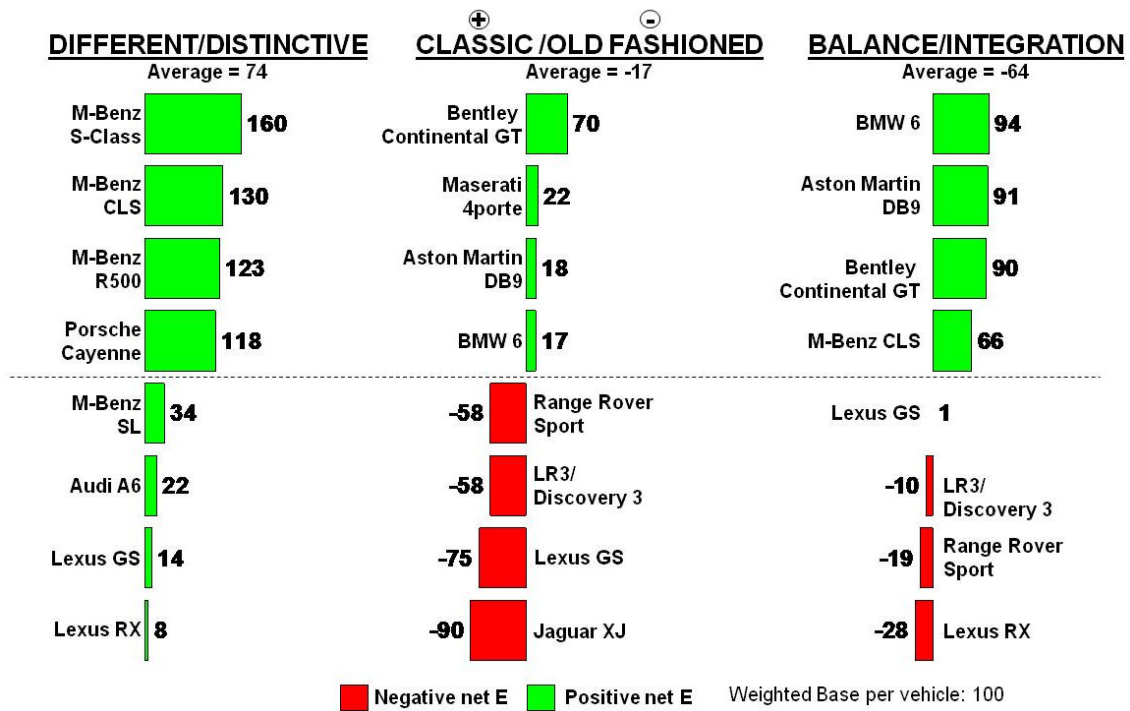


Figure B - 35 Whole Car Appearance NetE BiC/WiC (US & UK)

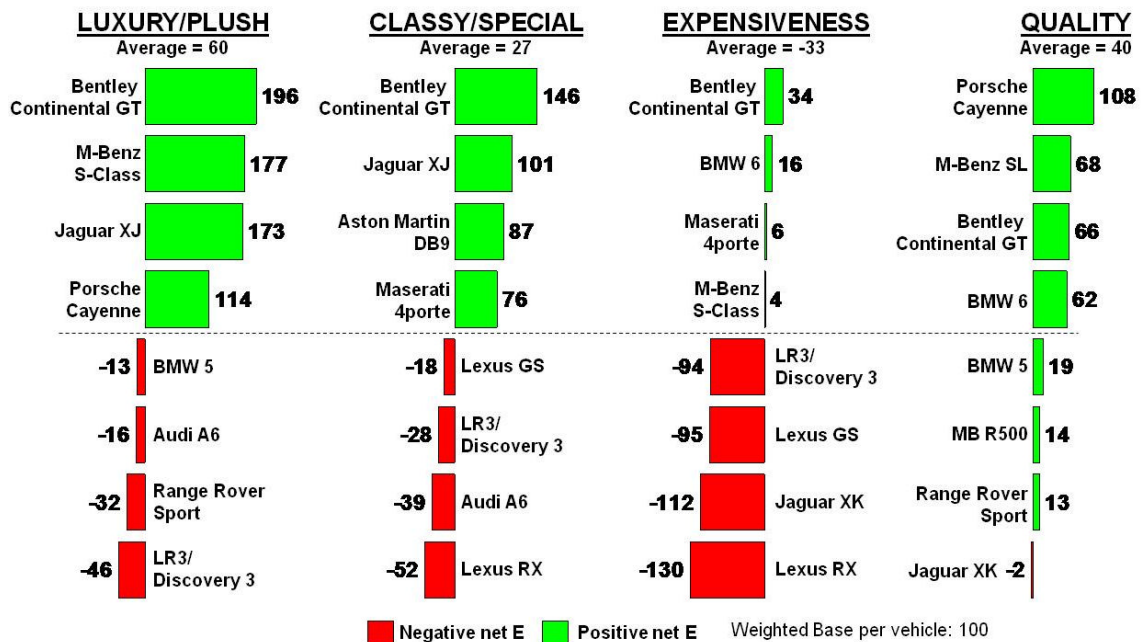


Figure B - 36 Whole Car Quality/Premiumness NetE BiC/WiC (US & UK)

Finally, respondents were asked how negative (1) / positive (10) they felt about a range of PALS attributes. The mean attribute rating scores are summarised in Figure B - 37.

mean ratings (1= feel very negative about, 10 = feel very positive about...)	The overall visual appeal from the exterior	The design of the Instrument Panel	The styling of the seats	Overall visual appeal on the inside	Overall sense of harmony	Sense of quality	Materials used in this car	The way this interior smells	The way things feel to the touch overall	The feel of the switches/controls	The feel of instrument panel	Feel of the steering wheel	The overall level of equipment	How well the interior and exterior match	The overall quality of design, inside and out	This vehicle's overall feeling of 'specialness'	OVERALL PALS RANK	OVERALL NHE RANK
Mercedes-Benz S550	8.2	8.4	8.7	8.7	8.7	9.2	9.0	8.8	8.9	8.7	8.5	8.4	9.2	8.7	8.7	8.9	2	1
Porsche Cayenne Turbo	7.6	8.0	8.3	7.7	7.8	8.3	8.1	8.0	8.2	7.6	7.8	8.1	8.3	7.9	7.8	7.7	6	2
BMW 645Ci	8.7	8.1	8.3	8.1	8.3	8.5	8.5	8.2	8.4	8.2	8.0	8.3	8.4	8.6	8.4	8.4	4	3
Bentley Continental GT	8.6	8.2	8.7	8.8	8.7	9.5	9.4	8.6	9.1	8.7	8.7	8.6	9.2	8.9	8.7	9.3	1	4
Maserati Quattroporte	8.1	8.0	8.7	8.2	8.1	8.8	8.7	8.7	8.7	8.3	8.4	8.8	8.8	7.9	8.4	8.3	3	5
Mercedes-Benz R500	7.2	7.6	7.8	7.6	7.5	7.8	7.4	7.6	7.6	7.7	7.7	8.1	8.3	7.8	7.6	7.2	10	6
Range Rover Sport SC	7.6	7.0	7.9	7.7	7.6	7.8	7.7	7.4	7.6	7.5	7.2	7.8	8.2	8.1	7.8	7.4	9	7
Jaguar XJR	7.2	7.3	7.7	7.7	7.8	8.1	8.0	8.1	7.8	7.3	7.4	7.8	8.1	7.7	7.6	7.8	8	8
Mercedes-Benz CLS	8.5	7.5	7.5	7.2	7.5	8.0	7.7	8.1	8.0	8.0	7.8	8.2	8.0	7.8	8.1	8.0	7	9
Aston Martin DB9 Volante	8.9	8.2	7.9	7.9	7.6	8.5	8.4	8.6	8.3	7.4	7.6	8.4	8.3	8.2	8.4	8.7	5	10
Land Rover LR3 HSE	6.1	5.8	6.8	6.4	6.4	6.5	6.3	6.5	6.5	6.1	6.1	6.8	6.9	7.3	6.3	6.2	18	11
Range Rover SC	7.9	6.0	6.6	6.1	6.2	6.8	6.4	6.6	6.3	6.2	6.2	6.7	7.0	6.7	6.9	7.2	15	12
Mercedes-Benz SL 500	8.0	7.3	7.1	7.3	7.5	7.7	7.3	6.9	7.3	7.4	7.2	7.4	7.7	7.7	7.8	7.5	11	13
Audi A6 4.2 Quattro	6.6	6.9	6.7	6.7	6.8	6.9	6.5	6.8	7.0	7.1	7.0	6.8	7.5	6.9	6.7	6.2	14	14
Lexus RX 400h	6.2	6.8	7.0	6.5	6.4	6.5	6.2	6.7	6.6	6.8	6.7	6.8	6.9	6.8	6.4	5.7	17	15
Lexus GS 430	6.8	6.7	7.1	6.6	6.6	6.9	6.5	6.6	7.1	7.2	7.0	7.2	7.9	7.0	7.0	6.0	13	16
BMW 545i	6.9	6.2	6.9	6.2	6.2	6.7	6.4	6.8	6.7	6.6	6.5	7.1	7.0	6.6	6.7	6.1	16	17
Jaguar XK	7.2	7.2	7.3	7.0	6.9	6.9	6.5	6.8	7.1	6.7	6.9	7.4	7.4	7.3	6.9	6.7	12	18

Best in Class

Figure B - 37 PALS Attribute Ratings

Overall Summary/Conclusions

The research has highlighted the importance of interiors to high-end automotive products, and having an exceptional interior enhances some key brand standing points:

- Specialness / indulgence
- Possibly creating a unique selling point (competitive advantage)
- Quality – cost of entry
 - reliability, durability
 - quality of design / craftsmanship
 - function and features

However, an exceptional interior alone will not drive desirability: the overall vehicle must still be appealing. Exteriors can create desirability for a vehicle, for example the Range Rover Sport scores highly in the JD Power APEAL study even though its interior is not exceptional.

The following factors differentiate the exceptional interior from the merely good interior:

- Materials are special
- Put together properly
- With no tacky/plasticky bits that detract from overall quality
- And all in harmony with what consumers consider to be premium iconography:
 - Indulgent proper leather – looks and feels soft/supple
 - Expensive looking wood, not laminate, no strange dyes

- Proper harmonious components brought together in a harmonious way
- No obviously cheap and tacky bits (no nasty plasticky bits) to detract from the overall look and feel

Authenticity is an important element of premium iconography:

- No fake leather
- No fake wood
- No nasty plastic
- No cheap components borrowed from cheaper models
- Care and attention to detail – no rough stitching, no strange gaps
- Harmony – all designed to go together
- Plus all the expected toys

PALS (Product Attribute Leadership System) is an agreement across PAG to ensure every *tangible* aspect of the vehicle has been manufactured to a specified standard. PALS is structured from Level 1 to Level 5; Levels 1 – 3 are given a rating from: Leadership, Amongst the Competitors and Competitive. This determines what standard the particular parts of the vehicle should be engineered/manufactured/designed to. The following attributes correspond with the Premiumness findings and as such should be protected with Leadership status:

- Design – all consecutive levels
- Perceived Quality – all consecutive levels apart from sound quality (level 3)
- Infotainment and HMI – all levels
- Accommodation and Usability – exterior dimensions only (level 2)

APPENDIX C APPLYING THE PREMIUMNESS RESEARCH METHOD TO LIVE PROJECTS - “L486/L538”



Introduction

The L486/L538 Premiumness Research Project was a practical application of the Stage 2 process described in Appendix B. L486 and L538 are codenames for new products being developed by Land Rover. In this case, they were actually brand new models, rather than upgrades or refreshes of existing models. In this case the research was performed to inform the design and development process, rather than to abstractly understand how consumers perceive luxury vehicles.

L538 is the LRX cross-coupé, due to go on sale in 2011⁶⁰:



Figure C - 1 L538 (LRX)

L486 is essentially a 7 seat version of this vehicle, due to go on sale in 2012.

Because these models were in development they could not be studied directly, so the Freelander 2 model was used, both as a proxy and also to capture customer views of this vehicle using the premiumness methodology. Freelander had not been evaluated during the Stage 2 research.

This appendix provides an overview of the study and its findings as presented to JLR management circa February 2008. It provides a passive review, and does not include a critique of the methodology, analysis or dissemination process. It also does not incorporate observations from the research interventions that were conducted as part of the EngD research project (these are described in the main body of the thesis).

⁶⁰ <http://www.landrover.com/gl/en/lr/lrx-concept/lrx-concept/>

Acknowledgements are given to MM-Eye research agency, who conducted the research for JLR, and to Amanda Hope, Helen Connelly and Rebekah Loftus (JLR MRO) who managed the process and disseminated the findings.

Aims and Objectives

This research project was conducted in 2007 to look specifically at Land Rover's Freelander 2, L486 and L538 products. The objectives for each vehicle were slightly different:

Freelander 2 (LR2)

- To understand how target consumers perceive Freelander 2 compared to key competitor benchmark vehicles⁶¹
 - Does Freelander 2 evoke a greater or lesser emotionally positive response – measured NetE
 - Why does Freelander 2 evoke this response
 - What do the competition do well or not so well
 - What do Freelander 2 customers want – inform MY change
- To understand how real customers perceive Freelander 2 in terms of its design and quality of materials and hence its 'premiumness'
- To understand what this group of customers (small SUV buyers and prospects in UK and US) want in a small SUV

L486/L538

- To understand how real customers perceive the prospective competitor benchmark vehicles selected in terms of their design and quality of materials and hence their 'premiumness'
 - What level of emotional response does each vehicle evoke
 - What do they do well – what applications can Land Rover carry over
 - What do they not do well – what must Land Rover avoid
 - Is a 5 door perceived differently to a 3 door in terms of emotional response
- To obtain knowledge to give a recommendation for a design benchmark for L538
 - To inform the business regarding customer opinions of potential benchmark vehicles⁶²

⁶¹ There was a concern that LR2 had premiumness deficiencies

⁶² requested by Product Strategy

- To ensure benchmarks embody the required level of premiumness and provide suitable learning for future L513 development
- To understand how customers perceive a 5 door vs. a 3 door

Methodology

Clinics were held in Kidderminster (UK) and Pasadena (US) in December 2007. The study comprised 137 participants (72 UK and 65 US). The sample comprised a mix of age, lifestage and gender, with a threshold minimum of £18,000/\$32,000 paid for the vehicle owned (except Mini owners). Participants were chosen according to the car they owned (qualifying vehicle), and the sample for each clinic split 50% SUVs, 50% other bodystyles. The aspirer/developer/heartlander/luxuriator breakdown was not used in this study.

Each participant was allocated to one of the two evaluation cells (labelled the L486 and L538 cells accordingly). The vehicles contained in each cell are shown in Figure C - 2 to Figure C - 5, and reflect the competition set being considered for benchmarking for the new models. Each participant reviewed 3 cars each, in a rotated order⁶³.

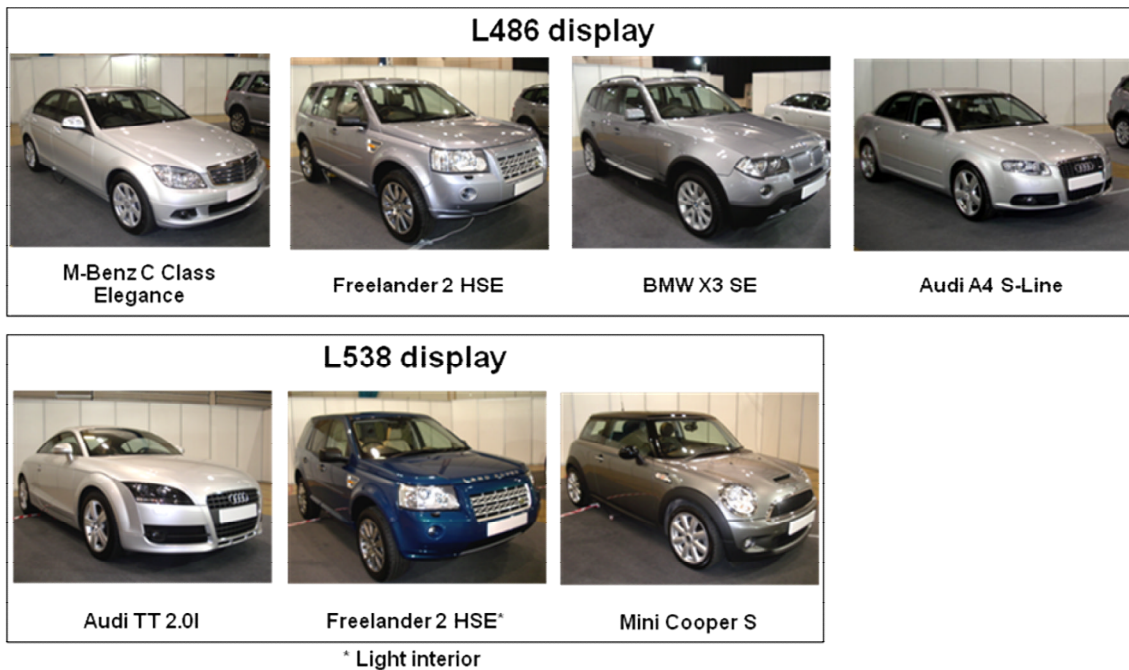


Figure C - 2 UK Cars - Exteriors (mainly dark interiors)

⁶³ ie the cars were viewed by the participants in different orders: 1 2 3, 2 3 1, 3 1 2, etc.

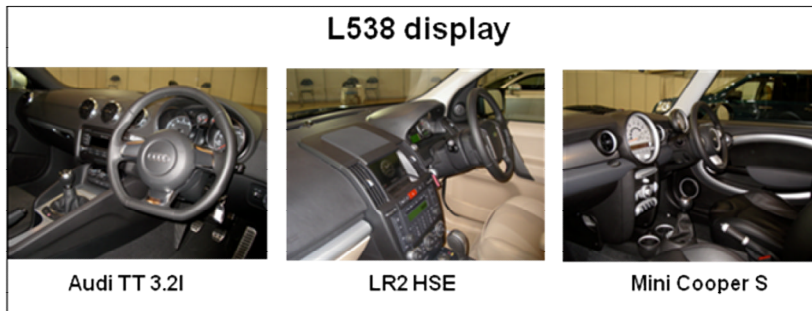
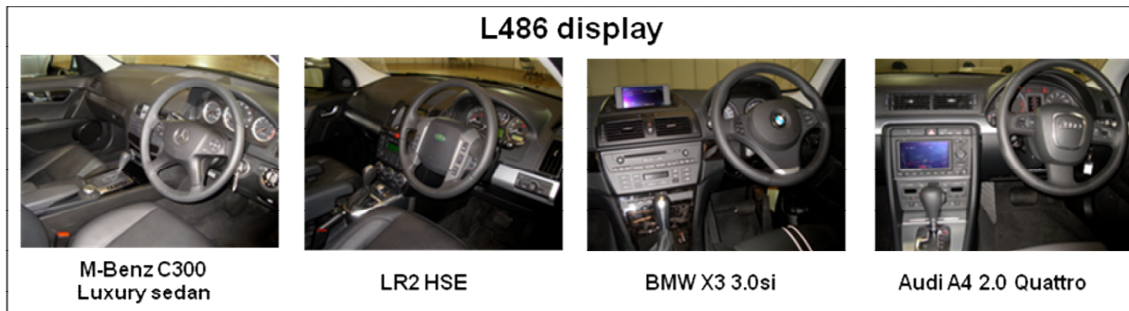


Figure C - 3 UK Cars - Interiors



Figure C - 4 US Cars - Exteriors (mixed light and dark interiors)

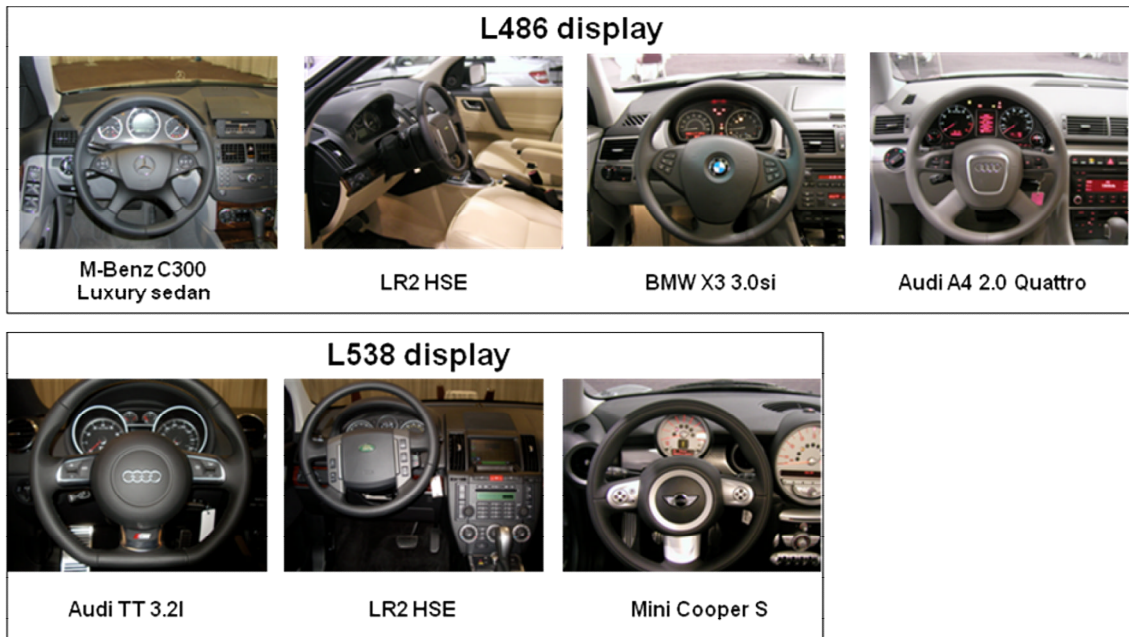


Figure C - 5 US Cars - Interiors

Each clinic followed the structure shown in Figure C - 6.

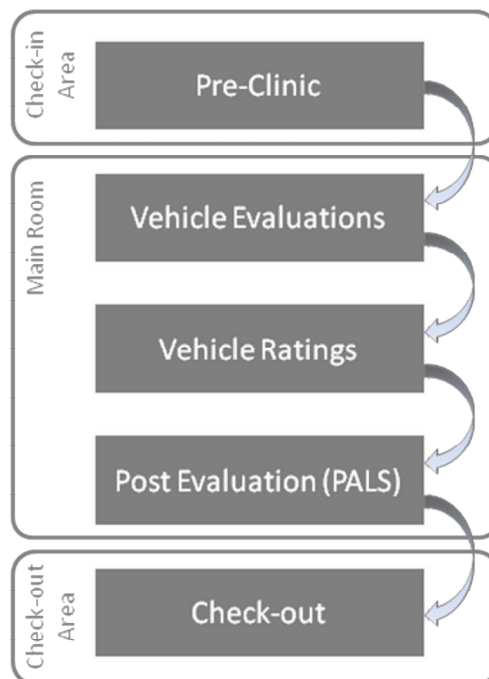


Figure C - 6 L486/L538 Clinic Process Flow

Participants in the “pre-clinic” were asked to position brands on the premium “continuum”. They were then asked to position models from a list of current models for each brand.

Participants were taken into their evaluation cell and were asked to view each of the 3 vehicles in turn. Respondents were asked to give their initial top-of-mind response (look at the car for 2 minutes, then talk to me in your own words), then a more detailed look at the car (interior, exterior, etc, but still respondent

directed). Their movements were recorded by observers, and everything that they said (the stream of consciousness) was captured on voice recorders. The order in which respondents viewed the cars was rotated.

Participants were then given the opportunity to re-position the vehicles that they had seen on the brand continuum, to capture post-evaluation thoughts and compare pre and post-evaluation positions.

Participants were finally asked to evaluate each vehicle by rating a number of attributes that reflected the PALS structure.

Overview of Results

The clinics have yielded a wealth of data in three categories:

- Premiumness Continuum:
 - Brand standing & brand strength;
 - Nameplate (awareness, pre and post evaluation position).
- PALS Ratings:
- Stream of Consciousness.

Brand and Model Standing

Respondents were shown a screen with a single horizontal line (continuum), calibrated from 0 “low end”⁶⁴ to 100 “high end”⁶⁵. Respondents used a stylus to drag brand names from the top of the screen into position on the line according to their personal perception, leaving any brands they didn’t know to one side. Respondents were able to refine their positioning until they were happy with the relative position of each of the brands they were familiar with.

This process yielded the following results (Figure C - 7):

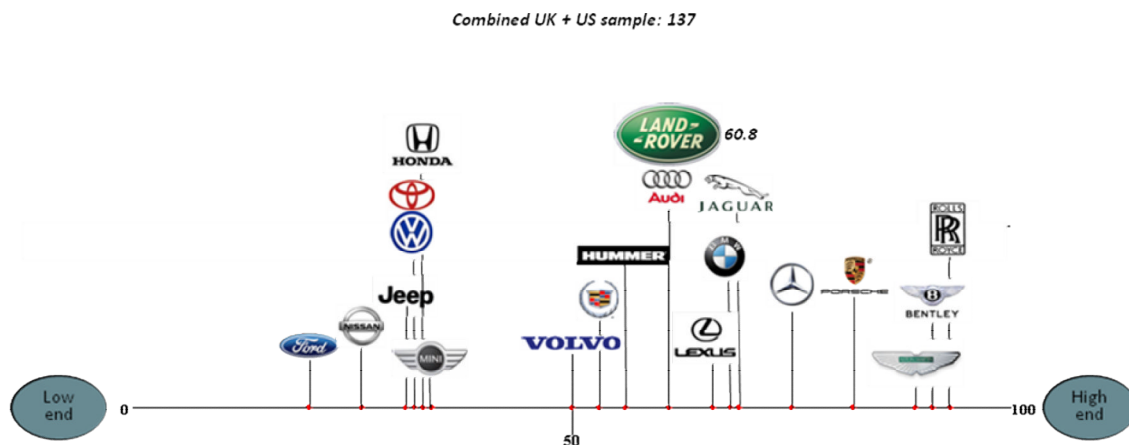


Figure C - 7 Brand Strength (US & UK)

⁶⁴ Low end, ordinary, mass market, less special

⁶⁵ High end, upmarket, luxury, special

Land Rover⁶⁶ was positioned higher in the US than in the UK, as for Stage 2. The brand was positioned slightly lower than in the Stage 2 clinic, but the sample demographic was markedly different.

Brand focus for the L486 cell is shown in Figure C - 8, while brand focus for the L538 clinic is shown in Figure C - 9.

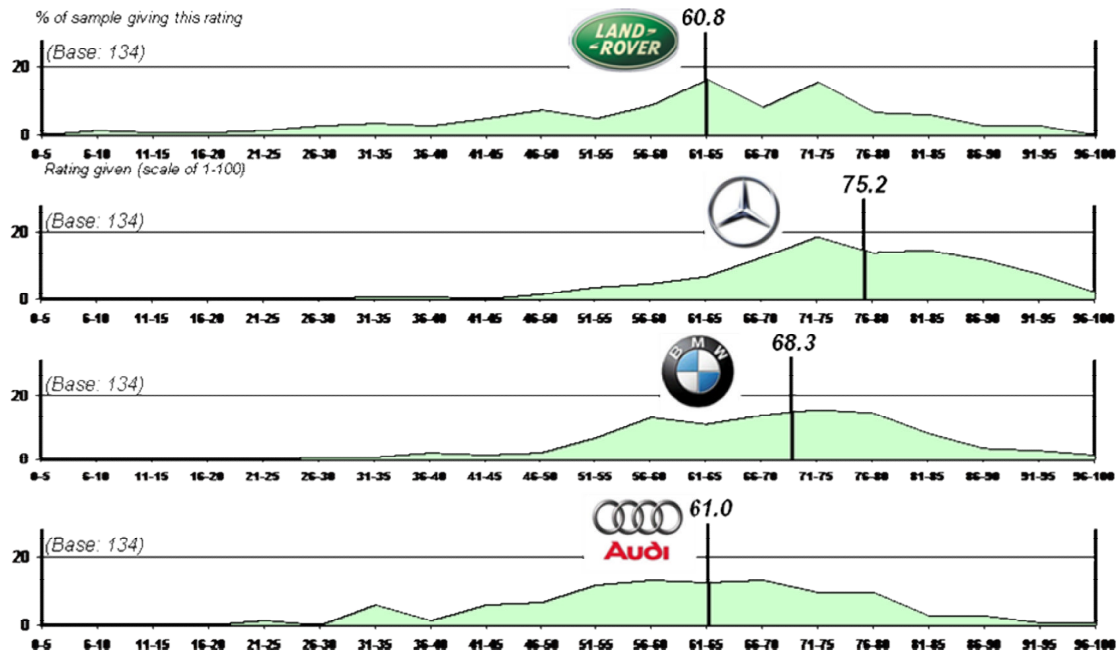


Figure C - 8 Brand Focus - Brands in L486 Cell (UK & US)

This suggests that the Land Rover brand is outperformed by Mercedes and BMW in terms of both strength and focus, but holds a similar position to Audi.

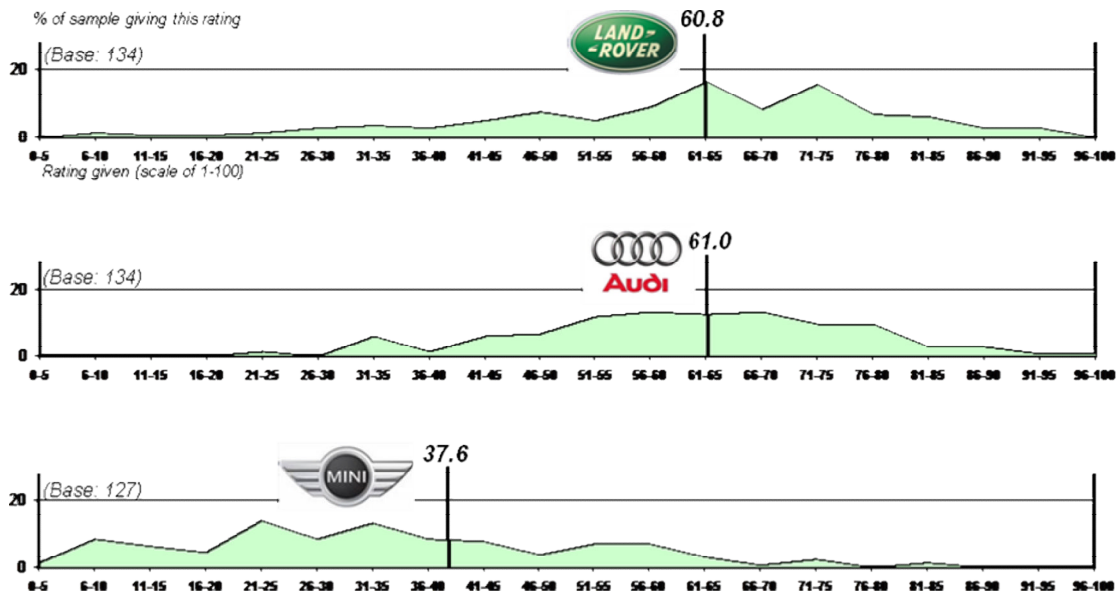


Figure C - 9 Brand Focus - Brands in L538 Cell (UK & US)

⁶⁶ This clinic is for Land Rover products, so Jaguar is not explicitly discussed this time.

This suggests that the Mini brand is not perceived as a competitor to either Land Rover or Audi by the target consumers.

The respondents were asked to position those models names that they were familiar with relative to where they had previously positioned the brand on the continuum. The result is shown in Figure C - 10

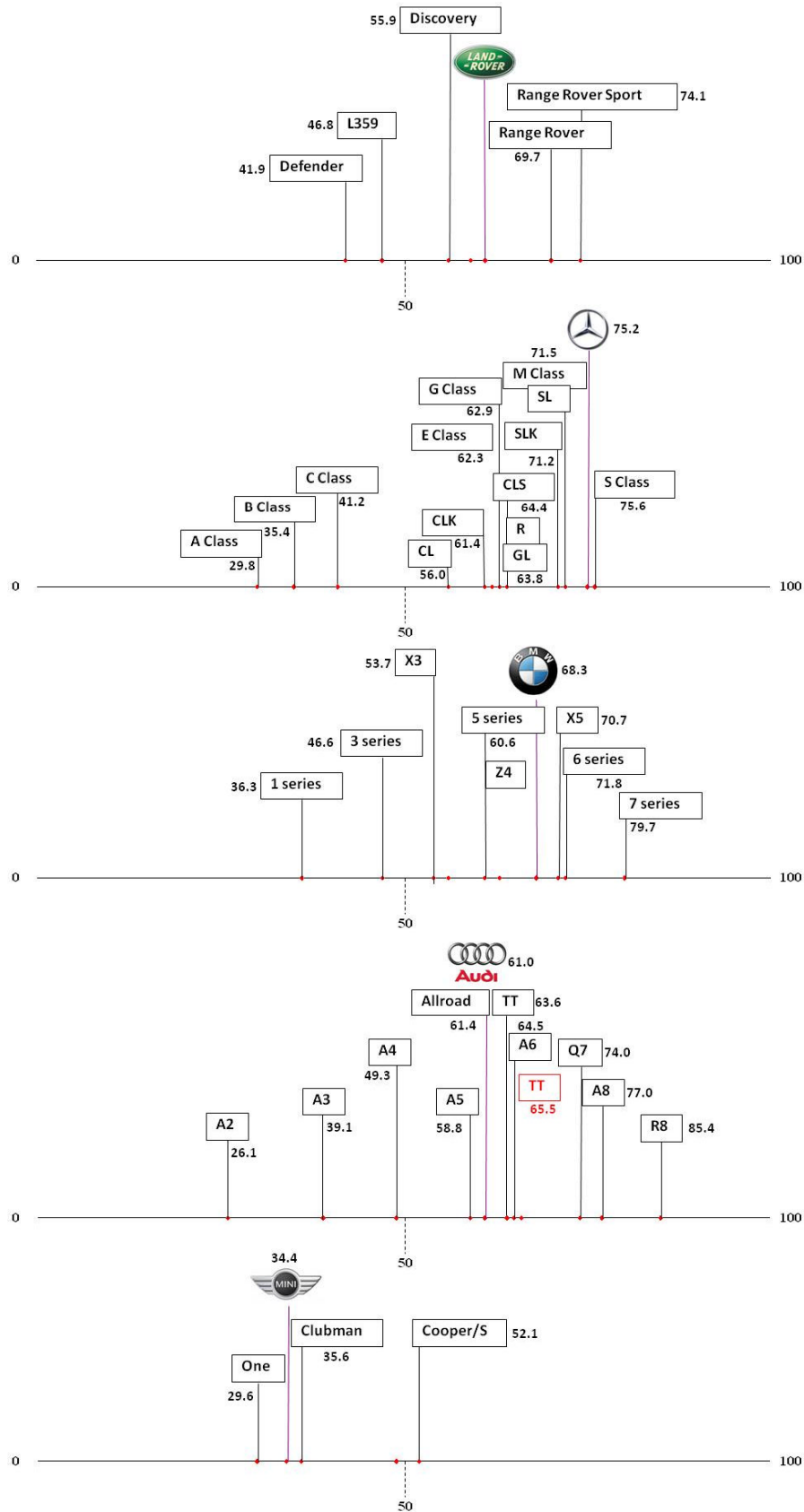


Figure C - 10 Model Standing (UK & US)

Most brands demonstrate the balancing see-saw concepts, with the absolute exception of Mercedes, which suggests that the Mercedes brand has that “mythic status” where its image lies beyond the sum of its parts.

