Empirical investigation into the use of complexity levels in marketing segmentation and the categorisation of new automotive products

EMPIRICAL INVESTIGATION INTO THE USE OF COMPLEXITY LEVELS IN MARKETING SEGMENTATION AND THE CATEGORISATION OF NEW AUTOMOTIVE PRODUCTS

by

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ABSTRACT

This thesis is set in the context of the automotive industry where launches of new products with high levels of technical innovations are becoming increasingly complex for consumers to comprehend. Car manufacturers need to understand consumer perceptions of new models so they can categorise their products form the consumer perspective, to obtain a more accurate indication as to where their products fit within the increasingly defined consumer segments.

Situational and personal variables now play the most important roles in marketing. In the area of nested segmentation consumer variables are only concerned with their needs, attitudes, motivations and perceptions and overlook any previous experience, exposure or familiarity that a consumer may or may not have had with the product. It is argued here that consumers have differing perceptions of newness and that asking “how new” and “new to whom” would be valid questions for marketers when introducing new products. If car manufacturers can categorise their products in terms of newness for specific consumers based on their levels of Expertise, Involvement and Familiarity with the product, manufacturers will be able to target appropriate markets more effectively. To explore this area a mixed methods research approach was applied.

This research found that the level of Involvement with the product, from a motivational aspect, gave rise to different levels of interest and enthusiasm between consumers and has a direct impact on how different types of consumers view new products. In addition the differing levels of consumer knowledge highlights the need to improve targeting of marketing communications so that manufacturers provide a better understanding of complex new products to consumers. Current mass marketing methods based on consumer demographics are no longer sufficient.

This research found that a consumer’s level of Expertise, Involvement and Familiarity (EIF) with a specific product can be captured using a multi-dimensional scale to measure consumer product knowledge and provide an accurate consumer segmentation tool. By offering different explanations of product innovations to these consumer segments, according to a customer's EIF, marketers will achieve more effective targeting, reduce marketing costs and increase marketing campaign response.

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CHAPTER: 1 INTRODUCTION

This thesis is an empirical investigation into consumer perceptions of new automotive products. During the course of the research two papers were published in academic journals (Taylor-West et al., 2012; Taylor-West et al., 2013a), three papers were accepted and presented at academic conferences (Taylor-West et al., 2011a; Taylor-West et al., 2011b; Taylor-West et al., 2013b), two papers were accepted and discussed at doctoral colloquiums and three papers were accepted and presented at PhD seminars (Appendix 14). All papers were subject to blind peer reviews; the doctoral colloquiums and seminars provided in-depth discussion, including feedback for direction and conceptualisation.

The introduction of new products is vital to a company's success. How newness is defined is heavily debated, yet most agree that for something to be new it must have some perceivable change to differentiate it from previous products as well as competitor alternatives (Rokeach, 1973; Herstatt and von Hippel, 1992; Rogers, 1995; Johannessen et al., 2001; Chapman, 2005; Conway, 2010; Peter and Olsen, 2010). Changes in a product could be incremental or radical with a greater or lesser degree of innovation (Gobeli and Brown, 1987), and there is a common view that innovation implies invention (Johannessen et al., 2001). Chapman (2005) suggests that new innovations can be misunderstood by customers and the general public, as they can be too complex. There can also be a lack of digestible information about a new innovation, or product, resulting in that product, or innovation being sidestepped or ignored (Chapman, 2005).

This chapter sets out the background to the research, the rationale and objectives, and an outline and structure of this thesis.

1.1 BACKGROUND

Documented information in the automotive industry is considerable, however this is mostly concerned with engineering and manufacturing processes that concern product development and production techniques (Saker, 2013). Currently, on the manufacturing side, knowledge sharing between manufacturers is becoming more and more commonplace (Morley, 2006; Agrawal et al., 2013).

In comparison, the area of sales and marketing are much less documented (Saker, 2013). This is because the franchise system adopted by most manufacturers is made up of independent retailers/dealer groups as the outlet for their products. Although the independents follow the manufacturer's marketing guidelines, they develop their own sales and marketing research and processes to suit their local area (Saker, 2013). The information obtained is usually on an ad-hoc basis and any knowledge is usually retained within the dealership and in some cases this is not even shared within the dealer group. As a result the available literature is discrete in nature and difficult to identify because of the lack of any central collation and knowledge sharing (Saker, 2013). The evidence suggests there is a need to collate existing knowledge and pull it together, this would provide more insight into the strategic and tactical processes used in automotive retail marketing and reveal the way forward to improving communications that are relevant to consumers.

Automotive manufacturers do provide support for marketing and training to retailers, but little is done to collate information and feedback from the retailers in terms of the success or failure of their strategic and tactical campaigns (Saker, 2013). Although retailers strive to follow the manufacturer's guidelines, it is inevitable that their interpretation may differ and wander from the manufacturer's objectives to the retailers objectives. There is also a lost opportunity to develop and improve the marketing campaigns due to the lack of feedback, resulting in best practices are unshared and remain within the domain of the retailer (Saker, 2013).

The outcome of this situation is that new product launches are formulated for mass markets with one-size-fits-all messages, leaving it to a consumer's summary judgement rather than tailoring messages to a more defined segmented market (Dibb, 1998; Beck et al., 2012). Although segmentation is used to target consumers, it is at a higher tier - usually demographics, without any consideration to the differences in views and opinions that consumers may have (Shillito, 2001). This is due to the limitation of basic data collection methods which opt for the easy route to the access of information such as age, marital status, postcodes, etc., all of which are readily available. This is also a limitation of bought-in information, such as consumer databases (Dibb and Simpkin, 1991; Dibb, 1998). Unless there is a change in the type of data and how it is collected, then more effective segmented marketing campaigns will remain elusive to automotive manufacturers as well as their retailers.

1.2 RESEARCH RATIONALE

The automotive sector and new automotive products was chosen because there is evidence that new cars are not easily understood (Gibson 2010; Sasu and Ariton, 2011). With a plethora of features and new innovations that are increasing in complexity some consumers are confused or even alienated, resulting in the products often been overlooked or even ignored (Talke et al., 2009; Whitfield, 2009; Loginova, 2010; Johannessen et al., 2011; Simonsohn, 2011; Warman, 2011; Reynolds and Ruiz de Maya, 2013).

For many consumers a car is usually the second biggest purchase after a house and they are ubiquitous, most families in the UK owing at least one car (Office for National Statistics, 2010). Yet, even though the process of consumer assessment is far more in depth than a low value everyday consumable product, consumers are disorientated when it comes to new innovations (Johannessen, 2011; Simonsohn, 2011).

This lack of understanding should be of great concern when you consider the high cost of car purchase for a consumer and the increasing cost to them as taxpayers when you consider the amount of investment being given to automotive manufacturers by government. For example, incentives to develop new green power trains that rely less on fossil fuels have been high on the government's agenda for some time (Department of Transport, 2003; Transport Research Board, 2004).

At the end of July, 2007 it was reported that out of 28 million vehicles, only 2,500 were battery-powered; a long way short of the government's target of 1.7 million electric vehicles by the end of the decade (Jowit, 2011). Despite this low take-up of electric vehicles, at the end of the decade (2010), the UK government gave Nissan UK a £20.7 million subsidy to develop their new Nissan Leaf electric car, even though only 55 electric cars of any make were registered in 2009 (Jowit, 2011). Even with these low volumes of sales, the Nissan Leaf was still given the accolade of European car of the year 2011 (Booker, 2010).

This did not halt the determination of the government to encourage cleaner vehicles, it was forecast that 2011 was the year of the electric car, but failed to do so, despite a £5000 government grant being given to consumers towards the cost of each vehicle (Rufford, 2012).

This was still not sufficient to attract consumers and supports the view by Sasu and Ariton (2011) who suggested that increasing incentives for buying environmental cars are not well understood and are not very effective.

The RAC provided some insight into why there is such a low take-up of green power (Gibson 2010). They believe that motorists need to know more about low emission vehicles, there view is that there is insufficient information available for consumers to make an informed judgement on these issues. In contrast a report by the Low Carbon Vehicle Partnership warned of the dangers of providing too much information, creating a situation of 'information overload' for consumers that may result in even greater confusion (Lane and Banks, 2010).

Although there is evidence that there is a need to provide more detailed information on new products, the information must be relevant and if possible customised to each individual consumer (Johannessen et al., 2001), but it may not be feasible because the provision of a one-to-one information service would not only be expensive, but also impractical (Rokeach, 1973; Chikweche and Fletcher, 2012). However, differing levels of information aimed at different group segments of consumers would be more useful than the current diffusion method of sending the same message to a mass market.

The evidence suggests that any development of how manufacturers communicate new products should begin with an assessment of the newness of the product from the consumer's viewpoint (Vercauteren, 2005). If consumers are confused by product complexity then this is the variable that should be used to measure newness. Evidence has established that a new product must be different (Chapman, 2005) and that it must have some degree of complexity to attract and gain initial interest from consumers (Michaut et al., 2001a). More research is needed to establish a categorisation of product complexity from the consumer's viewpoint. This categorisation of complexity could then be matched to the information needs of consumer groups; one key area of research identified in the literature review summarises this succinctly by asking "how new?" and "new to whom?" (Johannessen et al., 2001).

There is a wealth of literature relating to the categorisation of new products (Booz et al., 1982; Meyer and Roberts, 1986; Gobeli and Brown, 1987; Gregan-Paxton and John (1997); Cooper et al., 2002), however all current product classifications are measured on two manufacturing viewpoints. The first is the manufacturing capability in terms of technology

(Booz et al., 1982), the second is the newness of the market application for which the product has been developed (Gregan-Paxton and John, 1997). The marketing department is then given the task of positioning the manufactured product in the mind of the consumer (Jiao et al., 2007), but evidence suggests that marketing campaigns based on a manufacturer's view will not be as effective when compared to a consumers view of product newness (Johannessen et al., 2001).

Even if manufacturers could establish a new measure of consumer product complexity and develop marketing campaigns based on the consumer's viewpoint, they only have conventional consumer data based on demographics and social class that can be used for conditional segmentation methods, such as post code areas, income levels etc., (Bayus, 1991). Even recent research into social classes that suggests there are seven social classes instead of the accepted three (Hall, 2013) are still inadequate, because whilst this type of data tells you where consumers are located, they are unable to differentiate between individual's views and behaviour, even if they have the same demographic (Bayus, 1991).

Bloch (1981) suggests these views and behaviour are very emotive in nature when related to automobiles, some to a greater or lesser extent depending on how involved they are with their cars, and that basing campaigns using only demographic data is inappropriate. New products arouse different levels of interest and enthusiasm between consumers and what may be new to one consumer may not be to another (Rogers and Shoemaker, 1971), this is due in part to the level of knowledge or expertise of an individual as well their enthusiasm or involvement for a product (Bloch, 1981; Kleiser and Mantel, 1994, 1999; Laaksonen, 1994; Sasu and Ariton, 2011).

There is a great deal of literature concerned with consumers and product involvement, however this area of research is generally treated as a catch-all for all aspects of involvement with the main focus being on the purchasing process (Hupfer and Gardner, 1971; Muncy and Hunt, 1984; Jensen and Hansen, 2006). For example, situational or purchase involvement attracts the most attention for researchers because this is when the intensity of involvement is at its highest (Peter and Olson, 2010).

Whilst this is valid, situational involvement is temporal in nature and quickly subsides when the purchase process is completed (Peter and Olson, 2010) and is considerably downstream

from the impact of a new product. Situational involvement can only commence after product exposure and is more concerned with external elements that begin after the initial shortlist has been made - such as costs (Bloch and Richins, 1983; Dholakia, 2001).

In comparison a consumer's first impact is when they are initially exposed to the new product. Even during this early stage there is an intensity of emotional involvement, to a greater or lesser degree, depending on their level of enthusiasm and interest towards the product, which can evoke positive as well as negative reactions (Bloch, 1981). What is important is that emotional involvement is enduring and is concerned with the actual object - what it is, compared to the temporal nature of situational involvement which quickly subsides after the purchase is completed (Bloch, 1981).

There is evidence to suggest that emotional involvement moderates the level of consumer product knowledge (Bloch, 1981), not the in-depth technical knowledge associated with experts, but more from the aspect of interest in what it does rather than how it works, yet there is a gap in current literature that measures this construct. Another aspect that is not utilised, is the previous exposure or familiarity that consumers have with current products. For example, in the case of cars, previous owners will have more knowledge and be more aware of the changes to a new model compared to other consumers.

From a marketing perspective, data of this nature would provide more insight into their consumer base as well as more accurate consumer segments. To do this the areas of expertise, involvement and familiarity need to be unpacked so that they focus on the time when consumers are first exposed to new products.

If data was available for consumer segments, based on their level of familiarity, involvement and expertise with a product, then a sample of consumers that represent those segments could be used to establish a products level of complexity. This will provide two significant benefits; firstly manufacturers would be able to establish a new products optimum complexity, with lower and upper levels. Secondly marketers could provide more relevant information based on these levels. For example, clearer explanations can be given when communicating products that are high in complexity to avoid alienating consumers that have low levels of expertise, compared to more detailed information that would be sought by experts. This

would provide marketers with new consumer segments and more effective advertising campaigns.

Currently, most advertising is based on lifestyles and consumer aspirations to those lifestyles (Young and Rubicam Inc, 2002; Experian, 2003; Acxiom, 2004; Harris, 2004; Lilley, 2004; thevaluescompany, 2004; WPP Group, 2005). These are centred on a consumer profile established by manufacturers, or their marketing agencies, which they believe fits with their product. Methods that utilise this shoe-horning of product to consumer or consumer to product are unlikely to be successful if it relies on consumer aspirations. Although practitioners continue to use product positioning and aspirational methods as their main marketing tool, there has been very little academic research in this area, probably because this catch-all approach has little merit. Evidence suggests that consumers should be the judge of new products (Rogers, 1995; Danneels and Kleinschmidt, 2001; Johannessen et al., 2001) and marketers would benefit from obtaining consumer views, rather than imposing their own.

To date there have been no studies that have investigated links between product complexity and consumer segments that has utilised familiarity, involvement and expertise to measure the appeal of new products. Consumers would benefit from more information that is appropriate to them as an individual (Johannessen et al., 2001) and provide a greater awareness of products that they may normally overlook (Rogers, 1995), and for manufacturers it would increase the effectiveness of their marketing campaigns whilst providing a better indication and likelihood of success (Shillito, 2001).

1.3 RESEARCH OBJECTIVES

The objective of this thesis is to fill a gap in the literature on how consumers perceive the complexity of new products, based on their involvement, familiarity and expertise. Currently, in the automotive sector, there are no classifications that accommodate the consumers view or indeed categorise the degree of innovativeness (newness) and complexity they perceive in a new product.

In addition, there is no differentiation in marketing messages. A consumer profile is established by the product development teams and the same message is then sent out to mass market segments based on demographics. The objective is to design a more effective method

of profiling consumers, with data that identifies consumer segments more accurately, instead of using a structure based on intuition rather than systematic analysis (Dibb, 1998). Yet an intuitive structure is the approach most used by manufacturing industries, including the automotive sector, and one that has remained unchanged for some time (Dibb, 1998).

The evidence suggests specific objectives for the thesis as follows:

to establish/test independent variables that measure consumers' product expertise, involvement and familiarity with a product.

to investigate the relationships between these independent variables and a dependant variable that constitutes an overall consumers product experience (CPE).

to establish/test independent variables that measure new product complexity (NPC).

to investigate the relationships between CPE and NPC and discover if lower and higher levels of complexity can be established to provide an optimum range of complexity for a given product, a dependant variable - consumer categorisation of innovation (CCI).

This thesis investigates and builds upon previous studies in the areas of product newness and market segmentation. In doing so it provides important guidelines for marketing departments on data collection for improved consumer segmentation and manufacturers with a more effective measure for their new products.

By achieving these objectives the thesis will add to the area of consumer behaviour, new product development and market segmentation.

1.4 CHAPTER OUTLINE

The following structure gives an indication on how the research was carried out:

The review of literature is split into two sections to distinguish between the theoretical and what happens in practice. The first section 2.2 to 2.4 is a review of academic literature, the second 2.5 and 2.6 is a review of literature and information obtained from practitioners in the

automotive industry. The chapter begins with a short introduction leading into consumer behaviour which encompasses a wide range of literature including schema congruity, needs, expectations, emotions, involvement, traits, social cognition, stimulus, interest, inertia, values, benefits and means-end chain, search behaviour, appraisal theory and consumer concerns. This is followed by a section on new product development which discusses research relating to product newness, complexity, familiarity, expertise, innovation theory, optimum range categorisation theory and product development theory.

The review then looks at what happens in practice in the automobile industry and looks at three areas – New Product Development (NPD) in The Automotive Industry, Market Segmentation and Practioners and Advertising and Communications; NPD is discussed from the automotive manufacturer's perspective. This is followed by segmentation strategies which covers all the leading practitioner methods employed within their industry, together with a short section on advertising and communications. The chapter concludes with a summary and focuses on the gaps in the literature.

This is followed by chapter three which provides detail of all the exploratory studies that were conducted during the course of this research. This section includes fieldwork - investigations carried out in the field rather than a laboratory, consumer discussion groups, and interviews with manufacturers and practitioners, with detailed information on methods, data, the findings, discussions, conclusions and limitations. The exploratory studies are placed before the Methods chapter, because the investigations and pre-tests were necessary to form a conceptual framework. The studies in this chapter are detailed and use online questionnaires and SPSS analysis. Normally studies containing this level of detail are discussed first in the Methods chapter, but because they were instrumental in the conceptualisation of the study the detail is given here.

The study then leads into chapter four which is concerned with conceptualisation of the study including the model and factors.

Chapter five is the methods section which describes the research methodology that was used, including the questionnaire design and construction of the main survey - including pre-testing and exploratory research methods. Details are alsoprovided on the sampling frame and data collection methods, including online resources.

Chapter six provides the data analysis of the pilot and main surveys, including results and , findings. Details are given on a post-main survey of research into consumer preferences of communication methods. The discussion of findings draws together all the practical scales established from scale development techniques and the model is operationalised with Confirmatory Factor Analysis using Structural Equation Modelling.

Chapter 7 reports on post-main survey investigations into the methods used by manufacturers to diffuse product information for new model launches. Because of the timing of the product launches the results could only be reported after the main survey was completed.

Finally, chapter eight discusses the study implications, hypothesis conclusions and managerial implications and provides practical suggestions and guidelines that are relevant to academics as well as practitioners. Limitations of this work are discussed in the closing section with recommendations for future research in this area.

CHAPTER: 2 LITERATURE REVIEW

2.1 INTRODUCTION TO THE CHAPTER

This research has been directed at understanding the way customers approach buying a product they do not understand. The automotive industries in particular are developing highly complex products and often introduce several new innovations on each product release. This increasing complexity is leaving customers confused, or even alienated from the products. The aim of the research was to first, gain an understanding of how customers with different levels of understanding of the product, in this case a vehicle, approach the buying process. Second, what aspects of the buying process might be accessed and utilised by car manufacturers to market and sell their products. In order to achieve these aims a broad range of literature has been reviewed and analysed. For example, research that explored issues such as 'how new?' and 'new to whom?' (Johannessen et al., 2001), was considered of central importance when explaining how consumers develop perceptions of new products. The review also explored how car manufacturers develop new products and take them to market, and how those products are understood by consumers.

The automotive sector develops products that regularly are introduced with new technological innovations, so how consumers view new technologies on cars has also been a focus for the review. The literature review is organised into six main sections. After this introduction, section 2.2 discusses consumer behaviour towards new products, their perceptions and motivation, as well as how experience and exposure to a product moderates behaviour. Consumer concerns relating to new products are discussed, in particular, the feelings of uncertainty and risk in choosing the right product and the adoption of new technology are considered in the appraisal and acceptance process. Sections 2.3 evaluates New Product Development (NPD) literature to ascertain what defines product newness and section 2.4 focuses on how NPD theories have been applied in the automotive industry. Section 2.5 evaluates how market segmentation and information is currently sourced and used by manufacturers and marketing practitioners for marketing campaigns with section 2.6 focusing on how the techniques and methods are employed in advertising and communications in the automotive sector. The chapter concludes with a summary of the findings and implications that have driven this research.