When asked the re-position those models that they had evaluated, the following results:

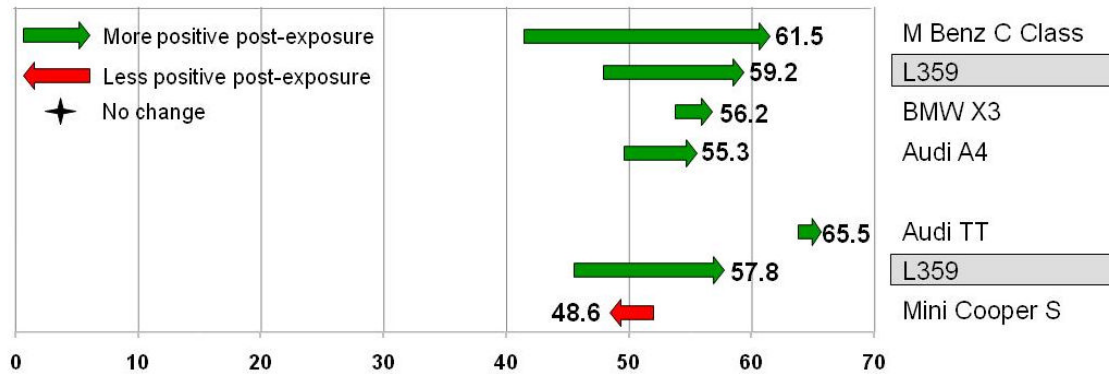


Figure C - 11 Post-Evaluation Model Strength (UK & US)

This further supports the suggestion that Mini and a brand and Mini as a model are not perceived at the same level as the other brands and models evaluated, having failed to meet consumer expectations, and therefore should not be used as benchmarks for developing the new Land Rover models.

Product Evaluation

The product evaluation phase was conducted as a static exercise only. The next phase was the evaluation of the actual vehicles. Each respondent viewed three vehicles in one cell. Respondents spoke freely, without direction from the moderators. The only prompts were open responses such as “talk to me” or “tell me what struck you”. The respondents were not aware of the aim of the exercise (premiumness) other than to find out what they thought. Their commentaries were captured on voice recorder. The aim was to capture what people naturally talk about, what language they use and with what degree of emotion (positive or negative). The recordings were transcribed and a coding system developed from and for the transcripts. The coding system captured the area of the car being discussed, the nature or subject of the comment (theme), the emotional valence and the sense being used. In this way, the number of comments could be counted and ascribed a meaningful code, and a measure of emotional value could be created from the data. The process was managed by the contractor (MM-Eye). The technique is described as StreamingTM.

Because comments have been coded according to whether they were emotionally positive (E+) or negative (E-), the verbatims can therefore be interrogated to compare E+ and E- for particular areas of the cars or for particular themes. A metric called NetE was introduced as a measure of appeal, and represents the balance of E+ and E-⁶⁷.

⁶⁷ NetE = number of positive comments - number of negative comments

The charts discussed below represent what was disseminated within JLR. There is more supporting data, but this was not provided to them.

Figure C - 12 shows the total number of positive and negative comments made by all respondents, normalised to 100 respondents per vehicle (this excludes neutral comments). This gives a measure of the emotional reactions to each of the cars: which cars got the greatest number of positive comments, which got the largest number of negative comments, and which had the greatest balance of positive comments (highest NetE).

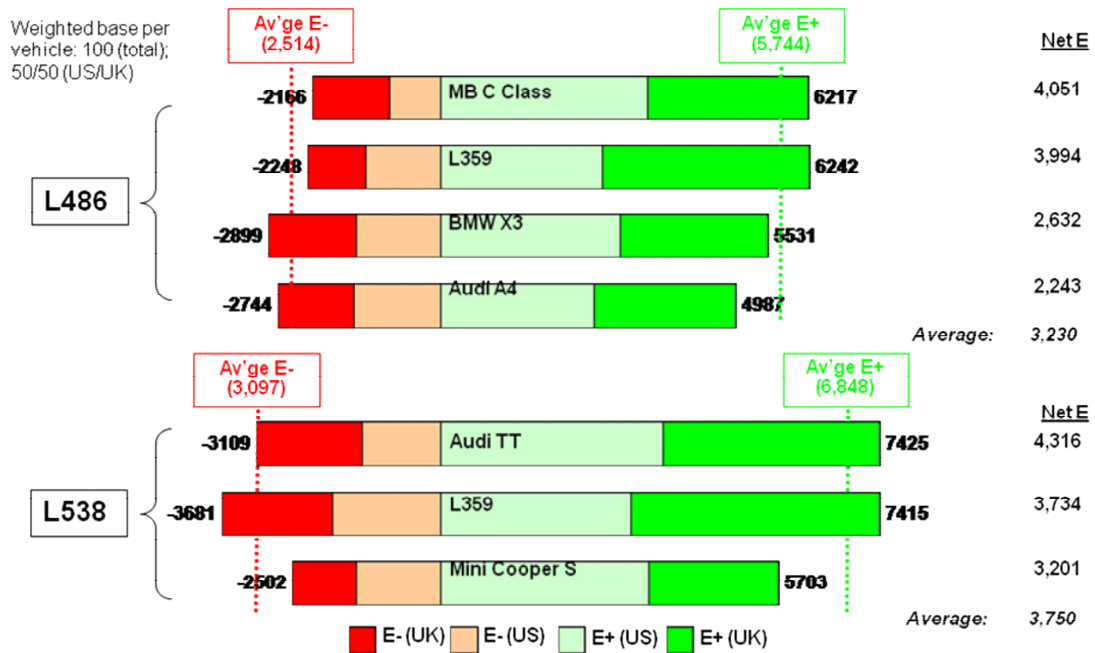


Figure C - 12 Total E+ and E- Scores - All Vehicles (US & UK)

The coding scheme used for Stage 2 was used for this clinic, with a few additions as required.

Because there are fewer cars in this clinic, the data was not analysed according to top 5 and bottom 5. However, the biggest premiumness differentiators were again found to be Materials, Appearance, Quality/Premiumness.

Looking just at the two Freelanders (one in each cell) shows some interesting differences between US and UK, but also between the slightly different specifications (Figure C - 13). For example, one of the UK cars was Blue with light interior rather than silver/grey with dark interior. The main differences within the markets were related to function and size rather than premiumness: UK respondents found it much easier to find/use/understand controls in UK, while many US respondents complained of over-complex centre stack, fiddly and overly numerous buttons, switchgear too close together etc.

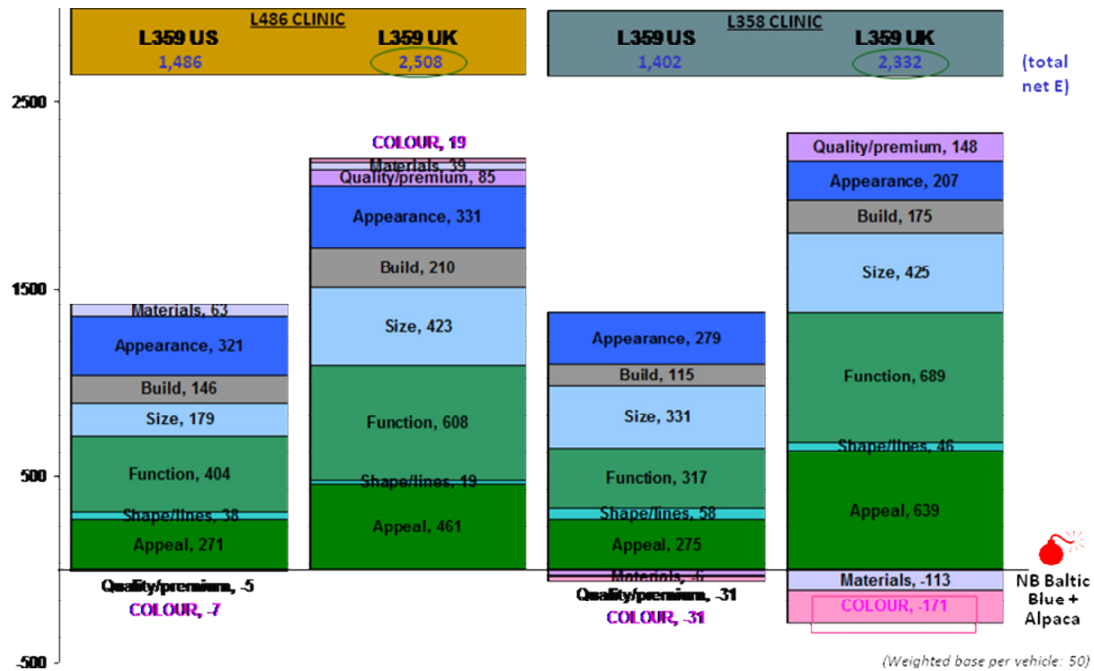


Figure C - 13 Freelander - NetE by Theme

Figure C - 14 shows the breakdown of NetE for the L486 cell by theme. A factor was developed to enable comparisons. This factor is illustrated in Figure C - 15.

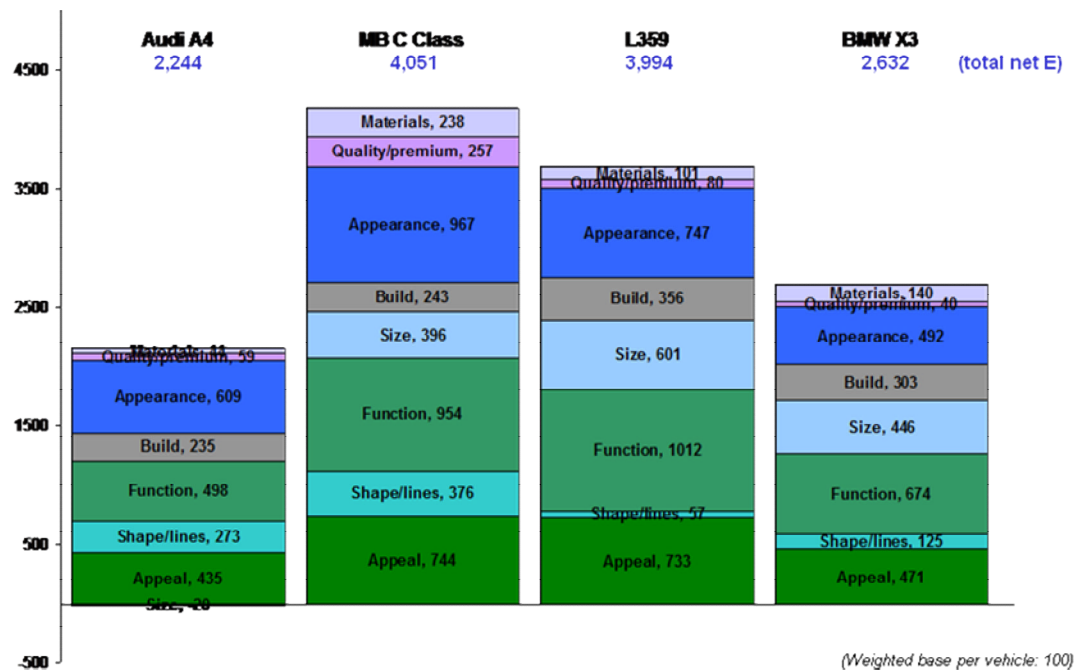


Figure C - 14 L486 Cell - NetE by Theme (US & UK)

THEME	Average Net E	A4	C Class	L359	X3	BIC
Total net E (Index vs average)	3230	0.69	1.25	1.24	0.81	Biggest 'premiumness' differentiators
Materials (Index vs average)	131	0.34	1.82	0.77	1.07	
Quality/Premiumness (Index vs average)	109	0.54	2.36	0.73	0.37	
Appearance (Index vs average)	704	0.87	1.37	1.06	0.70	
Build (Index vs average)	284	0.83	0.86	1.25	1.07	
Size/room/space (Index vs average)	356	-0.06	1.11	1.69	1.25	
Function (Index vs average)	785	0.63	1.22	1.29	0.86	
Shape/lines (Index vs average)	208	1.31	1.81	0.27	0.60	
Appeal (Index vs average)	596	0.73	1.25	1.23	0.79	

Figure C - 15 L486 Cell - NetE by Theme (Factor)

The best in class for each theme has been highlighted. In terms of premiumness drivers, the C Class is a clear leader, while the Freelander scores highest for practical themes.

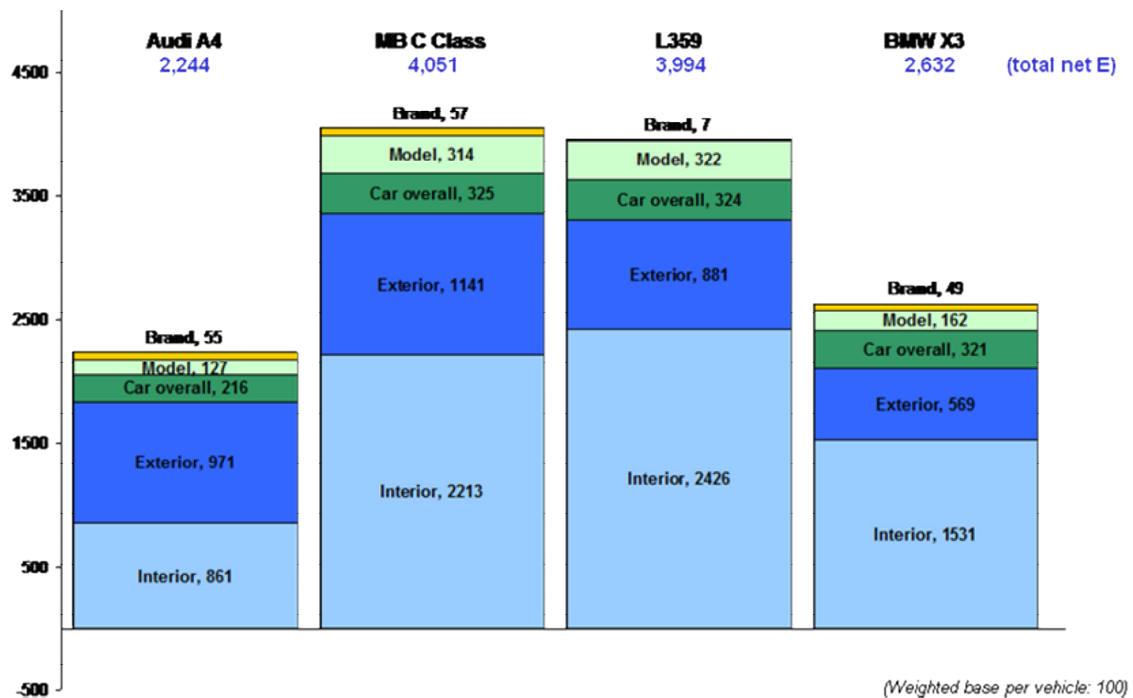


Figure C - 16 L486 Cell - NetE by Area (US & UK)

Figure C - 16 demonstrates that the biggest score area for NetE is the interior (as was also shown during Stage 2)⁶⁸. Breaking down NetE contributions for

⁶⁸ Note: the total NetE score given in these graphs includes Tier 1 Themes that are not included in the actual bars.

the interior by theme (Figure C - 17) show that practical themes about function and size generate the greatest balance of positive comments; once these are excluded, materials, appeal and appearance are the key drivers. This suggests that different drivers (practical considerations) seem to be more important to consumers in this market bracket (Stage 2 considered a higher end, higher wealth segment).

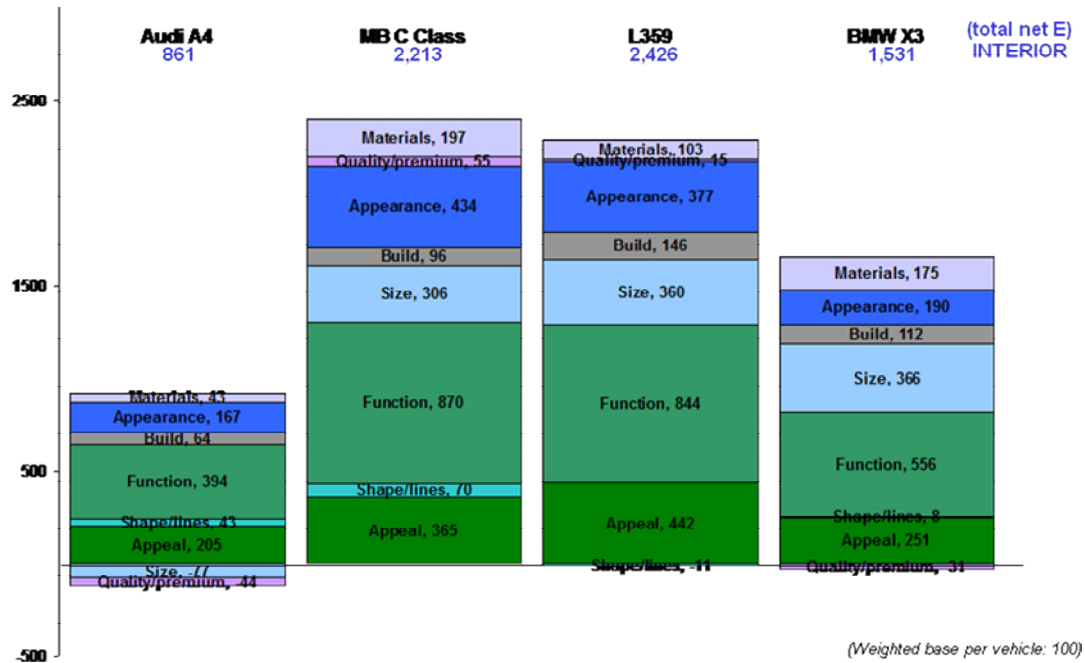


Figure C - 17 L486 Cell - Interior NetE by Theme (US & UK)

Figure C - 18 to Figure C - 20 provide a breakdown of the three salient differentiators identified in Stage 2 as driving the perception of luxury in a vehicle.

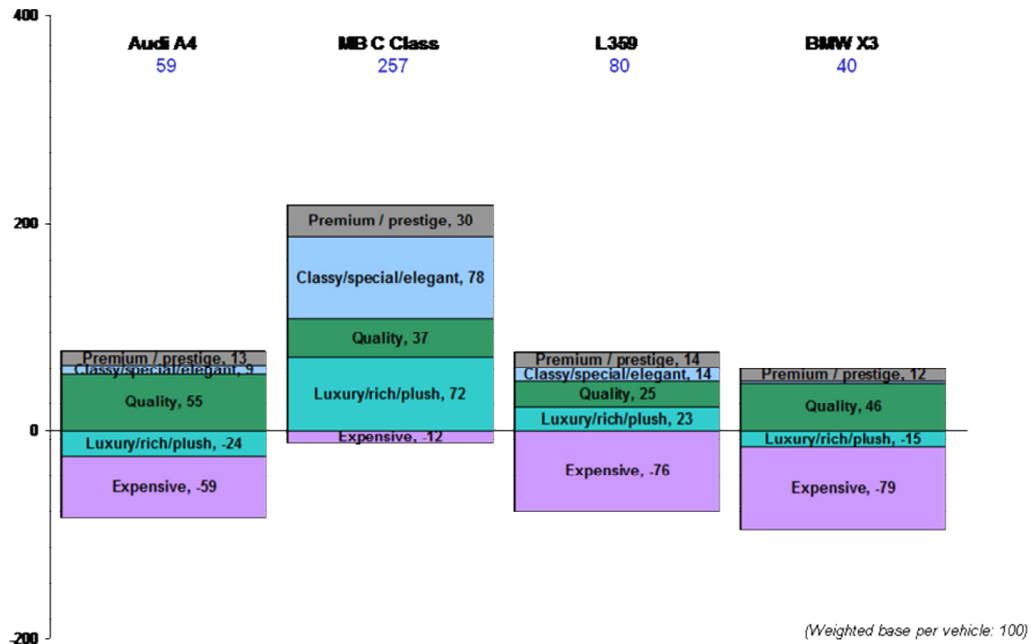


Figure C - 18 L486 Cell - NetE by Quality/Premiumness (US & UK)

The Mercedes C Class had a significantly better NetE for Quality/Premiumness, driven by higher classy/special/elegant and luxury/rich/plush NetEs and notably because of a lack of cheapness: negative NetE for expensive translates as consumers making negative comments about cheapness. This is clearly an area that needs improving for Freelander to improve its position in the eyes of the consumer, and provides a clear message for the design and development of L486.

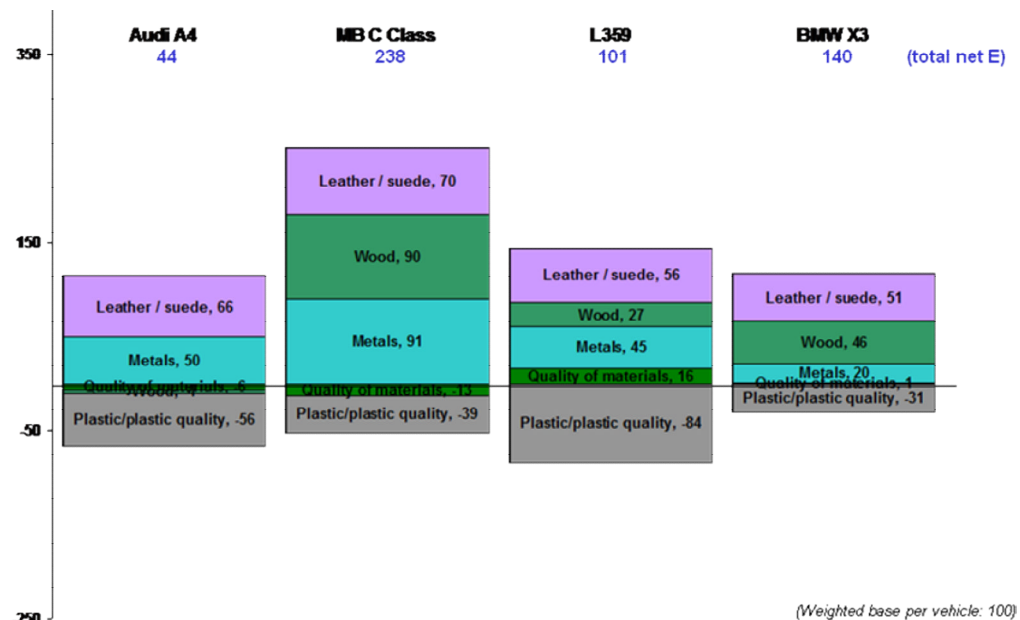


Figure C - 19 L486 Cell - NetE by Materials (US & UK)

All cars, but especially Freelander received negative NetE scores for plastic materials - a clear message from consumers that they do not like the plastics (quality or quantity) used in the vehicles.

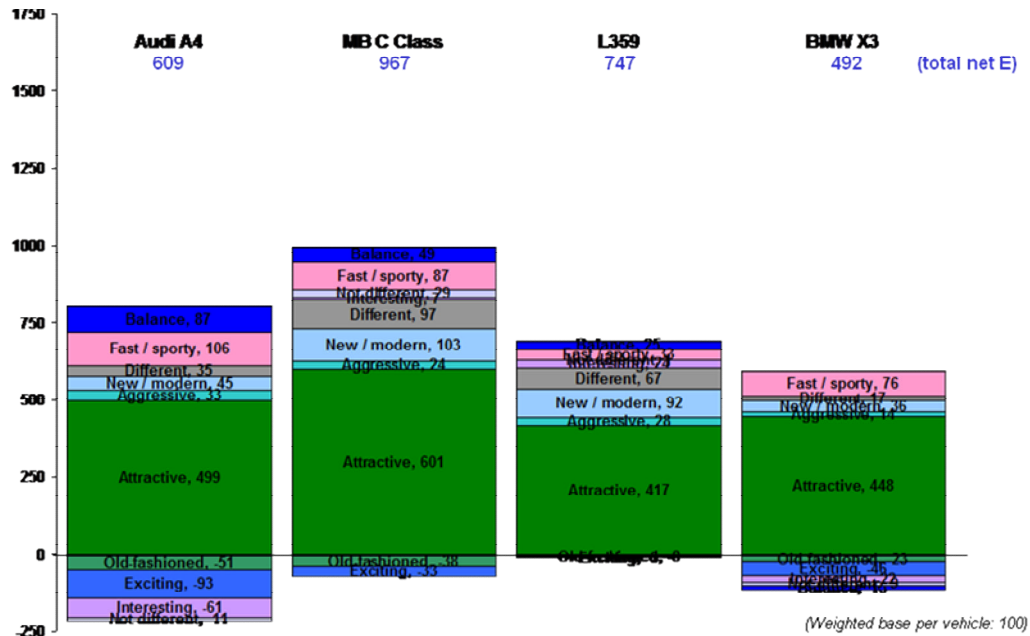


Figure C - 20 L486 Cell - NetE by Appearance (US & UK)

Attractiveness is clearly the biggest driver of the Appearance NetE results. The Audi A4 was perceived as being a dull - not interesting, not exciting.

The areas where Freelander came out as best in class were Function, Build and Size/Room/Space (shown in more detail in Figure C - 21 to Figure C - 23).

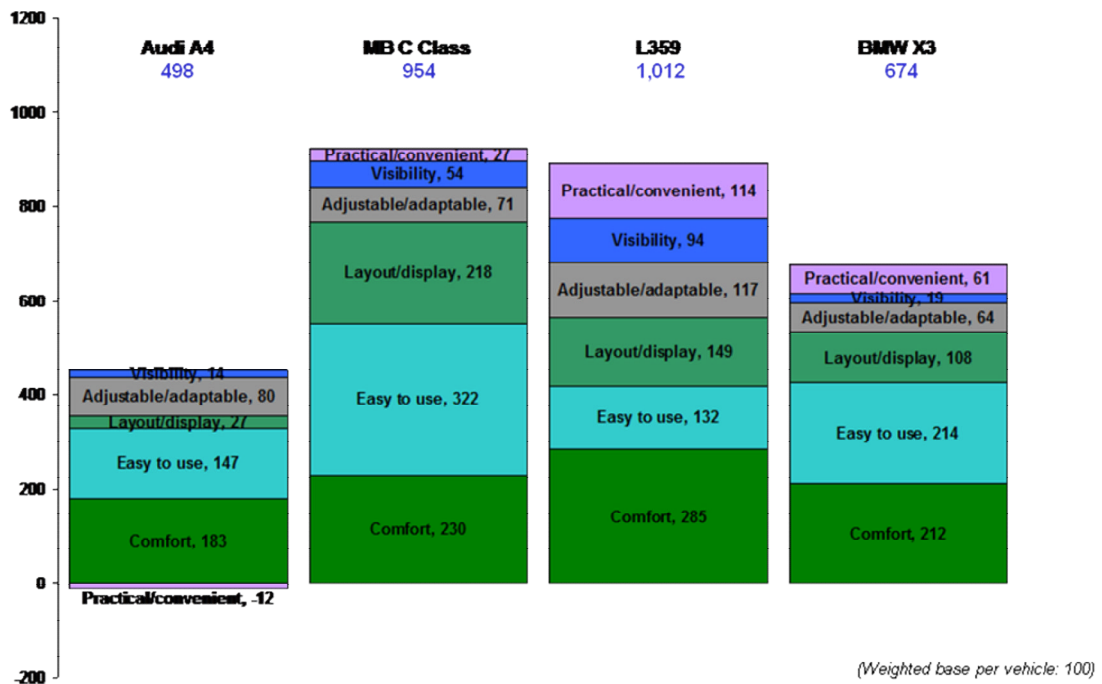


Figure C - 21 L486 Cell - Function NetE by Theme (US & UK)

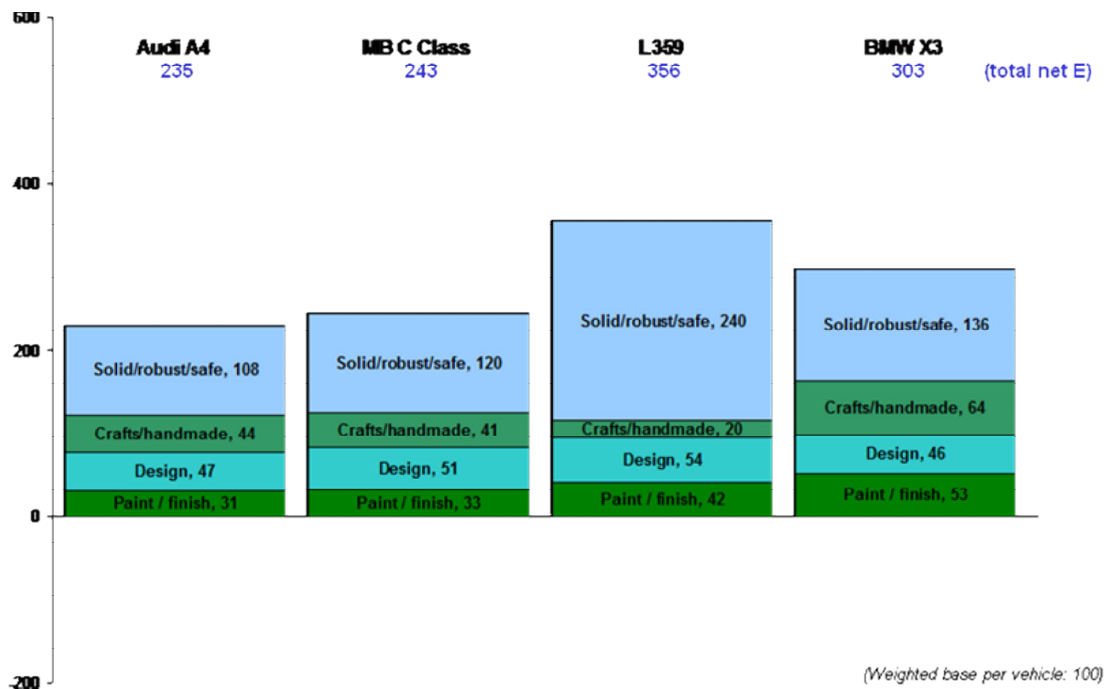


Figure C - 22 L486 Cell - Build NetE by Theme (US & UK)

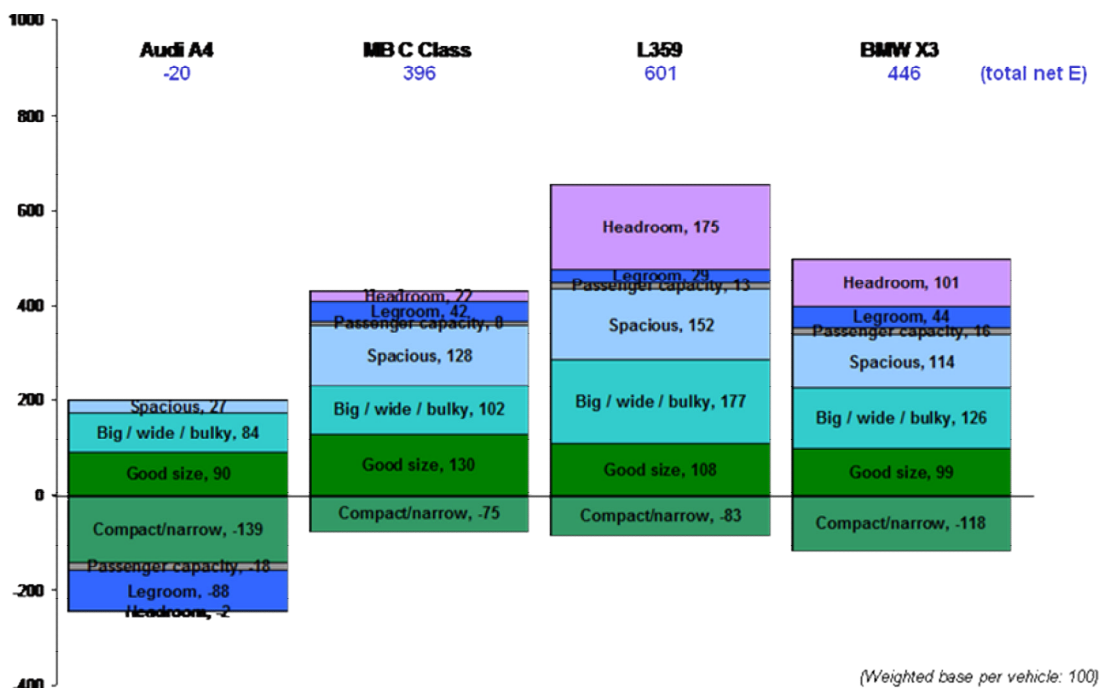


Figure C - 23 L486 Cell - Size/Room/Space NetE by Theme (US & UK)

Finally, respondents were asked how negative (1) / positive (10) they felt about a range of PALS attributes. The mean attribute rating scores for L486 are summarised in Figure C - 24.

	Freelander			BMW X3			M-Benz C Class			Audi A4		
	Both	UK	US	Both	UK	US	Both	UK	US	Both	UK	US
Overall visual appeal from exterior	8.0	8.1	7.8	7.3	6.9	7.7	8.1	8.1	8.2	7.3	7.4	7.3
Overall visual appeal inside	7.8	8.2	7.3	7.5	7.0	8.1	7.9	7.8	7.9	7.2	7.6	6.7
Overall sense of harmony	7.7	8.2	7.1	7.4	7.0	7.9	7.9	8.0	7.9	7.1	7.3	7.0
Sense of quality	7.9	8.1	7.6	7.5	7.0	8.2	8.2	8.1	8.3	7.2	7.7	6.7
How well interior & exterior match	7.8	8.4	7.1	7.7	7.1	8.3	8.1	7.9	8.2	7.7	8.0	7.4
Overall quality of design inside & out	7.9	8.4	7.4	7.5	7.0	8.0	8.3	8.2	8.4	7.2	7.4	7.0
Overall feeling of specialness	7.8	8.4	7.1	7.2	6.9	7.6	7.8	7.7	7.9	6.6	6.8	6.3
Design of instrument panel	7.6	8.0	7.3	7.3	7.2	7.4	8.8	8.0	8.0	7.2	7.3	7.0
Styling of seats	8.1	8.3	7.9	7.9	7.6	8.2	7.4	7.3	7.6	7.3	7.5	7.0
Materials used inside	7.6	7.8	7.4	7.5	7.0	8.2	7.7	7.6	8.0	7.2	7.8	6.5
Way interior smells	8.4	8.5	8.4	7.7	7.3	8.2	7.7	7.4	8.0	7.2	7.4	7.0
Way things feel to the touch overall	8.1	7.9	8.2	7.8	7.6	8.1	7.9	7.8	7.9	7.6	8.0	7.3
Feel of switches/controls	7.7	7.6	7.9	7.6	7.4	7.9	7.8	7.6	8.0	7.3	7.6	7.0
Feel of instrument panel	7.5	7.6	7.4	7.2	7.1	7.3	7.7	7.5	7.9	7.1	7.5	6.8
Feel of steering wheel	7.4	7.5	7.3	8.0	7.9	8.2	7.5	7.5	7.4	7.9	8.0	7.8
Overall level of equipment	8.4	8.7	8.1	7.8	7.7	7.9	8.2	8.4	8.1	7.7	8.2	7.0

 Best in Class

Figure C - 24 L486 Cell PALS Attribute Ratings

In terms of learning from the overall best in class in the L486 Cell (the Mercedes C Class), the following points were noted:

- Materials have more plush/luxury feel;
- Still has plastic but it both looks and feels better – it is certainly NOT the first thing one notices;
- The IP is very well designed, clearly laid out, intuitive, all to hand. Has plenty of ‘gizmos’ but these are pleasingly simple looking, not a labyrinth of fiddly buttons ... quietly impressive;
- Modern, clean looks inside and out;
- Respondents found it hard to find anything much to criticise ... even if it was “not my kind of car”;
- The Mercedes C Class seems therefore to be a good benchmark in terms of how to plan and execute an interior for a mid-range premium vehicle (especially given most SUV owners now want an ‘executive saloon’ feel inside their cars).

Figure C - 25 shows the breakdown of NetE for the L486 cell by theme. A factor was developed to enable comparisons This factor is illustrated in Figure C - 26.

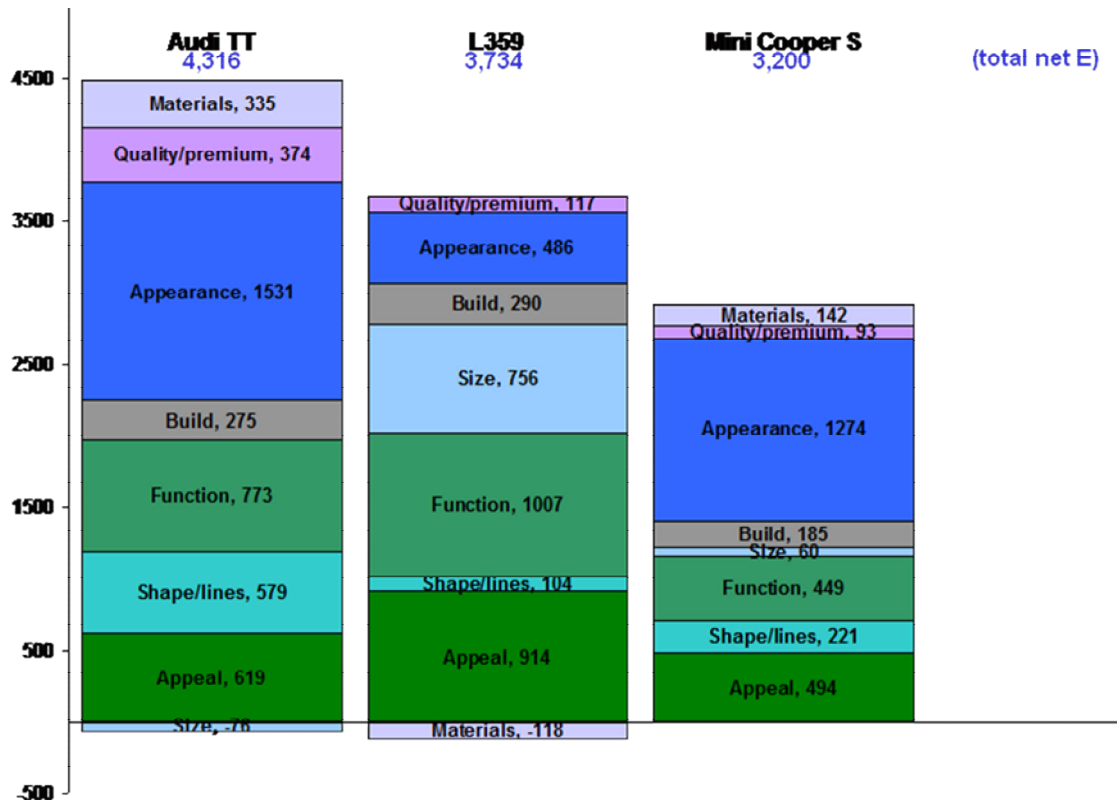


Figure C - 25 L538 Cell - NetE by Theme (US & UK)

Freelander achieved worse NetE results for the three key differentiators (materials, appearance and quality/premiumness) than both the Mini and the TT by a considerable margin (2240 for the TT, 1509 for Mini and 485 for the Freelander. This is a considerable disadvantage for the Freelander.

THEME	Average Net E	Audi TT	L359	Cooper S	BIC
Total net E (Index vs average)	3750	1.16	1.00	0.85	
Materials (Index vs average)	160	2.09	-0.73	0.89	Biggest 'premiumness' differentiators
Quality/Premiumness (Index vs average)	195	1.92	0.60	0.48	
Appearance (Index vs average)	1097	1.40	0.44	1.16	
Build (Index vs average)	251	1.10	1.16	0.74	
Size/room/space (Index vs average)	247	-0.31	3.06	0.24	
Function (Index vs average)	743	1.04	1.36	0.60	
Shape/lines (Index vs average)	281	1.84	0.37	0.79	
Appeal (Index vs average)	675	0.92	1.35	0.73	

Figure C - 26 L486 Cell - NetE by Theme (Factor)

This again shows how Freelander excels in practical areas, but performs poorly in terms of consumers' perceptions of luxury and premiumness.

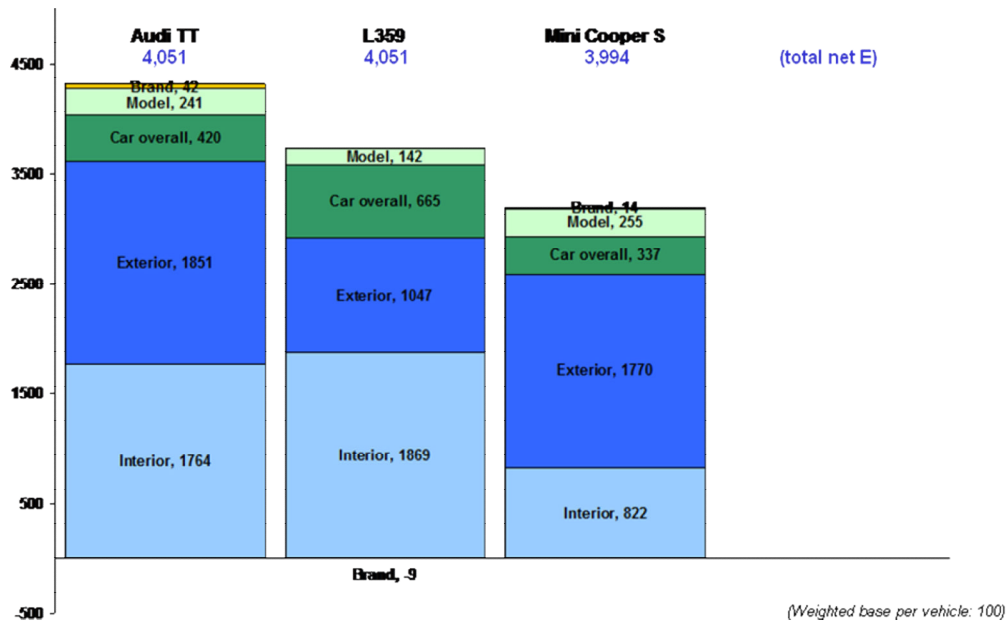


Figure C - 27 L538 Cell - NetE by Area (US & UK)

In this cell, the exterior of the car elicited a higher contribution for the NetE scores for both the TT and the Mini (Figure C - 27). For these competitor cars, the exterior is clearly more emotionally exciting than the interiors.

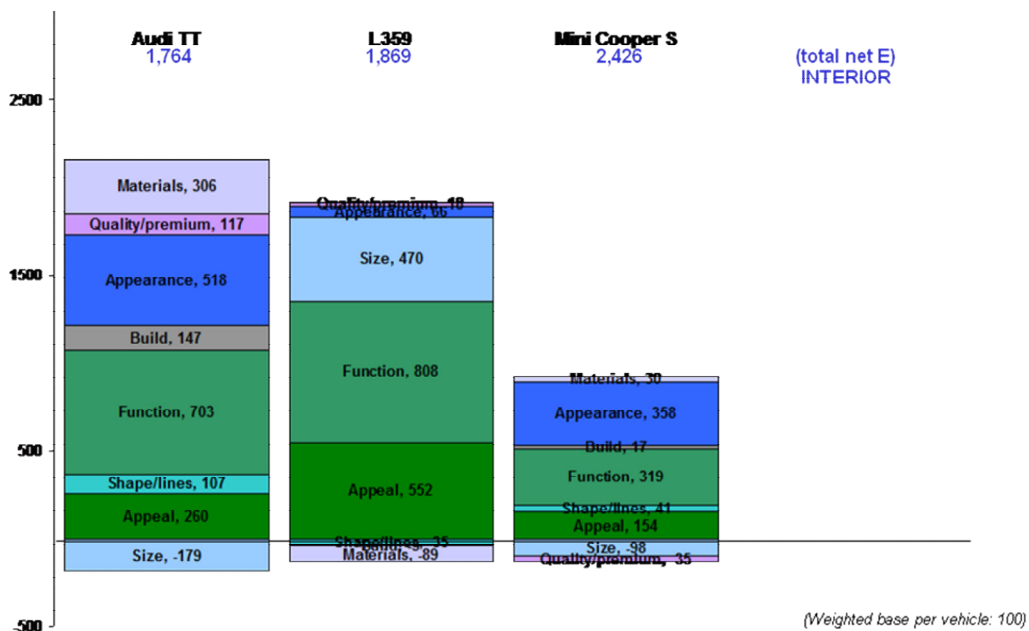


Figure C - 28 L538 Cell - Interior NetE by Theme (US & UK)

Looking at the combined NetE for materials, appearance and quality/premiumness, the TT attains 941, the Mini 353 and the Freelander -5. This sends another clear message in terms of the perceived premiumness of the Freelander.

Figure C - 29 to Figure C - 31 provide a breakdown of the three salient differentiators identified in Stage 2 as driving the perception of luxury in a vehicle.

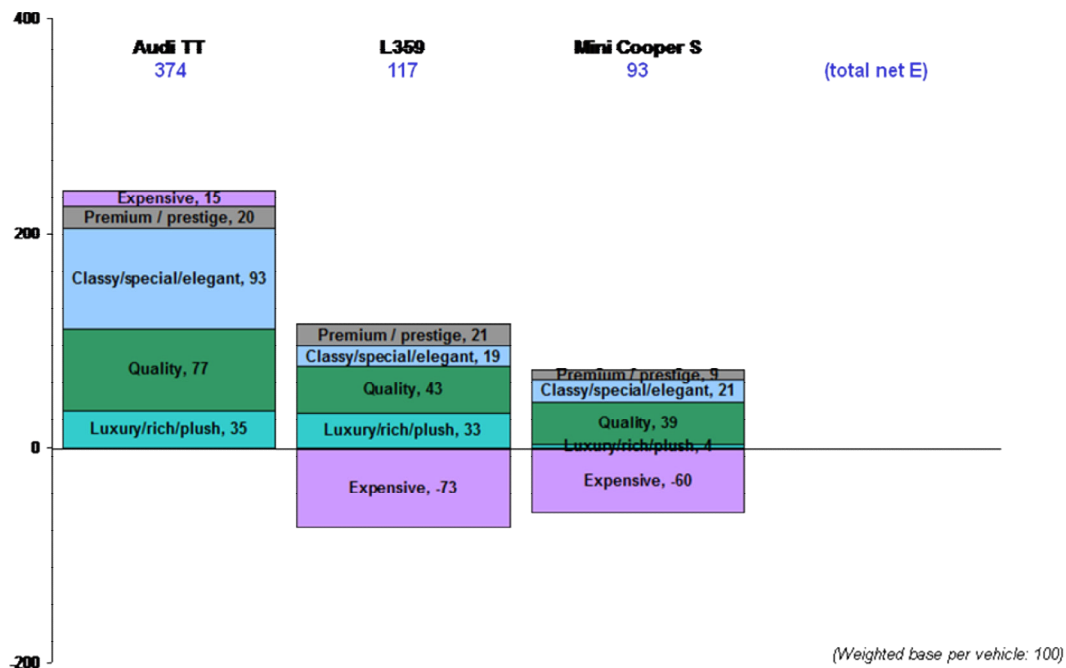


Figure C - 29 L538 Cell - NetE by Quality/Premiumness (US & UK)

The TT had a significantly better NetE for quality/premiumness. Both the Freelander and the Mini had negative NetE results for expensive, i.e. they were perceived as cheap.

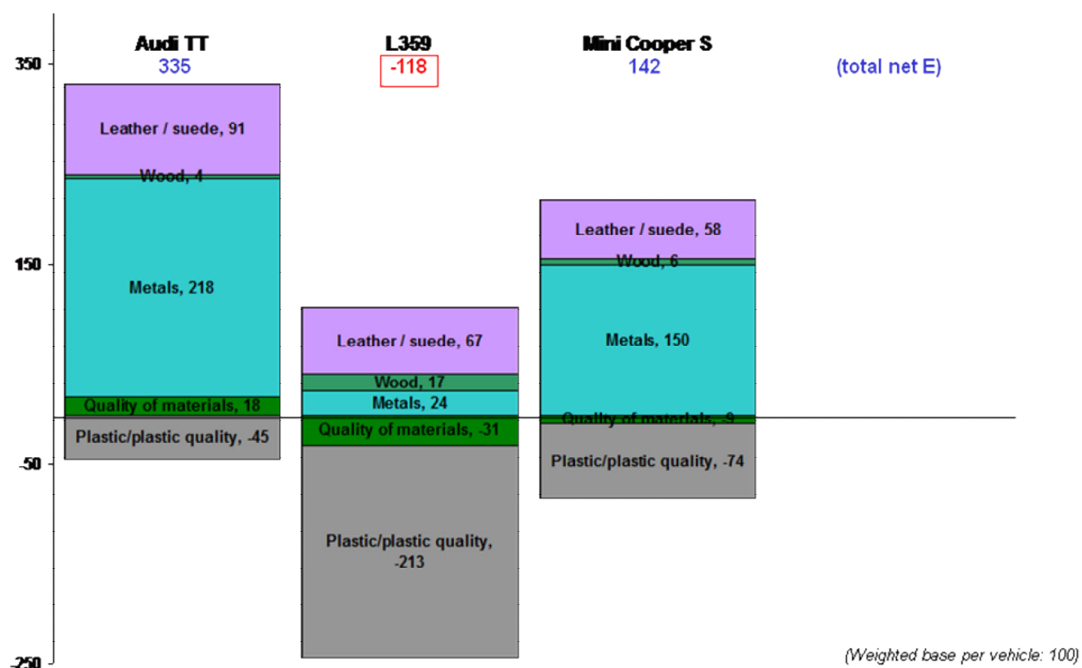


Figure C - 30 L538 Cell - NetE by Materials (US & UK)

The Freelander was especially criticised for its plastics. Good quality metals in the TT and Mini improved their respective NetEs.

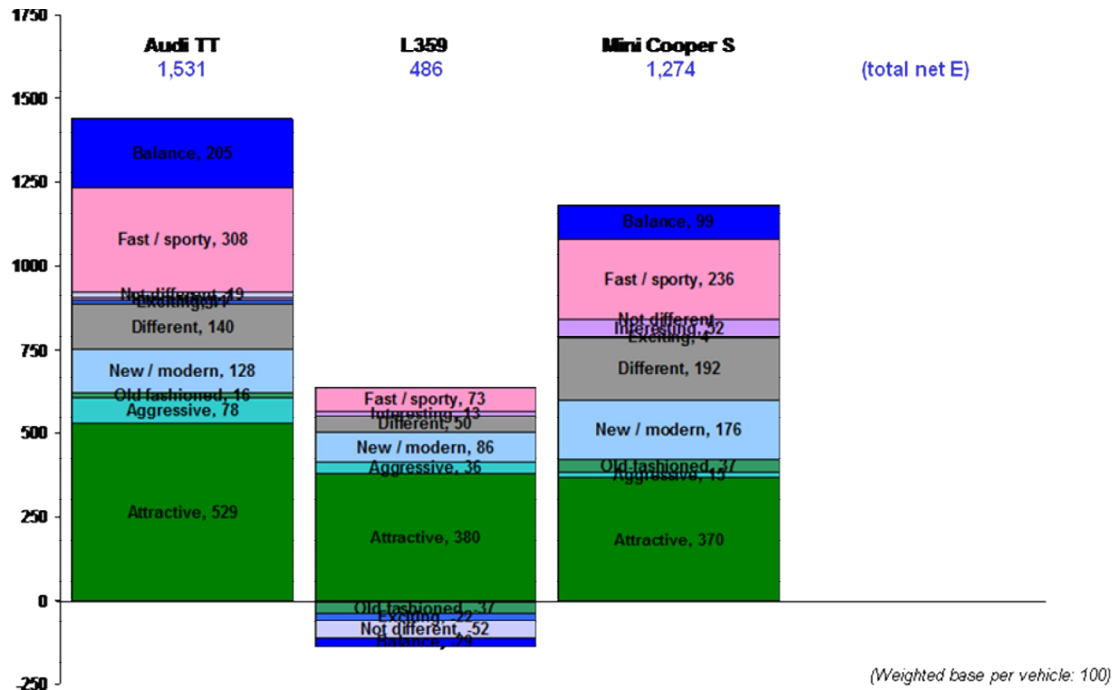


Figure C - 31 L538 Cell - NetE by Appearance (US & UK)

Attractiveness is clearly the biggest driver of the Appearance NetE results. The Freelander was perceived as being a dull within this group - not interesting, old-fashioned, not exciting.

The areas where Freelander came out as best in class were Function, Build and Size/Room/Space (shown in more detail in Figure C - 32 to Figure C - 34).

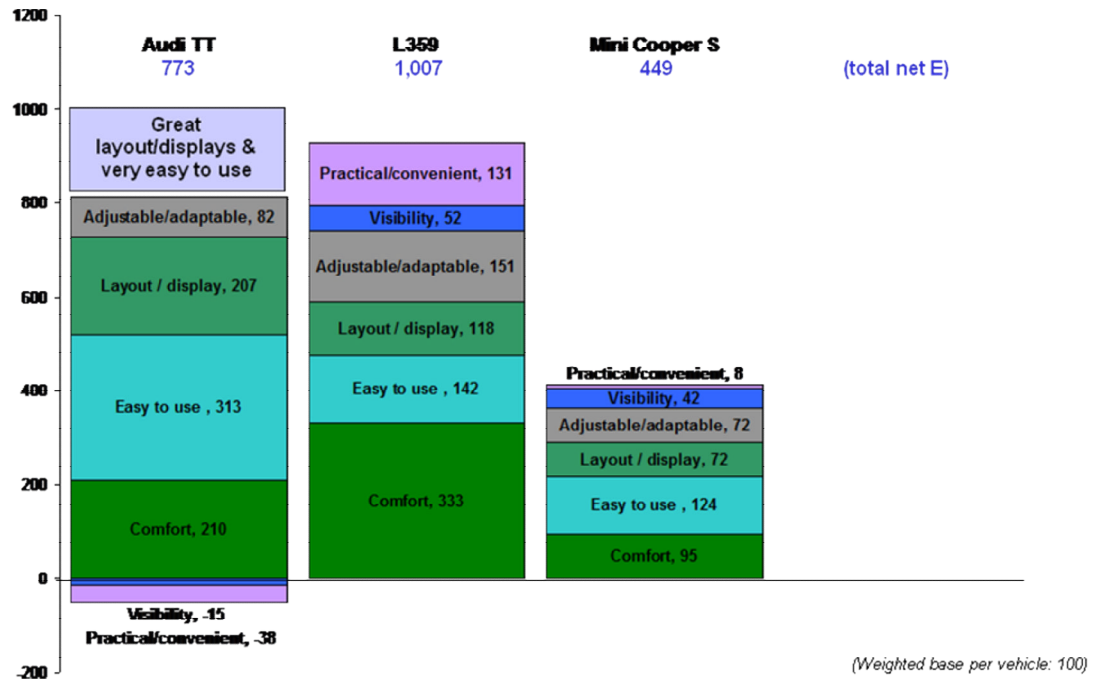


Figure C - 32 L538 Cell - Function NetE by Theme (US & UK)

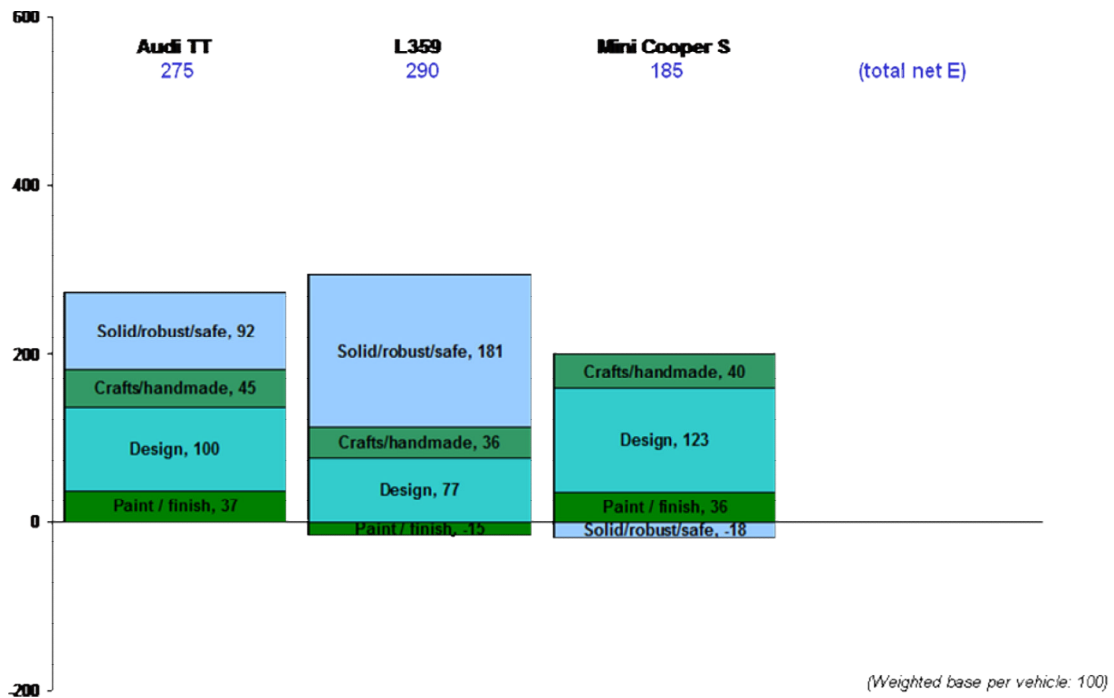


Figure C - 33 L538 Cell - Build NetE by Theme (US & UK)

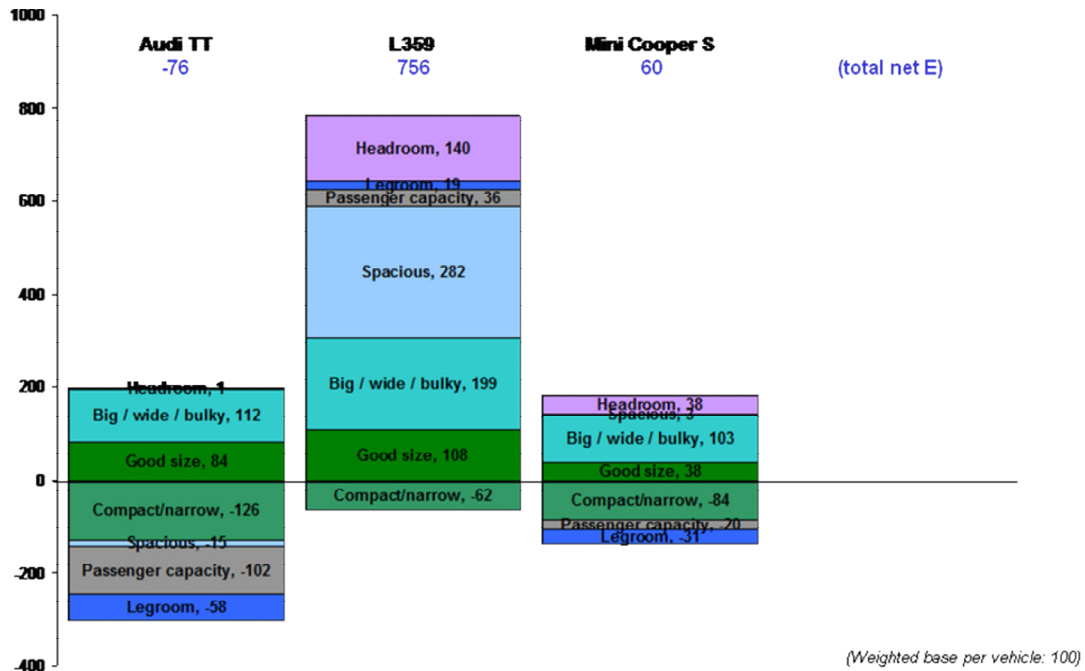


Figure C - 34 L538 Cell - Size/Room/Space NetE by Theme (US & UK)

Finally, respondents were asked how negative (1) / positive (10) they felt about a range of PALS attributes. The mean attribute rating scores for L538 are summarised in Figure C - 35.

	Freelander			Audi TT			Mini Cooper S		
	Both	UK	US	Both	UK	US	Both	UK	US
Overall visual appeal from exterior	7.1	7.3	7.0	8.4	8.4	8.5	7.6	7.6	7.6
Overall visual appeal inside	6.9	7.3	6.5	8.0	7.5	8.5	6.6	6.5	6.7
Overall sense of harmony	6.7	7.0	6.3	8.0	7.6	8.3	6.4	6.3	6.5
Sense of quality	6.8	7.0	6.6	8.2	7.9	8.5	6.4	6.3	6.6
How well interior & exterior match	7.2	7.3	7.1	8.1	7.7	8.6	7.3	7.5	7.1
Overall quality of design inside & out	7.2	7.3	7.0	8.3	8.0	8.5	7.4	7.4	7.4
Overall feeling of specialness	6.8	7.3	6.3	8.2	8.1	8.3	7.1	6.8	7.4
Design of instrument panel	6.4	6.5	6.3	7.9	7.6	8.2	5.9	5.6	6.2
Styling of seats	7.3	7.4	7.1	8.2	8.0	8.4	7.2	7.5	6.9
Materials used inside	6.7	6.9	6.4	7.8	7.6	8.0	6.4	6.2	6.6
Way interior smells	7.6	7.9	7.3	7.3	7.1	7.5	6.6	6.4	6.8
Way things feel to the touch overall	7.0	7.5	6.4	8.1	7.9	8.3	6.7	6.6	6.9
Feel of switches/controls	6.7	6.9	6.5	7.9	7.9	8.0	6.2	6.1	6.3
Feel of instrument panel	6.5	6.7	6.3	7.9	7.5	8.2	6.0	6.0	6.0
Feel of steering wheel	6.6	6.9	6.2	8.3	8.1	8.5	7.3	7.2	7.4
Overall level of equipment	7.3	7.8	6.7	7.8	7.6	8.1	6.8	6.6	6.9

Best in Class

Figure C - 35 L538 Cell PALS Attribute Ratings

In terms of learning from the overall best in class in the L538 Cell (the Audi TT), the following points were noted:

- The TT lives up to high expectations rather than exceeding them;
- Quality fit and finish with excellent attention to detail, nothing clashes, everything feels designed to fit as a whole;
- Exudes 'no expense spared' feel with many quality touches and finishes, real metal, quality plastics, leather and suede – designed by 'obsessives';
- Purposefully minimalist – has everything you need and all in the right place;
- Less is more ... yet still has enough points of difference to suggest understated uniqueness

Key Learning Points/Conclusions

Freelander Key Learning

The Land Rover brand brings with it higher expectations in US; exterior design cues on Freelander have brought it physically closer to its Range Rover stable mates (especially Range Rover Sport style side vents), but the interior does not deliver Range Rover quality/feel. This is less of an issue in UK where L359 is seen more as a huge improvement its predecessor rather than a disappointing cheaper version of the Range Rover Sport.

The key areas to improve included the poor quality and over-abundant plastics (especially when in the Alpaca finish), and the over-complex layout and displays.

Key Learning for L486

The S-Class provided a clear example of 'how to do premium' in 2006, so the new C-Class shows Mercedes-Benz are again ahead of the game: it not only meets but exceeds expectations. It may be smaller and less expensive but it is a class leader in its category.

The A4 studied is the outgoing model, and this may be reflected in the comments: it is suggest that the latest A4 is reviewed to explore to what extent the changes that Audi have made shift perceptions.

BMW X3 is not a worthy benchmark for premiumness, especially in UK where it is viewed as 'ersatz'.

Freelander has some way to go to match the quality of materials, fit and finish of new C-Class and is unlikely to be seen as a truly premium product until the quality of plastics is addressed: poor steering wheel in particular is a constant reminder of cost cutting.

L359 can appear 'schizophrenic' – a vehicle which clearly has upmarket aspirations but is let down by cheap materials. Unless this is addressed it seems hard to move it further up the scale and increase the price positioning.

Key Learning for L538

The Mini is not viewed as a premium brand and Cooper S is not a premium product. It IS fun, quirky, characterful, distinctive, unique, but also (and more in UK) over-designed and slightly tiresome. Nevertheless it does not disappoint in terms of materials/quality (given it is not really expected to be 'up scale' at all).

The TT presents a benchmark for a 'serious' and premium product. It strikes the right balance of distinctive yet understated – the designers seem to know exactly how far to go. It combines cool elegance with exciting sporty design, and is grown up fun, but not staid/boring.

Again Freelander shows major improvements need to be made to materials quality to lift it into a more 'high end' category.

APPENDIX D PALS ATTRIBUTES



PALS: To Level 3

The tables presented in the following 5 pages show the Attribute Clusters by which the Product Attribute Leadership Strategy is defined. The breakdown of these clusters is shown to Level 3.