2.2 CONSUMER BEHAVIOUR

2.2.1 Schema Congruity

Peter and Olsen (2010) define consumer behaviour towards products, as the thoughts, feelings and actions that consumers experience during the consumption process and argue that these experiences are influenced by everything that is happening within that environment, such as advertisements, product appearance, consumer comments and advice. This consumer interaction is dynamic involving interactions and exchanges on how information is received and absorbed, particularly for those who are attached or involved with a product, as these consumers can be very motivated and energised (Peter and Olsen, 2010; Morton et al., 2011).

Meyers-Levy and Tybout (1989) first suggested the concept of 'schema congruity' as a basis for this product evaluation by consumers. Schema are defined as organised patterns of expectations, beliefs, prototypes, and effect (Home and Kahle, 1988; Folkes and Kielser, 1991) that guide perception, thought, and action (Mandler, 1981). Schema can be described by their level of congruity, that is, how well the picture fits with what they know and expect (familiarity). When familiarity is lacking the schema is said to be incongruous (unfamiliar).

Products are said to be held internally as categorised schema with associated attributes and values which are revised as new information is received and processed (Meyers-Levy and Tybout, 1989; Tomaseti and Ruiz, 2004). For consumers, these internal schemas are activated when new products are encountered in a search for a favourable match (Mandler, 1981). Schema congruent products (familiar) are identified quickly and are only likely to prompt a passing interest, whereas when schema incongruent products (unfamiliar) are encountered, the novelty increases arousal and stimulates thought processes that search conceptually for answers in an effort to resolve the incongruity (Mandler, 1981; von Hippel, 1986). Where this effort is unresolved, extreme incongruity develops, resulting in a negative evaluation that can lead to frustration and rejection. In the case where an incongruity is resolved, the process is rewarding and positively valued; this is classified as moderate incongruity (Mandler, 1981). Meyers-Levy and Tybout (1989) conclude that ideally moderate schema incongruity is optimal, rather than no congruity or extreme levels; moderate schema incongruity results in more favourable perceptions of a product.

Gregan-Paxton and John (1997) suggest schemas are created as a by-product of the analogical learning process. When faced with something unfamiliar, people often attempt to understand novelty or incongruence, by relating it to something familiar. This process can involve accessing information from a number of familiar existing schema, in an attempt to understand and comprehend an unfamiliar product. This accumulated knowledge is then formed into a new schema (Shapiro et al., 2009). Coulson (2001, p122) discusses a similar process he refers to as conceptual blending, comprising 'composition', 'completion' and 'elaboration', leading to a new emergent structure or new blend. The evidence suggests that moderate schema incongruity suggested by Meyers-Levy and Tybout (1989) provides the most favourable outcomes in product assessment without risk of alienating consumers.

Some authors argue that product categorised schema have associated attributes and values (Ostlund, 1974; Meyers-Levy and Tybout, 1989; Gregan-Paxton and John, 1997; Hofstadter, 1998). Attributes contain concrete, physical elements, such as an optical mouse as part of a computer, alongside abstract attributes that are inferred and intangible, such as ease of use. Most attributes also have a relation, an interconnectivity with other product components, e.g. the optical mouse has a relationship with the computer screen. These attributes and relationships create a base domain and are important in establishing new schema or target domains. Central to this process is the comparison of the attributes and relations of one base domain with another, which as a process seems similar to Coulson's (2001) conceptual blending. Sometimes attribute only comparisons can be problematic as some consumers have a tendency to embellish the transfer of information from a base domain to a new schema, resulting in errors (Gregan-Paxton and John, 1997). Copycat products take advantage of these type of errors, particularly when it is based on physical similarity alone, as it encourages more favourable comparisons (Gregan-Paxton and John, 1997).

Novices and experts tend to approach products differently. Novick (1998) suggests novices are primarily attribute-driven whereas experts are relation-driven. This argument supports the views of Gregan-Paxton and John (1997) who observed that schema-based categorisation was beyond the ability of those with low levels of base domain knowledge. They suggest that novices with impoverished schemas (low relational content) utilise a similarity–to-exemplar process in which the more similar the target domain is (i.e. the more attributes observed) to the base domain (exemplar) the more willing the novice will be able to make a comparison. In addition they suggest that experts also use similarity-to-exemplar processing for familiar

products that do not warrant the use of schema based processing, but if there is a total lack of product categorised schema (as in the case of new-to-the-world products), then both experts and novices turn to mere appearance comparisons in an attempt to identify associations. If a match cannot be found in this category-based evaluation then the individual product attributes have to be considered in a piece-meal process or, in the case of novices, using category-based processing (Gregan-Paxton and John, 1997).

Recent research has identified problems in some expert evaluations (Mehta et al., 2011). Findings revealed that when products lacked relational information, experts had a tendency to punch above their weight to avoid schema incongruity, and made assumptions based on attribute comparisons. Some assumptions were made because the experts thought they were expected to know; Mehta et al. (2011) describe these actions as false recall effects and found that some experts fill in missing information and simply guess. Problems with expert assessment is not new, Moreau et al. (2001) found that although experts had a higher comprehension and a preference for continuous innovations, when they encountered discontinuous innovations their entrenched knowledge resulted in lower comprehension, fewer benefits and low preferences compared to novices. Moreau et al. (2001) concluded that experts need supplementary information for discontinuous innovations. If this is the case, then it is likely that where this information is not forthcoming, it is possible that experts may make an inaccurate assessment of the value of an innovation, or product.

Mukherjee and Hoyer (2001) found that even consumers with low knowledge make inferences on novel attributes based on potential benefits and cost. This value inference is only positive if attributes are seen to add value. Part of the evaluation process includes consideration of the learning-cost – the effort in learning how to use something. Complex products are associated with high learning costs and are negatively evaluated as a result. Mukherjee and Hoyer (2001) argue most people do not want to understand the inner mechanics of complex products and so marketers should always highlight ease of usage and provide benefit information when launching new products.

There are cases where innovations are equally abstract for novices and experts. An example of this is the Mercedes-Benz Biome concept car revealed in 2010. This car was made from Biofibre a lightweight material grown from seed so at the end of its life it could be composted, just like garden waste. Whilst this was a serious design proposal, the press at the

time commented that it owed more to the realms of psychedelia than the accepted norms of car design (Williams, 2010b) - it would appear that there are limits to acceptability.

Even the concept of 'newness' is subject to individual interpretation (Rogers, 1995; Moreau et al., 2001; Pauwels et al., 2004; Cowley and Mitchell, 2005; Talke et al., 2009; Loginova, 2010; Johannessen and Olsen, 2011; Simonsohn, 2011). Rogers, (1995, p.36) identified five perceived attributes that consumers use to judge new innovative products:

Attributes of Newness	**Description**
Relative advantage	An evaluation of the advantages of a new idea/product over existing ideas/products
Compatibility	Concept of matching existing values and needs
Complexity	Degree of difficulty to understand and use a product
Trialability	Can be tried or experimented with on a limited basis
Observability	An innovation offers observable results

Table 1 - Attributes of Newness - summarised from Rogers (1995)

The second attribute - compatibility, is for this research, the most interesting. Compatibility involves the consumer relating the product to internally held criteria/knowledge where values and needs have a high influence in determining the outcome, though it is noted that Blythe (1999) suggests that such a process is only likely to be undertaken for high-involvement purchases because of the extended evaluation e.g. a house or car. The third attribute, 'complexity' is also of great interest for this research as if there is a lack of understanding , 'use' and any further product evaluation cannot take place, at this point products are often overlooked or bypassed (Mukherjee and Hoyer, 2001).

Although values and needs vary considerably among different consumers, initial interest and arousal is critical when selling a product. If a product fails to grab any attention, the consumer is unlikely to pay attention, even if the product meets the needs and values that are being sought (Mandler, 1981). However, when attention is captured, needs quickly come to the forefront of the appraisal process as they are the dynamic motivator of our desires.

2.2.2 Needs

Kim et al. (2002) propose that consumer values and needs change overtime, adapting dynamically to personal circumstances, surroundings and environment. Values are a type of social cognition that shape an individual's needs and desires (Becker and Richards, 2007), which in turn determines attitudes and consumption behaviour that are manifested by preferences for certain products. Chapman (2005) points out that all forms of desires are motivated by two categories of need, those that are 'innate' and those that are 'acquired'. Innate needs are physiological, such as the need for food and shelter. In contrast acquired needs are psychological, things that people want or aspire to, such as recognition, prestige, social status and friendship. Chapman's (2005) categories are similar to the 'functional' and 'social' needs proposed by Park et al. (1986), but they suggest a third category 'experiential' needs are required to satisfy the desire for variety, novelty and sensory pleasure; Park et al. (1986) suggest the latter being the most important motivator in creating demand for new products. Perhaps the description given by Steg (2005) of 'must' and 'lust' of car use is more appropriate.

Steg (2005) found that while innate/functional needs are necessary (must), the social and affective or experiential needs (lust) provide the most differences between consumer groups, in particular the emotional aspect of how they feel about a product. Sasu and Ariton (2011) support this view, they found that the way some people talk about cars show they satisfy social needs and experiential desires, some people don't drive cars just because they need them, but because they like to drive.

Although values and needs change over time, experiential needs do not as they are an ongoing desire for new things, as soon as old experiential needs are met then new experiential needs emerge "nurturing the infinite sequence of desire and destruction that is so characteristic of the modern world" (Chapman, 2005, p.54).There is evidence that consumers can recognise and/or visualise needs. Research by Schoormans and Robben (1997), found that one third of unplanned buying was attributed to consumers recognition of new needs while shopping, but Stern (1962) argues that this is not necessarily irrational, particularly when consumers see something for the first time and visualise a need. Even instances of pure impulse purchasing are usually associated with a desire to escape from the norm, e.g. anecdotally, a colleague who intended to buy a small economic car, recently returned with a high-performance BMW estate car, citing that she just 'needed to have it'. Yet there are some

‘givens’ that consumers may find hard to sacrifice, an expectation to have at least what they have had before.

2.2.3 Expectations

Moultrie and Fraser (2004), proposed that product development of existing lines should begin with the assessment of how the current product compares with user expectations and this should be approached with a mindset that the consumers expectation is that new equals better. They suggest that if the existing product falls below consumer expectations, it would be impossible to improve the product without this information, and it is likely that the new product will inherit the faults and flaws of its predecessor.

Some expectations are short term others long-term, but in both cases there are times when consumer expectations are not met (McCarthy, 1995). For example, The Economist (2012a) asked “Whatever happened to the flying car?” the adverts of the 1950s and 60s led the baby boomer generation of that area to grow up to believe that they will be going to work in sky cars. The same generation may have been saddened when tape cassette players were no longer fitted to cars, only to hear that there are now plans to remove the CD player replacement with MP3 players (McManus, 2012). Some proposals are treated with cautious anticipation e.g. a self-driving car (The Economist, 2012b), but for other practical changes manufacturers should assess how such proposals impact on consumer expectations and in particular, create emotional reactions such as arousal and disappointment.

2.2.4 Appraisal Theory and Emotions

The appraisal of a situation, object, or event is based on the personal significance of a number of dimensions and criteria. Appraisal theory invokes responses that are emotional in nature which are differentiated by an individual’s subjective evaluation. Appraisal is a two stage process involving a primary appraisal (i.e. the positive or negative significance of an event for one's well-being), and secondary appraisal (the ability to cope with the consequences of an event), (Scherer, 1999).

Scherer (1999), suggests the classic approach to appraisal employs four main groups of criteria:

1. Intrinsic characteristics of objects or events, such as novelty or agreeableness.
2. The significance of the event for the individual's needs or goals.
3. The individual's ability to influence or cope with the consequences of the event, including the evaluation of uncertainty/risk.
4. The compatibility of the event with social or personal standards, norms, or values.

Zajonc (1984), points out that although appraisal theory may explain some emotional reactions there are many cases where responses are unconscious and undeliberate, and it is possible for arousal to be triggered without any in-depth cognitive-evaluative processing at all. What is clear is that the appraisal process will come to an abrupt halt if initial exposure does not stimulate further interest. Depending on a consumer's individual circumstances there may be underlying concerns and risks associated with a product that restrict the evaluation.

Emotions are central to appraisal theory (Scherer, 1999); they are involved in a person's subjective evaluation of a situation, object or event in a process that involves assessment, such as novelty, impact on meeting needs and goals, the ability to influence or cope with any consequences and compatibility with social or personal standards. Whitfield (2009) suggests the process begins with stimulus and ends in a response involving reactions that provide pleasure in terms of arousal as well as arousal potential; many of those reactions being automatic unconscious factors (Scherer, 1999). For high value products, purchase decisions are likely to be goal based – not just functional but also higher order (Schlosser, 2003), for example what does a car or house say about you (Whitfield, 2009). Whilst stimulus is the basis for comparison, emotions are fundamental in reaching a categorical conclusion, and something that is person specific.

In comparison Barsalou (1995) suggests that whilst goals are individual in nature there are shared taxonomic categories which are recalled during the decision-making process, for example a commuter will require a comfortable car with good fuel economy and may associate a subcompact car with these attributes, a process described as constraint-chains. Yet Barsalou (1995) acknowledges that at this point emotions become involved in the final appraisal process. How intense those emotions are is dependent on the level of involvement consumers have with the product.

2.2.5 Involvement

Bloch (1981), Shimp and Sharma (1983) and Lennox and MaClaren (2003) have all argued that consumer views are moderated by a consumer's enthusiasm or involvement with the product. Products arouse different levels of interest and enthusiasm between consumers and impact on how they view new products. Research by Zaichkowsky (1985b) suggests this interest and enthusiasm is involvement with the product, a motivational construct that increases with more frequent use. Zaichkowsky also suggests that product use and involvement are correlated when use of the product is optional, although most consumers regard a car as a necessity.

Other views suggest involvement is represented by an individual's needs, goals, values and any existing knowledge and attitude to the object (Laaksonen, 1994; Garcia and Calatone, 2003), however Gatignon and Robertson (1991) suggest that this is moderated by the degree of innovativeness of a product. Rogers and Shoemaker (1971) disagree with this view and suggest that if the object or idea seems new to the individual, then from their individual viewpoint it is an innovation. It is argued here that how involvement with the product influences consumer behaviour depends on the intensity of involvement and so adopts the position also taken by Sasu and Ariton (2011). It is important to note that the literature has a very broad definition of involvement, many researchers use it as a catch-all for a number of variables and processes, some examples are shown in Table 2.

Researcher	Term Used	Definition of involvement
Hupfer and Gardner (1971)	Ego Involvement	'the degree of ego-involvement can be determined by the relative importance of an attitude that the individual holds regarding the object or activity' (pp. 262-3)
Jensen and Hansen (2006)	Purchasing Involvement	Relevance of purchasing activities to the individual
Peter and Olson (2010)	Brand Involvement	Commitment to a specific brand
Muncy and Hunt (1984)	Ego	Value of self and object
	Commitment	Purchasing intentions
	Communication	Information search
	Purchase	Concerns at the time of purchase
	Response	Reaction to a product

Table 2 - Approaches to 'Involvement' applied in the literature

This research has focused on the impact of 'Response Involvement' as this is concerned with the initial reaction to the exposure of a new product; the other categories of involvement happen later in the product evaluation process to support purchasing decisions and so are only activated in the subsequent arguments and debates for purchase (Peter and Olson, 2010). Although Ego may have some influence, all the other aspects have no place in the initial exposure. The difficulty in applying the concept of response involvement is identifying how involved the consumer is with a given product.

Involvement is a personal phenomenon that is an expression of an individual's views and feelings, as a well as how they respond to an object (VonRiesen and Herndon, 2011). Consumers also differ in how long they spend in assessing a product, what search patterns they apply and how much detailed information they need to make a decision (van Rijnsoever et al., 2009). Consumers can be active or passive to advertising and marketing communications which may cut short or activate further information searches depending on the intensity of involvement with a product (Laurent and Kapferer, 1985; Zaichkowsky, 1985b). Bauer et al. (2006) suggest that higher levels of involvement, leads to greater perceptions of product attributes. However, Zaichkowsky (1985a), points out that increased

perceptions does not necessarily mean an increase in expertise; it is suggested that you do not need to be an expert to have involvement.

Quester and Lim, (2003) suggested that high involvement is a pre-requisite for loyalty, whereas extremely low involvement can be the least understood and unpredictable area because of the ambivalence and/or inertia to the product and product information. How involved, uninvolved and ambivalent a consumer is with a product is a key factor in determining brand loyalty (VonRiesen and Herndon, 2011). According to VonRiesen and Herndon (2011) brand commitment is more likely when the level of involvement is above-average (true loyalty), as opposed to low involvement which generally indicates loyalty of a spurious nature. Peter and Olsen (2010) argued that marketers are able to influence overt consumer behaviour, but not covert behaviour or consumers with inertia towards a product. Whilst loyalty is not a specific subject of investigation in this thesis, the inertia aspect of low involvement is discussed in more detail in Section 2.2.9 as marketers should consider how they communicate with this segment.

Richins and Bloch (1986) states that involvement is consumer-defined, not product-defined, yet most products are classified as high or low involvement by researchers, although Peter and Olson (2010) suggest even this is inaccurate as involvement is a continuum rather than a bipolar classification. Laurent (1985) suggests all surveys should include a measurement of consumer involvement as advertising messages should be tailored to be active or passive in order to limit or extend the way in which consumers' process information.

However, Peter and Olson (2010) suggest that involvement is not a continuous state, it is specific to occasions, such as when purchasing a car and that once the purchase is completed, the involvement fades until the next time, yet a distinction is drawn between intrinsic self-relevance - those who are passionate about cars, and self-relevant consequences - those who are concerned with social status, the former being more enduring than the latter. A number of authors disagree with Peter and Olsen (2010) that the involvement fades between purchases, on the contrary automobile involvement is seen as a constant long term interest that endures over time (Lennox, 2003; Kassubeck et al.,2011) and would only intensify at the time of purchase, rather than fade during the intervening period (Bloch, 1981).

Dholakia (2001) suggest that even when situational elements such as unanticipated costs of early replacement introduces risk that can heighten and skew the level of involvement, enduring involvement will always prevail. Although situational involvement is important in the decision-making process, it relates to tangible aspects such as cost, choice and the outcomes of perceived risk (Bloch and Richins 1983). However, this thesis is concerned with the enduring emotional involvement that forms the basis of the attraction to the product, preceding situational aspects.

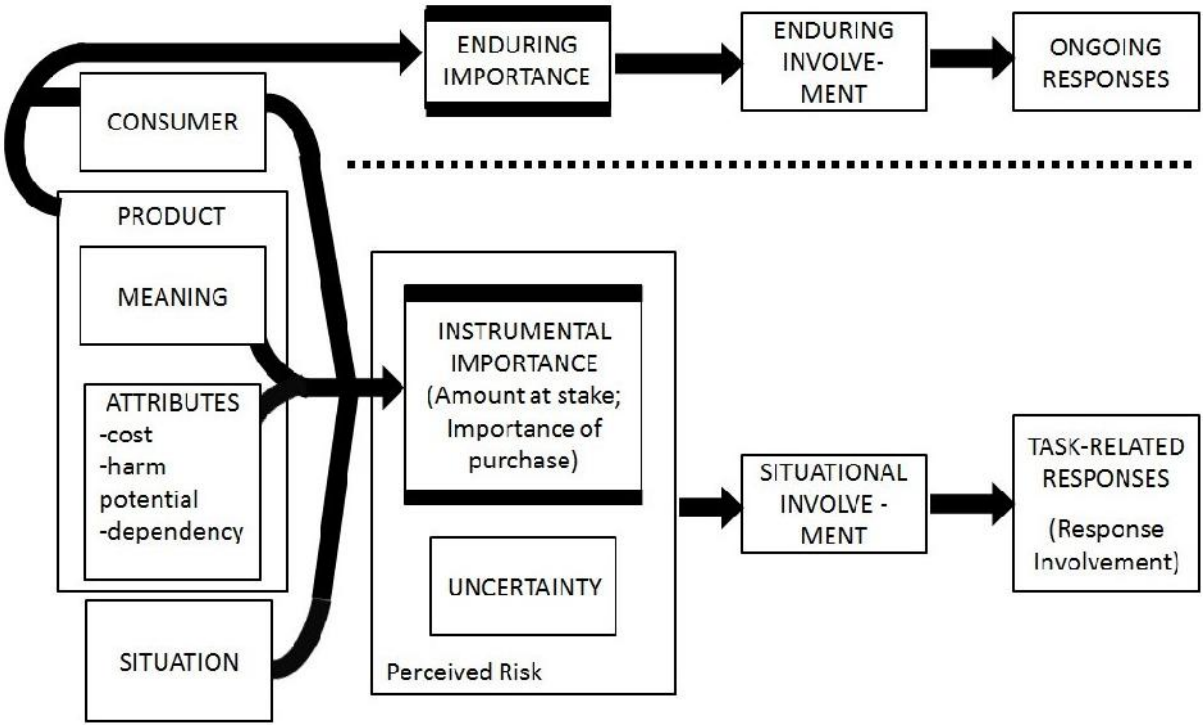

Figure 1 – Source: Redrawn from Bloch and Richins (1983, P78)

Bloch (1981) developed the Automobile Involvement Scale (AIS) based on the so-called 'love affair with the automobile' that is associated with ridership and a long-term interest in cars. The scale is based on the importance of personal needs, image and values that reflect an individual's involvement on an ongoing basis, ranging from minimal to extremely high levels. Although the evidence suggests that AIS (Bloch, 1981; Shimp and Sharma, 1983; Lennox and McClaren, 2003) provides a reliable tool to identify consumer segments in the automotive industry, personality traits can provide an alternative segmentation tool.

2.2.6 Traits

Mowen and Harris (2003) carried out research in the automotive industry using personality traits as a segmentation tool and proposed a four level hierarchy (Table 3).

Trait	Description of Trait
Elemental	Self needs, emotions and arousal
Compound	Competitiveness and task orientation
Situational	Frugality and value consciousness
Surface	The reaction to elemental, compound and situational traits. Prone to bargaining

Table 3 - Personality Traits Segmentation Tool - summarised from Mowen and Harris (2003)

Mowen and Harris (2003) discovered that the surface trait of bargaining proneness was useful for targeting consumers for dealers that employ a price negotiation strategy. By identifying consumers with this trait combined with demographics it enabled them to target this segment more accurately. However, according to Blythe (1997), there are an estimated 18,000 identifiable personality traits with more being discovered daily - bearing this in mind, the target market would have to be very specific to be effective . Hutchinson and Eisenstein (2008) suggest that traits are developed over time and are formed from social cognition; this is discussed in the next section.

2.2.7 Social Cognition and Stimulus

Social cognition is formed from learning what others do and do not do; learning might impact on and change persons behaviour, but learning can also occur without a change in behaviour (Bandura and McClelland, 1977). Searle (1995) suggests that nothing is known to a person except the content of their experiences and that cognition develops as people adapt to their environment. Berger and Luckmann (1991) argue that although people do adapt, reality is differentiated by the degree of familiarity person has with surroundings.

Cognition then, begins with stimulus. Radford and Bloch (2011) propose that stimulation begins with a visual evaluation that raises arousal and interest. This would then seem a crucial experience for manufacturers to understand, as if a new product fails to make an impact, the evaluation process comes to a halt. Radford and Bloch (2011) found that the

focus of new product development has always been on technology and features and has not taken into account consumer reactions. When consumers are faced with making a choice between a large number of new products ,which are often introduced with only small changes and differentiators, they are often confused, not only by the large number of products, but also by the abundance of marketing materials. To stand out from the clutter, new products need to have visual stimulus. For example, a new automobile model receiving a "wow" type of response at a motor show will create an immediate impact, it is not sufficient for a product to just have new features, it must also look different to other products (Radford and Bloch, 2011).

Sasu and Ariton (2011) found that in the automotive sector, complexity is the main stimulus for buyers. Stimulus evokes four types of consumer response (Crilly et al., 2004); emotional, aesthetic, semantic interpretation (what it does) and symbolic association (social status), emotion being fundamental in stimulating arousal (Whitfield, 2009). Most consumers do not delve very deeply in their search for information on new products, most rely on extrinsic cues, the non-physical characteristics such as advertising, packaging, brand reputation and price (Ratneshwar et al.,1996), whereas other consumers refer to third party sources for information, such as product reviews in their product assessments (Akdeniz et al., 2013). A frequent measure of stimulus is fixation times with the product or product information, the association being that interest holds your attention for longer periods, indicating a preference for one product over another (Goldsmith and Hofacker, 1991). However, Mandler (1981) warns that this association can be flawed because the interest could be bad as well as good and may have little to do with preference, citing the situation in road traffic accidents where motorists slow down to view the scene, a problem which is referred to as "rubbernecking".

For the majority of consumers, interest arises when they are intrigued by something which is unfamiliar and/or complex to understand (Berlyne, 1978; Silvia, 2005), although curiosity will decline rapidly unless they can source adequate information. If the product is too complex any future exposures will be given less and less interest. Sahar (1999) proposes that interestingness is individual and subjective due to the diverse nature of consumer knowledge. However, some consumers do have continuing intense interest and enthusiasm for products, particularly those who must have the "habitual acquisition of newer, shiner things" (Chapman, 2005, p.18) and they continually seek out information on new products within their area of interest and usually have an impact in the transfer of new information to other

consumers (Bloch, 1986). Others have fixed perceptions, innate preferences of things they like and dislike, these can be inherited preferences that make it entirely possible to like something without knowing why it is we like them (Mandler, 1981). These preferences may change over time through exposure to new experiences, whereas some consumers wait to see if others like the product, particularly for infrequent purchases, but following others can be problematic as consumers have different tastes; one may like a product that others dislike (McFadden and Train, 1996).

Michaut (2004a) found that liking increases when new products are understood and disliked when this was reversed, similarly Peter and Olson (2010) found consumer appraisal follows a process of awareness, knowledge and liking. In this case like/dislike is more acceptable in the early stages as an immediate response to new products rather than the deeper emotion of love/hate that may develop over the longer term. This could be compared with human relationships, unless it is love-at-first-sight it begins with liking each other, this analogy can be drawn with the 'exposure effect', the more exposures to a product increases the probability it will be liked (Clark and Fiske, 1982). Nel (2012) suggests that liking something is not enough, people do not buy things that they just like anymore, but they will spend their money on things they love. Nel suggests that liking something does not mean a change in behaviour, whereas the emotional responses of love and hate does. Just liking something means it's okay and as most ideas are not groundbreaking, they fall into the okay or like bucket. With more and more competing products in the marketplace, Nel (2012) suggests manufacturers need to get their consumers to move from liking their products to loving their products. Yet there is a segment of consumers that appear to have little or no interest in some products.

2.2.8 Inertia

Although there are leaders and followers in the adoption of new products, such as the Rogers and Shoemaker (1971) categorisation of innovators through to laggards, there are consumers that appear to have no apparent reasons or preferences when making a purchase decision, the so-called 'inertia' segment (Bettman and Park, 1980; Alba and Hutchinson, 1987; Goldsmith and Flynn, 1992; Schoormans and Robben, 1997; Peter and Olson, 2010; Wu, 2011).

Rogers and Shoemaker (1971) categorisation implies a hierarchical approach, a simple lineage of leaders and followers in the take up of new products that is led by innovation,

peaking at the early majority stage and then descending into decline. Prior to Rogers's categorisation, Stuteville (1968), suggested consumers rely on feedback from early innovators, they wait until they confirm it is okay before they start to take up the product. Stuteville points out this is similar in manufacturing, innovators take the lead followed by the larger group of imitators. Later research by Santini and Vyas (2005) found that in the automotive market, consumers change their purchase decisions as new-technology vehicles move from the risky or unique phase to the safe or mainstream phase.

Wu (2011) proposed that inertia occurs when consumers make decisions based on situational cues and reflects a non-conscious process; unemotional; habitual; indifferent and convenience driven but because of this, even though the purchase process appears to be passive and without much thought, it is fragile and should be treated as spurious loyalty as such customers are vulnerable to attractive alternatives. In fact Greig (2003) suggests that when there is such a weak connection, the inertia segment of consumers are more likely to accept suggestions made by others, whether this be friends and family or at the point of sale.

Wu (2009), found that inert consumers are unpredictable, as they will easily terminate their relationships if they are attracted by better offers in the marketplace. Peter and Olson (2010) describe this behaviour as a simple or conjunctive strategy, whereas Bettman and Park (1980) suggest that it may be that the task is just too overwhelming and some consumers go with the easiest options. Keller (2003) though proposes that all encounters with a product have the opportunity to change a consumer's mental representation and information of that product. This would suggest that care must be taken when asking questions from consumers that show ambivalence in their attitude to new products, such as someone who buys without much thought. These consumers may have difficulty in explaining why they made repeat purchases of the same brand, especially if the reason they gave is they simply buy because they really like the brand (VonRiesen, 2011). It may be that for the inertia segment their requirements, for some products, are easily met, such as values and means-end chains.

2.2.9 Values and Means-End Chains

Most authors accept that there is a correlation between lifestyles and social surroundings and such lifestyles have an impact on values (Rokeach, 1973; Home and Kahle, 1988; Kahle and Chiagouris, 1997; Kim et al., 2002; Greig, 2003; Brookes et al., 2004). Kahle and Chiagouris

(1997) suggest that it is critical to gain an understanding of why specific product attributes are regarded as important to people with certain lifestyles and values. They also acknowledge that there is no universal set of attributes to characterise all products. However, Rokeach (1973) suggests that values are stable and enduring, and that the total number of values a person has is relatively small. He also argues that most people possesses the same values, but to differing degrees. Consumers view product attributes as a means to an end, in other words the benefits gained – a means-end chain (Laaksonen, 1994). Means-end chains are made up of instrumental values (what it is and means to you) and terminal values (what it does and the consequences). These values can be domain specific (van Raaij and Verhallen, 1994). For example, Sasu and Ariton (2011) suggest the reason for car ownership is the instrumental value when choosing a car, whereas things that give pleasure, security and a comfortable life are terminal values (Peter and Olson, 2010). Punj and Staelin (1983) suggest that the goal that consumers strive for can be regarded as a 'terminal value'. There are cases for specific terminal or end requirements; these are known as constraint chains. For example, commuters who travel long distances will look for a car that has the attributes of good fuel economy and comfort such as a subcompact car or large families that would need an estate car (Ratneshwar et al., 1996).

Rokeach (1973) developed a model comprising eighteen instrumental and eighteen terminal values; the Rokeach Value Survey (RVS). The survey asks respondents to arrange the values in order of importance to them, starting with the most important and so on until the list is exhausted, resulting in the identification of higher ranked orders of instrumental and terminal values. However the RVS has been criticised by Home and Kahle (1988), because of the difficulty of the lengthy ranking task and information loss due to rank orderings. Home and Kahle (1988), unsurprisingly, had a preference for their own List of Values (LOV), a simplified model developed from Rokeach's RVS but that also accommodates a number of category-relevant factors. They suggest that value dimensions are not independent and that value perceptions can be generated without the product or service being bought or used, for example a trade-off between quality and price; a value-for-money conceptualisation (Sweeney, 2001), which itself is a means-end value process. LOV is used extensively in academic research and significantly predicts consumer behaviour trends (Kahle et al., 1986; Cohen and Basu, 1987; Sweeney and Soutar, 2001; Kurpis et al., 2010).

Holbrook and Stern (1999) take a different approach and suggests consumer value can only be derived from the interaction between the consumer and the product or service. The interaction activates comparisons with relevant internally held preferences and values and the outcome is defined as the consumption experience. The proposition by Holbrook and Stern can only apply to a product or service that can be consumed by some form of interaction, in the case of automobiles this could be through test driving the vehicle, but this is unlikely to occur for under-the-bonnet improvements, no matter how innovative or novel they may be. For example, the achievement of the highest accident crash rating or similar improvements in occupant safety zones in automobiles are unlikely to be consumed before they are appreciated. As such it is logical to presume that not all values can be defined as consumption experiences, for consumers to be attracted by these types of credence products, the manufacturer must ensure consumers have enough information to form an assessment (Gobeli and Brown, 1987).

Scherer (1999) suggests that internally held values are likely to be established well in advance of any consumption stage and are activated in the appraisal process when consumers come face-to-face with a situation, object or event for the first time. This still assumes some form of prior experience or familiarity and they could be more psychological in nature than material values as was found in the research by Stradling (2002) into the benefits obtained from car use, which identified image and personal identity as key aspects that reflected their success and happiness. Botschen et al. (1999) gives some support to this view, in this research it was found that consumers only search for products that will fulfil the benefits and values sought. There is evidence to support this notion that personal values give a clearer understanding of consumption patterns especially if those values are implicit, as they will affect what specific choices are based on, and what is or is not valued for a wide range of products (Erdem et al., 1999; Allen, 2001).

Mandler (1981) points out that, in the absence of any other evidence, default values will define the expected and normal values for any particular variable, that is, any gaps in product or service perception will be filled by internally held values that have been developed through extensive experiences. Mandler proposes that those experiences define what will become usual and familiar. Depending on the extent of a consumer's experience, any shortfalls will invoke differing levels of search behaviour to fill those gaps.

2.2.10 Search Behaviour

Several frameworks have been developed to improve our understanding of search behaviour, including four relating to the purchase of new cars. First, Kiel and Leyton (1981) suggest there are low, high and selective information seekers. Second, Furse et al. (1984) suggest low, high and self-reliant approaches to information gathering. Third van Rijnsoever et al. (2009) found relationships between attitude and behaviour to car purchasing by establishing links between information sources and the most important aspects of car purchase, they found correlations between involvement with cars, using Bloch (1981) AIS scale, and the amount of information sources. Fourth, Sasu and Ariton (2011) offer a more detailed framework based on the number of information sources used by the consumer as well as search intensity.

%	Number of Information Sources Used	Search Intensity	Behaviour displayed
45%	Medium	Low	This group has visited relatively many dealers, has discussed with many sales representatives and made several test-drives. They enjoyed the car buying process the most, they see themselves as having a low control level on resources and don't have a very optimistic attitude towards technology or innovation.
25%	Large	Moderate	In making the final decision, these consumers used the most brochures, they consulted the most sales representatives and made the most test-drives. They are moderately optimistic and innovative when speaking of technology.
25%	Large	Low	They gathered information from many sources but the number of searches within each source was the smallest, these consumers being reserved when it comes to new technologies.
5%	Medium	High	These consumers are very optimistic about technology and innovation.

Table 4 - Search Behaviour - Compiled from Sasu and Ariton (2011, p.23)

2.2.11 Consumer Concerns about Product Innovations

Unsurprisingly purchasing a high value product creates more concern in the consumer because of the feeling of uncertainty and risk in choosing the right product. In addition to the financial and psychological risks there may also be concerns about the adoption of new technology (Ozaki, 2011; Barnett, 2012). A report into passenger cars by the Energy Saving Trust (2007) suggests a growing reluctance for consumers to take up new technology through lack of knowledge, familiarity or experience. They found that early adopters of new technology represented only 2.5% of the total market and early buyers a further 12.5%, the remaining 85% being the mass market, who adopt a 'wait-and-see' approach to new technologies and innovations.

Because newness often implies innovation, and innovation often implies new technology, research has shown that some consumers display a resistance to new innovations, even technophobia (May, 2011), and that such resistance and phobia can become a real barrier to adoption for some products (Brosnan 1998; Wiedmann et al., 2011). Brosnan (1998) suggested that 85% of the population were hesitant or resistant to new technology and proposed three consumer technology typologies: Eager Adopter: loves technology and is the first to try any new gadget; Hesitant 'Prove It': uses technology but finds the learning curve steep and encounters problems and Resister: keeps away from technology feeling they will never learn or absorb anything from it. Rowley (2000) argues that the resistance is to the use of technology, rather than technology, albeit the main problem being the complexity of options that confronts consumers during the buying process. Unless care is taken about introducing how to use new technology, consumers can be alienated very quickly resulting in resistance and possible rejection (Mukherjee and Hoyer, 2001).

To some extent concerns about new technology and innovation resistance may disappear with the passage of time. Currently, it has been suggested that with regards to technology, consumers can be placed into two groups, digital natives and digital immigrants (Steinberg, 2012). Digital natives are children of the 90's who have had Web access and mobile technology their entire lives as opposed to digital immigrants who were introduced to technology as adults. In terms of information a digital native is not disrupted by a non-linear narrative and is happy in receiving and piecing information in any order together, whereas digital immigrants need the whole story, a beginning, middle, and end, and in that order.

In addition to technology concerns, there are a number of risk-related adoption barriers, such as financial risk. The main causes for uncertainty include:- performance risk - will it do what I want it to do; time risk - how much time will it take up and social risk - will it be acceptable within my social circle, all these issues add to the feelings of uncertainty (Wiedmann et al., 2011). The level of risk in purchasing situation depends on the product, low value and frequent purchases such as milk, or soap, require minimal involvement by the consumer (Dholakia, 2001). For high value products involvement risk is much higher and is defined by the consumer (Richins and Bloch, 1986). So what defines product newness and what do individual customers regard as innovation?

2.3 NEW PRODUCT DEVELOPMENT

This section assesses what defines product newness and what is an innovation from the perspective of the consumer. This assessment leads into a discussion of product development theory in order to identify the hurdles that face manufacturers, with particular reference to the automotive industry.

2.3.1 Product Newness

There are three main categorisations of how consumers process product newness, as defined in the following table:

Categorisation of Newness	Process	Authors
Perceptual	Directly grasped during product exposure	Michaut et al. (2001a)
Epistemic	Requires reflection on the part of the consumer	Michaut et al. (2001a)
Conceptual	Reconciling the unfamiliar	Nurrenbern and Robinson (1998)

Table 5 - Product Newness

Michaut et al. (2001a) proposed that the way in which the product newness is considered influences the perceived value of that product and also its success on the market. They suggest newness is a two-dimensional structure comprising ‘perceptual newness’ and ‘epistemic or conceptual newness’. Perceptual newness is described as “elements consumers

directly notice during product exposure" (Michaut et al., 2001a, p.2) making it easy for the consumer to identify and be comfortable in their association with the product. Brewin (1989) refers to this stimulation as an affective process that draws on prewired knowledge that is non-conscious process and activated without intention or awareness. However, individuals hold affective preferences, their likes and dislikes, these have a moderating effect especially when processing old and new judgements (Zajonc, 1980).

In comparison epistemic newness are "elements that require more information processing and reflection" (Michaut et al., 2001a, p.2) for products that require more thought, reflection and activate cognitive stimulation. Hofstadter (1998) suggest this prompts an automatic trigger of identification using internally held recall in the process. Bennett and Dewar (2004) propose epistemic knowledge is accumulated through two stages: the knowledge required to create knowledge that is new to you, and the knowledge required to decide whether an argument is valid.

The expectation is that perceptual newness is a prerequisite for product success (Michaut et al., 2001a), even though epistemic newness is key to holding a consumer's interest/ intrigue, it can only commence once the product is noticed. This recognition process can be extended if there are numerous elements of epistemic newness to the point where consumers have negative reactions to the product; this is supported by Rogers (1995) view, if the product is too complex it can become a potential barrier to adoption by the consumer. Chapman (2005), suggests that regardless of the level of complexity something must be altered if it is to be noticed and advocates a policy of Just Noticeable Difference (JND) - small changes that are mild jolts that change the flow of information and perception, but not enough to alienate the consumer.