Based on Version 11_3 (04/04/07)		
Attribute Cluster	Level 2	Level 3
Vehicle Dynamics	Ride	Primary
		Secondary
		Impacts
	Handling	Straight Ahead Stability
		Cornering Stability
		Transitional / Lane Change Stability
		Active Control
	Steering	Parking / Manoeuvring
		Straight Ahead Controllability
		Cornering Controllability
		Steering Disturbances
	Braking	Pedal Feel
		Performance
		Stability
		Parking Brake
		Braking Disturbances / Refinement
		Split-mu braking
Performance Economy & Driveability	Performance	Maximum Through Gear Performance
		Maximum In Gear Performance (Flexibility/Elasticity)
		Grade Capacity & Acceleration Capability
		Towing Capacity & Acceleration Capability
	Fuel Economy	Homologated FE
		Real World Cycle FE
		Vehicle Range
		Indicated FE
		Environmental Image
	Performance Feel & Driveability	Acceleration
		Deceleration
		Launch Character
		Shift Character
		Start, Idle & Shutdown
		Controls

Attribute Cluster	Level 2	Level 3
Safety & Security	Passive Safety	Partner Protection
		Crashworthiness
	Active Safety	Preventative
		Dynamic
		Collision Avoidance
	Security	Personal
		Property
Vehicle NVH & Sound Quality	Powertrain NVH & Sound Quality	Interior Idle NVH
		Acceleration NVH
		Deceleration NVH
		Overall Sound Quality Character
		Transient NVH
		Cruising Powertrain NVH
		Engine start-up / Shut-down NVH
		Exterior Powertrain NVH & Sound Quality
		Tip-in / Tip-out Clunk
	Windnoise	Motorway Speed Windnoise (80-130km/h)
		High Speed Windnoise (>130km/h)
		Open Glazing Windnoise
	Road NVH	Road noise
		Road vibration
		Impact noise
	Source Harmony / Interior Quietness	Interior Static Acoustic Character
		Transparency to openness from road, wind & powertrain
		Transparency to openness from environment
	Operational Sound Quality	Body closure open and shut sound quality
		Customer operated feature sound quality
		Audible Chimes
	Squeaks & Rattles	
	Exterior Noise Legals	
Perceived Quality	Crafted Quality	Optical Quality
		Sound Quality
		Touch & Feel Quality
		Smell
	Design Quality	Interior Design Quality
		Exterior Design Quality
	Material Quality	Jewel
		Premium
		High
		Competitive
Durability & Reliability	Corrosion vehicle life	Appearance
		Serviceability
		Functional life
	Durability vehicle life	Vehicle Structure
		Major Units
		Consumable Items (COO)
		Service Parts
	Retained Newness	Perceived Quality Retention
		Functional Degradation
	Robustness and Strength	Structural strength
		Customer usage modes
		Environmental conditions
		Robustness to fire

Attribute Cluster	Level 2	Level 3
Cost of Ownership	Scheduled Maintenance	Engine Oil
		Oil Filter
		Air Cleaner Filter
		Fuel Filter
		Pollen Filter
		Spark Plug Set
		Timing Belt / Tensioner
		Brake Fluid
		Trans. Fluid
		Wheel/Tyre Check
		Brake Wear Check
		Coolant
		Exhaust Emissions Test
		Air Conditioning Check
	Non-Scheduled Repairs	TIRES
		FRT. PAD SET
		RR PAD / SHOE SET
		FRT. BRAKE DISC / ROTOR
		CLUTCH KIT
		COMPLETE EXHAUST
		STEERING ADJ
		ALTERNATOR
		STARTER
		WATER PUMP
		CATALYST
		FRT. SHOCK ABS. / STRUT
		RR SHOCK ABS. / STRUT
		WIPER BLADE SET
		BATTERY
		HEADLAMP BULB
		RADIATOR HOSE (T / B)
		AUX. DRIVE BELT
		STEERING GEAR
		RADIATOR
		WINDSHIELD
		AIR CONDITIONING
		Thermostat
		Lower Ball Joint (or Control Arm)
		Rear Brake Drum (or Rotor)
		Muffler
		Tie Rod End (Outer)
		Heater Core
		Bulb Replacements (Turn Signal, Reverse, Brake, Dome, Inst.)
	Damageability Index / Insurance Rating	Damageability Index (NA)
		GdV Group Rating (D)
		Thatcham Group rating (UK)
		Thatcham security rating (UK)
	Residual Value / Depreciation	TBD
		TBD

Attribute Cluster	Level 2	Level 3
Environmental Impact	Materials of Concern	Lead
		Mercury
		Hexavalent Chromium
		Cadmium
		No Corporate prohibited substance usage
		Competitive opportunities
		Emissions from materials and parts
		Filtration Requirements
		Whole Vehicle Interior Air Quality
		Cleanability
	Sustainable materials	Recycled Content
		Renewable materials
	Recycling	Type Approval Recyclability
		Other ELV directive requirements
	Life Cycle Aspects	Life Cycle Vehicle Performance
		Legal Life Cycle Actions by Product Development
		Life Cycle Information
	Emissions	Regulated Gasoline tailpipe Gas emissions
		Regulated diesel tailpipe Gas emissions
		Homologated CO2 tailpipe emissions
		Non-homologated CO2 emissions
		Non-regulated emissions in use phase
		Evaporative Emissions
Accommodation & Usage	Driving Position & Passenger Accommodation	In-/Egress
		Primary Controls Usage
		Roominess
		Usage Non-Primary Controls
	Visibility	Forward Visibility
		Side & 3/4 Visibility
		Rearward Visibility
		Interior Visibility
	Seat Comfort	Primary Front Seat
		Primary Rear Seats (PRS)
		Occasional Rear Seats (ORS)
	Daily Life Usage	Luggage and Cargo Carrying
		Flexibility
		Stowage
		Dimensional Fit
		Maintenance Routines
	Interior Lighting	TBD
Vehicle HMI & Audio-Visual Performance	Vehicle HMI	Sensory Input
		Perception
		Functional Comprehensibility
		Controllability
		Safety of Usage
		Customer Delight
	Audio - Visual Performance	Sound Performance
		Visual Performance
		Guidance Performance
		Perceived reception quality
		Connectivity Performance
		Offering Completeness

Attribute Cluster	Level 2	Level 3
All Weather Comfort & Vision	Climate Comfort	Defrost performance
		Demist performance
		Heat up performance
		Cool down performance
		Maintain climate comfort
	Exterior Lighting	TBD
	Water & Dirt Management	Driving on Contaminated Roads
		Splash Protection & Wading Capability
		Operational Visibility
		Dynamic Cabin Water Tightness
		Static Cabin Water-tightness
Off Road (All Road) Capability	Capability on Wet Grass	Composure
	Capability on Snow / Ice	Traction
	Capability on Dirt Roads	Driveability
	Capability in Mud / Ruts	Integration
	Capability on Soft Sand	Package
	Capability on Rocks	Dynamics
	Capability for Off-road Wading	NVH
Design	Exterior Design	Volume and Proportions
		Stance
		Component Definition
		Surface Execution
	Interior Design	Volume and Proportions
		Material Selection
		Component Definition

PALS: PQ Attributes To Level 5

The following table provides the breakdown of Perceived Quality Attributes to Level 5. Note the Materials attributes are only broken down to Level 3.

There are 77 (level 5) sub-attributes in total for Perceived Quality.

Based on Version 11_3 (04/04/07)				
				77
Attribute Cluster	Level 2	Level 3	Level 4	Level 5
Perceived Quality	Crafted Quality	Optical Quality	Appearance Quality (surfaces and textures?)	Surface quality
				Gloss
				Texture / Grain
				Fastener Appearance
				Parting lines
				Cleanability
			Appearance Harmony	Colour harmony
				Gloss harmony
				Texture harmony
				Illumination harmony
			Geometric Quality (Build Quality)	Gap width / flushness
				Radii / Edge quality
				Parallelism / Alignment
				See through
				Wiring / pipe routing
			Geometric Harmony (design ?)	Gap width / flushness harmony
				Radii / Edge quality harmony
				Parallelism / Alignment harmony
				Graphics / Fonts / Symbols harmony
		Optical Degradation (wear and tear)	Colour Degradation	
			Gloss Degradation	
			Dimensional Degradation	
			Fabric wear	
			Scuff / scratch resistance	
		Sound Quality	Operational Sound Quality	Pitch
				Loudness
				Sharpness
				Timbre
				Time structure
			Operational Sound Harmony	Pitch harmony
				Loudness harmony
				Sharpness harmony
			Operational Sound Degradation	Timbre harmony
				Time structure harmony
		Touch & Feel Quality	Touch quality (surface feel)	Noise
				Surface stiffness
				Surface roughness
				Surface friction
				Surface differential heat
			Feel Quality (eg switch feel)	Effort
				Time
				Travel / displacement
			Touch / Feel Harmony	Precision
				Surface stiffness harmony
				Surface roughness harmony
				Surface friction harmony
				Surface differential heat harmony
			Touch / Feel Degradation	Effort harmony
				Travel / displacement harmony
			Function	Touch degradation
				Feel degradation
		Smell	Smell Quality	Honest functionality
				Odour concentration / intensity
			Smell Harmony	Odour fade-out / decay
				Hedonic tone
	Design Quality	Interior Design Quality	Volume & Proportions	Front interior vehicle smell
				Rear interior vehicle smell
			Material Selection	Functional placement
				Interior harmony
				Honesty / integrity
				Functional performance
		Exterior Design Quality	Component Definition	Material choice harmony
				Colour selection
			Component Definition	Grain
				Jewellery definition
			Surface Execution	Illumination consistency
				Display characteristics
	Material Quality		Material Selection	Detailed Execution (Jewellery)
				Illumination consistency
			Material Selection	Surface Language
				Aesthetic camouflage
		Paint Lustre		
		Paint Geometry		
		Jewel	Most frequently touched and viewed on the car	
		Premium	Most frequently viewed on the car ' Dash and door upper'	
		High	High influence on initial impression of quality	
		Competitive	All other areas of the vehicle	

APPENDIX E SAMPLE VERBATIM TRANSCRIPTS



Example Transcript for Range Rover SC (UK Respondent)

Resp ID no.	5001
Country	UK
1st car	Range Rover SC
2nd car	Maserati Quattroporte
3rd car	Aston Martin DB9
1st car: Q2 - General	<p>Okay I dread to have to get into it. I hate the confinement, I just really hate them. There was no way you could get them if you're only five feet four, in a lady like way, it's a real climb-down to fit yourself in and I think for somebody of my height if you had children that you were trying to get in the back seat, you can't do that either because it is such a huge leap over. You're high I think it's really big, I think I don't like them. I don't like I think it's big, I think if somebody comes up behind you in one of those on a motorway, whether you're doing, what speed you're doing it or not, it's and I don't think it's needed for city driving or for things. I think they're for people that live off road. Inside it's nice It didn't have a television did it? and I couldn't work out the middle box. The middle box comes up and I think it's a chiller, yeah the centre consul, I think it's a chiller because there's one of those but they seem to go down when you lift it up, there's an arrow pointing down to press the button, which I so I thought that might benothing happens. I think it's Inaudible. I didn't like it, I just didn't like it and as I say I thought Inaudible. It's very boxy and I don't think that shape has changed, I think I don't know. I think it's very messed up in the back where it splits in two ways, where it drops down and all this back, yeah. Inaudible. actually at first I thought what are those little round things, just by the centre consul. I thought that was for drinks. I think it's a round ashtray that looks like a drink thing, the one that opens Inaudible. There's a with a light, when you open the door a little sort of like spot light. Inaudible. Yeah, but that's all. I didn't think the way the seats are there was that much space between the back seat and the front seat for such a big car. Inaudible. that's just piping on the seat. Inaudible. No sorry.</p>
1st car: Q3 - Exterior	<p>I think it's very big, I think it's very high and I think the back window gives you great visibility if you're sitting in there driving, because it's a very big back window. And is that pink or is it just the light reflection, because it looked pink at one point, now you've lifted that up, the boot up it doesn't look pink. The pink I think is a strange color. I think it's very good that it splits like this, the back tail gate thing, because I can reach that half of it, but if the whole thing went up I would never be able to reach it to pull it back down again. . Just the window. I know some Range Rovers the window opens, is it Range Rovers? Some of I think it's very good that the middle seat has a hole tha comes away, that you can slide something through, maybe between people and that the seats fold down. . Again it's got the wheels with the cut out and the way they're stuck. I think everything about the car is very, very boxy. The wing mirrors are very boxy, everything about it is very boxy and square and I know that's suppose to be because it shows that it's strong and chunky. . Actually considering it's off road, I thought you might have</p>

	<p>wipers and I can see it's got water jets to clean the windows, but I thought you might have wipers. . It has water jets to clean your wipes, but if it's going to be off road it could be muddy as well and I would have thought rather than just water jets to squirt up at it, there might be wipers to wipe it, but I can't see any wipers to wipe the lights. So I don't really see any point in having water to squirt that at, because it may not get rid of it, in my opinion.</p>
<p>1st car: Q4 - Interior</p>	<p>Actually as a car I really don't like this and my big thing why I don't like is because it is so high and maybe it's high because it needs to be off road, I don't know, but when you're five feet you really cannot get in these things at all. I have to, I feel like I'm pulling on the steering wheel and that, if I was on a passenger side, I know I can't get in very well at all, so I don't like them. I think if you're going to have a car this high, you should have a little step that drops down, like on a bus or something, just lets it's down, so you can actually climb in a little bit easier. But having said that, as I sit here now I think the windscreen is great because I have a really good view. I can see where the end of the bonnet is, so I know if I'm gong to hit something, which I couldn't do with the first car, the first one. . I can see all of my dials even with the steering wheel forward, which is very good, and I can reach the pedals really easily, which is good, because I often can't reach the pedals very easily. I feel it might have a television in it, just because of this makes me think of the television and because I think this is geared more as a family sort of car, rather than a single person car, so I thought it might have a television in it to keep the children amused. I'm not sure what all of the buttons and things mean and I think it's a bit like washing machines with cars, I think you have a lot of buttons that you don't use, that's my personal opinion. Yeah you only use three settings don't you and I'm not quite sure what that little thing is down there. Oh is that the clock, is that the clock? . Which seems strange having a clock there when you've got digital and the temperature there, I would have thought it would have been there on the digital. Again I don't know why modern cars is everything is digital, have a little mechanical clock, which I know probably isn't mechanical, because it's probably charged by something else, but I just think if I were driving, I would rather be looking at straight ahead of me, to see the time, and if I'm late than trying to look down over to my left. This circle piece here in the centre, is what I thought looks like a drinks holders, but I think it's an ashtray because of that scratchy bit there, but if it is you must be a very heavy smoker. I think it is an ashtray. I don't like ashtrays. And then I think this possibly might be, in the middle, in the centre consul when it comes up, I think that either is storage or was this one? I think this might chill as well because it's got a vent there and I think those are very good because if you have a drink or anything for children you can put it in. But I pressed this button in the piece that raised and nothing happened and I'm not sure if that should be a CD player or something there, I don't know what that button is for. I think if you're going to have middle sections that are raised and are taking up space, they should have storage in them, so I think that's good. But as a car, if you want a really big butch car, it's a good family car, I feel safe. I quite like seats that have got arm rests. And does it spin? It spins, but it didn't do anything. Oh does it raise? So you could have or you needn't have it, well sort of. That's quite nice. It's a bit more American isn't it, having arm rests. That would be my</p>

	<p>comment on that. I think these are very high, the seats are very high, but then I don't tend to look backwards when I'm going to reverse, I use my rear view mirror and my wing mirrors to do reversing, so that's not too much of a problem to me, but I think if you were wanting to turn to reverse that would be more of a problem. . But it's just very black and grey. Actually that's like the one that advertised, that's like the one with those two children, is it the Sharon, something like that? . The sun glasses holder, and I know that's utilizing in the space there, but it is a bit more cheap I think. This was the one that had the light, yes I like this light here, when you get in, so as you can see... It's not actually in the door, it's underneath, there you see that's yours, on the dashboard, below the dashboard, I think that's good. What's that little thing just there? . A drinks holder. That's good, I like drinks holders, I think drinks holders are very handy, but there doesn't appear one for the driver. Is that a drinks holder? It's not a drink's holder, it's an ashtray isn't it. That's awful, an awful lot of smoking. Now maybe it's like that so you can use it if you smoke, but if not that's your drink bit, do you think, which is quite good. . I think it is more for a family or a for a group of people. I do think it should have television facilities, that if the centre consul, where it says, 'audio, visual phone' and all that, I think it's good to have a phone. It does not have a television then I would have expected a television in the back, either in this middle section here, at the back of this middle section here. I think that air conditioning type thing of the middle consul piece.... I think it's still a fairly small middle seat if you're saying it's for five people, but then they're all smaller the seats. . Actually what I do find wonderful about it, is being able to sit in here, comfortably to move my seat, to be able to see easily along the length of the bonnet and to the end of the bonnet and to see, because to see a whole dash as I'm sitting here with the steering wheel at the position that I would want, I think that's really good, because it doesn't happen very often when you're a little woman. . No I just feel it's a bit mish mash. I think you've got, I think you've got the green strip, which is all digital saying your miles, the range and I assume it tells you how much petrol, gallons or whatever you've got and the temperature. I think that's in green, you've then got white with different colors on for your settings and your navigation and all of that lot, which I assume changes depending on what you've got on, but then you've got a mechanical clock and that just seems, three different sort of styles and I would have said No, no, I take it that must be the ashtray.</p>
1st car: Q6 - Rating	<p>I think it's a very big comfortable family car that is going to eat petrol, so it must cost a lot and I think that's it.</p>
1st car: Q7- Suggestions	<p>I think one definitely needs a television, both at the front and at the back for the children because it's obviously been rated as a family car. And I also feel that it needs to have a little step that slides out, like on a caravan or something, so that small, short wives can get in and also children, because otherwise if you're selling it as a family car and your wife can't reach to change the child seat or strap the child in, then obviously it must be a safety hazard and she's not going to promote her husband buying it if she feels that she can't get in it.</p>

Example Transcript for Range Rover SC (US Respondent)

Resp ID no.	5009
Country	USA
1st car	Range Rover SC
2nd car	Maserati Quattroporte
3rd car	Aston Martin DB9
1st car: Q2 - General	<p>Okay, when I looked at that car I don't know why I immediately thought about the Outback and off-road driving. That vehicle is a very manly vehicle to me. It looks strong and substantial and big and hard to manage in a city. It looks like a guy car. I can't imagine a lady driving that car. That's silly but.. The inside of it, the outside of it doesn't strike me one way or the other because it's a truck and I don't do trucks but it's as nice a truck as any, looks like a good truck. The inside of it looks very good, very substantial, very quality, high quality, beautiful leather, looks fully loaded and appointed, all the amenities.. I think that that looks indestructible. It looks indestructible and I'm sure that no vehicle is indestructible but to me it looks very very strong and it looks very crash-worthy. It looks like it has a good low centre of gravity. It just looks like nothing could hurt you and you'd never have any problems with it. Just how it looks to me. Is there anything wrong with the exterior? The exterior of it is a truck. It's a great looking truck interior, great looking. That, I've looked in some high end SUVs and things like that and I must say I was surprised when I looked in there because I didn't expect it to be as luxurious as it is. It's quite luxurious and I don't think the outside of it made me think that, it didn't make me think that when I opened the door I was going to be like oh-oh nice up in here, you know. It looks like a good family vehicle to take a road trip in, just perfect. I can picture a family in there, going on a long distance, being very comfortable and being very safe. Safe, that's the word I want to say. It looks very safe. Is there any other feelings that you had come to mind when you were looking at the vehicle? I think of it as being a very expensive truck. That's it. I must say, I bet you eighty grand isn't high though. What else would I enter? It smells good, it had that leather smell. That new leather smell is just a show-stopper, it's just wonderful. It's just wonderful, it just reminds you of having a new car and I've been getting a new car every three years for many, many, many years and it just never stops knocking my socks off, that smell (laughs) Is there anything else before we move on? No, that's it.</p>
1st car: Q3 - Exterior	<p>Range Rover. Right, tell me about it. Ah wow, here we have this very safe-looking, very practical looking, very sturdy-looking Range Rover. Is it a Range Rover or Land Rover? Range Rover. Range Rover But a Land Rover.. ..is one of the, oh, okay, shows how much I know. But, anyway, there's nothing about the outside of this car that strikes me one way or the other. It's not pretty. It looks sturdy and safe and dependable. It looks like you could Looks like it would never break down and it looks like it could, you could hit it doing eighty miles an hour and it would sit there. Looks like a safe family vehicle. The exterior does nothing for me, one way or the other, it just does nothing for me. It's a truck. No.</p>

<p>1st car: Q4 - Interior</p>	<p>Okay, Range Rover. A family vacation, a family vacation. You could put lots of children in here. It looks like you could but actually you don't have, you have one, two doors, you can only put four children in, three children and a husband in here? Okay, does it have a.. well, I might as well ask you. This is a very nice, very big, high, off the ground vehicle. How does that make you feel? Like queen of the road. I would never drive this. It's too big. It's too big for me, but that's just my personal thing. I don't care for trucks and SUVs. There are a couple of them, a couple of SUVs that are kind of cute. This interior: It's pretty unremarkable. It looks very industrial and very practical and very built to last and go the distance. It does that. It does that. This looks like a real work horse of a car, of a vehicle. It looks like a work horse. It doesn't look particularly luxurious to me but I get the impression that everything you need is in here but the word luxury doesn't come to mind. It just looks very practical and good for a family with young kinds and stuff. Very safe, very safe. I feel safe in here. What feelings do you have when you are sitting in it? Mostly that I would like to get out (laughs) but what feelings? This car doesn't inspire me. It's, it looks like the front part of a tractor trailer. It's industrial-looking. You keep using this word 'industrial'. Tell me more about that. It looks like a working vehicle, a vehicle that you would use for some kind of commercial use. That's what it makes me feel, that it's built to withstand abuse and still be, still work and still look good, because it looks good, it just, it's not beautiful, it's just good. Is there anything that you find quite wonderful about this car, particularly? Yes, this car makes me feel like you would never have a minute's trouble with this car. It's hard to imagine having any kind of problem with the functionality and serviceability of this car. It totally impresses me as being just indestructible. That's the feel that I get from it. Is there anything else that you find disappointing about the car? No, if I liked trucks I would like this. Is there anything else you would like to say about the vehicle? I can't find the damn radio. Tell me more about that. I have issues with that. Where is the radio? That is just so lame. Why do that? That bothers me. Why do they change the design of something that has been around for seventy years. I mean, all of a sudden, you can't find nothing. Why is that cute? Why is that done? Now I've got to read a book to find out how to work the radio, that's lame. Is there anything else you would like to say about this vehicle? No, I don't think so. Everything else looks kind of normal. The key is in a strange place but I would have figured that out. It has a regular-looking gear-shift. Where the hell is the radio? Man, oh, that's so dumb. Oh, that's it. That's it.</p>
<p>1st car: Q6 - Rating</p>	<p>Here again the Range Rover I've always thought of as being a really expensive truck and it's a prestigious truck, if there is such a thing, and that's it.</p>
<p>1st car: Q7- Suggestions</p>	<p>More luxury appointments in the interior. Make it more luxurious-looking like the seats are very plain, the dash is very plain. It looks very plain. It looks like the inside of a working vehicle. I think you ought to have the option of carrying more people since it is such a big ride. I mean, the fact that you're still basically looking at carrying five people, that's the same thing you take in a car and yet that thing is huge and I'm sure it can eat up a whole bunch of gas but yet still you don't have seating capacity. So, you know, I wonder about the practicality of that but, I don't know, most people aren't practical, anyway, so, no..</p>

APPENDIX F PRP VERBATIMS CODING STRUCTURE



The Coding Structure comprises a 14 digit code made up as follows:



- 4 digit code for AREA which area of the car is being discussed;
- 4 digit code for DETAIL what sort of thing is being discussed, what theme;
- 4 digit code for DETAIL as above, to capture comments relating to 2 themes, e.g. material and colour ("what lovely creamy leather");
- 1 digit code for EMOTION positive, negative or neutral;
- 1 digit code for SENSE which sense does the comment relate to.

Area Codes

Code	Description	NET	SUBNET	SUBSUBNET
1001	Brand overall	Brand (NET)		
1021	TBD	Brand (NET)		
1030	TBD	Brand (NET)		
1101	Brand reputation	Brand (NET)		
1801	TBD	Brand (NET)		
2001	Model overall	Model (NET)		
2100	Between a coupe and a sedan	Model (NET)		
2101	Sedan/4 door	Model (NET)		
2102	Convertible/soft top	Model (NET)		
2103	Coupe/two door	Model (NET)		
2104	Hybrid/in between station wagon and SUV	Model (NET)		
2105	SUV/truck	Model (NET)		
2106	MPV/people carrier/minivan	Model (NET)		
2107	Estate/station wagon	Model (NET)		
2108	NOT a convertible	Model (NET)		
2109	A sports car	Model (NET)		
2210	6 seater	Model (NET)		
2211	2 seater	Model (NET)		
2212	4 seater	Model (NET)		
2213	7 seater	Model (NET)		
2214	5 seater	Model (NET)		
2320	Engine size	Model (NET)		
2321	Engine	Model (NET)		
2325	Battery	Model (NET)		
2399	Under bonnet - other	Model (NET)		
2999	The model - other area	Model (NET)		
3001	The car overall	Car Overall (NET)		
3002	Stance	Car Overall (NET)		
3003	Wheelbase	Car Overall (NET)		
3010	the car's features (generally)	Car Overall (NET)		

Code	Description	NET	SUBNET	SUBSUBNET
3099	The Car Overall - other	Car Overall (NET)		
3999	The car overall - other area	Car Overall (NET)		
4001	Overall exterior	Exterior (NET)	Overall Exterior (SUB-NET)	
4002	Exterior trim (general/unspec)	Exterior (NET)	Overall Exterior (SUB-NET)	
4004	Logo/badge (unspec location or not specified elsewhere)	Exterior (NET)	Overall Exterior (SUB-NET)	
4005	Emblem (other than brand logo)	Exterior (NET)	Overall Exterior (SUB-NET)	
4021	Windows (unspec)	Exterior (NET)	Overall Exterior (SUB-NET)	
4041	Bumpers/fenders (unspec)	Exterior (NET)	Overall Exterior (SUB-NET)	
4051	Lights (unspec)	Exterior (NET)	Overall Exterior (SUB-NET)	
4061	Parking sensors	Exterior (NET)	Overall Exterior (SUB-NET)	
4099	Overall exterior - other areas	Exterior (NET)	Overall Exterior (SUB-NET)	
4101	Overall Front (SUB-NET)	Exterior (NET)	Overall Front (SUB-NET)	
4111	Bonnet/hood	Exterior (NET)	Details of Front (SUB-NET)	
4112	Bonnet/hood - air intakes/vents	Exterior (NET)	Details of Front (SUB-NET)	
4114	Logo/badge on bonnet/hood	Exterior (NET)	Details of Front (SUB-NET)	
4121	Windscreen	Exterior (NET)	Details of Front (SUB-NET)	
4122	Windscreen - surround	Exterior (NET)	Details of Front (SUB-NET)	
4123	Windscreen - wipers	Exterior (NET)	Details of Front (SUB-NET)	
4131	Grille	Exterior (NET)	Details of Front (SUB-NET)	
4132	Grille - badge/logo	Exterior (NET)	Details of Front (SUB-NET)	
4133	Grille - air intake	Exterior (NET)	Details of Front (SUB-NET)	
4134	Small grilles/air intakes to side of front grille	Exterior (NET)	Details of Front (SUB-NET)	
4141	Front bumper/fender	Exterior (NET)	Details of Front (SUB-NET)	
4142	Front valance	Exterior (NET)	Details of Front (SUB-NET)	
4144	Front fender logo/badge	Exterior (NET)	Details of Front (SUB-NET)	
4151	Front lights/headlight cluster	Exterior (NET)	Details of Front (SUB-NET)	
4152	Front lights - headlight washers	Exterior (NET)	Details of Front (SUB-NET)	
4155	Fog lights	Exterior (NET)	Details of Front (SUB-NET)	
4161	Front parking sensors	Exterior (NET)	Details of Front (SUB-NET)	
4185	Front spoiler	Exterior (NET)	Details of Front (SUB-NET)	
4199	Exterior front - other areas	Exterior (NET)	Details of Front (SUB-NET)	
4201	Side	Exterior (NET)	Overall Side (SUB-NET)	Side (SUB-SUB-NET)
4202	Side - trim	Exterior (NET)	Overall Side (SUB-NET)	Side (SUB-SUB-NET)
4203	Side - crease/fold/moulding	Exterior (NET)	Overall Side (SUB-NET)	Side (SUB-SUB-NET)
4204	Side - vents/front wing vents	Exterior (NET)	Overall Side (SUB-NET)	Side (SUB-SUB-NET)
4205	Side - sill/skirt (beneath doors)	Exterior (NET)	Overall Side (SUB-NET)	Side (SUB-SUB-NET)
4206	Side step/running board	Exterior (NET)	Overall Side (SUB-NET)	Side (SUB-SUB-NET)
4211	Doors	Exterior (NET)	Overall Side (SUB-NET)	Doors (SUB-SUB-NET)
4212	Front doors	Exterior (NET)	Overall Side (SUB-NET)	Doors (SUB-SUB-NET)
4213	Rear doors	Exterior (NET)	Overall Side (SUB-NET)	Doors (SUB-SUB-NET)
4214	Doors - handles	Exterior (NET)	Overall Side (SUB-NET)	Doors (SUB-SUB-NET)
4215	Doors - lock	Exterior (NET)	Overall Side (SUB-NET)	Doors (SUB-SUB-NET)
4221	Side windows	Exterior (NET)	Overall Side (SUB-NET)	Other Side Details (SUB-SUB-NET)
4222	Side windows - surrounds/dividers/area around or between windows	Exterior (NET)	Overall Side (SUB-NET)	Other Side Details (SUB-SUB-NET)
4223	Rear side window(s)	Exterior (NET)	Overall Side (SUB-NET)	Other Side Details (SUB-SUB-NET)

Code	Description	NET	SUBNET	SUBSUBNET
4231	Mirrors	Exterior (NET)	Overall Side (SUB-NET)	Other Side Details (SUB-SUB-NET)
4232	Lights on side mirrors	Exterior (NET)	Overall Side (SUB-NET)	Other Side Details (SUB-SUB-NET)
4256	Side indicators	Exterior (NET)	Overall Side (SUB-NET)	Other Side Details (SUB-SUB-NET)
4257	(Side) marker lights	Exterior (NET)	Overall Side (SUB-NET)	Other Side Details (SUB-SUB-NET)
4261	Wheel arches/wheel wells	Exterior (NET)	Overall Side (SUB-NET)	
4262	Wheels - logo on brakes (behind spokes)	Exterior (NET)	Overall Side (SUB-NET)	
4263	Wheels - brakes/brake calipers	Exterior (NET)	Overall Side (SUB-NET)	
4264	Logo on wheels	Exterior (NET)	Overall Side (SUB-NET)	
4265	Wheels	Exterior (NET)	Overall Side (SUB-NET)	
4266	Wheels - rims/alloys	Exterior (NET)	Overall Side (SUB-NET)	
4267	Wheels - spokes	Exterior (NET)	Overall Side (SUB-NET)	
4268	Tyres	Exterior (NET)	Overall Side (SUB-NET)	Wheels (SUB-SUB-NET)
4269	Spare tyre	Exterior (NET)	Overall Side (SUB-NET)	Other Side Details (SUB-SUB-NET)
4271	Petrol cap	Exterior (NET)	Overall Side (SUB-NET)	Other Side Details (SUB-SUB-NET)
4272	Petrol cap - which side of vehicle	Exterior (NET)	Overall Side (SUB-NET)	Other Side Details (SUB-SUB-NET)
4299	Exterior side - other areas	Exterior (NET)	Overall Side (SUB-NET)	Other Side Details (SUB-SUB-NET)
4301	Roof line	Exterior (NET)	Roof/Roofline (SUB-NET)	
4302	The convertible top/removable top	Exterior (NET)	Roof/Roofline (SUB-NET)	
4311	Sunroof	Exterior (NET)	Roof/Roofline (SUB-NET)	
4321	Roof rack	Exterior (NET)	Roof/Roofline (SUB-NET)	
4399	Exterior roof - other areas	Exterior (NET)	Roof/Roofline (SUB-NET)	
4401	Rear/back generally/the back end	Exterior (NET)	Rear (SUB-NET)	
4421	Rear window	Exterior (NET)	Rear (SUB-NET)	
4422	Rear window - surround	Exterior (NET)	Rear (SUB-NET)	
4423	Rear window - wiper	Exterior (NET)	Rear (SUB-NET)	
4424	Rear window - defroster/demister lines	Exterior (NET)	Rear (SUB-NET)	
4431	Tailgate/boot/trunk from outside/trunk lid	Exterior (NET)	Rear (SUB-NET)	
4432	Boot rear step - height/width/loading ability	Exterior (NET)	Rear (SUB-NET)	
4433	Boot opening/mouth	Exterior (NET)	Rear (SUB-NET)	
4435	Tailgate/boot/trunk - handle	Exterior (NET)	Rear (SUB-NET)	
4436	Tailgate/boot/trunk - lock	Exterior (NET)	Rear (SUB-NET)	
4441	Rear bumper/fender	Exterior (NET)	Rear (SUB-NET)	
4442	Rear valance	Exterior (NET)	Rear (SUB-NET)	
4451	Rear lights/tail lights	Exterior (NET)	Rear (SUB-NET)	
4455	High level brake light	Exterior (NET)	Rear (SUB-NET)	
4461	Tow bar	Exterior (NET)	Rear (SUB-NET)	
4471	Fins/aerials	Exterior (NET)	Rear (SUB-NET)	
4472	Two fins	Exterior (NET)	Rear (SUB-NET)	
4481	Exhausts	Exterior (NET)	Rear (SUB-NET)	
4485	(Rear) spoiler	Exterior (NET)	Rear (SUB-NET)	
4491	Rear badge/nameplate	Exterior (NET)	Rear (SUB-NET)	
4492	Logo on any (specific) part of rear	Exterior (NET)	Rear (SUB-NET)	
4495	Number plate	Exterior (NET)	Rear (SUB-NET)	
4499	Exterior rear - other areas	Exterior (NET)	Rear (SUB-NET)	
4501	The underside/underneath of the car	Exterior (NET)	Rear (SUB-NET)	
4801	TBD	Exterior (NET)		
5001	Overall interior	Interior (NET)	Overall interior (SUB-NET)	
5002	Interior trim (general/unspec)	Interior (NET)	Overall interior (SUB-NET)	
5004	Interior logo - general/unspec	Interior (NET)	Overall interior (SUB-NET)	
5010	Interior features (generally)	Interior (NET)	Overall interior (SUB-NET)	
5011	Alarm system - any mentions	Interior (NET)	Overall interior (SUB-NET)	
5012	Power outlets/ auxilliary power outlets	Interior (NET)	Overall interior (SUB-NET)	
5025	Window shades/screens (unspec)	Interior (NET)	Overall interior (SUB-NET)	

Code	Description	NET	SUBNET	SUBSUBNET
5080	Storage space (generally)	Interior (NET)	Overall interior (SUB-NET)	
5091	Seats (unspec)	Interior (NET)	Overall interior (SUB-NET)	
5092	Seat belts	Interior (NET)	Overall interior (SUB-NET)	
5095	Logo/badge on headrests (front or rear)	Interior (NET)	Overall interior (SUB-NET)	
5098	TBD	Interior (NET)		
5099	Overall interior - other areas	Interior (NET)	Overall interior (SUB-NET)	
5201	Overall front interior	Interior (NET)	Other front (SUB-NET)	
5209	Windscreen area - shelf above dash/between dash and windscreen	Interior (NET)	Dashboard (SUB-NET)	
5210	Materials used inside, generally	Interior (NET)	Other front (SUB-NET)	
5211	Doors/front door interiors	Interior (NET)	Other front (SUB-NET)	
5212	(Front) door arm rest	Interior (NET)	Other front (SUB-NET)	
5213	Door interiors - handles	Interior (NET)	Other front (SUB-NET)	
5214	Door panel	Interior (NET)	Other front (SUB-NET)	
5215	Door trim	Interior (NET)	Other front (SUB-NET)	
5216	Door controls/switches	Interior (NET)	Other front (SUB-NET)	
5217	Side airbags	Interior (NET)	Other front (SUB-NET)	
5218	Door frame/surround	Interior (NET)	Other front (SUB-NET)	
5219	(Large) door handles/bars	Interior (NET)	Other front (SUB-NET)	
5220	Cruise control	Interior (NET)	Controls (SUB-NET)	
5221	Windscreen/windshield	Interior (NET)	Other front (SUB-NET)	
5222	Windows	Interior (NET)	Other front (SUB-NET)	
5223	Driver's switchpack	Interior (NET)	Other front (SUB-NET)	
5224	Logo on steering wheel	Interior (NET)	Other front (SUB-NET)	
5225	Horn (on steering wheel)	Interior (NET)	Other front (SUB-NET)	
5226	Window controls	Interior (NET)	Other front (SUB-NET)	
5227	Mirror controls	Interior (NET)	Other front (SUB-NET)	
5228	CD changer/play method	Interior (NET)	Other front (SUB-NET)	
5229	SOS button (on roof console)	Interior (NET)	Other front (SUB-NET)	
5230	Windscreen area - rear view mirror - compass display	Interior (NET)	Other front (SUB-NET)	
5231	Windscreen - front roof console	Interior (NET)	Other front (SUB-NET)	
5232	Windscreen - rear view mirror	Interior (NET)	Other front (SUB-NET)	
5233	Windscreen - interior lights	Interior (NET)	Other front (SUB-NET)	
5234	Windscreen - sun visors	Interior (NET)	Other front (SUB-NET)	
5235	Windscreen - vanity mirrors	Interior (NET)	Other front (SUB-NET)	
5236	Controls - any other,	Interior (NET)	Controls (SUB-NET)	
5237	Ignition/key	Interior (NET)	Other front (SUB-NET)	
5238	Keyless ignition/cassette start/ignition	Interior (NET)	Controls (SUB-NET)	
5239	Speakers	Interior (NET)	Other front (SUB-NET)	
5240	Other gauges/dials (eg water gauge)	Interior (NET)	Gauges /Dials (SUB-NET)	
5241	Dashboard	Interior (NET)	Dashboard (SUB-NET)	
5242	Gauges/Dials (unspec),	Interior (NET)	Gauges /Dials (SUB-NET)	
5243	Gauges/Dials - Tachometer/Rev counter	Interior (NET)	Gauges /Dials (SUB-NET)	
5244	Gauges/Dials - Speedometer/MPH dial	Interior (NET)	Gauges /Dials (SUB-NET)	
5245	Gauges/Dials - Odometer/distance gauge	Interior (NET)	Gauges /Dials (SUB-NET)	
5246	Gauges/Dials - Fuel/gas gauge	Interior (NET)	Gauges /Dials (SUB-NET)	
5247	Gauges/Dials - Clock	Interior (NET)	Gauges /Dials (SUB-NET)	
5248	Gauges/Dials - Navigation screen/nav/sat nav/control screen	Interior (NET)	Gauges /Dials (SUB-NET)	
5249	Gauge surround/hood	Interior (NET)	Gauges /Dials (SUB-NET)	
5250	Controls/buttons - navigation screen/control screen	Interior (NET)	Gauges /Dials (SUB-NET)	
5251	Central console	Interior (NET)	Centre Console (SUB-NET)	
5252	Floor console	Interior (NET)	Centre Console (SUB-NET)	
5253	Gearshift baseplate	Interior (NET)	Gear shift shifter gearbox (SUB-NET)	
5254	Controls/buttons (unspec)	Interior (NET)	Controls (SUB-NET)	
5255	Controls - turn indicators	Interior (NET)	Controls (SUB-NET)	
5256	Controls - lights (headlamps/rear lights etc)	Interior (NET)	Controls (SUB-NET)	

Code	Description	NET	SUBNET	SUBSUBNET
5257	Air conditioning/climate control/heating controls	Interior (NET)	Controls (SUB-NET)	
5258	Air vents	Interior (NET)	Controls (SUB-NET)	
5259	CD/stereo/radio/audio	Interior (NET)	Controls (SUB-NET)	
5260	Phone	Interior (NET)	Controls (SUB-NET)	
5261	iDrive	Interior (NET)	Controls (SUB-NET)	
5262	Heated seat	Interior (NET)	Controls (SUB-NET)	
5263	Blue Tooth	Interior (NET)	Controls (SUB-NET)	
5264	Steering wheel	Interior (NET)	Steering wheel (SUB-NET)	
5265	Control levers/stalks on steering wheel	Interior (NET)	Steering wheel (SUB-NET)	
5266	Paddle shift on steering wheel	Interior (NET)	Steering wheel (SUB-NET)	
5267	Gears/gear shift/stick	Interior (NET)	Gear shift shifter gearbox (SUB-NET)	
5268	Handbrake/parking brake	Interior (NET)	Other front (SUB-NET)	
5269	Pedals	Interior (NET)	Other front (SUB-NET)	
5270	Floor - carpet	Interior (NET)	Other front (SUB-NET)	
5271	Floor - mat	Interior (NET)	Other front (SUB-NET)	
5272	Floor - scuff plate	Interior (NET)	Other front (SUB-NET)	
5273	Cassette player	Interior (NET)	Other front (SUB-NET)	
5274	Front - others - cigarette lighter	Interior (NET)	Other front (SUB-NET)	
5275	Front others - ashtray	Interior (NET)	Other front (SUB-NET)	
5276	Front others - grab handle	Interior (NET)	Other front (SUB-NET)	
5277	Airbags	Interior (NET)	Other front (SUB-NET)	
5278	Trunk release	Interior (NET)	Other front (SUB-NET)	
5279	Bonnet/hood release	Interior (NET)	Other front (SUB-NET)	
5280	Front storage spaces - place to keep/put cell phone/mobile phone	Interior (NET)	Front/rear storage space (SUB-NET)	
5281	Front storage spaces (unspec)	Interior (NET)	Front/rear storage space (SUB-NET)	
5282	Front storage spaces - glovebox/glove compartment	Interior (NET)	Front/rear storage space (SUB-NET)	
5283	Front storage spaces - cup holders	Interior (NET)	Front/rear storage space (SUB-NET)	
5284	Front storage spaces - centre console box	Interior (NET)	Front/rear storage space (SUB-NET)	
5285	Front storage spaces - doors	Interior (NET)	Front/rear storage space (SUB-NET)	
5286	Front storage spaces - cool box/fridge box	Interior (NET)	Front/rear storage space (SUB-NET)	
5287	Front storage spaces - floor box	Interior (NET)	Front/rear storage space (SUB-NET)	
5288	Front storage spaces - sun glasses	Interior (NET)	Front/rear storage space (SUB-NET)	
5289	Front storage spaces - phone	Interior (NET)	Front/rear storage space (SUB-NET)	
5290	Front storage spaces - other	Interior (NET)	Front/rear storage space (SUB-NET)	
5291	Front seats	Interior (NET)	Front seats (SUB-NET)	
5292	The driver's seat	Interior (NET)	Front seats (SUB-NET)	
5293	Front seats - controls	Interior (NET)	Front seats (SUB-NET)	
5294	Front seat extension	Interior (NET)	Front seats (SUB-NET)	
5295	Front seats - head restraints/head rests	Interior (NET)	Front seats (SUB-NET)	
5296	Front seats - centre arm rest(s)	Interior (NET)	Front seats (SUB-NET)	
5297	Interior front - other areas	Interior (NET)	Front seats (SUB-NET)	
5298	Driving position	Interior (NET)	Front seats (SUB-NET)	
5299	Driver's footrest	Interior (NET)	Front seats (SUB-NET)	
5301	Roof	Interior (NET)	Roof (SUB-NET)	
5302	Roofliner/headliner	Interior (NET)	Roof (SUB-NET)	
5311	Sunroof	Interior (NET)	Roof (SUB-NET)	
5325	Sunroof screen	Interior (NET)	Roof (SUB-NET)	
5326	Vents in roof/sunroof	Interior (NET)	Roof (SUB-NET)	
5401	Rear interior generally	Interior (NET)	Other Rear (SUB-NET)	
5411	Rear door interiors	Interior (NET)	Other Rear (SUB-NET)	
5412	Rear door interiors - armrest	Interior (NET)	Other Rear (SUB-NET)	
5421	Rear window	Interior (NET)	Other Rear (SUB-NET)	
5425	Rear window shade/screen	Interior (NET)	Other Rear (SUB-NET)	
5427	TBD	Interior (NET)		
5450	Lack of central console hump in back	Interior (NET)	Other Rear (SUB-NET)	
5451	Rear console	Interior (NET)	Other Rear (SUB-NET)	
5452	Rear roof console	Interior (NET)	Other Rear (SUB-NET)	
5453	Rear hump dividing seats	Interior (NET)	Other Rear (SUB-NET)	
5455	Rear controls generally	Interior (NET)	Rear controls/ fittings (SUB-NET)	

Code	Description	NET	SUBNET	SUBSUBNET
5456	Rear fittings - interior lights	Interior (NET)	Rear controls/ fittings (SUB-NET)	
5457	Rear controls - air conditioning/heating	Interior (NET)	Rear controls/ fittings (SUB-NET)	
5458	Rear fittings - air vents/heat vents	Interior (NET)	Rear controls/ fittings (SUB-NET)	
5459	Rear controls - DVD player	Interior (NET)	Rear controls/ fittings (SUB-NET)	
5460	DVD/video screens (on back of front seats/for passengers)	Interior (NET)	Rear controls/ fittings (SUB-NET)	
5461	Rear vanity mirrors	Interior (NET)	Rear controls/ fittings (SUB-NET)	
5462	Rear tables/fold down tables on back of front seats	Interior (NET)	Rear controls/ fittings (SUB-NET)	
5475	Rear fittings - ash tray	Interior (NET)	Rear controls/ fittings (SUB-NET)	
5476	Straps/Dowager handle	Interior (NET)	Rear controls/ fittings (SUB-NET)	
5477	Hook (eg for hanging suits etc)	Interior (NET)	Rear controls/ fittings (SUB-NET)	
5478	Toolkit in boot/trunk	Interior (NET)	Rear controls/ fittings (SUB-NET)	
5479	Spare wheel in boot/trunk	Interior (NET)	Rear controls/ fittings (SUB-NET)	
5480	Hazard/warning triangle	Interior (NET)	Rear controls/ fittings (SUB-NET)	
5481	Rear storage spaces	Interior (NET)	Front/rear storage space (SUB-NET)	
5482	Rear parcel shelf	Interior (NET)	Other Rear (SUB-NET)	
5483	Rear storage spaces - cup holders	Interior (NET)	Front/rear storage space (SUB-NET)	
5484	Rear storage spaces - centre console	Interior (NET)	Front/rear storage space (SUB-NET)	
5485	Rear storage spaces - doors	Interior (NET)	Front/rear storage space (SUB-NET)	
5486	Rear storage spaces behind front seats (in rear)	Interior (NET)	Front/rear storage space (SUB-NET)	
5487	Boot/trunk (interior)	Interior (NET)	Boot/load space (SUB-NET)	
5488	Rear luggage screen/screen that pulls over luggage	Interior (NET)	Boot/load space (SUB-NET)	
5489	Rear - dog guard	Interior (NET)	Boot/load space (SUB-NET)	
5491	Rear seats/rear seating area	Interior (NET)	Rear seats (SUB-NET)	
5492	Centre back seat/ third back seat	Interior (NET)	Rear seats (SUB-NET)	
5493	Rear seats - controls	Interior (NET)	Rear seats (SUB-NET)	
5495	Rear seats - head restraints	Interior (NET)	Rear seats (SUB-NET)	
5496	Rear seats - arm rest	Interior (NET)	Rear seats (SUB-NET)	
5497	Rear seats - 3rd row of seats	Interior (NET)	Rear seats (SUB-NET)	
5498	Rear seats - pass through/access to 3rd row	Interior (NET)	Rear seats (SUB-NET)	
5499	Interior rear - other areas	Interior (NET)	Rear seats (SUB-NET)	
5713	TBD	Interior (NET)		
6511	TBD	Interior (NET)		

Detail Codes

Code	Description	NET	SUBNET
7000	Item just noticed/commented on - no reaction or detail given		
7001	Position (in scale/range)	QUALITY/PREMIUMNESS	High end
7002	Position in market	QUALITY/PREMIUMNESS	High end
7003	TBD	QUALITY/PREMIUMNESS	
7004	The brand/make of accessories (eg tyres, CD player etc)	QUALITY/PREMIUMNESS	Other quality/ premiumness
7005	TBD	QUALITY/PREMIUMNESS	
7006	Luxury	QUALITY/PREMIUMNESS	Luxury/ richness/ plushness
7007	Richness	QUALITY/PREMIUMNESS	Luxury/ richness/ plushness
7008	Plushness	QUALITY/PREMIUMNESS	Luxury/ richness/ plushness
7009	Quality	QUALITY/PREMIUMNESS	
7010	TBD	QUALITY/PREMIUMNESS	
7020	Elegance	QUALITY/PREMIUMNESS	Classiness/ specialness/ elegance/ sophistication
7021	Classiness	QUALITY/PREMIUMNESS	Classiness/ specialness/ elegance/

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Code	Description	NET	SUBNET
			sophistication
7022	Sophistication	QUALITY/PREMIUMNESS	Classiness/ specialness/ elegance/ sophistication
7023	Stylishness	QUALITY/PREMIUMNESS	Other quality/ premiumness
7029	Perfection	QUALITY/PREMIUMNESS	Other quality/ premiumness
7030	Specialness	QUALITY/PREMIUMNESS	Classiness/ specialness/ elegance/ sophistication
7031	Premiumness	QUALITY/PREMIUMNESS	Premiumness/ prestige
7032	Prestige	QUALITY/PREMIUMNESS	Premiumness/ prestige
7033	Desirability	QUALITY/PREMIUMNESS	Desirability/ enviability
7034	Enviability	QUALITY/PREMIUMNESS	Desirability/ enviability
7035	Chauffeur driven	QUALITY/PREMIUMNESS	Other quality/ premiumness
7036	TBD	QUALITY/PREMIUMNESS	
7037	TBD	QUALITY/PREMIUMNESS	
7041	TBD	QUALITY/PREMIUMNESS	
7051	TBD	QUALITY/PREMIUMNESS	
7067	TBD	QUALITY/PREMIUMNESS	
7091	TBD	QUALITY/PREMIUMNESS	
7094	TBD	QUALITY/PREMIUMNESS	
7097	TBD	QUALITY/PREMIUMNESS	
7099	Quality/ premiumness - other	QUALITY/PREMIUMNESS	Other quality/ premiumness
7100	Expensiveness	QUALITY/PREMIUMNESS	
7101	Expensiveness (PRICE)	VALUE/PRICE	
7102	Inexpensiveness	VALUE/PRICE	
7103	Value	VALUE/PRICE	
7104	Cost vs looks	VALUE/PRICE	
7105	Price?	VALUE/PRICE	
7106	Comparative price (compared to other brands/models)	VALUE/PRICE	
7110	Fuel consumption	VALUE/PRICE	
7199	Price/cost - other comments	VALUE/PRICE	
7201	Good size	SIZE/ROOM/SPACE	
7202	Big/ wide/bulk/Big	SIZE/ROOM/SPACE	Big/ wide/ bulk
7203	Small	SIZE/ROOM/SPACE	Small/narrow/ compact
7204	Deceptive size	SIZE/ROOM/SPACE	Other size/room/space
7205	Neat	SIZE/ROOM/SPACE	Other size/room/space
7206	Compactness	SIZE/ROOM/SPACE	Small/narrow/ compact
7207	Bulk	SIZE/ROOM/SPACE	Big/ wide/ bulk
7209	TBD	SIZE/ROOM/SPACE	
7210	Spaciousness/room	SIZE/ROOM/SPACE	Spaciousness/room
7211	Legroom	SIZE/ROOM/SPACE	
7212	Headroom	SIZE/ROOM/SPACE	Headroom/ high/tall
7213	Passenger room	SIZE/ROOM/SPACE	Passenger capacity/room
7214	Passenger capacity	SIZE/ROOM/SPACE	Passenger capacity/room
7215	TBD	SIZE/ROOM/SPACE	
7217	TBD	SIZE/ROOM/SPACE	
7220	Length - short	SIZE/ROOM/SPACE	Other size/room/space
7221	Length - long	SIZE/ROOM/SPACE	Other size/room/space
7222	Deep	SIZE/ROOM/SPACE	Other size/room/space
7223	Width - wide	SIZE/ROOM/SPACE	Big/ wide/ bulk
7224	Width - narrow	SIZE/ROOM/SPACE	Small/narrow/ compact
7225	TBD	SIZE/ROOM/SPACE	
7226	High/tall	SIZE/ROOM/SPACE	Headroom/ high/tall
7227	Low	SIZE/ROOM/SPACE	
7228	Low profile (tyres)	SIZE/ROOM/SPACE	Other size/room/space
7229	Size - other	SIZE/ROOM/SPACE	Other size/room/space
7230	Open/open feeling/airy feeling	SIZE/ROOM/SPACE	Spaciousness/room
7231	Closed/enclosed feeling	SIZE/ROOM/SPACE	Small/narrow/ compact
7232	The display/graphics (eg of the control screen)	FUNCTION	Positioning/layout/display
7233	Lack of lighting/illumination	SIZE/ROOM/SPACE	Lack of lighting/ dark
7234	Lighting/illumination	SIZE/ROOM/SPACE	Light
7235	Light feeling/lets in light	SIZE/ROOM/SPACE	Light
7236	Dark	SIZE/ROOM/SPACE	Lack of lighting/ dark
7247	TBD	SIZE/ROOM/SPACE	
7252	TBD	SIZE/ROOM/SPACE	
7299	TBD	SIZE/ROOM/SPACE	
7300	TBD	APPEAL	
7301	Appeal/general like	APPEAL	Other appeal
7302		APPEAL	Likelihood to buy/ own
7303		APPEAL	Likelihood to buy/ own
7304	Impressiveness	APPEAL	
7305	Essentialness	APPEAL	Other appeal
7306	Promise/disappointment	APPEAL	
7307	Expectation	APPEAL	
7309	Recommendation	APPEAL	Other appeal

Code	Description	NET	SUBNET
7310	Neat (US)	APPEAL	Other appeal
7311	Desirability of feature	APPEAL	Other appeal
7321	TBD	APPEAL	
7330	TBD	APPEAL	
7343	TBD	APPEAL	
7391	TBD	APPEAL	
7399	Appeal - other	APPEAL	Other appeal
7401	Attractiveness	APPEARANCE	
7402	TBD	APPEARANCE	
7403	TBD	APPEARANCE	
7404	TBD	APPEARANCE	
7405	Aggressive	APPEARANCE	Aggressive/ masculine
7406	NOT aggressive	APPEARANCE	Other appearance
7407	Masculine	APPEARANCE	Aggressive/ masculine
7408	Feminine	APPEARANCE	Other appearance
7409	Warmth	APPEARANCE	Other appearance
7410	Sexy	APPEARANCE	
7411	Lack of sexiness	APPEARANCE	Not sexy/ sporty/ fast looking
7412	Sports/sporty appearance	APPEARANCE	Fast/ sporty looking
7413	NOT sports/unsporty appearance	APPEARANCE	Not sexy/ sporty/ fast looking
7414	Fast looking	APPEARANCE	Fast/ sporty looking
7415	Not fast	APPEARANCE	Not sexy/ sporty/ fast looking
7416	Rugged	APPEARANCE	
7417	Not rugged	APPEARANCE	Other appearance
7418	Muscly/muscle car	APPEARANCE	Aggressive/ masculine
7419	Conservative	APPEARANCE	Other appearance
7420	Old-fashioned/old style	APPEARANCE	Old-fashioned/ classic/ traditional/ heritage
7421	Traditional	APPEARANCE	Old-fashioned/ classic/ traditional/ heritage
7422	Classic	APPEARANCE	Old-fashioned/ classic/ traditional/ heritage
7423	Heritage	APPEARANCE	Old-fashioned/ classic/ traditional/ heritage
7424	New	APPEARANCE	New/ modern/ futuristic/ innovative
7425	Modern	APPEARANCE	New/ modern/ futuristic/ innovative
7426	Innovative/new technology	APPEARANCE	New/ modern/ futuristic/ innovative
7427	Futuristic	APPEARANCE	New/ modern/ futuristic/ innovative
7428	Not futuristic	APPEARANCE	Other appearance
7429	Combination of old and new	APPEARANCE	Other appearance
7430	Unique	APPEARANCE	Different/ distinctive/ eye-catching/ unique/ original
7431	NOT unique	APPEARANCE	NOT different/ distinctive etc
7432	Different	APPEARANCE	Different/ distinctive/ eye-catching/ unique/ original
7433	NOT different	APPEARANCE	NOT different/ distinctive etc
7434	Distinctive	APPEARANCE	Different/ distinctive/ eye-catching/ unique/ original
7435	NOT distinctive	APPEARANCE	NOT different/ distinctive etc
7436	Original	APPEARANCE	Different/ distinctive/ eye-catching/ unique/ original
7437	NOT original	APPEARANCE	NOT different/ distinctive etc
7438	Eyecatching/stand(s) out	APPEARANCE	Different/ distinctive/ eye-catching/ unique/ original
7439	NOT eyecatching	APPEARANCE	NOT different/ distinctive etc
7440	Definition/accentuation	APPEARANCE	Other appearance
7442	Getting used to it	APPEARANCE	Other appearance
7443	Familiarity	APPEARANCE	Other appearance
7444	Interesting	APPEARANCE	Different/ distinctive/ eye-catching/ unique/ original
7445	Exciting	APPEARANCE	Different/ distinctive/ eye-catching/ unique/ original
7450	Digital	APPEARANCE	Other appearance
7451	Analogue	APPEARANCE	Other appearance
7452	Like cockpit/inside of aeroplane	APPEARANCE	Other appearance
7460	Cool/trendy	APPEARANCE	New/ modern/ futuristic/ innovative
7461	NOT cool/trendy	APPEARANCE	Other appearance
7499	Appearance - other	APPEARANCE	Other appearance
7501	Shape/ general lines	SHAPE/THE LINES	
7502	Aerodynamic/streamlined	SHAPE/THE LINES	Sleek/ aerodynamic/ clean lines
7503	Sleek/slickness	SHAPE/THE LINES	Sleek/ aerodynamic/ clean lines
7504	Smooth	SHAPE/THE LINES	Sleek/ aerodynamic/ clean lines
7505	Moulding/sculptured	SHAPE/THE LINES	Moulded/ sculptured
7506	Grooves/lines (NB not general lines of the car)	SHAPE/THE LINES	Moulded/ sculptured
7507	Sloping/sloped/it slopes	SHAPE/THE LINES	Sleek/ aerodynamic/ clean lines

Code	Description	NET	SUBNET
7508	Curved	SHAPE/THE LINES	Sleek/ aerodynamic/ clean lines
7509	Rounded	SHAPE/THE LINES	Sleek/ aerodynamic/ clean lines
7510	Hard lines/shape	SHAPE/THE LINES	Boxy/ square/ hardlines
7511	Heaviness of shape/line	SHAPE/THE LINES	Other shape/lines
7512	Cleanness of line/shape/plainness	SHAPE/THE LINES	Sleek/ aerodynamic/ clean lines
7513	Not plain	SHAPE/THE LINES	Other shape/lines
7515	Flat	SHAPE/THE LINES	Other shape/lines
7516	Boxy/square	SHAPE/THE LINES	Boxy/ square/ hardlines
7517	Angular	SHAPE/THE LINES	Boxy/ square/ hardlines
7518	Wedge shape	SHAPE/THE LINES	Boxy/ square/ hardlines
7520	Hooded/shaded	SHAPE/THE LINES	Other shape/lines
7521	Not hooded	SHAPE/THE LINES	Other shape/lines
7540	TBD	SHAPE/THE LINES	
7541	TBD	SHAPE/THE LINES	
7599	Shape/lines - other	SHAPE/THE LINES	Other shape/lines
7600	Colour combination (inc. two tone)	COLOUR	
7601	Colour (unspec)	COLOUR	
7602	Dark	COLOUR	
7603	TBD	COLOUR	
7604	Tinted	COLOUR	
7606	Light/pale/ not dark	COLOUR	
7607	Colour match/colour coding	COLOUR	
7608	Monochrome	COLOUR	
7609	White	COLOUR	
7610	Black	COLOUR	
7611	Silver	COLOUR	
7612	Grey	COLOUR	
7613	Specific shade of grey (seal grey, steel grey, etc)	COLOUR	
7614		COLOUR	
7615	Beige/camel	COLOUR	
7616	Cream	COLOUR	
7617	Brown	COLOUR	
7618		COLOUR	
7619		COLOUR	
7620	Blue	COLOUR	
7625	Green	COLOUR	
7626	Lime green	COLOUR	
7627	TBD	COLOUR	
7628	Yellow	COLOUR	
7629	Gold	COLOUR	
7630	Orange	COLOUR	
7631	Tan	COLOUR	
7640	Red	COLOUR	
7645	Purple	COLOUR	
7680	Shiny	COLOUR	
7681	NOT shiny	COLOUR	
7684	Metallic finish	COLOUR	
7686	Pearlised	COLOUR	
7699	Colour - other comments	COLOUR	
7700	Quality of material used	MATERIAL	
7701	Material used (unspec)	MATERIAL	Other material
7702	Metal	MATERIAL	Metals
7703	Chrome/use of chrome	MATERIAL	Metals
7704	Brushed/matt metal	MATERIAL	Metals
7705	Leather quality	MATERIAL	Leather/ suede
7706	Leather	MATERIAL	Leather/ suede
7707	NOT leather	MATERIAL	Other material
7708	Wood/wood trim	MATERIAL	Wood
7709	Not wood	MATERIAL	
7710	Plastic	MATERIAL	Plastic/ plastic quality
7711	NOT plastic	MATERIAL	Other material
7712	Wood quality	MATERIAL	Wood
7714	Rubber	MATERIAL	Other material
7715	Glass	MATERIAL	Other material
7716	Light reactive glass	MATERIAL	Other material
7720	Stitching	MATERIAL	Stitching/ piping
7721	Piping	MATERIAL	Stitching/ piping
7730	Leather softness	MATERIAL	Leather/ suede
7731	Leather colour	MATERIAL	Leather/ suede
7732	Suede/suede trim	MATERIAL	Leather/ suede
7741	Wood colour	MATERIAL	Wood
7751		MATERIAL	
7752	Plastic quality	MATERIAL	Plastic/ plastic quality
7760	Not chrome	MATERIAL	Other material
7761	Metal colour	MATERIAL	Metals

Code	Description	NET	SUBNET
7762	Stainless steel	MATERIAL	Metals
7763	Not stainless steel	MATERIAL	Other material
7766	Aluminium	MATERIAL	Metals
7767	Not aluminium	MATERIAL	Other material
7770	Combination of materials	MATERIAL	Other material
7780	Mesh (eg mesh behind grille)	MATERIAL	Other material
7784	Upholstery (unspec)	MATERIAL	Other material
7785	Breathable fabric	MATERIAL	Other material
7786	Carpet/carpeted	MATERIAL	Other material
7790	Soft top	MATERIAL	Other material
7795	Xenon (as headlights)	MATERIAL	Other material
7796	Halogen (lights)	MATERIAL	Other material
7799	Materials - other	MATERIAL	Other material
7801	Positioning/layout	FUNCTION	Positioning/layout/display
7802	Hidden/discreet/out of the way	APPEARANCE	Other appearance
7803	Sticks out/prominent/out in the open	APPEARANCE	Other appearance
7804	TBD	APPEARANCE	
7807	TBD	APPEARANCE	
7808	TBD	APPEARANCE	
7810	Balance	APPEARANCE	Balance/ integration
7811	Harmony	APPEARANCE	Balance/ integration
7812	Integration/flow/the way things fit together	APPEARANCE	Balance/ integration
7813	Continuous throughout/all through car	APPEARANCE	Balance/ integration
7815	TBD	APPEARANCE	
7816	TBD	APPEARANCE	
7899	TBD	APPEARANCE	
7901	Large number/amount	QUANTITY	Enough/ abundance
7903	Small number/amount	QUANTITY	None/ few/ lack of
7905	Enough	QUANTITY	Enough/ abundance
7906	TBD	QUANTITY	
7907	None	QUANTITY	None/ few/ lack of
7908	Has it got ...?/don't know if it has	QUANTITY	
7912	TBD	QUANTITY	
7921	TBD	QUANTITY	
7980	TBD	QUANTITY	
7991	TBD	QUANTITY	
8000	Eco friendliness	MISC	other misc
8001	Functionality (unspec)	FUNCTION	Easy to use/ understand
8002	Information/messages eg gives information on which doors open, external temp etc	FUNCTION	Other Function
8005	Practicality/usefulness	FUNCTION	Practicality/ convenience
8006	Multipurpose	FUNCTION	Adjustability/ adaptability
8007	Utility/"workhorse"	FUNCTION	Other Function
8008	Convenience	FUNCTION	Practicality/ convenience
8009	Ease of parking	FUNCTION	Other Function
8010	Ease of use	FUNCTION	Easy to use/ understand
8011	Ease of reach/accessibility (of items/features)	FUNCTION	Easy to use/ understand
8012	Accessibility (of interior/car itself)	FUNCTION	Ease of ingress/ egress
8013	Easy to find	FUNCTION	Easy to use/ understand
8014	Easy to see/easy to read	FUNCTION	Easy to use/ understand
8015	Ease of understanding	FUNCTION	Easy to use/ understand
8019	Dual control/both sides	FUNCTION	Easy to use/ understand
8020	Powered/electric/electrically operated	FUNCTION	Easy to use/ understand
8021	Ease of opening	FUNCTION	Ease of ingress/ egress
8022	Automatic opening/action/operation	FUNCTION	Ease of ingress/ egress
8023	Ease of closing	FUNCTION	Ease of ingress/ egress
8024	Automatic closure	FUNCTION	Ease of ingress/ egress
8025	Hands free	FUNCTION	Easy to use/ understand
8026	Touch operated	FUNCTION	Easy to use/ understand
8027	Voice control	FUNCTION	Easy to use/ understand
8028	The sound made/the feel when closing	FUNCTION	Other Function
8029	The seal when closing/closed	FUNCTION	Other Function
8030	Memory (as in seats etc)	FUNCTION	Easy to use/ understand
8031	Adjustability	FUNCTION	Adjustability/ adaptability
8032	Fold down	FUNCTION	Adjustability/ adaptability
8034	Language capability/different languages	FUNCTION	Other Function
8035	Adaptability/ability to change	FUNCTION	Adjustability/ adaptability
8036	The style/ configuration	MISC	
8040	TBD	BUILD	
8041	Durability	BUILD	Solid/ robust/ reliable/ safe

Code	Description	NET	SUBNET
8042	Solidity	BUILD	Solid/ robust/ reliable/ safe
8043	Strength	BUILD	Solid/ robust/ reliable/ safe
8044	Robustness/sturdiness	BUILD	Solid/ robust/ reliable/ safe
8045	Heavy	BUILD	Other build
8046	Not heavy, lightweight	BUILD	Other build
8051	Reliability	BUILD	Solid/ robust/ reliable/ safe
8055	TBD	BUILD	
8061	Simplicity	FUNCTION	Easy to use/ understand
8065	TBD	FUNCTION	
8069	Grip eg steering wheel	FUNCTION	Other Function
8070	Wraparound (eg seats)	FUNCTION	Comfort
8071	Safety	BUILD	Solid/ robust/ reliable/ safe
8072	Padded	FUNCTION	Comfort
8073	Firm/supportive	FUNCTION	Comfort
8074	Heated	FUNCTION	Comfort
8075	Comfort	FUNCTION	Comfort
8076	Driver comfort	FUNCTION	Comfort
8077	Passenger comfort	FUNCTION	Comfort
8078	Passenger convenience	FUNCTION	Practicality/ convenience
8079	Passenger control	FUNCTION	Other Function
8080	View to front/of bonnet	FUNCTION	Visibility
8081	Visibility	FUNCTION	Visibility
8085	Quietness	FUNCTION	Comfort
8090	Family	MISC	User type
8091	Not family	MISC	User type
8092	For women/female drivers	MISC	User type
8093	For men/male drivers	MISC	User type
8094	For older people/drivers	MISC	User type
8095	For younger people/drivers	MISC	User type
8097	Pet/animal carrying capability	MISC	User type
8098	Don't know what they are/what their function is	FUNCTION	Other Function
8099	Functionality - other	FUNCTION	Other Function
8101	Workmanship	BUILD	Craftsmanship/ handmade
8102	Craftsmanship	BUILD	Craftsmanship/ handmade
8103	Polish	BUILD	Paint/ finish
8104	Paintwork/paint job	BUILD	Paint/ finish
8105	Finish	BUILD	Paint/ finish
8106	Design	BUILD	
8107	Custom vs handmade	BUILD	Craftsmanship/ handmade
8108	TBD	BUILD	
8181	TBD	BUILD	
8199	Other build	BUILD	Other build
8201	Performance	PERFORMANCE/DRIVE	Performance/powerful
8202	Powerful	PERFORMANCE/DRIVE	Performance/powerful
8203	Not powerful	PERFORMANCE/DRIVE	Not powerful/ heavy to drive
8204	Heavy to drive	PERFORMANCE/DRIVE	Not powerful/ heavy to drive
8205	Suspension	PERFORMANCE/DRIVE	Other performance/drive
8206	Supercharged	PERFORMANCE/DRIVE	Performance/powerful
8207	4-wheel drive	PERFORMANCE/DRIVE	Other performance/drive
8208	TBD	PERFORMANCE	
8209	Want to drive it	PERFORMANCE/DRIVE	
8210	Personal drive experience	MISC	
8211	Sporty (drive/ride)	PERFORMANCE/DRIVE	Sporty/fun
8212	Fun	PERFORMANCE/DRIVE	Sporty/fun
8213	On the farm/ for farmers	MISC	Usage type
8214	Outdoors	MISC	Usage type
8215	Touring	MISC	Usage type
8216	Daily car/"daily driver"	MISC	Usage type
8217	Off-road use	MISC	Usage type
8218	City use/town car	MISC	Usage type
8219	Business use/company/fleet car	MISC	Usage type
8220	Short trips/shopping etc	MISC	Usage type
8221	Long distances	MISC	Usage type
8222	Motorway driving	MISC	Usage type
8225	Second car	MISC	Usage type
8226	Not daily car/not for daily driving	MISC	Usage type
8229	Usage - other	MISC	Usage type
8236	TBD	MISC	
8241	TBD	MISC	
8250	Automatic drive	PERFORMANCE/DRIVE	Other performance/drive
8251	Tiptronic drive/shift/gear	PERFORMANCE/DRIVE	Other performance/drive
8299	Drive/performance - other	PERFORMANCE/DRIVE	Other performance/drive
8306	TBD	MISC	
8401	Comparison with current car	COMPARISON	Other comparison
8402	Comparison with other cars of its	COMPARISON	Other comparison

Code	Description	NET	SUBNET
	type /class		
8403	TBD	COMPARISON	
8404	TBD	COMPARISON	
8405	Comparison with other/previous models of this brand	COMPARISON	
8406	Typical of its brand	COMPARISON	
8407	NOT typical of its brand	COMPARISON	Other comparison
8408	Typical of car type (eg "typical SUV")	COMPARISON	Other comparison
8409	NOT typical of car type	COMPARISON	Other comparison
8410	Typical of Ford	COMPARISON	Other comparison
8411	NOT typical of Ford	COMPARISON	Other comparison
8412	...Discovery	COMPARISON	Other comparison
8413	...Range Rover	COMPARISON	Other comparison
8414	...Jeep	COMPARISON	Other comparison
8415	..Aston Martin	COMPARISON	Other comparison
8416	..Audi	COMPARISON	Other comparison
8417	..Bentley	COMPARISON	Other comparison
8418	..BMW	COMPARISON	Other comparison
8419	..Jaguar	COMPARISON	Other comparison
8420	..Land Rover	COMPARISON	Other comparison
8421	..Lexus	COMPARISON	Other comparison
8422	..Maserati	COMPARISON	Other comparison
8423	..Mercedes	COMPARISON	Other comparison
8424	..Porsche	COMPARISON	Other comparison
8425	..Rolls Royce	COMPARISON	Other comparison
8426	..Toyota	COMPARISON	Other comparison
8427	..Maybach	COMPARISON	Other comparison
8428	..Honda	COMPARISON	Other comparison
8429	..Ferrari	COMPARISON	Other comparison
8430	Other brand	COMPARISON	Other comparison
8431	European/typically European	COMPARISON	Other comparison
8432	Not typically european	COMPARISON	Other comparison
8433	British/English/typically English	COMPARISON	Other comparison
8434	NOT typically British/English	COMPARISON	Other comparison
8435	American/typically American	COMPARISON	Other comparison
8436	NOT typically American	COMPARISON	Other comparison
8437	German/typically German	COMPARISON	Other comparison
8438	NOT typically German	COMPARISON	Other comparison
8439	Japanese/typically Japanese	COMPARISON	Other comparison
8441	Italian/typically Italian	COMPARISON	Other comparison
8442	NOT typically Italian	COMPARISON	Other comparison
8450	Like a commercial/industrial vehicle	COMPARISON	Other comparison
8460	..VW	COMPARISON	Other comparison
8461	..Chrysler	COMPARISON	Other comparison
8462	..Nissan/Infiniti	COMPARISON	Other comparison
8507	TBD	COMPARISON	
8705	TBD	COMPARISON	
8750	TBD	COMPARISON	
9021	TBD	COMPARISON	
9221	TBD	COMPARISON	
9981	TBD	MISC	
9990	Need to drive/try/like to test drive	MISC	other misc
9991	Need to look at it again	MISC	other misc
9999	Other - not codeable elsewhere	MISC	other misc

Emotion Codes

- 1 = E++
- 2 = E+
- 3 = N
- 4 = E-
- 5 = E- -

Sense Codes

- 1 = look/sight
- 2 = touch/feel
- 3 = smell
- 4 = functionality
- 5 = general impression/opinion

APPENDIX G PRP VERBATIMS DATABASE USER AND TRAINING MANUALS



A user guide and training manual were developed to support the roll-out of the premiumness verbatims database within the firm. These documents are attached for information:

Document Title	Author	Version	Date of Issue	No of Pages
Premiumness Research Verbatims Database User Manual	B Law	1i	30/11/2009	36
Premiumness Research Verbatims Database Training Manual	B Law	1g	30/11/2009	46

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Premiumness Research Verbatims Database

User Manual

Version 1g
30 November 2009

Bernie Law



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ABBREVIATIONS

APEAL	Automotive Performance Execution and Layout
BiC	Best in Class
E+	Number of emotionally positive comments
E-	Number of emotionally negative comments
IQS	Initial Quality Survey
JLR	Jaguar Land Rover
MRO	Market Research Office
MY	Model Year
NA	North America
NCBS	New Car Buyer Survey
NetE	Premiumness metric, derived from E+ - E-
NVES	New Vehicle Experience Survey
PALS	Product Attribute Leadership Strategy
PQ	Perceived Quality
QFD	Quality Function Deployment
S&D	Surprise and Delight
TGW	Things gone wrong
TL	Trim Level

1. INTRODUCTION TO THE PREMIUMNESS RESEARCH



This document provides instructions for the use of MRO's Premiumness Database.