Other authors take a rather different approach to the notion of conceptual newness. Berlyne (1966) argues that epistemic behaviour is motivated by conceptual conflict, this in turn stimulates exploration i.e. curiosity and to achieve this it is necessary for products to have an inadequacy of information. The stimulation involved can be diverse, such as novelty, surprisingness, complexity, change or variety, all of which are collated variables as they all have some collective impact. Berlyne (1966) suggests that these aspects of stimulation can be instantaneous, it is not necessary that they are preceded by the receipt of partial information; however the conceptual conflict must be reconciled. Moors et al. (2003) hold

that conceptual newness is an end-state, an outcome of new products. In the case of automobiles consumers would need to comprehend what the new model has to offer; its appearance as well as any technical innovations. Moors et al. (2003) argue that new products and services can only be successful if consumers have a good understanding of the newness (and benefits) of the new products and services, that is of the conceptual newness of the product.

Nurrenbern and Robinson (1998) argue that the notion of conceptual newness is of a higher order than perceptual and epistemic newness; they suggest that for conceptual newness you need questions that require you to formulate an answer rather than simply to recall something or to activate an algorithm. Nurrenbern and Robinson (1998) suggest such high order questions provide the following: an understanding of the underlying idea; explaining the unfamiliar; transferring knowledge to a new situation; adapting an explanation to a new situation; identifying the underlying concept and visualising a system to reach a conclusion.

On this basis, although perceptual newness captures your initial attention, epistemic newness is required to stimulate further interest and raise further questions about the product, with the proviso that if a product is too complex, or raises too many questions (Rogers, 1995), then an answer may not be found. The evidence suggests a number of reasons for differences in consumer perceptions of product complexity.

2.3.2 Complexity

Product complexity is moderated by the actual newness of the product (Gregan-Paxton and John, 1997). Gatignon and Robertson (1991) suggest that consumer perceptions set the level of how novel or innovative a product is, whereas Rogers and Shoemaker (1971) point out that it does not matter if the idea or product is new, as measured by the lapse of time, if the idea seems new to the individual, it is an innovation. The difficulty and importance is capturing those perceptions (Kotabe and Swan, 1995).

Berlyne (1970) and Ziamou (1999) suggest the degree of newness is perceived differently by producers and consumers. This is supported by Johannessen et al. (2001) who suggest that the questions of “how new?” and “new to whom?” are closely linked and should be considered in all new product development. From the manufacturer’s viewpoint complexity has both

internal and external elements (Lindemann et al., 2009). External elements comprise competitor products and consumer diversity, both providing and demanding increasing levels of innovation, whereas internal elements require the need for expertise and processing capabilities, not only to develop innovative products, but to keep pace with what currently exists and is demanded by the market.

Feeding these needs can be problematic, Chapman (2005) suggests more is less and questions whether our experiences have developed with equal pace with the gadgets and gizmos that are being produced, liking it to a Swiss Army knife that is crammed with functions at the expense of usability. A report by Warman (2011) estimated that in 2010 there was a £52 billion gap in what consumers paid for and the features they actually use and 51% of consumers expressed frustration in the use of at least one of their gadgets; the report suggests that ease of use, rather than increased features, is technology's new frontier. This appears to have some merit, an article by Wilcox (2012), suggests that the reason why Apple, Google and other companies post so many how-to videos online (small instructional video guides) is to try and reduce the amount of product returns and exchanges, 57% of returns (in the USA) are cited as being defective, whilst the real reason is they are too complex and the purchaser does not understand how the device works.

One car manufacturer, Volvo, supports this view, an article by Tobin (2012a) reported that in June 2012 the head of Volvo, Stefan Jacoby, admitted that their cars were too complex and that 75% of their customers were not aware of the possibilities of their cars. In the same article Tobin (2012a) suggested that less is more and reported a shift in customers buying basic cars without extras, yet just a few weeks later the same author reported that consumers would not forego some of the safety and comfort features they had become to expect (Tobin, 2012b). This presents some conflict as a lot of safety and comfort features are highly innovative (Knapman, 2012) – it appears that consumers seem to want features they don't understand and 'safety' becomes an issue. For one manufacturer, Ford Motor Company, one particular innovation became problematic. Ford introduced a 'Torque Vectoring Control' system (TVC) fitted to their Focus model but no one understood what it did or how it worked, so a year later, Ford had to develop a communications strategy giving detailed description and customer benefits to overcome customer resistance (Wood, 2012; English, 2013).

Yet there appears to be no slowdown in the development of highly complex new products in the automotive industry. New collaborations with leading technology companies are continually being formed. For example, Toyota are working with Microsoft to develop a Telematics system that turns a car into an information terminal, not only for communications and satellite navigation, but also for software updates to the engine management systems (Wilcox, 2011). In the USA, Ford Motor Company are working with Google to develop a car that will know where you are in the world, and at what time. This is linked to the recall of previous circumstances to make predictions about what it is to be used for, such as at 7:30 AM on a Monday it would recall that you are almost certainly driving to work and would check traffic congestion and plot a route accordingly. In time they expect the system to predict driver behaviour and optimise the performance to suit driving styles and types of journey (Pell, 2011). This may appear to be far-fetched, however Google have developed a driverless car in the USA, where the states of Nevada and California have legislated to allow such vehicles on their roads, and Mercedes is to introduce a system that will drive itself up to a maximum speed of 25 mph in the new S- Series 2013 model, which they say is useful in slow moving traffic congestion (Gillespie and Tobin, 2011).

How acceptable these advanced innovations will be to consumers' remains to be seen. Driverless cars and automobiles that predict driver behaviour may involve other aspects of concern for consumers beyond complexity. There is evidence to suggest exposure and usage with a product or innovation reduces complexity levels whilst creating familiarity with the product.

2.3.3 Product Familiarity

Mandler (1981, p5) suggests that it is a "pervasive human characteristic to prefer the known to the unknown, the usual to the unusual, the familiar to the strange". A number of authors suggest that increased use of a product reduces complexity as they become more familiar and comfortable with the product (Park and Lessig, 1981; Zaichkowsky, 1985a; Chapman, 2005; Hutchinson and Eisenstein, 2008; Lakshmanan and Krishnan, 2011; Reynolds and Ruiz de Maya, 2013). This may be the case with some high-frequency repeat purchases that are low in value, with high-value infrequent purchases this argument does not hold completely. Usage of the product will be relevant where some pre-experience exists, for example in the case of cars, the ownership or use of the previous model. Park and Lessig (1981), suggest that the

highest level of familiarity is ownership, later research by Park et al. (1994) found that memory recall was more accessible to consumers than knowledge accumulated from other sources. Familiarity with a product can have positive as well as negative connotations, Hutchinson and Eisenstein (2008), suggest that over-familiarity can disappoint through habituation - the same old thing, particularly where a product is in decline; a case of familiarity breeding contempt.

Others argue that modern consumers are short distance runners and that the deflowering gaze of familiarity begins to grow as they outgrow and demystify their current product as they begin to search for the next newer or shinier model - a faster car or a larger TV (Chapman, 2005). This is prevalent in industries where continuing evolution is the norm, such as the automotive industry with the never-ending introduction of new models.

Nevertheless, familiarity of a product is an important variable in the initial exposure to a new product (Laroche et al., 1996); even fleeting experiences have some value as consumers act on those prior experiences which provide consumers with prior knowledge to mediate their final judgement (Sujan, 1985). The way we act and respond to the world is largely conditioned by prior experiences, some of these are subconscious experiences that establish strong durable connections with users on both rational and emotional levels (Chapman, 2005); Johannessen and Olsen (2011) refer to this as tacit knowledge - the things we instinctively know. That level of knowledge is dependent on the depth of exposure and familiarity, whether that be casual use or ownership of the product, and is not limited to just previous models but also similar alternatives (Kressmann et al., 2006). There are many ways that knowledge can be acquired, Johnson and Russo (1984) suggests that no one study could examine them all, however where most correlations for familiarity are sought between usage and direct experience, they suggest the most overlooked source of familiarity is advertising, which is arguably the most important communication for the introduction and exposure to new models.

In terms of consumer choice, research by Barroso and Llobet (2012) found the awareness process can be significantly sped up by advertising and is crucial in making consumers aware of the existence and characteristics of new products, especially where there are a large number of products in the market. They found that consumers were only aware of a limited number of alternative products when they are in market, relying on past experience of

product usage and information spillovers of other products sold by the same firm, this can be particularly powerful when vehicles that generate 'buzz', spur sales of all the other automaker's vehicles (Train and Winston, 2007). Research by Kreuzbauer and Malter (2007), support the view of information spillover, particularly where brands share similar lines and appearances as they come together under the same umbrella, Keller (2003) refers to this connectivity as brand personality or heritage. This suggests that familiarity for most consumers is of a very localised nature, in fact it has been suggested that the last purchase experience is the best information for the next purchase and that some buyers only purchase on that basis (Paredes, 2011). In contrast, Kreuzbauer and Malter (2007), suggest that the familiarity of several prior car experiences formulates our concept of a car, but Morton et al. (2011) point out that this cannot hold for first time buyers who have to rely on the experience of others or product information sources.

Mantonakis et al. (2008) found that familiarity uses two types of information, implicit knowledge formed from prior experience without any conscious awareness and explicit knowledge formed from observed effects giving conscious awareness. Danneels and Kleinschmidt (2001) suggest that more importance should be attached to products having a familiarity fit with consumers - what they know and expect from a particular product. If this is the case then the path to increasing awareness is to employ communication methods that increase the explicit components of familiarity. Sometimes there is confusion between familiarity and expertise.

2.3.4 Expertise

Hutchinson and Eisenstein (2008) suggest a positive correlation between familiarity and expertise, but it is argued here that familiarity is built on product experience and so is different to detailed expertise. Peter and Olson (2010) found that most consumers use heuristics, i.e. a combination of processes when making decisions. Heuristics tend to be simple and are applied when needed and adapted to a given situation.

Chi et al. (1982) suggest that experts categorise problems differently than novices, for example physicists look at the deep structure (underlying principles); they look at things that will solve the problem rather than novices who look at surface structure (features). Hence they propose that is it not just the acquisition and memory recall of information that

differentiates a novice from an expert, it is the difference being the depth of knowledge and how it is stored.

Experts also store information in chunks and during retrieval one chunk may activate another. This provides them with the ability to recognize patterns in the task consideration on the basis of past experience. A good example of this is in chess. Experts recognize perceptual chunks, those typical and distinctive layouts and movements of pieces which they have acquired through practice and study, and stored in long-term memory, these are recalled when considering their next move (Connors et al., 2011). Research by Bettman and Sujan (1987) found that consumers can develop a great deal of expertise within a particular product category over time; this suggests novices can develop their levels of information through familiarity.

Even with a high degree of familiarity there are limitations to technical knowledge of complex products. Loginova (2010) suggests that complexity varies along a continuum rather than a polarised novice/expert effect, earlier work Gregan-Paxton and John (1997) proposed that the perception of product complexity varies considerably between novices and experts, surmising that novices are likely to be more perceptual than experts who, with more in-depth product knowledge, would probably be more epistemic in their evaluations of newness. Whereas Alba and Hutchinson (1987) simplify consumer knowledge into two major components, familiarity and expertise; whilst similar to the novice/expert categorisation they propose five distinct aspects of expertise:

Aspects of Expertise	**Description**
Simple repetition	Reduces the cognitive effort required to perform the task… leads to performance that is automatic
Cognitive structures	Ability to differentiate becomes more refined as familiarity increases
Ability to analyse information	Improves as familiarity increases
Ability to elaborate on given information	Improves as familiarity increases
Ability to remember product information	Improves as familiarity increases

Table 6 - Aspects of Expertise – summarised from Alba and Hutchinson (1987)

Alba and Hutchinson (1987) suggest these aspects can be improved as product familiarity increases - supporting the view by Loginova (2010) that familiarity/expertise is a continuum.

The degree of familiarity and/or expertise will raise or lower consumer views of what is new in a new product. For example, Alba and Hutchinson (1987) suggest novices are likely to view products non-analytically compared to experts, who actively seek more information simply because they know it is likely to exist; novices rely on recall (familiarity) and fewer details. In contrast Sujan (1985) argues that knowledgeable customers are less likely to be extreme in their evaluations than novices, due to what they think they know, later research supports this view. Wood and Lynch (2002) found that experts tended to punch above their weight describing it as overconfidence – a feeling of knowing phenomenon, a prevalent bias with people assuming they know more than they do; findings by Mehta et al. (2011) revealed that sometimes experts had a hard time recalling product features and simply filled in missing information, basically they took a guess.

Moreau et al. (2001) found that even experts with their entrenched knowledge require supplementary information when faced with a discontinuous innovation. In addition, Johnson and Russo (1984) found that experts rely on their knowledge to limit their searches for information and their analysis of prior knowledge revealed an 'inverted U' effect where information searches were more likely to be carried out by consumers who were moderately familiar than those who were highly familiar with the product. There is a danger here that if experts use what they think they know, rather than what they do know they will overlook a lot of information, this can become problematic, as expert advice is known to sway consumer demand (Simonsohn, 2011).

This is important as it demonstrates why the perception of the degree of product complexity varies between novices and experts, and their understanding of new products. Peter and Olson, (2010), expand on this; they suggest that during a decision-making process, only experts and motivated consumers, with high interest in the product, seek out more detailed information. Their evidence suggests that although information is available, it is not at a level that consumers understand and this is something that needs to be resolved by marketers.

Yet this is not new, it has been a problem for some time. Johnson and Russo (1981) wrote that simply providing information is ineffective, especially for technically complex products and attributes. They suggest information relating to the importance and benefits of attributes must be provided to help consumers make better decisions. Yet, at that time a study on search behaviour for new automobiles, argued that the availability of information was so rich that even unknowledgeable consumers could acquire enough information easily and that there was no difference in the possession of product knowledge between more experienced and less experienced consumers, the study concluded that manufacturers did not need to educate customers, they only needed to supply specific product information (Punj and Staelin, 1983). This may have had some validity back in 1983 but at that time complex developments were rare. For example, it was 1985 before anti-lock braking systems (ABS) began to appear on UK cars - even today there are a lot of people who still do not understand what it actually does (Gibson, 2010). Current vehicles are highly complex and sophisticated, even with greater access to modern day information cars are less understood by the general public than they were in 1983.

More recently, Cowley and Mitchell (2005), proposed that experts remember functional attributes compared to novices who remember functional benefits, but it would seem that an understanding is required before any benefit can be established. Sometimes benefits can be assumed; Hutchinson and Eisenstein (2008) found that whilst experts decide on the technical aspects, novices simplify this - if it has a lot of technical aspects it must be better, regardless of if those aspects are what they need. However, in the automotive sector research by Wiedmann et al. (2011) found the main barrier to adoption for consumers with low levels of technical knowledge, was lack of information. Innovation theory provides more insights into how this information is diffused.

2.3.5 Innovation Theory

The concept of innovation is associated with technical progress and creativity and innovation theory states that everyone is creative (Kirton, 1994). Kirton (1994) suggests that as part of the creative process, people respond to and/or seek out changes that the creative process brings, some more than others, but the assumption is that change is a constant phenomenon. For manufacturing it is fundamental to their viability that they continually produce new innovative products, however Kirton (1994) states that adaption is more prevalent than

innovation, mainly because for manufacturing it means it involves less risk, but for a consumer it usually means only a change in how it is used; Daniels and Henry (1998) suggested that organisations tend to favour the adaptive approach.

If the philosophical arguments that people recognise forms are accepted, and when those forms change they have to make choices, adapting may be the easier choice, providing the adaption is still recognisable. How people recognise a change, an adaption, or an innovation, is an important part of innovation theory, i.e. how innovation theory explores how innovations are diffused, if this process is not undertaken correctly then often the innovation can be overlooked (Rogers, 1995). Talke et al., (2009), suggest that new products have design and/or technical newness and although each aspect is quite different, the focus of innovation is centred on the technical aspect. Product innovativeness is not usually assessed from a design perspective (Demiröz, 2007), but visual appearance is still seen as the key trigger in product diffusion (Talke et al., 2009). A meta-analysis by Kock (2007) found that innovativeness on its own could not be relied on for product success. An example of this in the car industry was the launch of the new Volkswagen Passat in 2010. Although this model was completely new and technologically advanced over the outgoing model, it was seen at first glance, as being no different to the previous model, when in fact only the roof had been carried over from the previous model (Conway, 2010)

From a producer's point of view, Meyer and Roberts (1986) suggest that comparison of past and present products, are measurable along two basic dimensions. The first is the newness of technology in the product compared to technologies already developed by the firm; the second is the newness of the market application for which the product has been developed. Cooper et al. (2002) believe innovation is more complex that just a measure of a product's technical attributes. These authors differentiate among three types of innovations; repositioning of existing products (minor improvements), new to the firm (but not to the target consumer) and new-to-the-world (not seen before). All three classifications are based on the view of the manufacturer and although Cooper et al. (2002) suggests an innovation is more than just technical attributes their classification still suggests an innovation is about the manufacturer's technical capability.

Gobeli and Brown (1987) classified technology into four types of innovation, bringing together the producer and consumer aspects, firstly incremental innovation (repositioning)

which incorporates only a small amount of new technology and only a few new benefits for the consumer, secondly technical innovation (new to the firm) which embodies technology that is new to the industry but is not perceived as providing many new benefits to the consumer, thirdly application innovation (in effect this is new to consumer) which does not utilise significant new technology, but requires changes in consumer usage behaviour (implied newness) and finally radical innovation (new-to-the-world) is completely new technology that has not been seen before and requires significant changes to existing consumption patterns. Again, these classifications are mainly based on the technical capability of the manufacturer.

There are similar views by other authors. Robertson's (1971) view is that new products can be classified along a continuum depending on how continuous or discontinuous their effects are on established consumption patterns. A continuous innovation has the least disruption to consumption patterns such as annual new model automobiles (incremental) compared with a discontinuous innovation which involves completely new consumption patterns (radical) and the creation of previously unknown products, such as the first personal computer. However, new consumption patterns may not always be radical in terms of conceptualisation, Aristotle philosophised that a house is still recognisable as a house regardless of what it is made from. Similarly there have been several stages of music consumption such as vinyl records, tapes, mp3 players etc., they were innovative, but not really disruptive as they were all still forms of listening to music, only the interface had changed (McCormick et al., 2012). Urban et al. (1996), Veryzer (1998) and Hoeffler (2003) add a further dimension – really-new-products, a commercial discontinuous innovation, these are products that are perceived as being really new regardless of whether or not they incorporate new technology such as the Sony Walkman which utilised existing technology in a new way.

Hauser et al. (2006) highlight the need to identify and measure consumer innovativeness, they see this as key in identifying those consumers who are more likely to adopt new products. This approach will also allow companies to target their products more effectively. Yet if it is difficult to measure product innovation, it is unlikely that a measure of consumer innovativeness could be identified, in fact Blythe (1999) suggests it may be impossible to determine what innovation is in a new product, in an objective way, and that what consumers are really assessing is the product's newness. However, Ozaki (2011) argues that consumer perceptions of innovations are better predictors of adoption than using lifestyle profiles or

demographic data such as household income, education, age etc., although some measurement is needed to identify an optimum level of these perceptions.

2.3.6 Optimum Range

There appears to be an optimum range on the continuum of newness that consumers will understand. At the lower end would be minor incremental innovations prompting some interest, compared to the higher end radical innovations which create intense interest. Research by Michaut (2004b) found that new products that fall outside these optimum limits were likely to be rejected because they were 'not new enough' or 'too new', the more complex products meeting initial resistance when they are unable to reconcile them with known or familiar products. Early work by Wundt in 1874 (Berlyne, 1960) found that while stimulation was pleasant at medium intensities, it became unpleasant at higher intensities resulting in a lower evaluation of a product and proposed that optimum stimulation levels should be sought. Schoormans and Robben (1997) support this view by proposing moderate changes are the optimal level for maintaining interest and attention, even when the evaluation process begins to decline. The evidence suggests an optimum level of newness can be found through a process of categorisation.