The Premiumness Database contains the raw findings of two clinics that have been conducted with customers and potential customers to understand their perception of premiumness and luxury in JLR vehicles and competitor cars. The aim of the database is to enable the user to access and analyse the raw customer verbatims in a simple and useful way.

Premiumness Stage 1

Phase 1 was an initial qualitative study conducted in 2004/2005. The study comprised 21 focus groups: 9 in the UK and 12 in the US.

This study found that customers' definitions of premiumness included elements of rarity, quality and status, and that emotional benefits were at least as important as product qualities – premiumness cannot simply be engineered. The emotional needs were both inner-directed (e.g. the brand living up to expectations), and outer-directed (being admired by others). True premium brands satisfy both head and heart (rational and emotional).

Participants were asked to position car brands on a premiumness scale (Figure 1)

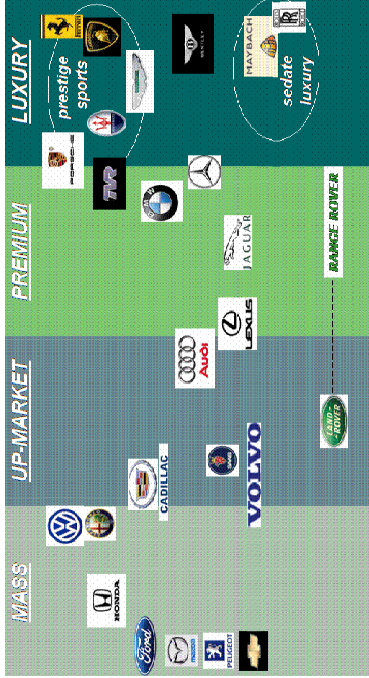


Figure 1 Premiumness Stage 1 Brand Continuum Results

This demonstrated that Jaguar and Land Rover were not being perceived as Luxury or Premium brands by their target markets. This unacceptable competitive disadvantage lead to the commissioning of Stage 2 of the Premiumness study, being more detailed and comprehensive.

Stage 1 represents the Premiumness pilot study. The pilot did not evaluate specific cars, so its findings are not contained within the verbatims database. However, the analysis can be accessed from the MRO website:

- <http://www.pagshare.ford.com/mss/mro/Cross%20Brand%20Studies/Attribute%20and%20Futuring/Premiumness%20-%20Full%20Access/2005/Premiumness%20Stage%201.ppt>

Premiumness Stage 2

The Premiumness Stage 2 research was a qualitative and quantitative study which aimed to:

- identify the areas that matter most in terms of luxury/perceived quality;
- understand how customers evaluate a vehicle's luxury/perceived quality;
- provide evidence to support a leadership luxury category in PALS;
- understand how the (static) product contributes to the perception of a brand's luxury;
- understand the dynamics of luxury brands;
- understand what customers think is worth paying a premium for.

Customer clinics were held in the US (157 participants) and UK (152 participants) between April and May 2006. Each clinic followed the structure shown in Figure 2.

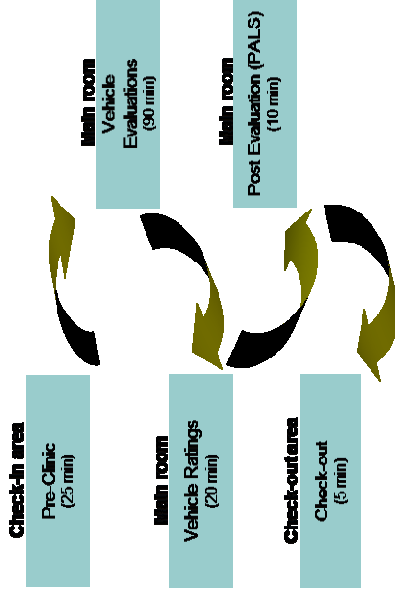


Figure 2 Premiumness Clinic Process Flow

Each participant was allocated to one of 6 evaluation cells, each cell contained 3 different vehicles (see Appendix A)

During the “pre-clinic”, participants were asked a series of questions about their experiences and opinions of vehicles. They were asked to position brands they would be evaluating on the premium “continuum”, and also to name models for those brands and position those models on the continuum. They were also asked to do this for the PAG brands and models.

Participants were taken into their evaluation cell and were asked to view each of the 3 vehicles in turn. Their movements were recorded by observers, and everything that they said (the stream of consciousness) was captured on voice recorders.

Participants were then asked to evaluate each vehicle by rating it against a number of attributes that reflected the PALS structure.

During the last activity, participants were given the opportunity to re-position the vehicles that they had seen on the brand continuum, to compare pre and post-evaluation positions.

The clinics have yielded a wealth of data in three categories, which has been analysed to date in a number of ways:

- Premiumness Continuum:
 - Brand standing & brand strength;
 - Nameplate (awareness, pre and post evaluation position).
- Ratings:
 - PALS Ratings (importance/satisfaction);
 - Brand Imagery (familiarity/favourability).
- Stream of Consciousness.

This database contains the Stream of Consciousness data, ie the customers' unprompted narration as they viewed their 3 cars, together with the code-based analysis of those verbatims. This codified analysis, which introduced the NetE¹ metric, was used to inform the results:

¹ NetE is the number of positive comments made minus the number of negative comments made.

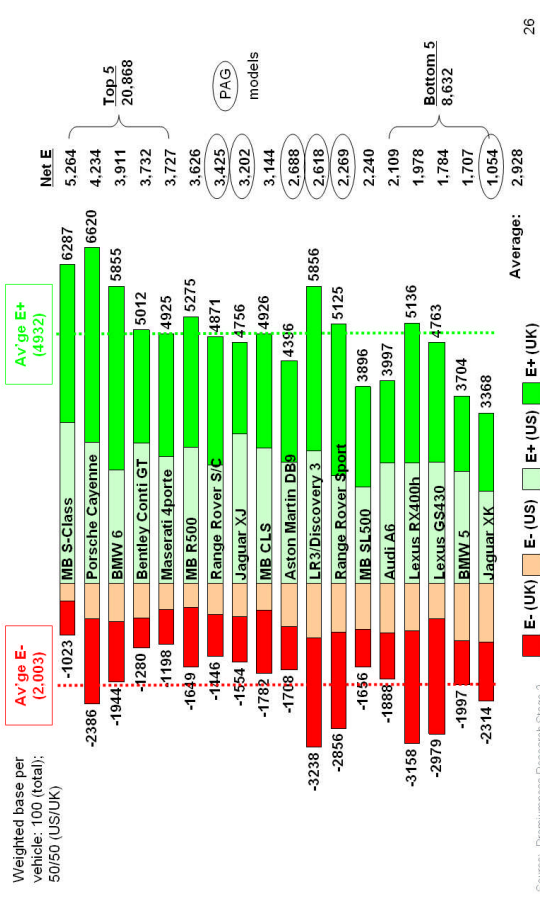


Figure 3 Premiumness Stage 2 NetE Results

The Continuum and Ratings findings are held by MRO and are available on the MRO website.:

- Premiumness Stage 2:
 - http://www.pagshare.ford.com/mss/mro/Cross%20Brand%20Studies/Attribute%20and%20Futuring/attribute_futuring.htm and
- L486/L538 Premiumness Study:
 - <http://www.pagshare.ford.com/mss/mro/Ad%20Hoc%20and%20GPD%20Studies/landrover%20Studies/486.htm>

L486/L538 Premiumness Study

This clinic followed an identical methodology to the original “stage 2” premiumness clinic, and captured the views of 72 UK respondents and 65 US respondents. 6 different vehicles were used. The vehicles used were from a lower segment than for the previous clinic study, and respondents were selected accordingly from a different demographic (while still representing the company's target consumer).

Participants visited one cell and evaluated 3 cars each. The cars used in each cell are shown in Appendix A.

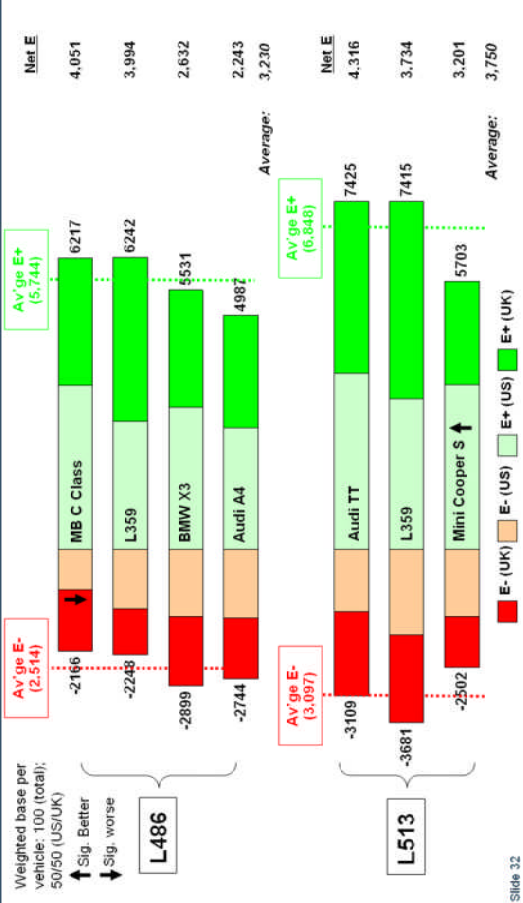


Figure 4 L486/L538 NetE Results

This database contains the Stream of Consciousness data, ie the customers' unprompted narration as they viewed their 3 cars, together with the code-based analysis of those verbatims. This codified analysis, was used to inform the results, and example of which is given in Figure 4.



2. OPENING THE DATABASE

NOTE: THE SCREEN DUMPS USED ARE FROM THE PROTOTYPE DATABASE, SO MAY LOOK SLIGHTLY DIFFERENT FROM WHAT IS SHOWN BELOW.

The verbatims database is a relational database built using Microsoft Access 2003. You will need MS Access on your PC to use this database. To open the file, double-click on the file name (currently Premiumness Database v15u.mdb). Access will open, and a security warning will appear (Figure 5).

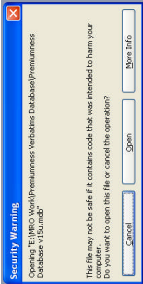


Figure 5 Opening Security Warning

Click Open, and the welcome screen is displayed (Figure 6): You may also be asked if you want to enable "unsafe expressions" – if this warning should appear, click Yes. In later versions of Access, this warning will be hidden in a warning bar at the top of the screen.

On opening the database for the first time, the welcome screen is displayed (Figure 6):

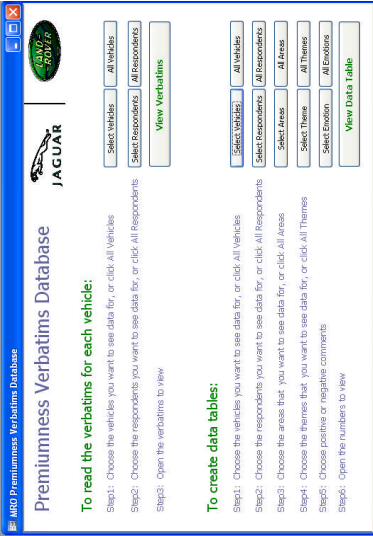


Figure 6 Welcome Screen

This screen allows the user to either read the complete verbatims from each participant, or to create data tables based on the emotional valence (E+, E-) of their comments.

You can choose to either of two ways to view the data:

- a. Look at everything that was said about a particular car, by particular types of people: you can look at the straight verbatims exactly as the respondents said them.

OR

- b. You can make a list of the types of things that were said about particular cars by particular types of people: you can then use these lists to make graphs (by exporting the data to Excel or similar), identify the "best" cars for particular features or collect specific comments about a targeted area.

This training manual shows you how to use both these approaches.

3. I WANT TO READ THE VERBATIMS

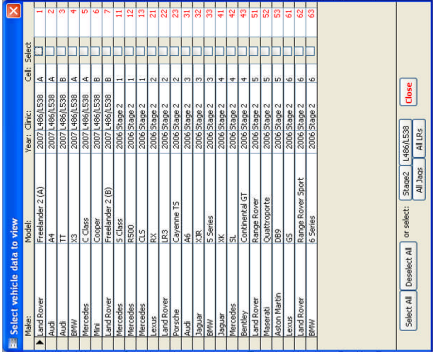


To read the complete verbatims from each participant, or from a specific range of participants, follow the steps outlined on the screen. This option allows records to be filtered according to the vehicle viewed, and by respondent characteristics.

Step 1: Choose the vehicles you want to see data for

To view verbatims for all vehicles, click the “All Vehicles” button on the Welcome screen (Figure 6). A message box will appear to confirm that all vehicles have been selected. Click OK to acknowledge and close the message box.

To select specific vehicles, click the “select vehicles” button. The screen shown in Figure 7 will appear. This screen lists the cars that have been evaluated during the premiumness research process. The list currently extends to 24 different models.



These buttons on this screen are additive, so clicking the “Stage 2” button and then “L486/L538” button will result in all the cars being selected. Similarly clicking “All Jags” then “All LRs” will result in all the Jaguars and all the Land Rover cars being selected.

You can also select individual cars by clicking directly the tick boxes.

To reset the “select” tick boxes, click “deselect all”.

NOTE: at least one car must be selected to view the verbatims.

Click “close” to exit the screen.

Step 2: Choose the respondents you want to see data for

To view verbatims from all respondents, click the “All Respondents” button. A message box will appear to confirm that all respondents have been selected. Click OK to acknowledge and close the message box.

To select specific respondents or groups of respondent, click the “select respondents” button. The screen shown in Figure 8 will appear.

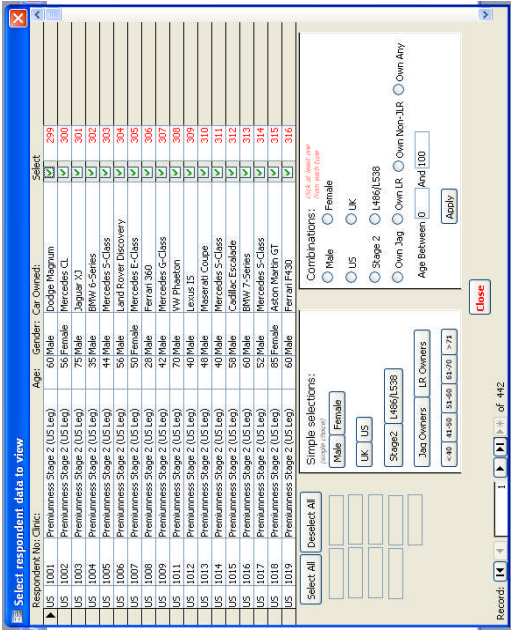


Figure 8 Select Respondents Pop Up Screen

This screen allows the data to be viewed to be filtered according to respondent's characteristics, such as age, gender and the cars they own.

To view all respondents' verbatims, click the “select all” button.

This screen offers the choice of simple selections or combinations.

To make a “simple” selection, i.e. to choose all males, or all stage 2 respondents, click the appropriate button. Note that clicking these buttons automatically removes any previous respondent selections you may have already made.

To make a “combination” selection, then click the option buttons as required. To select within an age range, enter the lower and higher numbers in the boxes provided. For example, Figure 9 shows the options clicked to select all US males from the Stage 2 research who own Jaguars or Land Rovers, and who are aged between 30 and 50.

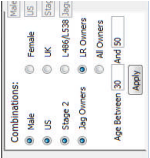


Figure 9: Respondent Selection - Combination Options

Click “Apply” to action the selection once complete. An error message will appear if any of the groups do not have at least one option selected (eg if neither male nor female have been selected).

Individual respondents can be selected or deselected by clicking directly the tick boxes.

To reset the “select” tick boxes, click “deselect all”.

NOTE: at least one respondent must be selected to view the verbatims.

Click “close” to exit the screen.

Step 3: Open the Verbatims to view

Click the “View Verbatims” button. The screen shown in Figure 10 will open.

Click on File in the menu bar, then Export. This will open the screen shown in Figure 14.
Select the location in which the file should be saved, then choose "save as type" Rich Text Format (*.rtf). Click Export.

The rtf file will be saved to the chosen location and can be opened at leisure.

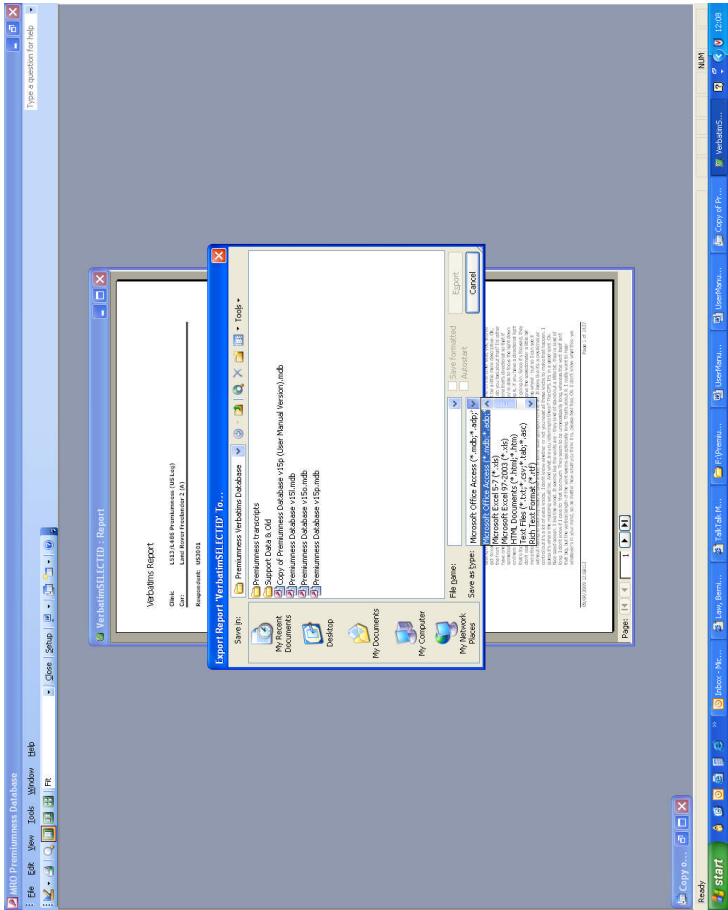


Figure 14 Export to RTF Format Dialog Box

4. I WANT TO CREATE DATA TABLES



Each individual verbatim has been analysed to identify the different comments made, and each comment has been allocated a code that identifies which part of the car is being discussed, and what theme of that comment.

The database enables the user to create data tables based on those codes that can then be exported into excel for further analysis. It allows the user to filter and manipulate data to answer questions such as: "how many people made comments about colour", "which cars received the greatest number of positive responses about the steering wheel?", "which cars received the fewest negative comments about leather?", "how did the female response differ to the male response to seats in the US"?, etc.

The first two steps are identical to those used to view verbatims as discussed in the previous section.

Step 1: Choose the vehicles you want to see data for

To view verbatims for all vehicles, click the "All Vehicles" button on the Welcome screen (Figure 6). A message box will appear to confirm that all vehicles have been selected. Click OK to acknowledge and close the message box.

To select specific vehicles, click the "select vehicles" button. The screen shown in Figure 15 will appear. This screen lists the cars that have been evaluated during the premiumness research process. The list currently extends to 24 different models.

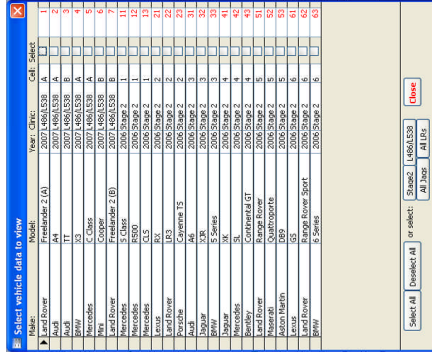


Figure 15 Select Vehicles Pop Up Screen

The user can "Select All" to view verbatims for all the cars shown. Alternatively, the user can select all vehicles from the Stage 2 research, or from the L486/L538 research. Buttons are also provided to speed the selection of all the Jaguar and/or Land Rover cars in the list

These buttons on this screen are additive, so clicking the "Stage 2" button and then "L486/L538" button will result in all the cars being selected. Similarly clicking "All Jags" then "All LRs" will result in all the Jaguars and all the Land Rover cars being selected.

You can also select individual cars by clicking directly the tick boxes.

To reset the “select” tick boxes, click “deselect all”:

NOTE: at least one car must be selected to view the verbatims.

Click “close” to exit the screen.

Step 2: Choose the respondents you want to see data for

To view verbatims from all respondents, click the "All Respondents" button. A message box will appear to confirm that all respondents have been selected. Click OK to acknowledge and close the message box.

To select specific respondents or groups of respondents, click the “select respondents” button. The screen shown in Figure 16 will appear.

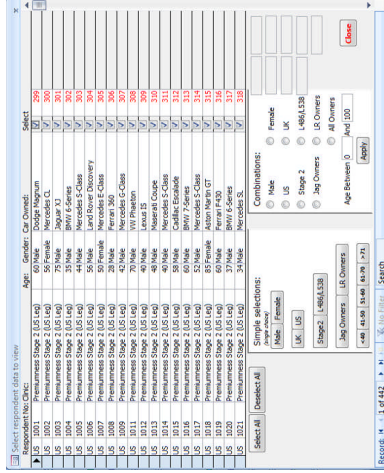


Figure 16 Select Respondents Pop Up Screen

This screen allows the data to be filtered according to respondent's characteristics, such as age, gender and the cars they own.

To view all respondents' verbatims, click the "select all" button.

This screen offers the choice of simple selections or combinations.

To make a “simple” selection, i.e. to choose all males, or all stage 2 respondents, click the appropriate button. Note that clicking these buttons automatically removes any previous respondent selections you may have already made.

To make a “combination” selection, then click the option buttons as required. To select within an age range, enter the lower and higher numbers in the boxes provided. For example, Figure 17 shows the options clicked to select all US males from the Stage 2 research who own Jaguars or Land Rovers, and who are aged between 30 and 50.

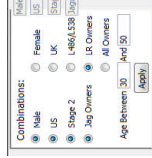


Figure 17: Respondent Selection - Combination Options

Click "Apply" to action the selection once complete. An error message will appear if any of the groups do not have at least one option selected (eg if neither male nor female have been selected).

Individual respondents can be selected or deselected by clicking directly the tick boxes.

To reset the "select" tick boxes, click "deselect all".

NOTE: at least one respondent must be selected to view the verbatims.

Click "close" to exit the screen.

Step 3: Choose the areas that you want to see data for:

The vehicles have been broken down into 274 discrete areas. At the highest level, these have been grouped into 5 "Nets":

- Brand,
- Model,
- Exterior,
- Interior and
- Car Overall.

The Interior and Exterior Nets have then been further divided into SubNets, such as Details of Front (Exterior) and Dashboard (Interior).

To view data for all areas of vehicles, click the "All Areas" button on the Welcome screen. A message box will appear to confirm that all vehicles have been selected. Click OK to acknowledge and close the message box.

To select specific areas, click the "select areas" button. The screen shown in Figure 18 will appear.

To select all areas relating to the exterior of the car, click the Exterior button.

To select all areas relating to the interior of the car, click the Interior button.

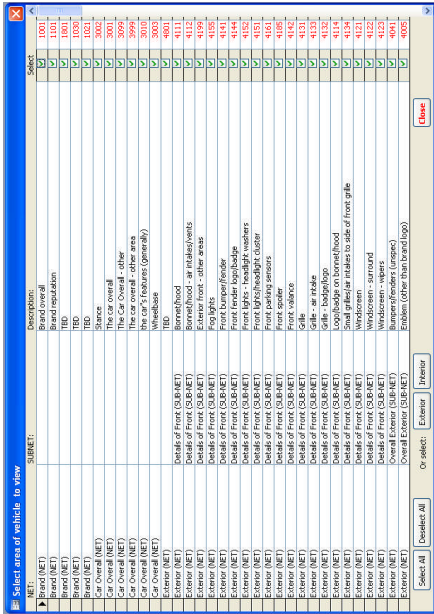


Figure 18 Select Area Pop Up Screen

The buttons on this screen are additive, so clicking the Exterior then Interior buttons will select both exterior and interior areas, in addition to any existing selections.

Individual areas can be selected or deselected by clicking directly the tick boxes.

To reset the tick boxes, click "deselect all".

Note: at least one area must be selected.

Hint: to find a particular key word, you can use the "Ctrl F" function. Click the cursor into the field you want to search then key <CTRL F>.

Click "close" to exit the screen.

Step 4: Choose the themes that you want to see data for:

The comments have been broken down into 419 discrete themes. At the highest level, these have been grouped into 14 "Nets":

Where appropriate, some Nets have then been further sub-divided into SubNets, such as metals (Materials) and aggressive/masculine (Appearance).

- Appeal
- Appearance
- Build
- Colour
- Comparison
- Function
- Material
- Miscellaneous
- Performance
- Quality
- Quantity
- Shape
- Size
- Value

To view data for all themes, click the "All Themes" button on the Welcome screen. A message box will appear to confirm that all themes have been selected. Click OK to acknowledge and close the message box.

To select specific areas, click the "select themes" button. The screen shown in Figure 19 will appear.

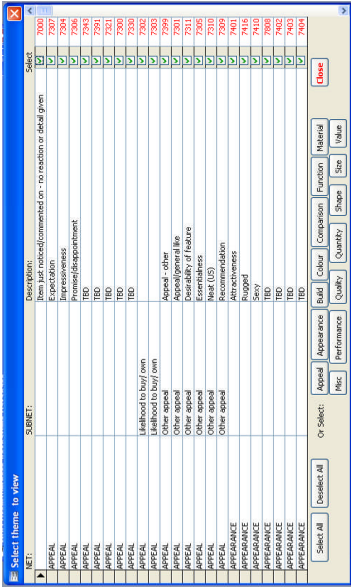


Figure 19 Select Theme Pop Up Screen

Clicking on any of the 14 Net buttons will select the appropriate themes. These buttons are additive, so clicking Appeal then Appearance will cause both theme Nets to be selected in addition to any selections already made.

Individual themes can be selected or deselected by clicking directly the tick boxes.

To reset the tick boxes, click "deselect all".

Note: at least one theme must be selected.

Hint: to find a particular key word, you can use the "Ctrl F" function. Click the cursor into the field you want to search then key <CTRL F>.

Click "close" to exit the screen.

Step 5: Choose positive or negative comments:

Each comment has been coded according to its emotional type, from Very Positive (E++) to Very Negative (E--). This screen allows the user to select only positive comments, or only negative comments, for example.

To view data for all emotional types, click "All Emotions" on the Welcome Screen. A message box will appear to confirm that all emotions have been selected. Click OK to acknowledge and close the message box.

To select specific emotional types, click the "select emotions" button. The screen shown in Figure 20 will appear:

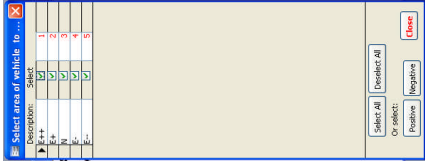


Figure 20 Select Emotion Pop Up Screen

Individual emotions can be selected or deselected by clicking directly the tick boxes.

To reset the "select" tick boxes, click "deselect all".

NOTE: at least one emotion must be selected.

Click "close" to exit the screen.

Step 6: Open the numbers to view

Click the "View Data Table" button. The screen shown in Figure 21 will appear:

This screen displays the details for each comment made. This data enables generation of charts and tables to demonstrate customer reactions to specific features in the cars.

There are 112,365 coded comments in total within the database.

records that match the combination of vehicles, respondents, areas, theme and emotions. Close the screen, then return to the selection screens to alter the selection criteria.

[illegible]

Figure 22 View Data Screen – No Records

The screen in Figure 21 shows the results for positive comments made about Interior Appeal and Appearance for the Mercedes S Class. In this instance, there are 66 comments to review.

Each record contains the car under review, the unique identifier for the respondent, and a location¹ within the verbatim where the specific comment was made. Each comment is allocated to an Area, and up to two Themes (for example, when one comment about a seat refers to both colour and material).

To Find Specific Verbatims

To view the verbatim to which the record refers, click on the record so that an arrow appears in the left hand column (as shown), then click the View Verbatim button. The screen shown in Figure 23 will appear. In Figure 21, the record selected is for a comment made in Question 3 (Interior) Location 6³. The text to which this refers is highlighted in Figure 23:

² The location gives an indication of where a comment may be found within the text. However, the location number actually refers to the order in which the codes were allocated to the text, and may therefore be out of synch in some instances.

³ ie the comment should be approximately the sixth comment made.

records that match the combination of vehicles, respondents, areas, theme and emotions. Close the screen, then return to the selection screens to alter the selection criteria.