2.3.7 Categorisation Theory

There is a general acceptance that consumers place products into boxes (Meyers-Levy and Tybout, 1989), perhaps by features and benefits - what they are and what they do. Sujan (1985) suggest that experience, prior knowledge, product use, ownership and familiarity are used to classify subjects on a single meaning. Although these may be valid, categorisation theory suggests that consumers relate physical issues to perceptual experiences, a two part combination (Medin and Barsalou, 1990). Categorical perception is defined as the use of sensory information in the identification process, such as noises or colours. This is combined with generic knowledge, the stored memories concerned with representation of physical things as well as experiences, such as what a car is, or going out to restaurants (Medin and Barsalou, 1990). The information from sensory perception and generic knowledge are then analysed into component parts or attributes and share similarities such as colour and shape, for example a Robin and a Canary, although different in colour would still be identified as a bird (Techman and Evans, 1999). This supports Aristotle's philosophy that a thing is whatever it is by virtue of its form (Magee, 2010).

Some products are categorised by how they make us feel or by things they remind us of, these similarities can be pooled into emotional characteristics. For example, it is commonly said that the arrangement of the cars headlamps and radiator grill can portray a happy or sad face, or a house can be described as being friendly or welcoming because of its ambience (Chapman, 2005). The outcome of categorisation depends on how well it is defined. Sometime this is not possible and results in fuzzy categories; particularly strong perceptual deviations in new products can affect product categorisation and become unacceptable (Schoormans and Robben, 1997). Medin and Barsalou, (1990), suggest this is because categories are not formed on the basis of rules but on similarity relationships, this is where physical attributes are related by resemblance to other attributes, for example wings and beaks are more likely to be related to flying than swimming. However, how quickly these assessments are made depends on the complexity of the categorisation process (Luhmann, et al., 2006) and may still result in fuzzy or undefined categories. Clearly there is an intersection of categorisation and innovation theory, particularly when choices have to be made and these intersections should be considered when developing new products.

2.3.8 Product development theory

Kotler et al. (2001), state that a product goes through a product lifecycle of introduction, growth, maturity and decline. As a result there is a constant need to introduce new products to replace the income and profit that will no longer be generated by current products. Product development theory is concerned with the complete process of bringing a new product to market; Kotler et al. (2001) suggest a nine step process as follows:`

New product strategy
Idea generation
Idea screening
Concept development and testing
Marketing strategy
Business analysis
Product development
Test marketing
Commercialization

Within this framework there are a number of hurdles that manufacturers will have to overcome depending on their resources, not only in finance, but also in expertise and capability, not just within the firm but from outside resources as well. This is also dependent on the firms view to new product development, which can be an ongoing proactive process to take advantage of new market opportunities, or a reactive process where nothing is done until a competitor introduces a new idea that they must follow. Ozaki (2011) suggests that whatever a firms resources are, they must adopt a sustainable innovation policy if they are to continue to prosper, this means that sometimes they will lead in the market and other times they will follow.

A proposal by Rothaermel and Deeds (2004) suggests that exploratory and exploitation alliances on product development have significant benefits. In the automotive industry some manufacturers have formed alliances with other manufacturers to collaborate on new product development. Some alliances are exploratory in nature to share development costs; others are sharing of technology as well as manufacturing capability (Agrawal et al., 2013). Some, but not all of these exploitation alliances are successful, for example when Ford Motor Company took over Jaguar in 1989, they shared the Ford Mondeo chassis with the Jaguar X-type introduced in 2001. Mondeo owners viewed this as a positive, prestigious development, whereas the Jaguar owners saw this is a very negative step backwards. In reality the use of the Mondeo chassis had a major improvement on the quality of the Jaguar (Morley, 2006).

The first step to take in new product development is for the manufacturer to identify consumer needs and usage that can then be turned into opportunities (Urban and Hauser, 2004; Vercauteren, 2005). This enables manufacturers to identify existing market gaps that can be turned into product opportunities, providing the cost to develop them are feasible so that the products are not only successful but profitable (Loch and Kavadias, 2008).

In the main, most product newness literature views the product from the perspective of the technical resources and manufacturing capability necessary to produce the product. Consideration of the consumer's perspective on new products is not given much attention, Moultrie and Fraser (2004), found there was insufficient attention given to the needs of consumers, mainly because product development staff had very little training in identifying consumer needs despite it having significant impact on new product performance (Henard

and Szymanski, 2001). How product development theory is applied in the automotive industry and how new product development (NPD) is managed, is discussed in the following section.

2.4 NEW PRODUCT DEVELOPMENT IN THE AUTOMOTIVE INDUSTRY

Having considered newness from a consumer's perspective it is appropriate to look at academic studies related to how products are evaluated and specifically developed by automotive manufacturers. In the case of the motor industry most manufacturers introduce new models annually with only a few minor changes, (Wiseman, 1971). Indeed many manufacturers introduce similar products having changed only one attribute of the product (Meyers-Levy and Tybout, 1989). Nearly eighty percent of new Fast Moving Consumer Goods (FMCG) reviewed in a report by Ernst and Young in 1999 (in Morris et al., 2003) are either me-too (copycat or similar) products or line extensions (to existing brands).

In 1963, style changes in the automotive industry were seen as an important market weapon which had to be a continual process, as any changes only lasted until others imitated it (Menge, 1962). By 1971, NPD in the automotive sector was focused on automotive styling (Sherman and Hoffer, 1971), as this focus continued and styling cycles lengthened, car sales declined (Hoffer and Reilly, 1984) reaching a point where cars produced by the volume automotive manufacturers were only differentiated by minor technical improvements and minimal styling differences (Lamming, 1993). In an attempt to create an ongoing interest incremental cosmetic changes are made on a quarterly basis, these are known as "product freshenings" which are intended to keep the product alive as opposed to the impact of a new model (Wright, 2004; Wright, 2005); discussions with the Advanced Product Group (APG) at Ford Motor Company in 2012 revealed that this is still current practice, even annual models being limited to minor exterior styling changes, mostly because of development cost constraints (this is discussed further in Section 3.3.3, Meetings with the Ford of Britain Advanced Product Group).

Alba and Hutchinson (1987) argue that when new brands are formed from existing attributes of a product class they will easily be identified as a member of that class, otherwise it would be difficult to identify or grade the product (schema congruity/incongruity.) By moving away from the comparison of existing attributes, especially into another group, consumers look for

‘nearest-neighbour’ models, a shift from shared-within attributes to shared-between attributes (Meyers-Levy and Tybout, 1989, Mau et al., 2008). For example, some company car drivers in the UK downsize their grade of car to benefit from lower company car taxation, in doing so they look for similar attributes in the smaller car that they enjoyed in the larger model.

The development of new products can also involve new innovations that change how consumers interface with or use the innovation. If consumers do not know what a product does or how a product is used, the uncertainty results in schema incongruity and creates potential barriers to adoption (Rogers, 1995). Research by Ziamou (2002), revealed that providing a new interface is introduced with a pre-existing functionality, the consumers are likely to perceive less uncertainty than if it was introduced with a new functionality; familiarity reassures the consumer that the new interface will perform as promised and provide the particular functionality that they expect from the product. This indicates that new innovations are more readily accepted if they can be related to familiar/existing products rather than radical new-to-the-world innovations. To some extent this is supported by Brandes and Brehmer (2004) who suggested that future innovations in the European car industry will take place stepwise rather than in a revolutionary manner, mainly due to the changes in supply chain management (SCM) with the outsourcing of components to reduce costs and capital employed; inevitably outsourced components are taken from existing components that are available and shared across the industry resulting in any advantage in new developments being short lived (Brocard and Donada, 2002; Brockman and Morgan, 2003).

Part of the SCM strategy for automotive manufacturers, is to share common components across different car model platforms to the extent that they are collaborating on future designs and shared components. This is a world away from when Henry Ford was supposed to have offered customers ‘any colour you want - so long as it’s black’, to where it is now common practice for manufacturers to share chassis and engine components, even production lines are now producing similar models for a range of manufacturers with only minor modifications but with different brand names (Simpson et al., 2006). In fact the practice of developing new products is based on manufacturing processes and capability (Revelle et al., 1998) – an Original Equipment Manufacturer (OEM)’s core and practical competences (Whittington, 1996), these take priority over all other requirements such as user needs and wants, with very

little focus on consumer issues or involvement even during design reviews (Moultrie and Fraser, 2004).

Brandes and Brehmer (2004) suggest that the route from transforming ideas into good currency (profitable return), in these type of collaborative circumstances, is a long one and found it more common for manufacturers to focus on short-term economic goals and risk avoidance. If these arguments are accepted then it seems less likely that radical new-to-the-world innovations will be introduced in the automotive industry.

Ofek and Sarvary (2003) view was that innovation cycles are determined by the success of a manufacturer's last innovation. There is less incentive to shorten the time until the next innovation is introduced if they continue to enjoy the fruits of their last innovation. Consequently the manufacturer may invest less on research and development than the competition and focuses more on advertising to take as much advantage as possible of the strong demand for its current product.

Sometimes manufacturers are able to extend the innovation cycles particularly when new applications are found that can utilise existing technology to continue the growth and size of market; greater new product advantage corresponding to higher new product performance (Nakata et al., 2006). A good example of this can be found in the automotive industry, Micro–Electro-Mechanical-Systems (MEMS) is finding increasing use in cars – e.g. Torque Vectoring Control. The market for MEMS was $1.7 billion in USA in 2010 with a growth forecast of 10% per annum from 2009 – 2014 (Marek, 2011).

Research by Booz et al. (1982) identified that new-to-the-world products accounted for sixty percent of products that were the most successful, yet manufacturers were reluctant to introduce these types of products because of their variability of return. Their findings revealed that success of new product performance was measured by profit contribution, return on investment and sales volume. Inevitably the only advances in development resulted in additions or improvements to existing product lines and cost reduction strategies. Yet having a technologically superior product is cited as the most important factor for the introduction of successful new products (Kaiser, 1974; Booz et al., 1982; Korenok et al., 2010). Howell (2001) argues that most new products were line extensions, but that innovation had not died, what seems new may in fact be something old, but with a new twist.

By 2004, Burrus (2004), suggests that line extensions or face-lifts had come to dominate the NPD landscape with as much a 75% of all new product launches being line extensions to existing brands, Chapman (2005), suggests this is mostly due to corporations who only make changes when they have to, or as Korenok et al. (2010) found when they were forced to keep up with competing brands, this is despite that new products are key to increasing long-term financial performance (Pauwels et al., 2004).

Kirton (1994) suggests manufacturers may prefer an adaptive approach if they are content in doing things better as opposed to the innovative approach to doing things differently, particularly where they need to resolve a short-term problem or need to develop a number of elements that are required for a large-scale change. This was the case with the Swedish automotive manufacturer Volvo, consumers bought them because of their safety and solidness, but even they had to change their tried and tested design in 1998, from their characteristic boxy design, to a more sleek modern design which retained the safety integrity of the vehicle, a process of change which they called 'Revolvolution' (Keinonen and Takala, 2006). Others have not been so fortunate, in late 2010 the death of an icon in America was announced (Williams, 2010a). General Motors decided to close down manufacturing of the Pontiac brand, one of the original so-called 'muscle cars', consumers simply moved away to other brands and Pontiac failed to follow. Although not sold in the UK, the brand was fairly well-known due to various TV and film appearances, but it shows how iconic brands can become obsolete if they fail to move with the times.

Backman et al. (2007) stated that things need to change and that the fuzzy front-end design of new product development should always strive to have new concepts that will not only be a testimony to their expertise, but also attractive and available to consumers. There is a need to build excitement into new cars, but it is hard to design a mass car; manufacturers don't want to offend consumers, so they don't take chances on design (Halliday, 2005). There is some evidence that this is starting to change, in the past automotive manufacturers have displayed new concept vehicles at motor shows to give consumers a long-range vision of the direction of their products, most of these never left the drawing board, whereas they are now displaying cars that are not so far-fetched which are making it into production and the market place more and more (Srinivasan et al., 2012).

2.5 MARKET SEGMENTATION AND PRACTIONERS

This section looks at the diffusion of new products and the tools used by automotive manufacturers and their associated marketing companies in targeting and communicating new products and new product innovations. The data collection, segmentation and classifications are questioned as to their rationale and effectiveness of their consumer data, as well as the usefulness of mass marketing.

2.5.1 Market Segmentation

Consumer needs can no longer be met by a mass marketing approach, their needs are more diverse and demanding in their product requirements (Dibb, 1998). Market segmentation is a process that identifies consumer groups which share similar needs, characteristics and behaviours that may require differing products or marketing mixes to other groups of consumers (Kotler, 1991; Smith, 2009). The general rule is that the closer the needs match up, the smaller the segment, and these smaller segments often attract premium prices because customers are prepared to pay for products that are near to, or exactly meet their needs (Goyat, 2011). There are concerns that some businesses believe they are following a market segmentation approach, but are not carrying it out correctly, and those who do follow the process correctly are finding results that cannot be implemented; this is particularly prevalent where businesses view segmentation as a tactical rather than a strategic marketing tool and become entrenched in the how, rather than the why (Dibb, 1998). Vercauteren, (2005) found that it is not uncommon to find marketing campaigns are carried out without any consideration as to who may be the users of the product.

Segmentation does not imply success, but it is the first step in identifying the target market it is an absolute prerequisite to an effective marketing campaign (Dibb and Simkin, 1991). Common types of market segmentation include: geographic, demographic, psychographic and behavioural segmentation (Kotler and Keller, 2006; Malhotra and Birks, 2007; Tkaczynski and Rundle-Thiele, 2011). In addition there are many practitioners with segmented database products based on lifestages and lifestyles (Alpert and Gatty, 1969), most are discussed in the Practitioner section, but even amongst these products there is a disagreement about how these variables are defined, each having their own proprietary categorisation (Du and Kamakura, 2006). Despite these differences these approaches continue in popularity because of convenience, especially when they appear to provide an

off-the-peg solution for their marketing requirements and when there is a lack of any alternative (Dibb, 1998).

Each of these segments may require different approaches depending on the product, however the problem is that most companies know who buy their products and where they are located, but not the reason why (Goyat, 2011). This is because very little information is captured beyond demographic and geographic data and when products are matched to consumer characteristics, this profiling is usually carried out in isolation as an ad hoc exercise and as a result, they may have the reason why people buy, but still not know where they are located. More sophisticated segmentation is required which combine other variables alongside demographics to have more predictive power (Wells et al., 2010), yet this is not new, Haley (1968) stated that the future of segmentation had to move from relying on descriptive factors – the who, to causal factors – the why, but as will be seen, in the automotive sector there has been little or no movement in this direction.

2.5.2 Introduction to the Practitioners Approach to Market Segmentation

The following sections (2.5.3 to 2.5.10) provide more insight into this problem by focusing on the way in which real companies and government address the issue. This section draws on documents and literature obtained from manufacturers and associated organisations through direct requests and meetings to establish the methods and rationale that they currently use in relation to new products and consumer data. Although the following information is usually associated with methods and exploratory chapters, the literature relating to practitioners is better placed here as it does form part of the foundation of the thesis.

2.5.3 Ford Motor Company Limited

Several meetings and conference calls were held with Ford personnel and their marketing support agency, Wunderman. The meetings and calls were arranged through the Ford sponsor of this study, the details on the need for a sponsor and how this was organised is provided in Section 5.1 (introduction to the Methods chapter).

The following information was discussed/exchanged by telephone and e-mail with Branislav Bucan, Brand and Product Insights Manager - Small cars, Ford Motor Company – Europe,

during November/December 2010. The discussions covered the segmentation they use and rationale in connection with new product development.

Since 2000, under a new programme named GPS1, Ford have used attitudinal segmentation at the onset of any new product development, this was developed by Global Consumer Insights (GCI), an internal department. Responses from consumer surveys to personal attitude statements are plotted into eight semi-quadrant categories using multidimensional scaling to provide an attitudinal map (Lilley, 2004), an example follows:

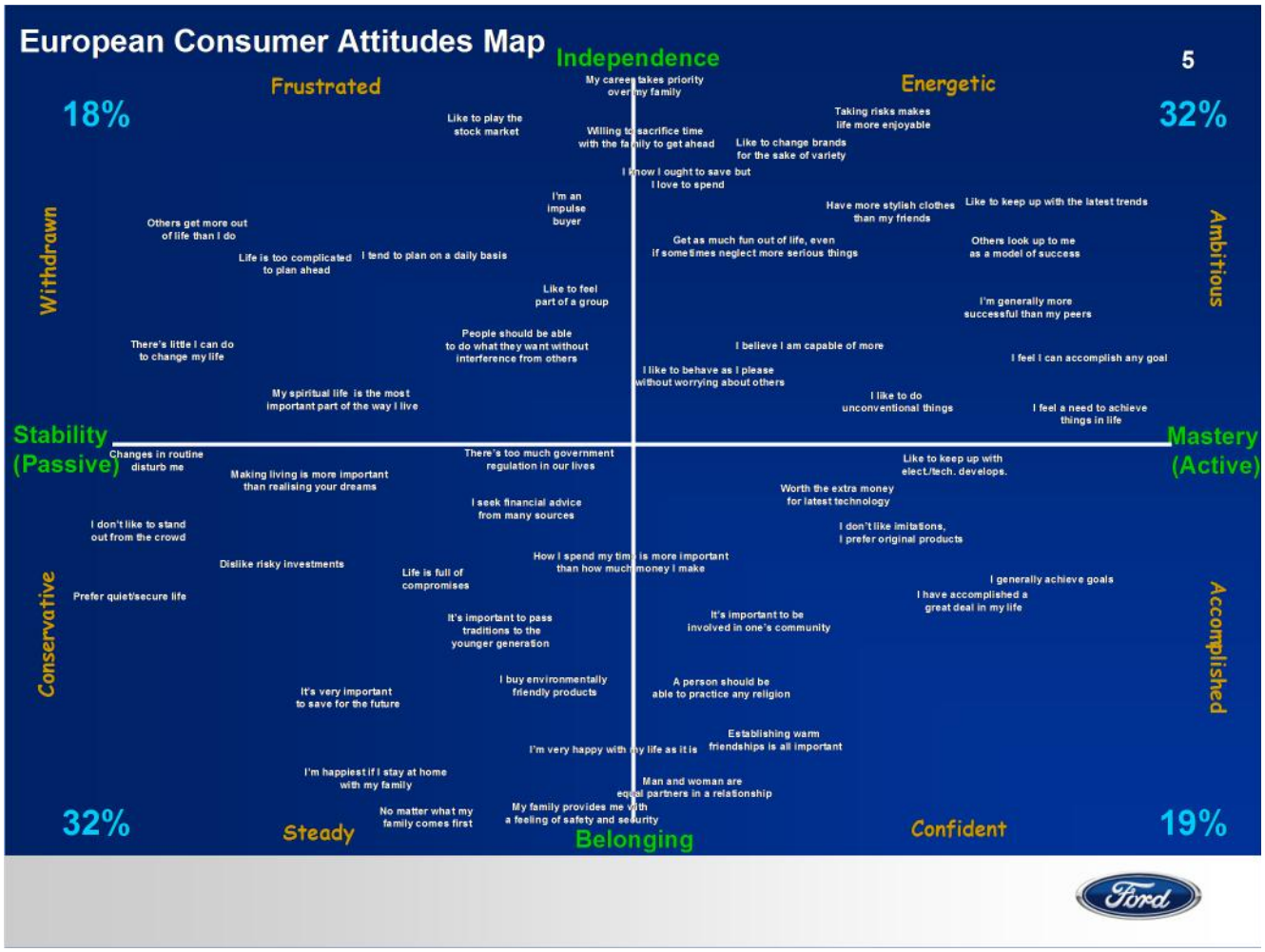

Figure 2 – Source: Permission given by Branislav Bucan, Brand and Product Insights Manager, Ford Motor Company – Europe – details supplied via email

These are then translated into lifestages (characteristics) which are then segmented into attitudinal typologies through clustering techniques. Clustering is a common method for

identifying groups of this nature (Ogden and Nicholas, 2011). This comprised 9 groups with *'hot buttons'* that characterise each segment:

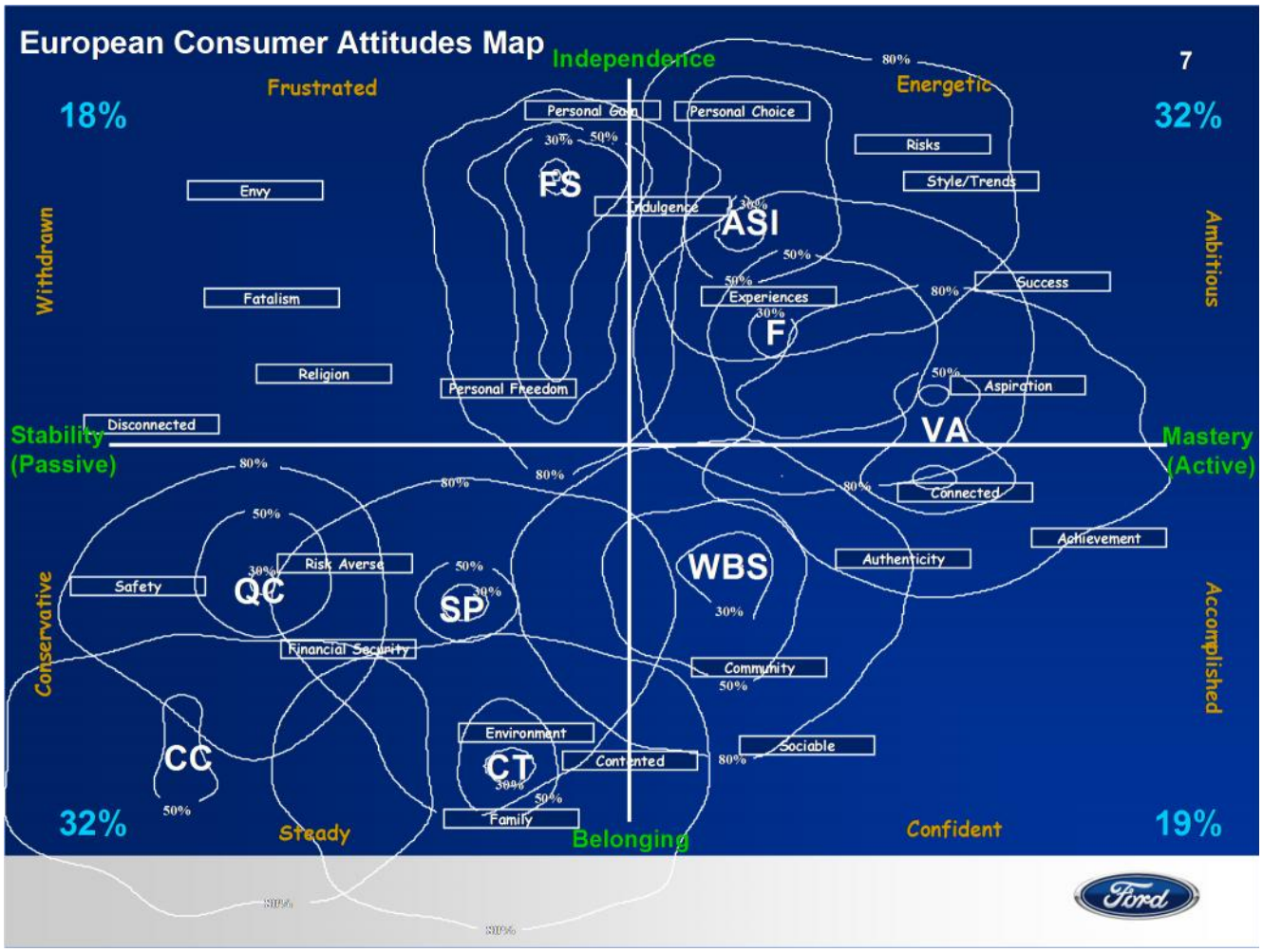

Figure 3 – Source: Permission given by Branislav Bucan, Brand and Product Insights Manager, Ford Motor Company – Europe – details supplied via email

Details of the codes used in the Consumer Attitudes Map are as follows:

FS	Frustrated Strivers
ASI	Active Self-Indulgents
F	Funseekers
VA	Visible Achievers
WBS	Well-balanced Sociables
SP	Social Pragmatists

CT Contented Traditionalists

CC Comfortable Conformists

QC Quiet Carefuls

Characterisations for each segment were also supplied but because of their commercial nature/value they are withheld in this report. There is some segmentation overlap, however it is stated that it does provide a 70% chance of identifying the correct typology.

The typologies are then overlaid with the brand positioning by manufacturer, model lines or consumer lifestage in each country providing a *'brand compass'* based on consumer attitudes that identifies own product as well as competitor positioning.

Product development is initiated through a 'Key Cost' meeting which utilises a 6 box matrix, one of which is 'Why buys?' They also use a customer base to identify the positioning of new products i.e. Is it a vehicle for today, or for the future. The research is carried out in the 'Big Five Markets' ; UK, Spain, France, Italy and Germany, the UK is usually the lead market or in the top 3 in most cases however, it depends on the product, for example Italy would be the lead market for small cars as it is the biggest market for that size of car.

Currently they usually research 3 markets (due to cost-savings) targeting 200 quantitative research respondents from each country (total 600) (questionnaire based), plus 6 to 10 in depth qualitative interviews (usually home visits) from 6 to 8 groups in their attitudinal segments (between 36 and 80 in total). The database of respondents that are used in the research are established and maintained through a network of research/marketing agencies in each country. They have never asked their groups specifically about newness in general terms, they are usually asked to comment on a specific product or idea. The result is a number of consumer profiles; the whole process is known as a *'consumerscape,'* (Lilley, 2004).

2.5.4 Wunderman Ltd

Wunderman are part of the Young and Rubicam Group (Young and Rubicam Inc, 2002), they are reported first because of their direct relationship and relevance to Ford Motor Company.

During January 2012 a number of discussions took place with Orlando Machado, Head of Analytics - Knowledge & Business Solutions – Wunderman Ltd, London. Wunderman are a major supplier to Ford for direct mail communications, solutions and campaigns, they also maintain and update consumer databases with consumer responses and requests for product/service information. The discussions covered the segmentation they use and rationale in connection with the development of marketing campaigns.

There are similarities between Ford and Wunderman in their models as well as terminology, which should be no surprise considering how close their ties are with marketing campaigns. The following example illustrates their use of lifestages and social profiles in assessing the largest revenue segments for a 'C' segment car, in this case a Ford Focus:

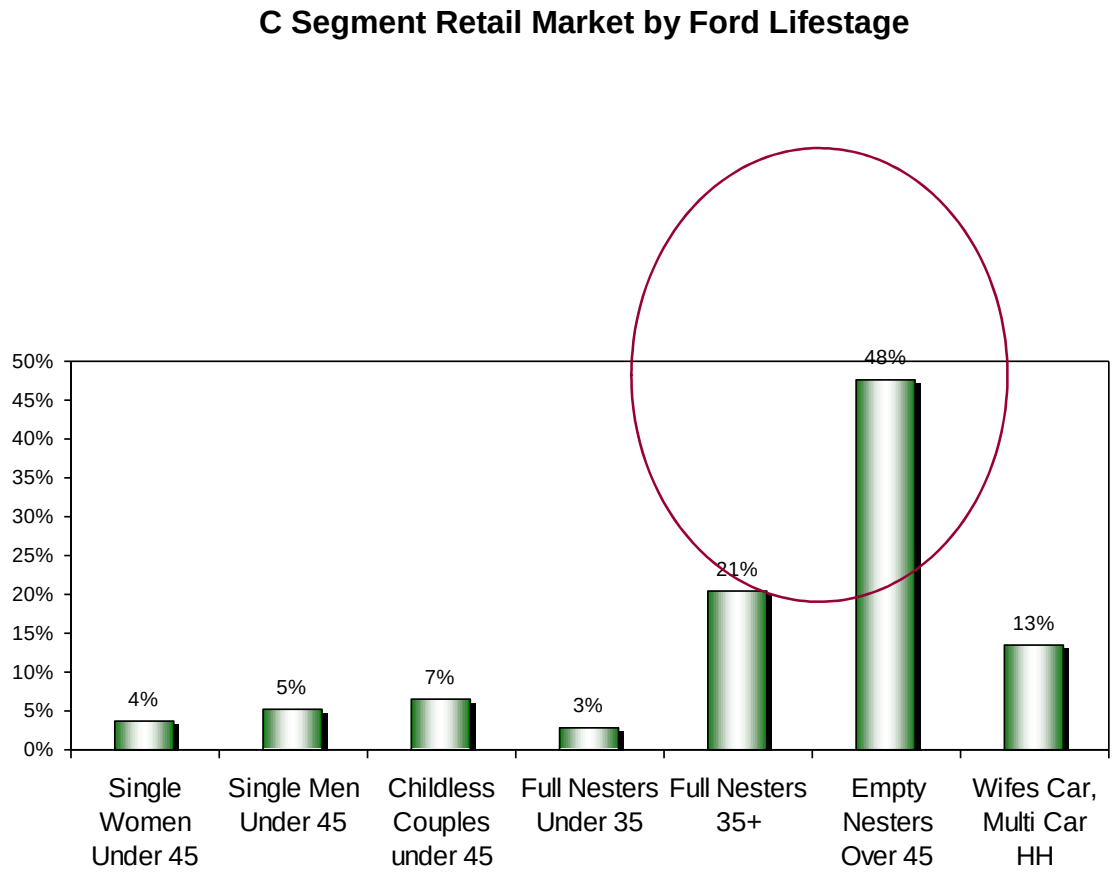

Figure 4 - Source: Permission given by Orlando Machado, Head of Analytics - Knowledge & Business Solutions – Wunderman Ltd, London - supplied via email

For full details on the standard motor industry classifications, and typical examples of the models in each segment, i.e. 'C' segment, please refer to Appendix 1.

In addition Wunderman use an analysis tool for identifying consumers that have the highest propensity to purchase for a given segment – Social Values Insight – a conceptual framework based on long lasting social values which underpin medium duration lifestyle typologies which in turn underpin brief and transient product typologies (Wunderman Knabs, 2003; Mordin, 2004). The resulting categorisation - *'socialvalues^{TM}'*, developed by an inhouse company 'thevaluescompany' (thevaluescompany, 2004) propose seven lifestyle strategies- self-explorer; experimentist; achiever; belonger; social resister; survivor and aimless. These categorisations are then matched to the Lifestyle Universe Database owned and developed by Claritas (Acxiom, 2004)**,** which contains up to 380 key lifestyle, demographic and purchasing characteristics for all UK households, approximately 44 million UK individuals.

There are similarities between Ford and Wunderman in their consumer typologies as well as terminology, which should be no surprise considering how close their ties are with marketing campaigns. Despite these similarities, for marketing campaigns Wunderman use the cross-matched **socialvalues^{TM}/**Lifestyle Universe data source, as it is provides established access to external prospects whereas the Ford segmentation is an internal concept without links to names and addresses. To identify which SocialValues match the Ford profile, they have to overlay the Ford Consumerscape typology using relational perspectives, as represented by the following map:

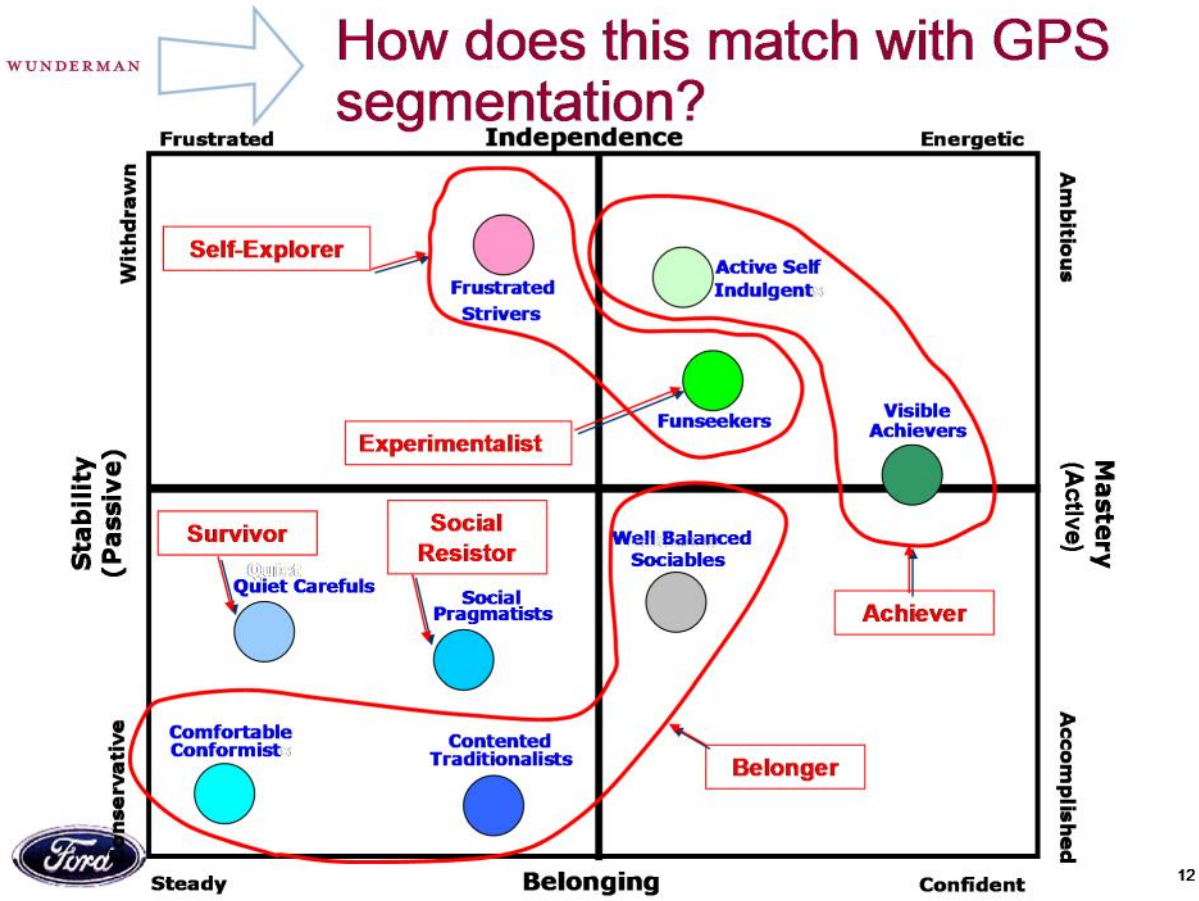

Figure 5 – Source: Permission given by Orlando Machado, Head of Analytics - Knowledge & Business Solutions – Wunderman Ltd, London - supplied via email

Clearly something is lost in this hybrid of typologies, and only some, not all, of the data on the Wunderman database were fully categorised into the SocialValues typologies.

Further discussions during January and February 2012 took place with a number of other segmentation and marketing companies who have their own commercial categorisations, as follows:

2.5.5 Experian Ltd

Experian Ltd is one of the largest commercial database companies in the UK. Their MOSAIC classification is based on geodemographic classifications and behavioural lifestyles. MOSAIC utilises the data from the National Census in the UK which is produced every ten years, the last being March 2011. This is updated annually to allocate changes in postcode demographics and is applied to existing categories (Experian Ltd, 2003). The MOSAIC system has been developed in over twenty countries worldwide based on geodemographic classifications and behavioural lifestyles (Schmidt and Pioch, 1996), the variables used in the creation of their typology include:

- race and ethnic origin
- age
- family status
- non-family household types, including college
- dormitories and military quarters
- travel to work
- education
- employment by industry and occupation
- income
- forms of income
- housing tenure
- housing type
- vehicle ownership
- household size
- age of dwelling and tenure

These variables are then segmented and presented as twelve groups:

- A Affluent Suburbia
- B Upscale City Singles
- C Second City Leaders
- D Blue Collar Winners
- E Fortunate Retirees

- F Metro Market Fringes
- G Remote Working Towns
- H Lower Income Seniors
- I Rural Towns & Farms
- J Other City Centres
- K Major Market Cores
- L Anomalous Lifestyles

The limitations with a database of this type are the reliance on the accuracy of self-administered forms and the time span between Census dates (Olson and Muderrisoglu, 1979). For example Experian Ltd report that in the 1991 UK Census, under the religion and ethnicity section, 390,000 people claimed to be Jedi knights!

In 2005 Experian (2005) developed a database specifically for the automotive market – Mosaic Automotive – which uses their existing geodemographic classifications and behavioural lifestyles. This is then matched to the 35 Million vehicle owner records held on the Driver and Vehicle Licensing Authority (DVLA) national car database, this process is carried out by the DVLA and the data returned to Experian is anonymous as it excludes names and addresses, only post code areas are supplied. The enables Experian to establish location patterns of vehicles to end user profiles based on the MOSAIC classifications. Because of the anonymity of the data that is returned from the DVLA, names and addresses would still be needed to carry out postal campaigns, but having identified and profiled the post code areas it is argued that if marketing efforts are carried out in these areas there is an increased likelihood of success. An example of MOSAIC in action is a survey carried out for the Mayor of London's Office in 2009 to identify consumer profiles and post code areas for users of electric vehicles as the first step to an infrastructure strategy (Greater London Authority, 2009). Whilst MOSAIC has the potential for more defined areas for product marketing; the drawback is the inevitable obsoletion of time sensitive census data, however it does have advantages in being more specialised rather than generalised in relation to the automotive industry.

2.5.6 MORI Research

The most common demographic segmentation was developed by MORI research, known as the Social Grade. This is based on the National Readership Survey (NRS) which was originally formed to identify segments for daily newspaper media, and has been in use since the 1960,s (Ipsos MediaCT, 2009). The segmentation is divided into six groups: A, B, C1, C2, D and E, as below:

Social Grade of Chief Income Earner		
Social Grade	**Description**	**% Population**
A	High managerial, administrative or professional	4
B	Intermediate managerial, administrative or professional	23
C1	Supervisory, clerical and junior managerial, administrative or professional	29
C2	Skilled manual workers	21
D	Semi and unskilled manual workers	15
E	State pensioners, casual or lowest grade workers, unemployed with state benefits only	8

Figure 6 – Source: Redrawn from NRS (2000)

More detailed explanations on categorisation were supplied via email with their Research Director :

‘In our studies we normally ask for the occupation of the chief income earner. You then need to collate information on their:

Position/rank/grade
Industry/type of company
Qualifications/degree/apprenticeship
Number of staff responsible for

then from this information we code them into the appropriate social grade category’. Again these are high level groupings and although they argue in their literature that they translate well down to regional levels, they were specifically developed for newspaper media targeting, because of this they are unlikely to be suitable for use with other products.

2.5.7 Euro RSCG

The following information was discussed/exchanged during three meetings and numerous telephone and e-mail communications with a number of senior staff at two branches of Euro RSCG – Euro RSCG Worldwide and Euro RSCG Skybridge, in particular Ms Robin Lauffer, Head of Strategy and Consumer Insights at Euro RSCG Worldwide – London. Euro RSCG Skybridge are a major supplier to Ford of Europe for training consultancy and reward and recognition incentive programmes for dealership staff, they also supply marketing materials and sales training for new product launches.

The discussions and meeting were the result of the literature research which revealed several references to *'Prosumerism'* and the use of *'Prosumer'* in research carried out by Euro RSCG. The word prosumer has been coined by many, McFedries (2002) suggesting the most popular definitions:

1. A consumer who is an amateur in a particular field, but who is knowledgeable enough to require equipment that has some professional features ("professional" + "consumer").

2. A person who helps to design or customize the products they purchase ("producer" + "consumer").

The second sense of the term -- the producer consumer -- was invented by Toffler (1980). Euro RSCG confirmed that this is the definition they investigated initially before defining their own definition: A proactive, empowered consumer. They define a prosumer as having the following characteristics (O'Reilly, 2001):

Get a rush from discovering new things
Transport trends "Human media"
Pursue timeless value
Seek out challenges and experiences
Recognise their own value as consumers and expect brand partners to do likewise
Are marketing savvy and plugged into multimedia sources
Demand top notch customer service and unlimited access to information
More plugged in, internet integrated into their lives
More likely to pay for premium services

Love to travel
Brand conscious / Brand Partners / Brand advocates
Their trust has to be earned

Euro RSCG summarise the prosumer as being proactive in seeking out information and opinions and sharing their views and experiences with others. They suggest that prosumers span Rogers and Shoemaker (1971) spectrum of early adopters and early majority profiles and have a heavy influence when relating new products to other consumers (Lauffer, 2004).