Query 1: 1. Name & Location		Area	Theme (1)		Theme (2)		Score
Name & Model	Location	Area	NET	APFAL	SUBNET	SUBNET	E
Nucleides 5 Class (2006)	US 1001 Q1001	Interior (NET)	Other front (SUB-NET)	APFAL	Other special		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q1006	Materials used inside, generally	Applongeneral like				E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q1016	Interior (NET)	Dashboard (SUB-NET)	APFAL	Other special		E+ touchfeel
Nucleides 5 Class (2006)	US 1001 Q1016	Interior (NET)	Other front (SUB-NET)	APFAL	Other special		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2004	Materials used inside, generally	Applongeneral like				E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2001	Westernised/extended	Applongeneral like				E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2001	Overall Interior	Overall front (SUB-NET)	Attractions			E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2006	Interior (NET)	Overall front (SUB-NET)	APPEARANCE	New modern (LUXUS)		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2007	Door controls/switches	Modern				E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2008	Interior (NET)	Front seats (SUB-NET)	APPEARANCE	New modern (LUXUS)		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2012	Interior (NET)	Storage bins	Applongeneral like			E+ general impression/ergo
Nucleides 5 Class (2006)	US 1001 Q2012	Interior (NET)	Storage bins (SUB-NET)	APPEARANCE	New modern (LUXUS)		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2016	Dashboard	Contributions - navigation controls (new information technology)				E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2021	Interior (NET)	Dashboard (SUB-NET)	APPEARANCE	Other appearance		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2021	Interior (NET)	Overall front (SUB-NET)	APPEARANCE	New modern (LUXUS)		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2026	Overall Interior	Overall front (SUB-NET)	APPEARANCE	New		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2032	Front storage spaces	Frontline storage space/APPEARANCE		Other appearance		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2032	Front storage spaces	Front storage spaces - car holders	Independency/level of the way	Other appeal		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2037	Interior (NET)	Westernised - interior layout	Applongeneral like	Other appeal		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2039	Interior (NET)	Rear seats (SUB-NET)	APFAL	Other special		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2039	Rear seat/linear seating area	Applongeneral like				E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2039	Interior (NET)	Other front (SUB-NET)	APPEARANCE	Other front (SUB-NET)		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2040	Interior (NET)	Rear controls (fringe)	APPEARANCE	Attractions		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2042	Interior (NET)	Rear controls generally		Other special		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2042	Front storage spaces - centre console	Frontline storage space/APFAL				E+ general impression/ergo
Nucleides 5 Class (2006)	US 1001 Q2042	Interior (NET)	Rear seats (SUB-NET)	APPEARANCE	Other appearance		E+ general impression/ergo
Nucleides 5 Class (2006)	US 1001 Q2044	Interior (NET)	Rear controls (fringe)	APPEARANCE	Other appeal		E+ Isodigital
Nucleides 5 Class (2006)	US 1001 Q2044	Rear fittings - interior layout	Rear controls - interior layout				E+ Isodigital

[View details](#)

Records: 14 of 46

Figure 21 View Data Screen

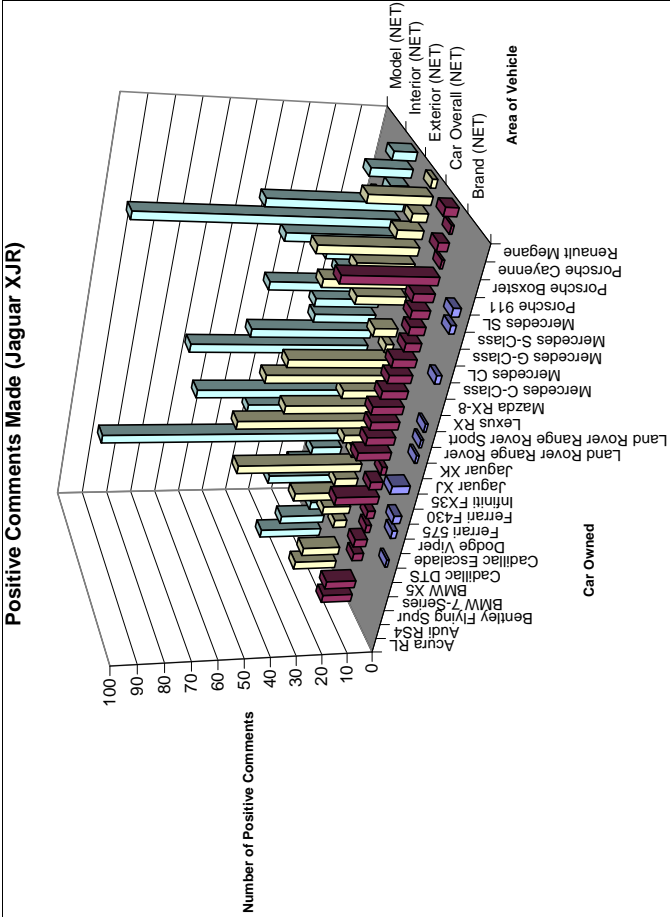


Figure 27 Example Excel Analysis (Chart)

Model	Brand	Car Overall	Exterior	Interior	Model	Brand	Car Overall	Exterior	Interior
1. Acura RSX	Acura	4.5	4.5	4.5	1. Acura RSX	Acura	4.5	4.5	4.5
2. Bentley Flying Spur	Bentley	5.0	5.0	5.0	2. Bentley Flying Spur	Bentley	5.0	5.0	5.0
3. Audi RS4	Audi	4.5	4.5	4.5	3. Audi RS4	Audi	4.5	4.5	4.5
4. BMW 7 Series	BMW	4.5	4.5	4.5	4. BMW 7 Series	BMW	4.5	4.5	4.5
5. Cadillac DTS	Cadillac	4.5	4.5	4.5	5. Cadillac DTS	Cadillac	4.5	4.5	4.5
6. Dodge Viper	Dodge	4.5	4.5	4.5	6. Dodge Viper	Dodge	4.5	4.5	4.5
7. Ferrari F430	Ferrari	4.5	4.5	4.5	7. Ferrari F430	Ferrari	4.5	4.5	4.5
8. Infiniti FX35	Infiniti	4.5	4.5	4.5	8. Infiniti FX35	Infiniti	4.5	4.5	4.5
9. Jaguar XK	Jaguar	4.5	4.5	4.5	9. Jaguar XK	Jaguar	4.5	4.5	4.5
10. Land Rover Range Rover Sport	Land Rover	4.5	4.5	4.5	10. Land Rover Range Rover Sport	Land Rover	4.5	4.5	4.5
11. Land Rover Range Rover	Land Rover	4.5	4.5	4.5	11. Land Rover Range Rover	Land Rover	4.5	4.5	4.5
12. Lexus RX	Lexus	4.5	4.5	4.5	12. Lexus RX	Lexus	4.5	4.5	4.5
13. Mazda RX-8	Mazda	4.5	4.5	4.5	13. Mazda RX-8	Mazda	4.5	4.5	4.5
14. Mercedes C-Class	Mercedes	4.5	4.5	4.5	14. Mercedes C-Class	Mercedes	4.5	4.5	4.5
15. Mercedes CL	Mercedes	4.5	4.5	4.5	15. Mercedes CL	Mercedes	4.5	4.5	4.5
16. Mercedes S-Class	Mercedes	4.5	4.5	4.5	16. Mercedes S-Class	Mercedes	4.5	4.5	4.5
17. Mercedes SL	Mercedes	4.5	4.5	4.5	17. Mercedes SL	Mercedes	4.5	4.5	4.5
18. Porsche 911	Porsche	4.5	4.5	4.5	18. Porsche 911	Porsche	4.5	4.5	4.5
19. Porsche Boxster	Porsche	4.5	4.5	4.5	19. Porsche Boxster	Porsche	4.5	4.5	4.5
20. Porsche Cayenne	Porsche	4.5	4.5	4.5	20. Porsche Cayenne	Porsche	4.5	4.5	4.5
21. Renault Megane	Renault	4.5	4.5	4.5	21. Renault Megane	Renault	4.5	4.5	4.5

Figure 26 Excel Data Sheet

The table will also contain columns of respondent data: age, gender, luxury level and car owned. The text in these columns will be coloured red, and are located at the far right hand edge of the spreadsheet (not shown in Figure 26).

The data can be manipulated within Excel to create charts directly or using Pivot Tables for more complex analyses. An example of such analysis is shown in Figure 27, which shows the number of positive comments made by male respondents about the Jaguar XJR, sorted by area of the car being discussed and which car the respondent owned. In this example, the greatest number of positive comments about the XJR's interior were received from men who owned a Mercedes SL or a Dodge Viper.

APPENDIX A THE CARS

Premiumness Stage 2 Clinic (April/May 2006)

US Vehicle Display

<div>Mercedes Room</div> <div>S550</div> <div>CLS</div> <div>R500</div>	<div>SUV Room</div> <div>LR3HSE</div> <div>RX</div> <div>Cayenne TS</div>	<div>Sedan Room</div> <div>XJR</div> <div>A6</div> <div>5 Series</div>	<div>GT Room</div> <div>XK</div> <div>SL500</div> <div>Continental GT</div>	<div>High Mix Room</div> <div>RR SC</div> <div>Quattroporte</div> <div>DB9</div>	<div>Mid Mix Room</div> <div>GS430</div> <div>RR Sport</div> <div>6 Series</div>
---	---	--	---	--	--

US Interior Treatments

<div>Mercedes Room</div> <div>S550</div> <div>CLS</div> <div>R500</div>	<div>SUV Room</div> <div>LR3HSE</div> <div>RX</div> <div>Cayenne TS</div>	<div>Sedan Room</div> <div>XJR</div> <div>A6</div> <div>5 Series</div>	<div>GT Room</div> <div>XK</div> <div>SL500</div> <div>Continental GT</div>	<div>High Mix Room</div> <div>RR SC</div> <div>Quattroporte</div> <div>DB9</div>	<div>Mid Mix Room</div> <div>GS430</div> <div>RR Sport</div> <div>6 Series</div>
---	---	--	---	--	--

UK Vehicle Display

<div>Mercedes Room</div> <div>S550</div> <div>CLS</div> <div>R500</div>	<div>SUV Room</div> <div>Discovery 3 HSE</div> <div>Lexus RX</div> <div>Cayenne TS</div>	<div>Saloon Room</div> <div>XJR</div> <div>Audi A6</div> <div>5 Series</div>	<div>GT Room</div> <div>XK (Aluminium)</div> <div>M-Benz SL</div> <div>Continental GT</div>	<div>High Mix Room</div> <div>RR SC</div> <div>Quattroporte</div> <div>DB9</div>	<div>Mid Mix Room</div> <div>GS430</div> <div>RR Sport</div> <div>6 Series</div>
---	--	--	---	--	--

UK Interior Treatments

<div>Mercedes Room</div> <div>S550</div> <div>CLS</div> <div>R500</div>	<div>SUV Room</div> <div>Discovery 3 HSE</div> <div>Lexus RX</div> <div>Cayenne TS</div>	<div>Saloon Room</div> <div>XJR</div> <div>Audi A6</div> <div>5 Series</div>	<div>GT Room</div> <div>XK (Aluminium)</div> <div>M-Benz SL</div> <div>Continental GT</div>	<div>High Mix Room</div> <div>RR SC</div> <div>Quattroporte</div> <div>DB9</div>	<div>Mid Mix Room</div> <div>GS430</div> <div>RR Sport</div> <div>6 Series</div>
---	--	--	---	--	--

L486/L538 Premiumness Clinic (December 2007)

US Vehicle display (mixed light and dark interiors)

L486 display – light interiors		
		
M-Benz C300 Luxury sedan	LR2 HSE	BMW X3 3.0si
Audi A4 2.0 Quattro		

L513 display – dark interiors

		
Audi TT 3.2i	LR2 HSE	Mini Cooper S

UK Interior Treatments

L486 display		
		
M-Benz C300 Luxury sedan	LR2 HSE	BMW X3 3.0si
Audi A4 2.0 Quattro		

L513 display

		
Audi TT 3.2i	LR2 HSE	Mini Cooper S

UK Vehicle display (mainly dark interiors)

L486 display		
		
M-Benz C Class Elegance	Freelander 2 HSE	BMW X3 SE
Audi A4 S-Line		

L513 display

		
Audi TT 2.0i	Freelander 2 HSE*	Mini Cooper S
* Light interior		

UK Interior Treatments

L486 display		
		
M-Benz C300 Luxury sedan	LR2 HSE	BMW X3 3.0si
Audi A4 2.0 Quattro		

L513 display

		
Audi TT 3.2i	LR2 HSE	Mini Cooper S

APPENDIX B SAMPLE SIZES

When making statistical analyses of the data, the size of the samples must be taken into account: the number of people viewing each car must be factored into the numbers of comments made if they are to be compared.

The sample sizes per car are as follows:

	UK			UK Total	US			US Total	Grand Total
	Female	Male	Blank*		Female	Male	Blank*		
Aston Martin DB9	10	16		26	7	17	1	25	51
Audi A4	8	22	1	31	12	15		27	58
Audi A6	5	18		23	7	17	1	25	48
Audi TT	10	18		28	11	16	1	28	56
Bentley Continental GT	11	9		20	4	21		25	45
BMW 5 Series	5	18		23	7	17	1	25	48
BMW 6 Series	7	14		21	5	20		25	46
BMW X3	10	18		28	11	16		27	55
Jaguar XJR	5	18	1	24	7	17	1	25	49
Jaguar XK	14	9	2	25	4	21		25	50
Land Rover Freelander 2 (A)	9	22		31	10	18		28	59
Land Rover Freelander 2 (B)	10	17		27	11	16	1	28	55
Land Rover LR3	8	17		25	6	19		25	50
Land Rover Range Rover	10	16		26	7	17	1	25	51
Land Rover Range Rover Sport	8	15		23	5	20		25	48
Lexus GS	8	15		23	5	20		25	48
Lexus RX	8	17		25	6	19		25	50
Maserati Quattroporte	9	16		25	7	17	1	25	50
Mercedes C Class	12	21		33	9	17		26	59
Mercedes CLS	6	20		26	6	19		25	51
Mercedes R500	6	20		26	6	19		25	51
Mercedes S Class	6	20		26	6	19		25	51
Mercedes SL	14	9		23	4	21		25	48
Mini Cooper	10	18		28	11	16	1	28	56
Porsche Cayenne TS	8	17		25	6	18		24	49

* *Note: There are 16 respondents for whom age and gender data is not known. These respondents are excluded from age or gender filtered searches. The missing data has been requested.*

The following table gives sample sizes for the overall dataset:

	UK			UK Total	US			US Total	Grand Total
	Female	Male	Blank*		Female	Male	Blank*		
L538/L486	23	46	4	73	25	38	7	70	143
Stage 2	51	95	3	149	35	113	2	150	299
Grand Total	74	141	7	222	60	151	9	220	442

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Premiumness Research Verbatims Database

Training Manual

Version 1
30 November 2009

Bernie Law



ABBREVIATIONS

APEAL	Automotive Performance Execution and Layout
BiC	Best in Class
E+	Number of emotionally positive comments
E-	Number of emotionally negative comments
IQS	Initial Quality Survey
JLR	Jaguar Land Rover
MRO	Market Research Office
MY	Model Year
NA	North America
NCBS	New Car Buyer Survey
NetE	Premiumness metric, derived from E+ - E-
NVES	New Vehicle Experience Survey
PALS	Product Attribute Leadership Strategy
PQ	Perceived Quality
QFD	Quality Function Deployment
S&D	Surprise and Delight
TGW	Things gone wrong
TL	Trim Level

INTRODUCTION TO THE TRAINING PROCESS



NOTE: THE SCREEN DUMPS USED ARE FROM THE PROTOTYPE DATABASE SO MAY LOOK SLIGHTLY DIFFERENT FROM WHAT IS SHOWN BELOW.

The Premiumness Research

This document provides exercises in using MRO's Premiumness Database.

The Premiumness Database contains the raw findings of two clinics that have been conducted with customers and potential customers to understand their perception of premiumness and luxury in JLR vehicles and competitor cars. The aim of the database is to enable the user to access and analyse the raw customer verbatims in a simple and useful way.

Details of the research methods and links to key findings are provided in the User Manual ([W:\JLR Global Marketing\Product Strategy & Market Research\Market Research Office\Cross-Carline Project Folder\Operationalising Luxury \(BLAV5\)\Premiumness Database \(Prototype\)\UserManual_v1h.doc](#)). It is recommended that the User Manual is read prior to undertaking the exercises in this Training Manual.

The Training Manual

This document provides some examples which the user can work through in a step by step process to understand the Premiumness Verbatims Database and how it can be used.

The training manual follows the format of the User Manual, which is extended to include specific exercises to practice. The margin provided on the right hand side of the page is to allow you to make notes.

The instructions are given first for you to read, these are followed by exercises which are highlighted in **red text**.

Screen shots within the exercises are annotated with numbered arrows that relate to the numbered instructions.

Opening the Database

The verbatims database is a relational database built using Microsoft Access 2003.

You will need MS Access on your PC to use this database.

To open the file, double-click on the file name (currently Premiumness Database v15u.mdb). Access will open, and a security warning will appear (Figure 1).

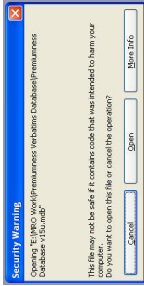


Figure 1 Opening Security Warning

Click Open.

You may be asked if you want to enable "unsafe expressions" – if this warning should appear, click Yes. In later versions of Access, this warning will be hidden in a warning bar at the top of the screen.

You may also receive warning that this may be from an unsafe source and may harm your computer. Again, click Yes to open the file if you are happy to do so.

When the file is opened, a welcome screen is displayed (Figure 2):

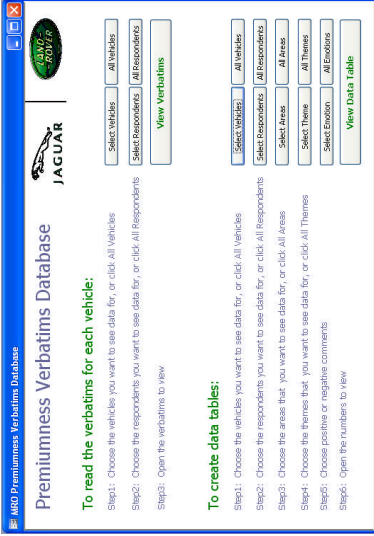


Figure 2 Welcome Screen

This screen allows the user to either read the complete verbatims from each participant, or to create data tables based on the emotional valence (E+, E-) of their comments.

What You Can Do

You can choose either of two ways to view the data:

- (1) Look at everything that was said about a particular car, by particular types of people: you can look at the straight verbatims exactly as the respondents said them.

OR

- (2) You can make a list of the types of things that were said about particular cars by particular types of people: you can then use these lists to make graphs (by exporting the data to Excel or similar), identify the "best" cars for particular features or collect specific comments about a targeted area.

This training manual shows you how to use both these approaches.

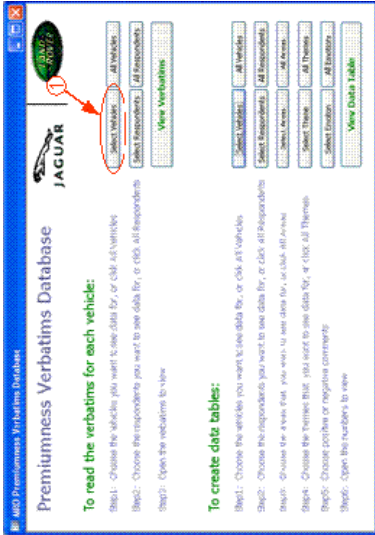
EXERCISE 1: VIEW VERBATIMS FROM MEN ABOUT THE
RANGE ROVER SPORT



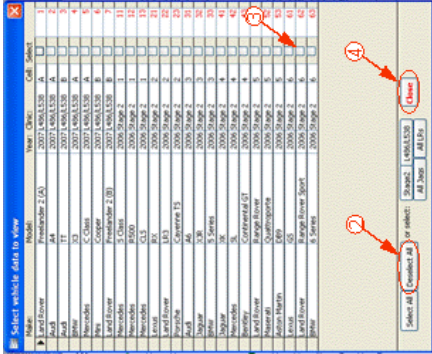
For this exercise, we want to review all the comments made by all men about the Range Rover Sport.

Exercise 1a: Choosing Vehicles

- (1) Click the "Select Vehicles" button on the welcome screen.



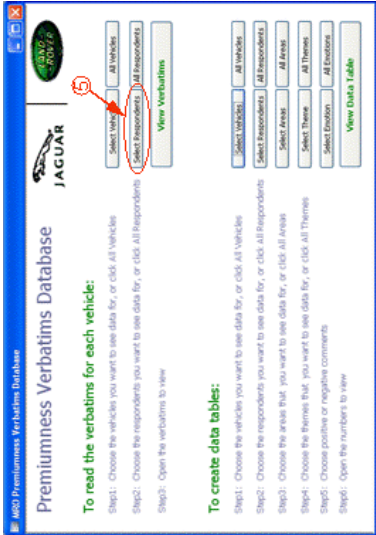
A pop-up screen will appear:



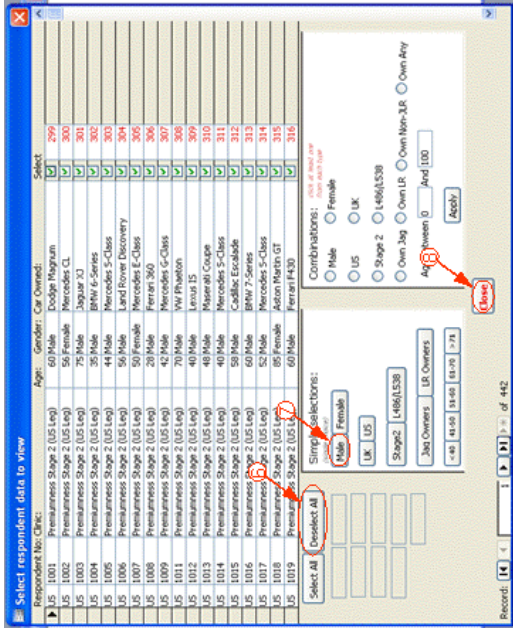
- (2) Click on "Deselect All" to clear any previous selections.
- (3) Click on the tick box for the Range Rover Sport and ensure a tick appears in the box.
- (4) Close the window.

Now only verbatims for the Range Rover Sport will be shown.

Exercise 1b: Choosing Respondent Types



- (5) Click the "Select Respondents" button on the welcome screen. Another pop-up screen will appear:

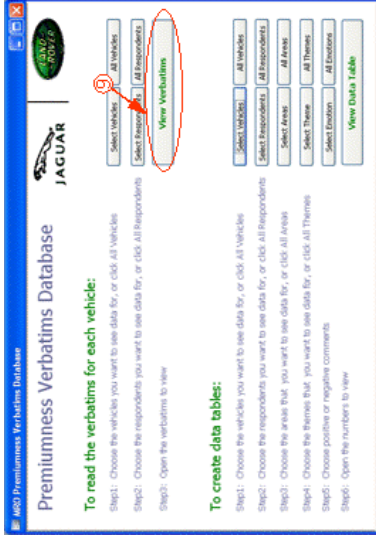


(6) Click on "Deselect All" to clear any previous selections.

(7) Click on "Male" to select all male respondents. Note this selects all males that took part in the research. To select males from only the US (for example), see Exercise 2.

TRY IT: Click on any of the other buttons within the "simple selections" box to see how the ticks in the tick boxes change according to the button that has been clicked. You can use the vertical scroll bar on the far right hand side of the window to move up and down the list easily. Be sure to finish by clicking on "Male".

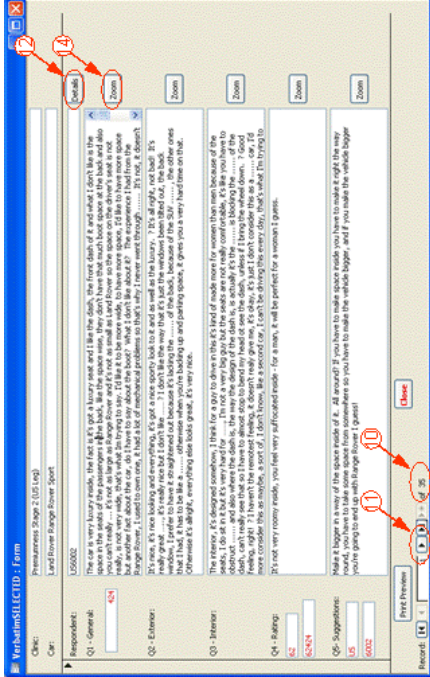
(8) Close the window.



Exercise 1c: View the Verbatims

(9) Click on "View Verbatims".

The View Verbatims Screen will appear. This screen displays the verbatims according to question. Each text box has a vertical scroll bar to enable the complete record to be read.

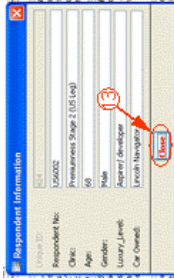


(10) Note that there are 35 records. This means that 35 male respondents made comments about the Range Rover Sport.

(11) To move between the records click on the arrows indicated. You can also use the arrows on your keypad to navigate.

(12) To find out more about the respondent who made the comments currently displayed, click the "Details" button.

The Respondent Details Screen will appear:

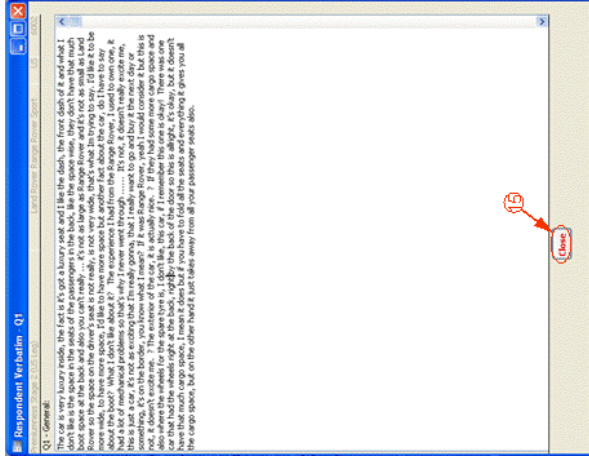


The respondent displayed is aged 68 who drives a Lincoln Navigator.

(13) Close the window.

(14) To expand the text within the verbatims screen, click the "Zoom" button adjacent to the question of interest.

The Respondent Verbatims Screen for the adjacent question will appear:

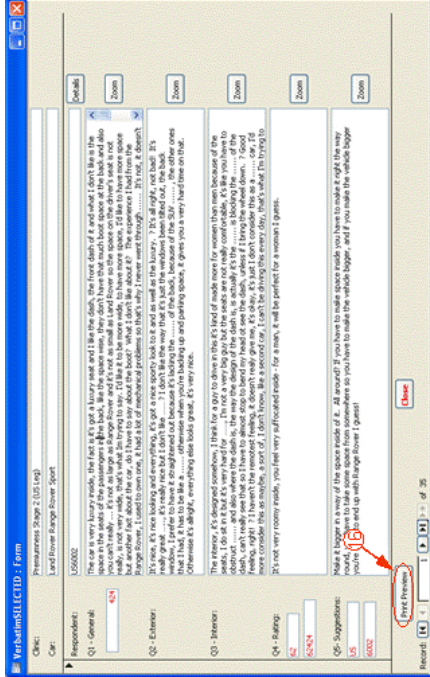


Hint: to find a particular key word, you can use the "Ctrl F" function. Click the cursor into the field you want to search then key <CTRL F>.

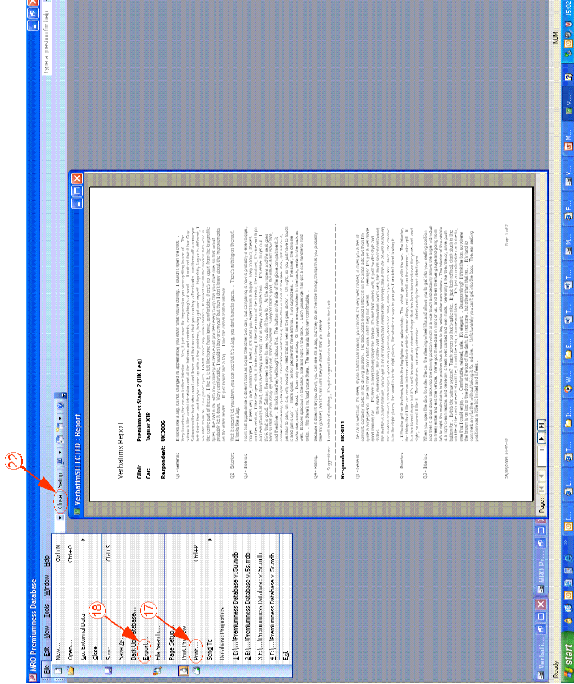
(15) Close the pop-up window.

Exercise 1d: Export the Data

The text boxes are "read only" to protect the data, however, the data can be copied and pasted to other applications. It is also possible to export the data to another application (such as MS Word) as a Rich Text File.



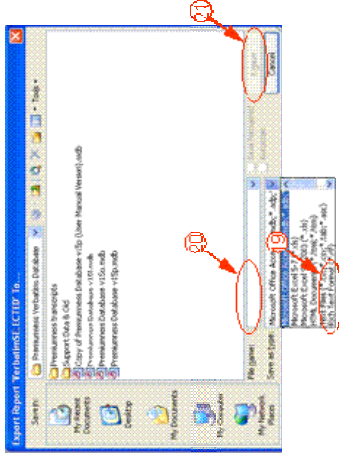
(16) Click the "Print Preview" button. The Verbatims report screen will appear:



(17) This screen allows you to print off a hard copy in an easily readable format using the Print option from the File Menu bar.

You can also export this print preview to a Rich Text File which can then be manipulated in any text-based software package.

(18) In the File Menu, click "Export". A dialog box will open:

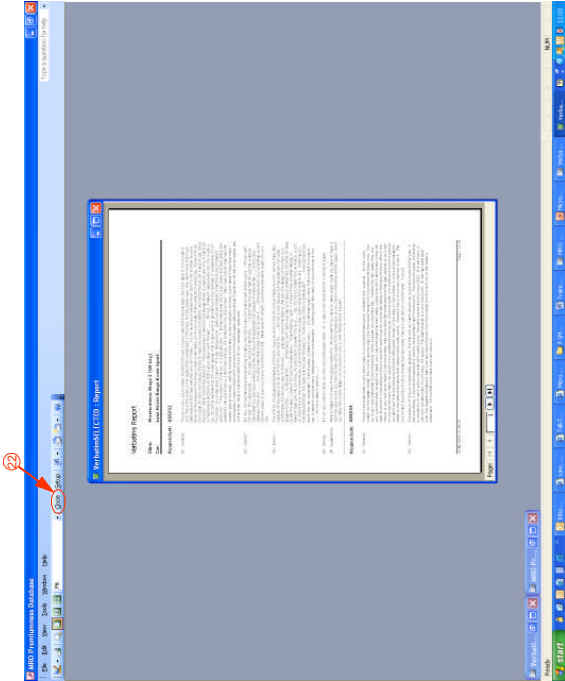


(19) Under the "Save as type", select Rich Text Format.

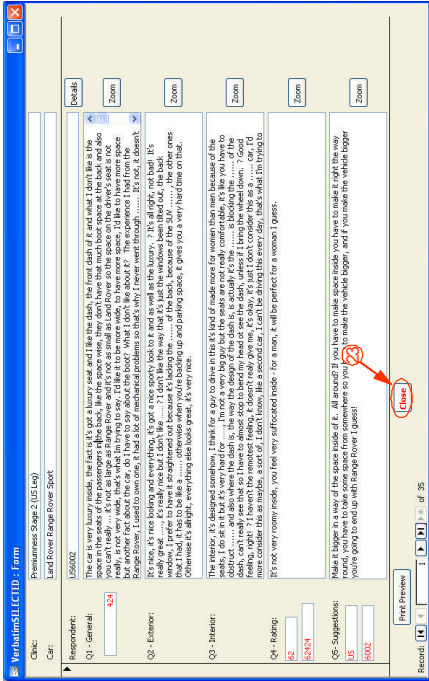
(20) Enter your chosen file name.

(21) Click "Export" (this button will become active once a file name has been entered).

An rtf file will be saved in the chosen location. Note that this can be an inelegant format; you may prefer to print the document as a pdf file (via File Menu, "Print"), depending on your requirements.



(22) Close the Verbatims Report window.



(23) Close the verbatims window.

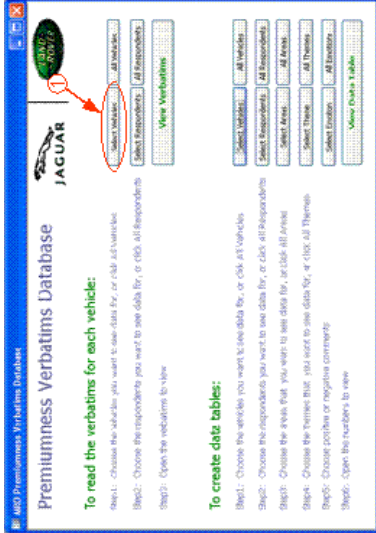
EXERCISE 2: VIEW VERBATIMS ABOUT JAGUAR CARS
FROM PEOPLE AGED 60 OR BELOW WHO
OWN A JAGUAR OR LAND ROVER



For this exercise, we want to review all the comments about the Jaguar cars¹ made by people in the UK who are aged 60 or below, and who also own a JLR vehicle.

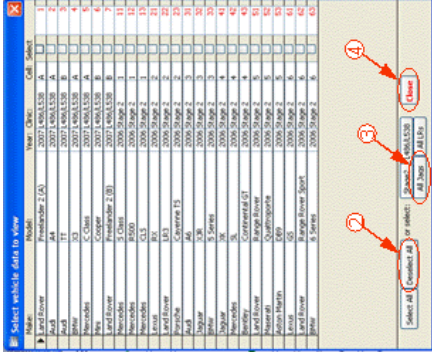
Exercise 2a: Choosing Vehicles

- (1) Click the "Select Vehicles" button on the welcome screen.



A pop-up screen will appear:

¹ XJR or XK, in this case



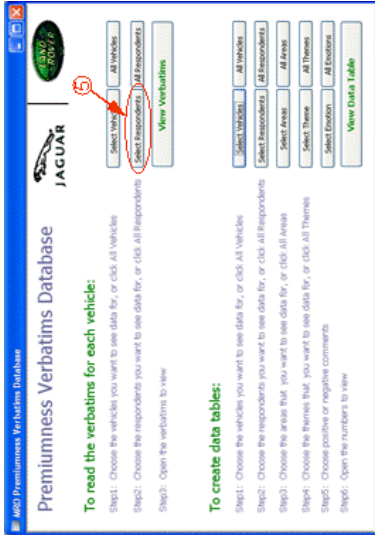
- (2) Click on "Deselect All" to clear any previous selections.
- (3) Click the "All Jags" button and ensure ticks appear in the boxes for the two Jaguar cars.

TRY IT: Click on any of the other buttons to see how the ticks in the tick boxes change according to the buttons that have been clicked. You can use the vertical scroll bar on the far right hand side of the window to move up and down the list easily. Be sure to finish by clicking on "Deselect All" and then "All Jags".

- (4) Close the window.