Euro RSCG have established a database of approximately 2,000 consumers who are prepared to participate on research in each of the following countries: UK, France, Germany, India, China and USA, it is intended to add further countries. Prosumers are identified by an algorithm of qualitative questions that are included in every survey; details of the algorithm were supplied under a confidentiality clause for this research and due to the commercial value cannot be disclosed in this report. Findings from their research suggested that prosumers represent 20 – 30% of people who make and break markets, in every category and in every geography by being early adaptors and early majority of new products whilst actively sharing their views and spreading brand messages (Harris, 2004).

Although the classification is based on values and lifestyles, one aspect of the prosumer mindset of particular relevance to this study, is that they love “new”.

2.5.8 Demographic and Geodemographic Classifications

Some classification systems have been developed over a number of years and are in common use throughout industry including automotive marketing. In the UK the most common systems in use are demographic classifications:

National Readership Survey (NRS) produced by NRS UK Ltd and based on social grade definitions:

social grade	social status	occupation
A	upper middle class	higher managerial, administrative or professional
B	middle class	intermediate managerial, administrative or professional
C1	lower middle class	supervisory or clerical, junior managerial, administrative or professional
C2	skilled working class	skilled manual workers
D	working class	semi and unskilled manual workers
E	those at lowest level of subsistence	state pensioners or widows (no other earner), casual or lowest grade workers

Figure 7 - Source: Redrawn from Businessballs (2003)

According to Blythe (1997) the use of social grade definitions, defined by occupations, is an ambiguous concept in modern times because the opportunities to progress are much greater for the old lower classes and the shift in labour patterns from manufacturing to service industries involving more technological and administrative functions rather than physical labour. If this is valid then the development by NRS of their **NRS Super Profiles** classification may be more appropriate –

A - affluent achievers
B - thriving greys
C - settled suburbans
D - nest builders
E - urban ventures

F - country life
G - senior citizens
H - producers
I - hard-pressed families
J - have-nots
K - unclassifiable

Figure 8 - Source: Redrawn from Businessballs (2003)

In comparison the Insight Value Group Ltd (2004) developed its own scale, which draws heavily from Maslow's Hierarchy of Needs, the **Social Value Groups**:

social value group	characteristics
self actualisers	focused on people and relationships, individualistic and creative, enthusiastically exploring change, 'in a framework of non-prescriptive consideration for others'
innovators	self-confident risk-takers, seeking new and different things, setting their own targets to achieve
esteem seekers	acquisitive and materialistic, aspiring to what they see are symbols of success, including things and experiences
strivers	attaching importance to image and status, as a means of enabling acceptance by their peer group, at the same time holding onto traditional values
contented conformers	wanting to be 'normal', so follow the herd, accepting of their circumstances, they are contented and comfortable in the security of their own making
traditionalists	averse to risk, guided by traditional behaviours and values, quiet and reserved, hanging back and blending in with the crowd
disconnected	detached and resentful, embittered and apathetic, tending to live in the 'ever-present now'

Figure 9 - Source: Redrawn from Businessballs (2003)

Lastly, a more detailed system has been developed over many years by CACI Ltd and utilises geographic and demographics into a geodemographic classification know as ACORN (CACI Ltd, 2009), which stands for A Classification of Residential Neighbourhoods. The listings have been widened over time into specialised segments and they are extensive, the original classification comprised seventeen consumer groups and fifty four neighbourhood types.
A small section is reproduced as follows:

acorn 'types'	acorn 'groups'
A - thriving 1.1 wealthy suburbs 1.2 villages with wealthy commuters 1.3 mature affluent home-owning areas 1.4 affluent suburbs, older families 1.5 mature well off suburbs 2.6 agricultural villages, home-based workers 2.7 holiday retreats, older people, home-based workers 2.8 home owning areas, well-off older residents 3.9 private flats, elderly people	1 - wealthy achievers, suburban areas 2 - affluent greys, rural communities 3 - prosperous pensioners, retirement areas

Figure 10 - Source: Redrawn from Businessballs (2003)

Halliburton and Hünerberg (1993) argue that it is no longer possible to classify people into neat and stable segments, the geography that has usually ruled national marketing programmes needs to re-think its basis for segmentation and look at customer groups with similar needs; a bottom-up approach of identifying these customers is needed rather than the top-down approach of grouping unknown individuals by demographic, lifestyle or industry criterion.

2.5.9 Emotional Geographics

Sheller (2003) also argues against these simplified patterns of identification stating that consumers never simply choose a car on rational economic choices, it is a combination of aesthetic, emotional and sensory responses to driving as well as kinship, sociability,

habitation and work that influences decisions, an emotional sociology which Sheller terms ‘emotional geography’.

There has been evidence in the past where emotional aspects have been utilised in automotive adverts, Sheller (2003) provides some examples as follows:

Manufacturer	Description of Advert
Audi	Audi banks on its ‘German design’ reputation in England through the ‘Vorsprung durch Technik’ campaign
Seat	Seat plays on its Hispanic ‘auto-emocione’
Renault	Renault uses a French international footballer who plays for an English team to talk about the Clio’s ‘va-va-voom’ and ‘je ne sais quoi’
Nissan	Nissan goes further and tries to transcend national motorscapes in its ‘Do you speak Micra?’ advertisements, set in a futuristic urban utopia where the brand has evolved its very own language

Table 7 - Emotional Aspects in Automotive Advertising

Sheller (2003) does not infer there is any simple correlation of style with national identity but it is suggested that producing such identities does establish emotional geographies of car cultures. There is some agreement with this kind of emotional objective, Chapman’s (2005) view is that consumers are becoming increasingly attached to emotionally durable products which purport to be in touch with their feelings.

2.5.10 Government Social Classifications

Although the last few sections were concerned with practitioners, attention must be drawn to the vast amount of information that is collated by the government which is used extensively to explain variations in the structure of socio economic positions, patterns of social behaviour and other social phenomena. These are known as Socio Economic Classifications (SEC’s) is used to inform government when making policy decisions on employment, health care, benefits etc., etc. as well as data for information compiled by the Office for National Statistics. The majority of information is gathered at the time of the 10 year census. Most of the information is accessible to the public, but access to the depth of detailed information is restricted (Office for National Statistics, 2010).

2.6 ADVERTISING AND COMMUNICATIONS

This section discusses how new products are promoted and communicated, the diffusion process. Ries and Trout (1986) propose that advertising creates and heightens consumer expectations by positioning a product in the mind of the consumer, but you are in trouble if you get it wrong. Advertising people are continually on the outlook for gaps and holes in the marketplace where they can create the illusion that a product or service will fill that gap as well as how your product will be thought about. (Diwan and Bodla, 2011).

There are a number of ways how products are positioned:

Type of Positioning	Method
Attribute	Associating the product with features such as safety and durability
Use or application	How it will be consumed
Product user	Linking the product with user groups
Product class	An alternative to existing products
Competitors	Comparing to other well-accepted products

Table 8 - Product Positioning Methods

Usually a product map is produced to give a visual representation of how the features and benefits of a product is positioned against competitors, in some cases there may be more than one positioning strategy. An alternative method is to use surrogate positioning, this is where only the products attributes are given without describing the features and benefits, allowing consumers to draw their own conclusions (Crawford, 1985; Peter and Olson, 2010). Daneels and Klienschmidt (2001) proposed that the strongest correlates of new product success was the ability to provide features and benefits that were not offered by alternative products.

Ries and Trout (1986) suggest that most consumers rank products and brands in their minds and the advertisers use product positioning as a weapon in the battle for your mind. Because consumers have different levels of product knowledge, the amount of information needed to position the product correctly needs careful consideration, for example an expert may understand braking, acceleration and cornering ability in a car, a more abstract category that groups these aspects such as ‘handling’ may be better understood by a novice (Peter and

Olson, 2010). Chapman (2005), the suggested that there should be layers of information or narratives and the release or reveal of information should be controlled, particularly for complex products. If the release is too slow it will generate frustration, and if too fast and it may confuse and alienate the consumer, Chapman draws an analogy to a Russian doll, where more is revealed as each layer is opened, perhaps a better analogy would be that the outer layer of the Russian doll represents the most abstract layer and subsequent layers provide more detailed information.

The content of marketing messages is dependent on the type of medium being used by advertising companies and the options that are available to them. The TV advert has a much greater impact than a static billboard or newspaper advert, although there are still limitations (mainly because of cost) on how much information can be imparted in a short period of time (Sethuraman et al., 2011). Chapman (2005) says this is the reason why most adverts challenge the way we live and consume products by conjuring up provocative images and ideas of how this could change if we bought into that product – probably the mostly used product positioning promise being to make the consumer part of the advert theme, rather than just a passive observer. Although some adverts may be viewed as being fictitious or even dishonest, Chapman says it is simply manipulating the notions of what is possible and that because everyday life is so hectic, fiction provides a necessary relief, an escape. And by providing meanings, proactive or subversive - known as phantile drives – it provides more depth to the consumer's product exposure and experience. This is likely to be the thinking behind why advertising is seen to be helpful, rather than believable (Hoch and Ha, 1986). However, advertising and communications need to be continually monitored to avoid marketing myopia (Steinberg, 2012).

2.6.1 Marketing Myopia

Levitt (1960) suggests a firms greatest danger is complacency and stagnation, especially when they have enjoyed a market share and customer base that they have grown to rely on. Marketing myopia occurs when firms become locked into producing products that they think consumers want. In the automotive industry there are some well-known examples. Ford Motor Company dominated the market in its early days by producing cheap cars through the invention of the assembly line, but they refused to offer any cars in any other colour than black, it wasn't long before competitors stole their market share by offering consumers more

colours. Similarly in the late 1950's, American automotive manufacturers failed to identify that consumers would accept smaller cars and lost millions of customers to the influx of smaller car manufacturers from Asia, this loss of market share is something that they have never recovered from (Levitt, 1960). Levitt suggests that firms must not think of themselves as just producing goods or services, they need to think of themselves as providers of things that people want through the use of inventiveness and skill.

2.6.2 Summary of the Practitioners Approach to Market Segmentation

The literature highlights a preference for manufacturers to use product positioning based on lifestyles in their marketing communications, rather than product information, despite the evidence that complex innovations are often sidestepped or ignored because they are not understood (Berlyne, 1978; Rogers, 1995; Chapman, 2005; Silvia, 2005). The literature shows that advertising in general strives to position the product in the mind of the consumer, by generating illusions and manipulating the notions of what is possible, yet consumers will not buy what they do not understand (Gibson, 2010).

Instead of aspirations manufacturers need to look at providing product information, particularly in the automotive industry where complex innovations are now the norm. Whatever choice the consumer has, success can only be achieved if they are able to understand the product. In helping people to make those choices the only way to fill that gap in their knowledge is by providing the information that is relative to them (Rogers,1995).

2.7 LITERATURE REVIEW SUMMARY

The literature review provided valuable information and insights into the methods and constructs used in the assessment of new products in particular how the complexity of new innovations are understood and noticed by consumers. Many of the studies provide categorisations of product innovation and the aspects of consumer behaviour in the assessment of new products, some instruments measure these categorisations but none of them provide a set of factors that match the complexity of innovations with consumer product knowledge.

Research to date, published in the literature, suggests that for something to be new it must have some perceivable change to differentiate it from previous products as well as competitor

alternatives (Rokeach, 1973; Rogers, 1995; Johannessen et al., 2001; Chapman, 2005; Conway, 2010; Peter and Olsen, 2010). However, a number of academic authors suggest that new innovations are often misunderstood as they can be too complex, particularly in the area of new automobiles, the main problem being a lack of digestible information (Johannessen et al., 2001; Chapman, 2005; Gibson, 2010; Sasu and Ariton, 2011; Wiedmann et al, 2011; Tobin, 2012a; Wilcox, 2012). One key study by Johannessen et al. (2001) raises two questions relating to new innovations "how new" and "new to whom" that should be considered in all new product developments and that consumers would benefit from more information that is appropriate to them as an individual, suggesting a measurement of both the innovation and consumer, but from the consumer rather than the manufacturers perspective.

Similar views are held by Gregan-Paxton and John (1997), who propose that product comparisons are based on product attributes, tangible – what it does, and intangible – how it does it, the more complex products invoking relational comparisons to match similarities from a number of categorised products (Meyers-Levy and Tybout, 1989; Luhmann, et al., 2006), using features and benefits - what they are and what they do (Sujan (1985). This does not mean that gaining an understanding of a new product will result in automatic endorsement or adoption, but it does mean that the product will be considered instead of being overlooked (Rogers, 1971).

To do this, manufacturers need to identify and capture the aspects of consumer product knowledge. This will enable them to categorise new models with an optimum range of complexity that would be acceptable to their consumer base. The result would identify where new products are positioned in terms of complexity, allowing them to provide the correct level of information when communicating to the consumer segments. This would also provide an indication to manufacturers of the success or failure for products that exceed or fall below the upper and lower levels of complexity (Michaut, 2004b). The literature provides a number of key variables to identify the knowledge held by consumers: expertise, involvement and familiarity, in this research expertise is in the context of actual knowledge (Zaichkowsky,1985a; Alba and Hutchinson, 1987; Gregan-Paxton and John, 1997; Novick, 1998; Kleiser and Mantel, 1994, 1999); involvement is perceived or accumulated knowledge gained through a keen interest with a product (Bloch, 1981, 1984; Shimp and Sharma, 1983; Lennox and MaClaren, 2003; Kassubeck et al., 2011) and familiarity is taken as previous

exposure through ownership or access to a specific product (Rogers, 1971; Alba and Hutchinson, 1987; Danneels and Kleinschmidt, 2001).

The present literature does not provide a comprehensive understanding of how manufacturers can get their new innovative products noticed by consumers and the data that is required to measure the complexity of the innovation and consumer product knowledge. Therefore, this study investigated the appropriateness of measures and constructs required to establish a more reliable segmentation tool for marketing communications, in doing so the object was to supplement the knowledge gained from literature with exploratory studies using field-based discussions and interviews with practitioners and consumers. The detail of this research is provided in the Exploratory Studies chapter.

In summary there are a number of gaps to be resolved. Firstly, manufacturers need data that identifies consumer perceptions of product complexity which can be used to group consumers into low, medium (optimum) and high segments. Secondly manufacturers need to identify the level of complexity in all new products, from a consumer's viewpoint – using the same scaling as the consumer segments. Lastly, manufacturers need to match both sets of data – perceived consumer complexity with perceived product complexity to provide relevant levels of product information to a more reliable segmented target market. This literature review provided the variables and constructs required to achieve those objectives.

CHAPTER: 3 EXPLORATORY STUDIES

3.1 INTRODUCTION TO THE CHAPTER

The exploratory studies are placed in this section of the thesis, before the Methods chapter, because the investigations and pre-tests were necessary to form a conceptual framework. They provided valuable insights into how this study should move forward, as well as testing the appropriateness of existing constructs and a foundation for the main questionnaire. Some of the studies are detailed and use online questionnaires and SPSS analysis. Normally studies containing this level of detail are discussed first in the Methods chapter, but because they were instrumental in the conceptualisation of the study the detail is given here.

The introduction to this thesis highlighted an abundance of well documented information and research relating to product development and production techniques within the automotive industry, whereas in the area of sales and marketing it is fragmented and uncoordinated with no central collation. The information that is available is discrete in nature because it is sourced on a local and mostly ad hoc basis by individual retailers.

Although the literature review covers theoretical constructs in detail there is a need to develop a more in-depth understanding of industry specific information through the collation of existing knowledge within the industry, and pull it together to create an understanding of the strategic and tactical processes used in automotive retailing, as well as consumer reactions and behaviour.

A number of constructs in the literature review needed to be investigated to identify if they are appropriate to this current area of research and consumer as well as industry views need to be obtained. This required a number of interviews and pilot studies through fieldwork - investigations carried out in the field rather than a laboratory, as well as online questionnaires. Therefore, an exploratory research design was chosen because little is known in this area and the method of enquiry required an investigative approach (Spector, 1981; Iacobucci and Churchill, 2010). The discussions also obtained a richness of data for cars in general as well as new products.

3.2 OVERVIEW OF EXPLORATORY STUDIES

The exploratory studies utilised investigative and information gathering methods as shown in Figure 11.

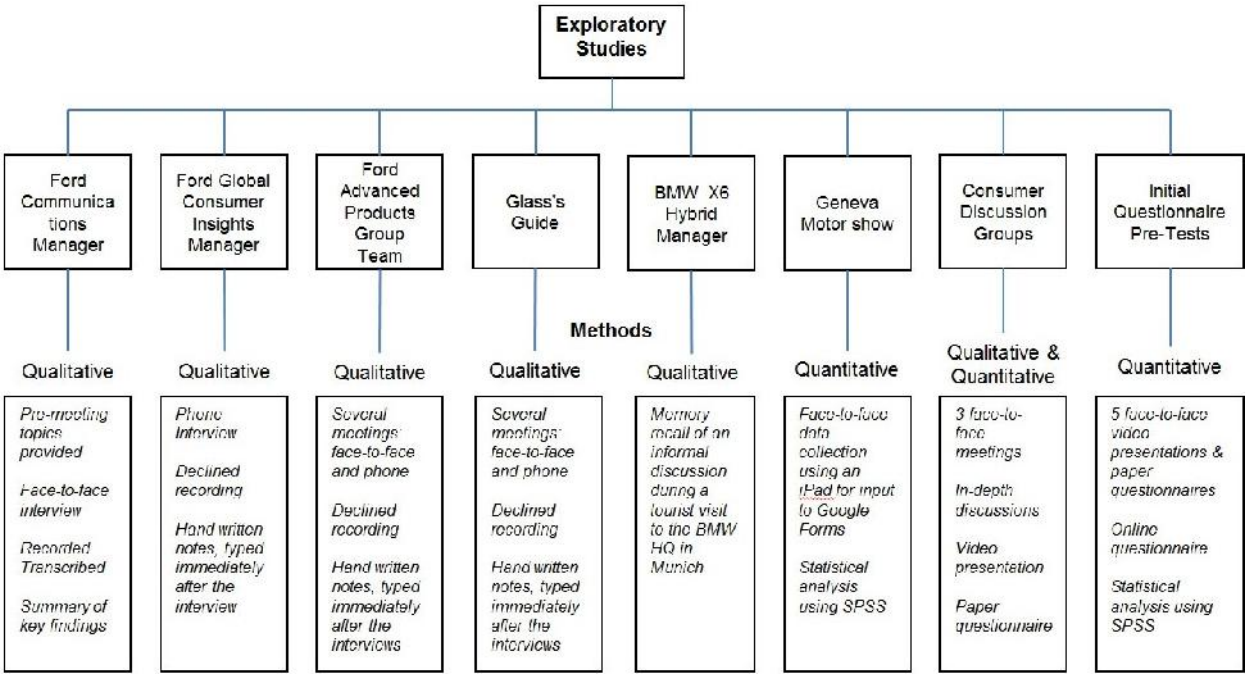

Figure 11 – Overview of Exploratory Studies

Findings were fundamental to conceptualisation and provided the research design for the main methodology.

3.3 INTERVIEWS WITH MANUFACTURERS AND PRACTITIONERS

To investigate how automotive manufacturers and practitioners communicate new products to consumers, a number of meetings and events were organised/attended to discover the nuts and bolts of how this worked. This involved meetings with key informants and attendance at two new product launches. The product launches were of particular interest as they are the cornerstone of how salespeople are trained to communicate the new products, particularly the innovations, to consumers. Note that the product launches took place after the main survey had been completed, this could not be avoided because of the availability and timing of events. The product launch information is provided in Section 7.2.