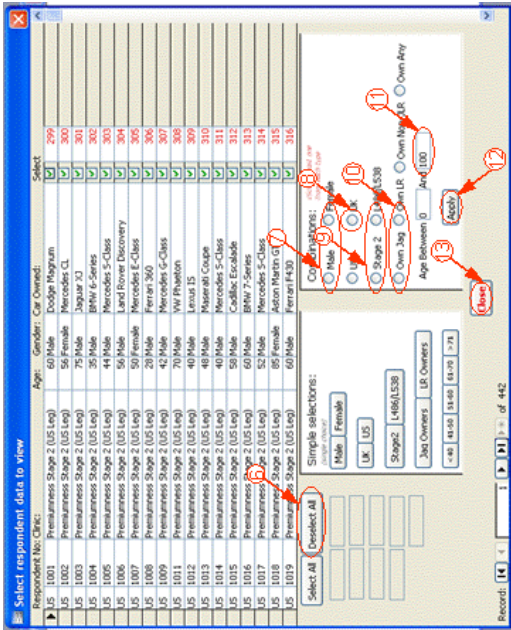
Now only verbatims for the XJR and XK will be shown.

Exercise 2b: Choosing Respondent Types



- (5) Click the "Select Respondents" button on the welcome screen.

Another pop-up screen will appear:



- (6) Click on "Deselect All" to clear any previous selections.
- (7) Select both the "Male" and "Female" options.
- (8) Select the "UK" option.

- (9) Select the "Stage 2" option (note no Jaguars were reviewed in the L486/L538 clinic, so in this example clicking this option is not necessary).

- (10) Select "Own Jag" and "Own LR".

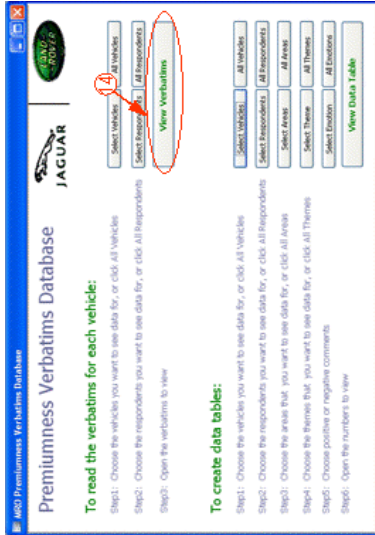
- (11) Enter the max age of 60 in the box

- (12) Click Apply

See how the ticks now reflect the options chosen.

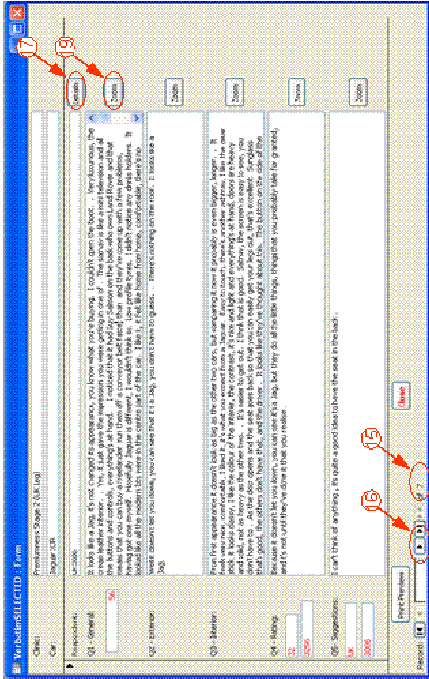
- (13) Close the window.

Exercise 2c: View the Verbatims



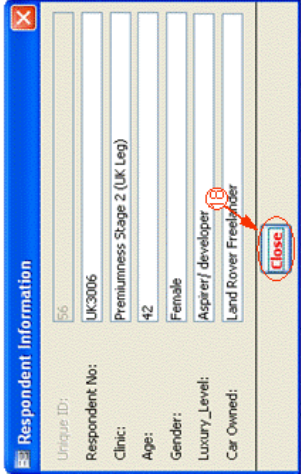
- (14) Click on "View Verbatims".

The View Verbatims Screen will appear:



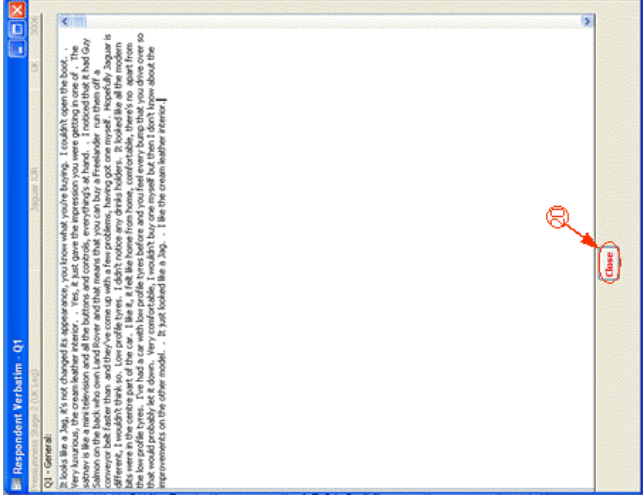
- (15) Note that there are 7 records. This means that 7 respondents in the UK, who own Jaguars or Land Rovers and who are aged 60 or less, made comments about Jaguar Cars.
- (16) To move between the records click on the arrows indicated. You can also use the arrows on your keypad to navigate.
- (17) To find out more about the respondent who made the comments currently displayed, click the "Details" button.

The Respondent Details Screen will appear:



- The respondent displayed is a female aged 42 who drives a Freelander.
- (18) Close the window.
 - (19) To expand the text within the verbatims screen, click the "Zoom" button adjacent to the question of interest.

The Respondent Verbatims Screen for the adjacent question will appear:

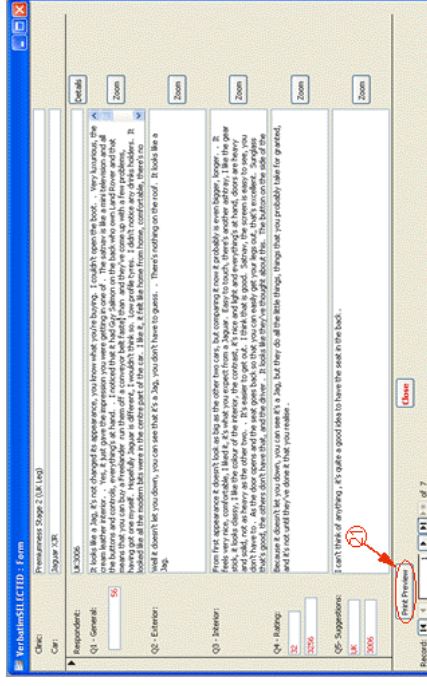


Hint: to find a particular key word, you can use the "Ctrl F" function. Click the cursor into the field you want to search then key <CTRL F>.

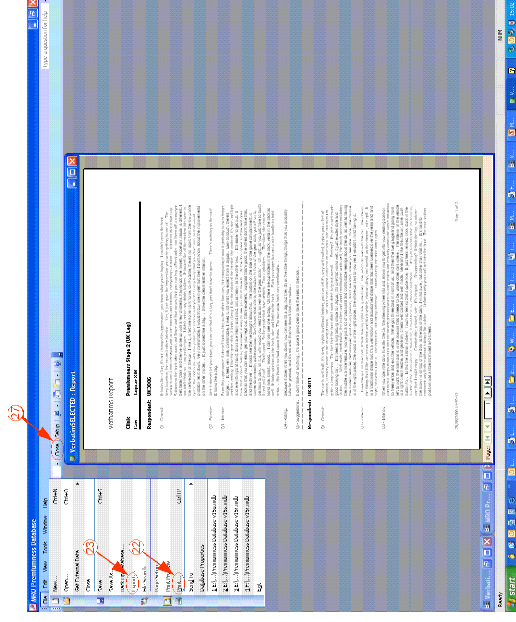
- (20) Close the window.

Exercise 2d: Export the Data

The text boxes are read only to protect the data, however, the data can be copied and pasted to other applications. It is also possible to export the data to another (application such as MS Word) as a Rich Text File.



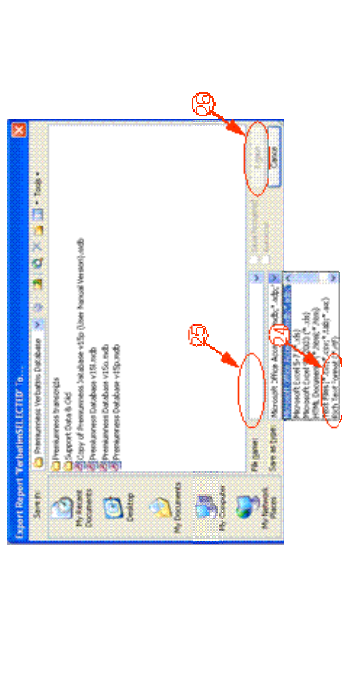
(21) Click the "Print Preview" button. The Verbatims report screen will appear.:



(22) This screen allows you to print off a hard copy in an easily readable format using the Print option from the File Menu bar.

You can also export this print preview to a Rich Text File which can then be manipulated in any text-based software package.

(23) In the File Menu, click "Export". A dialog box will open:

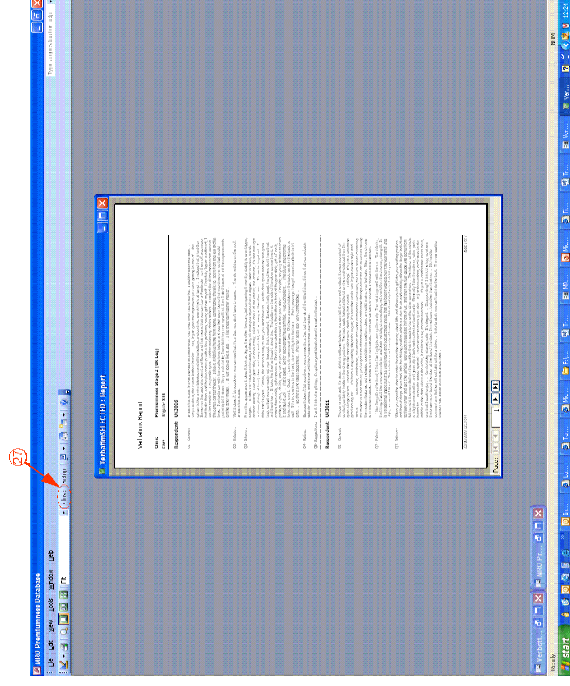


(24) Under the "Save as type", select Rich Text Format.

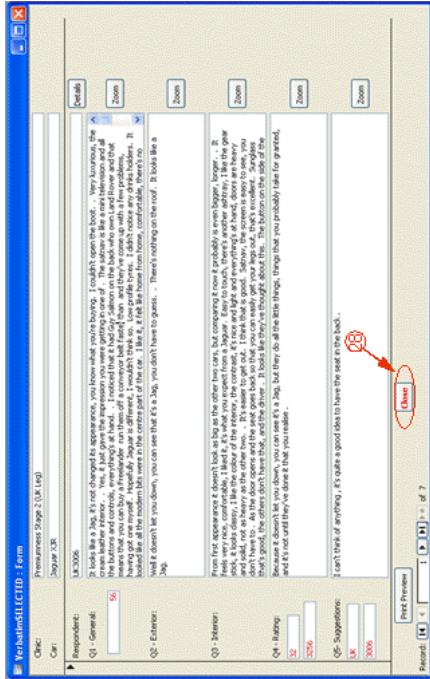
(25) Enter your chosen file name.

(26) Click "Export" (this button will become active once a file name has been entered).

An rtf file will be saved in the chosen location. Note that this can be an inelegant format; you may prefer to print the document as a pdf file (via File Menu, "Print"), depending on your requirements.



(27) Close the Verbatims Report window.



(28) Close the verbatims window.

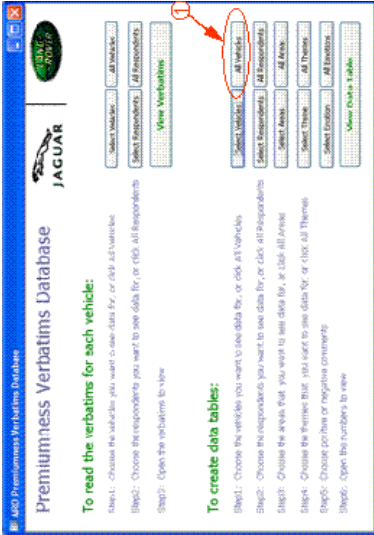
EXERCISE 3: WHICH CAR RECEIVED THE LARGEST NUMBER OF POSITIVE COMMENTS FOR LEATHER ?



In this exercise, we are going to identify the car which received the largest number of comments for leather and look at the drivers for this success (where do most of the positive comments come from?).

Exercise 3a: Choosing Vehicles

(1) Click the "All Vehicles" button on the welcome screen.



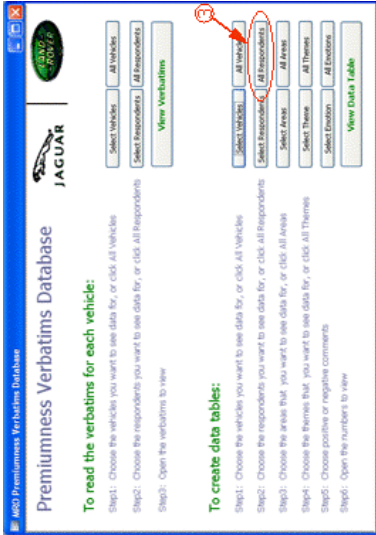
A dialogue box will appear:



(2) Click "OK" to acknowledge the message and close the box.

Exercise3b: Choosing Respondents

(3) Click the "All Respondents" button on the welcome screen.



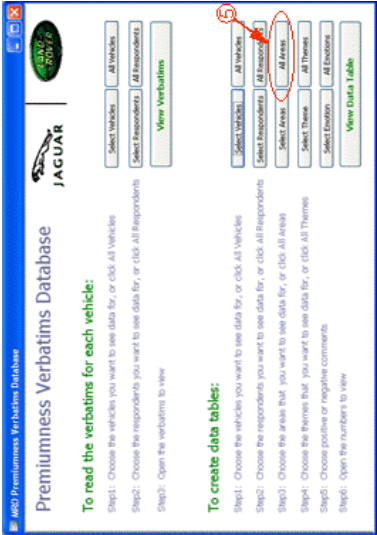
A dialogue box will appear:



(4) Click "OK" to acknowledge the message and close the box.

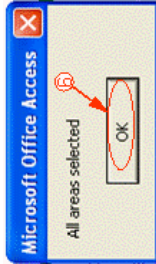
Exercise 3c: Choosing the Areas of the Cars

(5) Click the "All Areas" button on the welcome screen[†].



[†] Note: You would expect comments about leather to be restricted to interior areas of the car, you don't really need to filter the areas by "interior" for this example. However, if the search concerned interior plastics, then you would use the "Select Area" option and choose "Interiors", to ensure comments about exterior plastics were excluded.

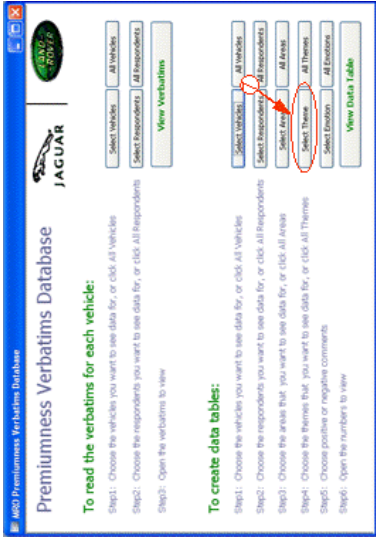
A dialogue box will appear:



(6) Click "OK" to acknowledge the message and close the box.

Exercise 3d: Choosing Themes

(7) Click the "Select Theme" button on the welcome screen.



A pop-up box will appear:



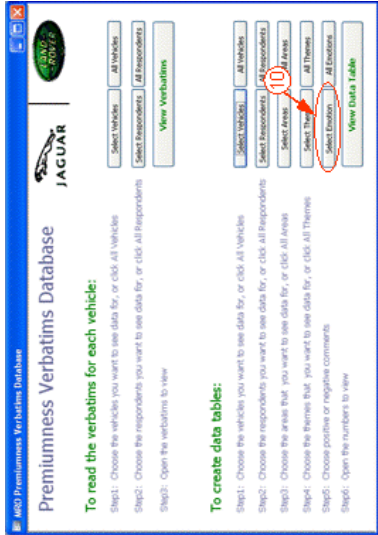
- (8) Scroll down the pop up screen to where MATERIAL appears in the left hand "NET" column, using the vertical scroll bar. Within the material theme, click all the tick boxes that refer to leather in the "SUBNET" or "Description" columns.

Hint: to find a particular key word, you can use the "Ctrl F" function. Click the cursor into the field you want to search then key <CTRL F>.

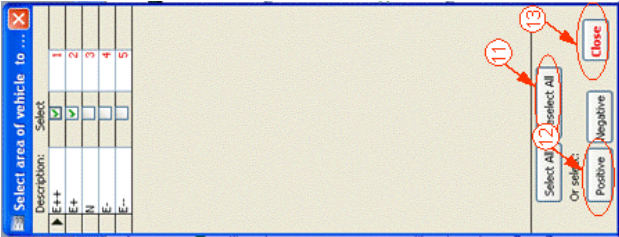
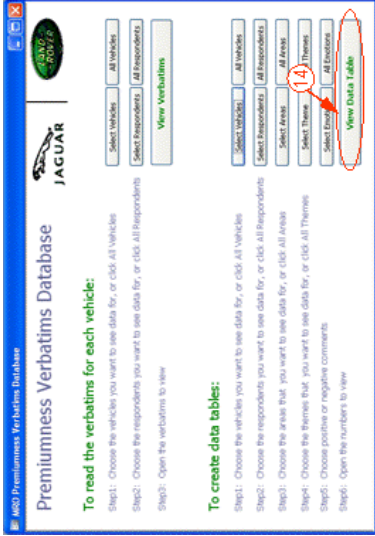
- (9) Close the window.

Exercise 3e: Choosing Emotions

- (10) Click the "Select Emotion" button.



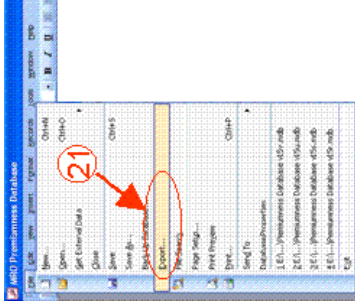
A pop-up box will appear:



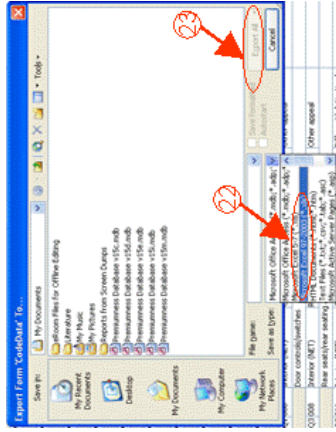
- (11) Click on "Deselect All" to clear any previous selections.
- (12) Click "Positive" to select positive comments.
- (13) Close the window.

Exercise 3f: View the Data

- (14) Click "View Data Table" to view the resulting data.



A dialog box will appear:



- (22) Select the location in which the file should be saved, choose a file name, and choose "save as type" Microsoft Excel 97-2003 (*.xls).
- (23) Click "Export All" (this will become active once a filename is entered).

The data table will then be saved as an Excel spreadsheet in the specified location.

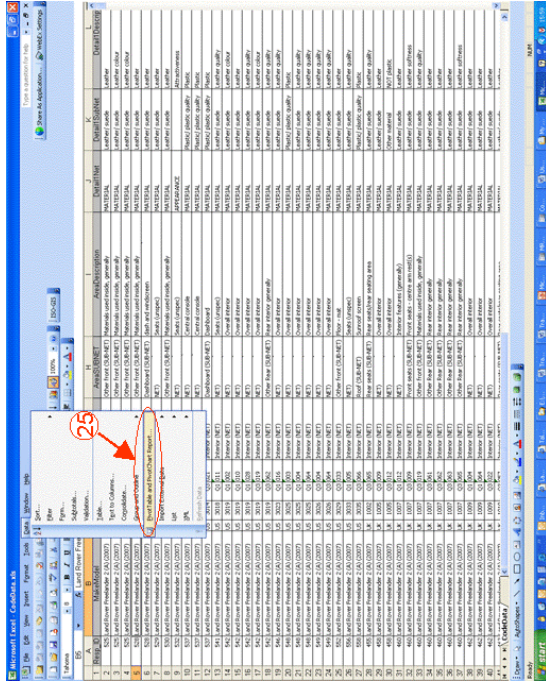
Exercise 3h: Interrogate the Data

- (24) Open the Excel Spreadsheet that you have just created.
- The easiest way to create graphs and charts from this data is to use pivot tables.
- Excel Pivot Table tutorials are available online. For example:

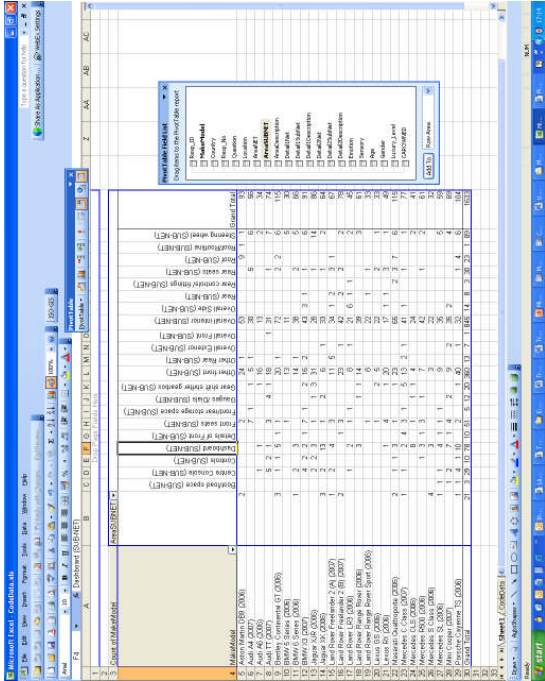
- <http://office.microsoft.com/en-gb/excel/HA010346321033.aspx>
- <http://www.ucl.ac.uk/is/documents/manuals/excel-pivot-tables-manual.doc>
- <http://www.ptc.com/olm/detail-report/pivot-table>

This training manual is not intended as a pivot table tutorial. The following exercise illustrates an example of how these can be used, but if the user has not used pivot tables before, they should familiarise themselves with the tutorials given in the links above.

- (25) Select "Pivot Table and PivotChart Report..." from the Data menu.



A 3-step wizard will appear.



We now have a table that clearly shows that the Bentley Continental GT and Maserati Quattroporte both received 115 positive comments related to leather. You can create charts based on this data as for other Excel spreadsheets.

To analyse more deeply this information, we can change the fields that are used for the analysis. In this case, we can change the field used in the Column Fields area to reflect the Area of the Car being discussed (drag the AreaSUBNET or AreaDescription fields to the Column Fields area, then right-click on the Emotion heading and click "hide" to remove):

You can also add layers to the analysis incorporating respondent data, etc, depending on the purpose of the enquiry.

At this point, you may want to refer back to the database with a more refined search to select only those verbatims for the Maserati and Bentley, and for the "overall interior" AreaSUBNET to identify specific comments.

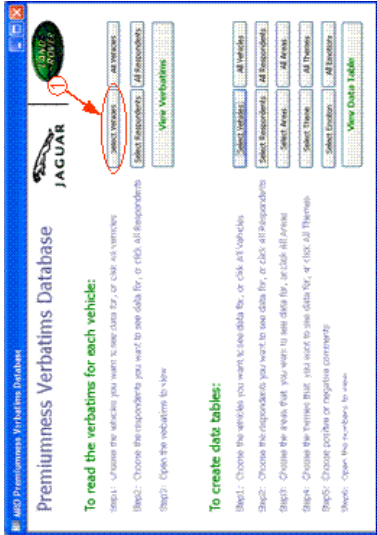
EXERCISE 4: FIND NEGATIVE COMMENTS RELATING TO INTERIOR PLASTICS IN LR3.



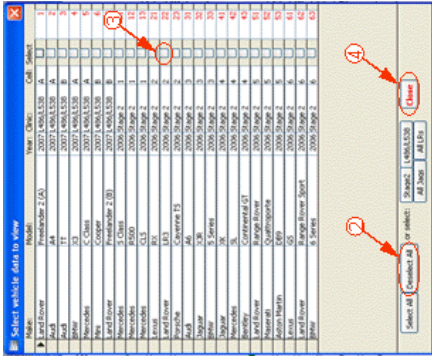
In this exercise we are going to create a data table of all the negative comments relating to interior plastics in LR3, and use the "View Verbatims" facility to pick out the specific points that respondents made.

Exercise 4a: Choosing Vehicles

- (1) Click the "Select Vehicles" button on the welcome screen.



A pop-up screen will appear:

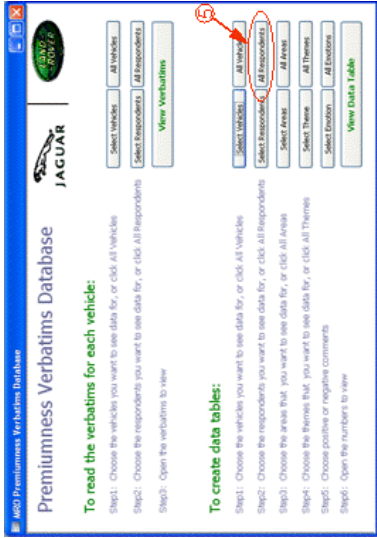


- (2) Click on "Deselect All" to clear any previous selections.
- (3) Click on the tick box for the Land Rover LR3 and ensure a tick appears in the box.
- (4) Close the window.

Now only verbatims for the LR3 will be shown.

Exercise4b: Choosing Respondents

- (5) Click the "All Respondents" button on the welcome screen.



A dialogue box will appear:

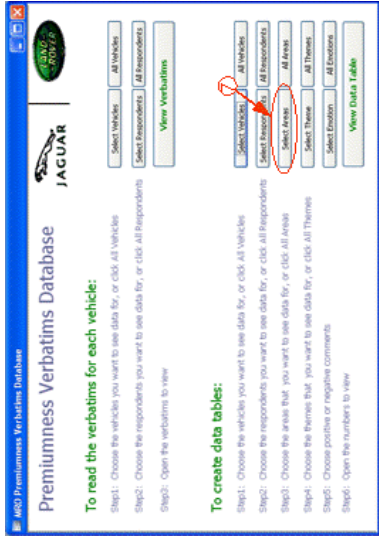


- (6) Click "OK" to acknowledge the message and close the box.

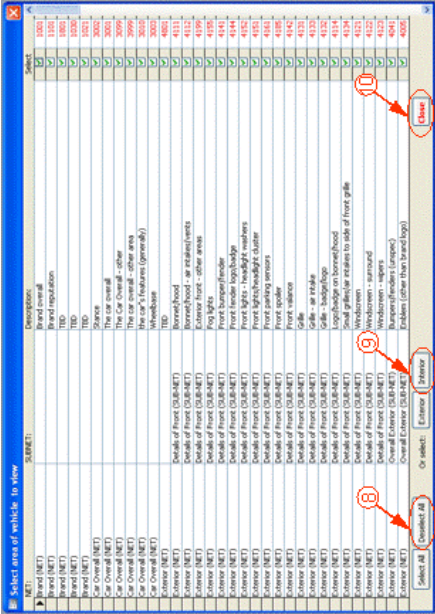
Exercise 4c: Choosing the Areas of the Cars

Plastics appear on both the interior and exterior of the LR3. We are only interested in comments about interior plastics for this exercise.

- (7) Click the "Select Area" button on the welcome screen.



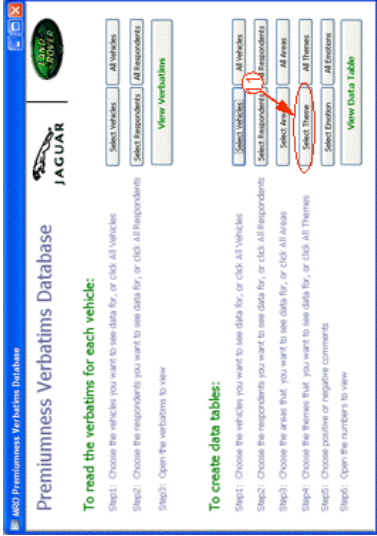
A pop-up box will appear:



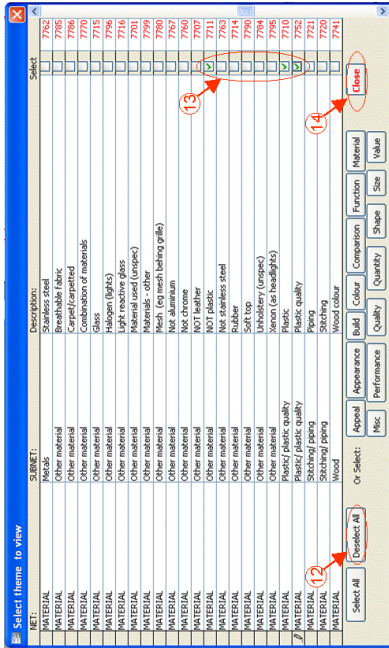
- (8) Click "Deselect All" to remove any previous selections.
- (9) Click "Interior" to select all interior codes. Use the vertical scroll bar to ensure that the interior codes have been checked.
- (10) Close the window.

Exercise 4d: Choosing Themes

- (11) Click the "Select Theme" button on the welcome screen.



A pop-up box will appear:



(12) Click "Deselect All" to remove any previous selections.

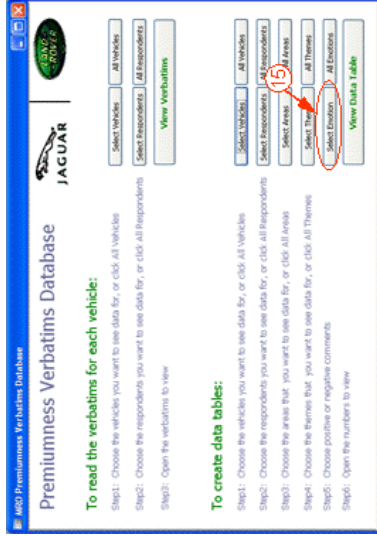
(13) Scroll down the pop up screen to where the materials theme is selected using the vertical scroll bar, and click all the tick boxes that refer to plastics.

Hint: to find a particular key word, you can use the "Ctrl F" function. Click the cursor into the field you want to search then key <CTRL F>.

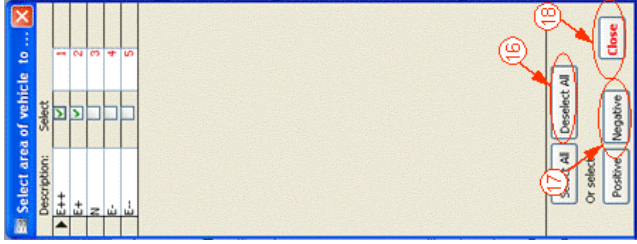
(14) Close the window.

Exercise 4e: Choosing Emotions

(15) Click the "Select Emotion" button.



A pop-up box will appear:



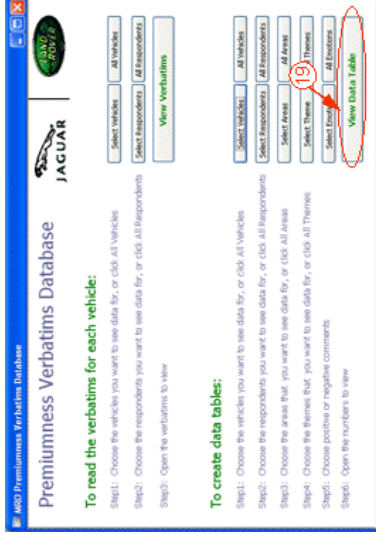
(16) Click on "Deselect All" to clear any previous selections.

(17) Click "Negative" to select negative comments.

(18) Close the window.

Exercise 4f: View the Data

(19) Click "View Data Table" to view the resulting data.



APPENDIX A SAMPLE SIZES

When making statistical analyses of the data, the size of the samples must be taken into account: the number of people viewing each car must be factored into the numbers of comments made if they are to be compared.

The sample sizes per car are as follows:

	UK			UK Total	US			US Total	Grand Total
	Female	Male	Blank*		Female	Male	Blank*		
Aston Martin DB9	10	16		26	7	17	1	25	51
Audi A4	8	22	1	31	12	15		27	58
Audi A6	5	18		23	7	17	1	25	48
Audi TT	10	18		28	11	16	1	28	56
Bentley Continental GT	11	9		20	4	21		25	45
BMW 5 Series	5	18		23	7	17	1	25	48
BMW 6 Series	7	14		21	5	20		25	46
BMW X3	10	18		28	11	16		27	55
Jaguar XJR	5	18	1	24	7	17	1	25	49
Jaguar XK	14	9	2	25	4	21		25	50
Land Rover Freelander 2 (A)	9	22		31	10	18		28	59
Land Rover Freelander 2 (B)	10	17		27	11	16	1	28	55
Land Rover LR3	8	17		25	6	19		25	50
Land Rover Range Rover	10	16		26	7	17	1	25	51
Land Rover Range Rover Sport	8	15		23	5	20		25	48
Lexus GS	8	15		23	5	20		25	48
Lexus RX	8	17		25	6	19		25	50
Maserati Quattroporte	9	16		25	7	17	1	25	50
Mercedes C Class	12	21		33	9	17		26	59
Mercedes CLS	6	20		26	6	19		25	51
Mercedes R500	6	20		26	6	19		25	51
Mercedes S Class	6	20		26	6	19		25	51
Mercedes SL	14	9		23	4	21		25	48
Mini Cooper	10	18		28	11	16	1	28	56
Porsche Cayenne TS	8	17		25	6	18		24	49

* *Note: There are 16 respondents for whom age and gender data is not known. These respondents are excluded from age or gender filtered searches. The missing data has been requested.*

The following table gives sample sizes for the overall dataset:

	UK			UK Total	US			US Total	Grand Total
	Female	Male	Blank*		Female	Male	Blank*		
L538/L486	23	46	4	73	25	38	7	70	143
Stage 2	51	95	3	149	35	113	2	150	299
Grand Total	74	141	7	222	60	151	9	220	442