3.3.1 Meeting with Ford of Britain (FoB) Communications Manager

A meeting was held with Richard Beard, Ford of Britain (FoB) Communications Manager, at the head office of Ford Motor Company Ltd based in Warley, Essex on 21st October 2011. An outline of the topics that would be discussed in the meeting was requested and supplied in advance. The purpose of the meeting was to ask about the Ford Consumerscape, their own in-house segmentation tool (full details supplied previously in the Market Segmentation and Practioners section), which provides a detailed profile of the type of person that will be interested in particular models. Pre-meeting topics relating to the Ford Consumerscape were provided to Richard Beard as bullet points:

How is the profile established – background research, sources of data that kind of thing.

How do they identify the market segment to match that profile from their marketing data.

How do they update the marketing data and how deep they go in their data collection

Pre-meeting notes on the structure of the meeting were compiled as an aide-memoire (Appendix 6).

The meeting was recorded, transcribed and a summary was made of the key findings.

The meeting started with Richard Beard describing one of the key reports within Ford - the Brand Equity and Awareness Tracking (BEAT). This is used to track brand health metrics including purchase funnels, it is run quarterly with approximately 2000 Ford customers and Ford prospects as a stand-alone activity, and asks questions on five key metrics, as follows:

Familiarity - have you heard of the brand
Favourable Opinion - how favourable is your opinion of Ford
Consideration - would you consider buying a Ford
Shopped - have you looked in detail at buying a Ford
Purchase Intention – do you intend to purchase a Ford

This report has been in operation for four years. Details of the findings were not supplied because of the confidentiality of their nature, apart from Familiarity which returned 90% in

the last quarter; the Communications Manager commented “if you haven’t heard of Ford you properly aren’t interested in cars at all”.

A question was asked on who does the profiling of a new car; who says this is the person that will buy the car? The basis of product development and their marketing strategy is to establish a consumer profile using the Consumerscape process, which provides a characterisation of a typical consumer. For example, the characterisation for the Fiesta model is called Antonella, a 28-year-old who lives in Milan and likes to drive her friends around and sees it as a social mobility vehicle for her friends. She is more concerned with the outside appearance rather than comfort. In comparison, the characterisation for the Focus model is called Lorenzo, again an Italian, age 48 with children that have left, or just about to leave, home and he is starting to enjoy the finer things in life.

As previously reported, Italy is the lead market for small cars for Ford as it is the biggest market for that size of car, which is the reason for Italian characterisations, however for the UK they are using a younger Lorenzo characterisation, aged 35 with a more active lifestyle, as they believe this to be a higher target consumption group for the UK.

When asked about how they identified where Lorenzo’s lived, they outsource this to a company called Mindshare and Wunderman who use conventional media consumption methods, although this was not expanded upon. An observation was given that the outsourcing companies would have to make some assumptions, particularly for the emotional aspects of the Consumerscape profile when matching to the data they held, the response was as follows:

‘The bit I’m struggling with is that within our database… these emotional metrics, involvement, those are variables. Databases are not as sophisticated as some people feel . Whilst you might have a Favourable Opinion when you buy the vehicle, your life time experience might mitigate against that or you may have bought it as a transactional piece and actually grown to like the product. So these things vary over time… they are more difficult to gauge overtime unless you are doing that regular calling on the database… that draw that information in. I don’t know how actionable that is going forward.’

The clear impression from the meeting was that the marketing strategy is to position the product in the mind of the consumer and was heavily dependent on the Consumerscape being a valid profile. This indicated that the information provided was downstream from how the consumer profile was established and that further information was required on how the Consumerscape was established; Richard Beard said this was the responsibility of Pat Farrell, FoB Global Consumer Insights Manager.

3.3.2 Meeting with Ford of Britain Global Consumer Insights (GCI) Manager

As a result, a conference call took place with Pat Farrell, FoB Global Consumer Insights (GCI) Manager on 6th December 2011 to discuss how a Consumerscape was established. A request to record the conference call was declined, therefore handwritten notes were taken and typed up immediately after the call ended. The following is a summary of the notes taken.

Establishing a Consumerscape involves considerable desktop research, they hypothesise what customers are interested in, their beliefs and attitudes and establish a profile. They then have to find the consumers who fit this profile, this is outsourced to agencies that use an algorithm, the details of the algorithm were not revealed, but it was revealed that they are fairly loose e.g. a few factors such as price bracket.

Ford then run a number of focus groups with the consumers that the agency have identified, followed by more detailed interviews with individuals and finally an immersion stage where they spend three days with individuals discussing product and observing their daily routines - the objective is to validate the profile. At the same time consumer surveys using personal attitude statements are carried out. Once they have this validation the data is then clustered to form the characteristics of the consumer profile, such as Lorenzo, which then becomes the basis of the design brief for a new car or major design change.

However, in the past Ford have produced models that have not had a pre-established consumerscape, as a result they have had to shoehorn an existing Consumerscape, sometimes without success. And there is evidence of this. The Ford Fusion was launched in 2002 based on a consumerscape that was based on a young city dweller, an “urbane’ small estate vehicle with raised suspension to cope with traffic calming road bumps. In reality it attracted elderly

and mobility consumers, who found it easy to get into the vehicle because of the raised access and that it could carry a wheelchair. These points were discussed with Richard Beard and Pat Farrell, they revealed that the Fusion did not match the anticipated volumes Ford expected, Richard Beard blamed the advertising and Pat Farrell blamed the shoehorned Consumerscape.

3.3.3 Meetings with the Ford of Britain Advanced Product Group (APG)

A previous research project in 2005 involved a meeting with the Manager and two members of the FoB Advanced Product Group at the Ford Dunton Research Centre, Essex to discuss their involvement in new product development. The following is a summary of that meeting.

They are involved with three 3 car lines: Small, Medium and Large. The product cycle plan has a horizon of 10/11 years, this is the normal replacement cycle mentality, although this is changing to a 7 year cycle in terms of new models, however the basic platform (shared across models) is much longer at 14 years with two major changes during that period. Additionally they have a refresh every 3.5 years in addition to annual facelifts.

APG become involved at the boundary of where major changes need to take place, this is known as scaleability in the product cycle plan.

APG is concerned with innovations NOT styling – styling is separate and innovations are proposed for all three car lines, partly led by gaps in the market and any opportunities that are identified. Niche products have normally been random although in the last two years they have been more structured.

Product proposals have to be supported by an allocation of investment as well as planning volumes. They have market pressures from national sales markets with “wish lists” this is usually an internal view which is sales based from field teams and dealers as to what is selling well or how the markets respond to product. APG prefer the external view, which is looking at what is happening through consumer research, an example given was the use of an attitudinal group of consumers when designing the new Focus and their opinions of the feature levels of the product. In addition they use observational methods with consumers to

see how they react to new innovations. There is also input from management in the fleet sector.

When asked how they defined an innovation their responses were as follows:

Obviously different
Obvious new function
Surprise and delight features
Evokes an emotional experience
Wow factor, really cool and it's ours

Interestingly the 'wow' factor is something that is advocated by Radford and Bloch (2011) in the stimulus section of the literature review (Section 2.2.7).

Changes in the product cycle plan occur annually – usually a facelift, followed by an in-cycle refreshing after 3.5 years (mentioned earlier).

When asked about niche products as to what makes them a category killer, they said they would rather use the term category reducer which shrinks the segment to a specific product. They use 'White Space Products' as the terminology for brand new products where nothing else currently exists in the market, these are aimed directly to the consumer segment they target and are developed through customer involvement at two stages:

Real Immersion: spending time with consumers and the product such as consumers and engineers carrying out joint test drives.

Market Immersion: consumer focus groups (participants are outsourced to a recruitment agency).

Ideally APG would prefer people who either love or hate a product – a polarised style, rather than 'liked but do not buy' – a safe style. On a scale of 1 to 9 they would rather have 1's or 9's as 7's are seen as also-rans.

Changes need to have design cues on the outside of the product - described as *'Top Hat'*, the bits you see, although they point out that these have to be treated with care. They mentioned a minor change that was proposed to the bumper of the Ka was rejected at the consumer involvement stages as it changed the whole look of the car, moving away from the rounded lines that buyers were familiar with.

This information was supplied to the new Manager, Richard Brown, of the APG in December 2011 with a request for a meeting or conference call to update this information and gain support for the current PhD research. Setting up a working relationship with the APG took a long time, requiring several presentations and phone calls before their support was gained. The problem is they are very time poor, working to deadlines with what is a small team, and although they thought this research would have some value for them, other priorities frequently pushed discussions backwards.

Eventually, in February 2012 emails and a conference call took place with the Manager, Richard Brown and Alicia Agius, Product Innovation Manager (Europe) of APG. A request to record the conference call was declined, therefore handwritten notes were taken and typed up immediately after the call ended. The following is a summary of the discussions:

Initially details of the meeting in 2005 were discussed. They confirmed that the details obtained then are still valid. Essentially their views and how they do things has changed very little, but automotive innovation is now an increasingly complex landscape, across feature, technology and full vehicle. Whitespace remains the goal, but they do not solely look for whitespace, nor do they solely look for polarizing ideas.

They were asked if they have any involvement with the GCI team and the development of the Ford Consumerscape. They said they have a close working relationship with Pat Farrell's (Manager) Consumerscape team, but this was a bit vague, i.e. when asked if they were involved in establishing the Consumerscape they said no, they were simply given the Consumerscape profile. They added that although the Consumerscape is provided, they apply a deliberate stretch to the profile when designing so that it will appeal to a wider audience. This stretch is achieved by hypothesising what customers are interested in, their beliefs and attitudes and this establishes the profile that APG developments are based on.

They then source consumers who match this profile to be able to carry out interviews and focus groups; this is outsourced to a recruitment agency (no change to 2005).

The objective of the interviews and focus groups is to establish a product hypothesis by identifying a number of aspects: e.g. ingress and egress needs identified a sliding side door for the new Ford B-Max.

In conclusion they were interested in the three aspects identified in the PhD research: familiarity, involvement and expertise as emotional segmentation tools and they agreed to provide support and collaboration to investigate these aspects further, subject to work priorities.

3.3.4 Meetings and discussions with Glass's Guide

A previous research project in 2005 involved a meeting with Jason King, Forecasting Editor, Glass's Information Services Limited, at the head office in Weybridge, Surrey. The company produce a proprietary product used by most car dealers in the UK that forecasts used car values, this is typically used as a reference by the dealers in the valuation of vehicles that are taken in part exchange; this is known as a residual value. The purpose of the meeting was to discuss how residuals of new vehicles are forecasted; the following is a summary of the notes that were taken at that meeting.

Current values are set using benchmarking over the previous 7 years based on the following main streams of data sources:

The values and volumes of cars sold at public, as well as closed, car auctions
Part exchange values given by participating dealers to their customers
Sale prices obtained by participating dealers
Disposal values of part exchange vehicles sold to the trade by car dealers.

All valuations contain the best- selling variant of each model. An algorithm is used to arrive at the final valuation based on the data with an adjustment for the vehicles mileage and condition.

Some sentiment is taken into account from press and industry, Top Gear etc., propitious as well as adverse comments and reviews, equally government policies on taxation can affect residual values as vehicles fall out of favour with buyers. However, a lot of decisions are made by them as to what is new – for example the recent facelift on the BMW 5 series of changing the bumper was not seen as new and added nothing to the residual values. According to Glass's this was all BMW could afford to do in the late life of the model, but for a revaluation changes need to be noticeably significant and not just a minor alteration.

The conclusion was that newness has a value, new product and alterations must be seen to have visibly changed in eyes of the buyer, the greater the degree of change the higher the residual valuation.

In July 2012, following a number of emails, a conference call took place with Adrian Rushmore, Managing Editor; the previous (Jason King, Forecasting Editor) contact had left the company. A request to record the call was declined; therefore handwritten notes were taken and typed up immediately after the call ended. The summary of the discussions in 2005 was still the way they carried out residual forecasting; basically the highest values were when it looked different.

The changes to last Volkswagen Passat model were discussed. Volkswagen claimed the Passat was completely new apart from the roofline, but still looked like the old Passat (Conway, 2010). His view was that their revaluation of the new model would have been higher if it had looked different whereas changes to engines and other technical advances only make small incremental increases to their valuations, although there are times when there is a demand for novel options. He gave an example of a built in satellite navigation systems; at one time they would make £200 more – even with a cost of £900 as an option, whereas now it would be about £100. He said the main rule of thumb is that a particular brand, model and or options are sought after, such as BMW.

The discussion then turned new drive trains valuations, such as electric powered cars. He said that for technology of this nature they have an initial surge of interest, but this is really from a false sub-market. For example, the Toyota Prius hybrid –a car that can switch between a petrol engine and electric motor, had a huge surge of interest when the first ones came back onto the market. The interest increased residual valuations considerably but that interest

quickly subsided and residuals fell considerably. The problem is there are always a group of people who want to buy the first used vehicles that come onto the market, once they have bought them interest disappears.

In general he reiterated it was all about looks, but sometimes things like exceptional fuel efficiency make a difference. With this in mind questions were asked about how he thought the new Ford EcoBoost cars with a new 1.0 litre 3 cylinder engine would be viewed. This new engine had the power output of a 2.0 litre engine under acceleration, but the economy of a 1.0 litre engine. The view is that the first ones onto the used market, due at the start of September, 2013, would be bolstered by Ford selling initial supplies of ex-demonstrators through a closed auction to Ford Dealers, but there will also be the same surge of interest from the enthusiasts/experts creating a sub-market which will then drop after that segment has been satisfied. He suggested making contact again in December or in January next year to discuss the used car market reaction to them.

This was subsequently followed up by telephone in February 2013, however Adrian Rushmore has left and there is no replacement as yet, but the call was taken by Richard Parkin who was caretaking the role at that time. The research background was discussed and he gave feedback on the used car market reaction to the Ford EcoBoost. He agreed with Adrian Rushmore that there appeared to be a surge of initial interest in the new engines, but in general prices settled back to normal levels. He felt that it had not attracted any other buyers apart from people who would normally buy a 1.0 litre engine, perhaps because it does not compute to buyers that you can get 2.0 litre power from such a small engine, it is simply something they do not understand.

3.3.5 Informal Meeting with BMW X6 Hybrid Manager – Munich

The following information is based on the memory recall of the author of this thesis from an informal meeting with BMW X6 Hybrid Brand Manager on 21.9.2011; a chance meeting on a tourist visit to the headquarters of BMW in Munich, which is open to members of the public.

The Brand Manager for the new BMW X6 Hybrid was carrying out a photo shoot of the new model. During the brief conversation, the background of this thesis was explained. The

conversation was based on the type of person that would buy the new BMW X6 Hybrid. The Brand Manager had a specific profile of the person that would buy this type of vehicle – there were a number of display boards around the vehicle depicting this lifestyle profile, but when asked him if they had a database of people that they could contact directly (based on the profile), he revealed that that was where they had a problem. They had data on addresses, marital status, income, amount of children – all demographics, but he said they had no data on any emotional factors, he corrected that by saying 'they can't capture that.' He said there were too many aspects to capture, as a result they come up with a composite profile and then make the product to fit that profile. The difficult thing is then to decide who fits those profiles, with the data they have already.

3.4 GENEVA MOTOR SHOW

Research was carried out on the Toyota stand at the Geneva Motor Show, Switzerland, held in March 2011, with visitors to the show on public days.

The objective of the study was to establish the current reliability and validity of using the reduced item scales: Automobile Involvement Scale (Shimp and Sharma, 1983) and Expertise (Kleiser and Mantell, 1994). This would test measures that may be potential determinants on how consumers perceive the complexity of new products. In addition, questions were asked to identify familiarity with the Toyota models and the respondents view of how innovative they were.

The method selected to source primary data was a quantitative approach using self-administered questionnaires with visitors to the Geneva Motor Show. Data collection used a novel approach where respondents used the new Apple iPad to complete an online questionnaire – the collector of the data was on hand to monitor and advise if necessary. The questionnaire was designed so that all questions had to be answered for completion. This method allowed for the controlled collection of specific information from the participants (Iacobucci and Churchill, 2010).

3.4.1 Background to Data Collection

The survey was conducted over 2 public viewing days, Thursday April 3rd and Friday 4th March 2011. The venue was the Geneva Motor Show, Geneva, Switzerland. This was chosen

because of its importance in the launch of new models in Europe for manufacturers and availability in terms of timings for the research schedule. 161 self-completion questionnaires were completed of which all were useable as they were completed online and they were designed to only be accepted if they were completed in full, this was in line with the study target of 150. Only 2 people declined to fill in the questionnaire, resulting in a response rate of 98.77%. It is believed that this high response rate was due to the high level of interest in the relatively new Apple iPad and that only this research was using this method of data collection at the motor show. It had been anticipated the novel method would attract people to participate in the questionnaire. The response indicates that the enthusiasm shown by the participants to use the iPad to complete the questionnaires, showed the anticipation to be valid.

A number of questions were asked to identify respondent demographics and reasons for visiting the motor show. 89% of respondents were Male and 11% were Female. 51% of respondents were in the sub-45 age group (all percentages are rounded – up and down). The country of origin for respondents was France 32%, Germany 27%, Switzerland 15% and Other 26%. 74% were visiting to 'Look at the new models'. 45% owned a car that was up to 3 years old, 22% from 4 to 6 years old and 33% were > 6 years old. Finally 35% owned a Ford car, 11% owned a Peugeot, 10% owned a Renault and Others were 44%.

Existing AIS and Expertise scales were used with two triangulation scales to test validity. Likert scales, on a range of 1 to 7 (1 = Strongly Disagree; 7 = Strongly Agree), were used throughout the survey.

Existing Scales

The 2 item instrument - Involvement - proposed by Taylor-West et al. (2008) as a reduction of the Shimp and Sharma (1983) 8 item AIS scale, was used to measure Involvement. The two items used were as follows:

Cars offer me relaxation and fun when life's pressures build up.
Sometimes I get too wrapped up in my car.

The 3 item instrument – Expertise - proposed by Taylor-West et al. (2008) as a reduction of the Kleiser and Mantel (1999) 10 item Consumer Expertise scale, was used to measure Expertise. The three items used were as follows:

I enjoy learning about cars.
I can recall almost all existing brands of cars from memory.
I can recall almost all brand names of cars.

Triangulation Scales

To test the validity of the Involvement and Expertise scales the following two triangulation questions were used, these were agreed with the panel of experts established for this research (Section 5.2).

I really enjoy driving (Involvement scale)

I would consider myself to be an expert on automobiles (Expertise scale)

See Appendix 2 for the English version of the questionnaire used at the Geneva Motor Show, participants could also choose German or French versions.

3.4.2 Findings

Results identified that Involvement had a large positive relationship with the triangulation scale (Pearson Correlation r =.829), as shown in Figure 12. Note: r =.50 to 1.0 is considered to be a large relationship, strengthened by the use of a high confidence level p>.05.

Similarly, it was found that Expertise had a large positive relationship with the triangulation scale (Pearson Correlation r =.776, Figure 12).

The results also revealed a medium relationship between Involvement and Expertise (Pearson Correlation r =.398, Figure 12). Note: r =.30 to .49 is considered to be a medium relationship). The evidence suggests that the higher the Involvement the higher the Expertise.

		Triangulation Scales	Expertise
Involvement	Pearson Correlation	.829	.398
	Sig. (2-tailed)	.000	.000
	N	161	161
Expertise	Pearson Correlation	.776	n/a
	Sig. (2-tailed)	.000	
	N	161	

Figure 12 - Correlations for Involvement and Expertise

The findings show positive relationships exist between a consumer's expertise and their involvement with the product, this concurs with previous findings by Taylor-West et al. (2008) that expertise increases pro-rata to the involvement that one has with an automobile.

Previous research into the AIS scale (Shimp and Sharma, 1983; Lennox and McClaren, 2003) suggested the original 17 item scale developed by Bloch (1981) was excessive and that a reduced item scale of 8 items could be used in the future. And there are strong arguments for using reduced item scales if you consider that statistical analysis needs 10 (or more) times as many respondents as questions (Cohen et al., 2003; Hair et al., 1998; Tabachnick and Fidell, 2007; Pallant, 2010). As many surveys have respondents in the 100's rather than 1000's reduced item scales would be beneficial.

Findings suggest the reduced two item scale for Involvement and the three item scale for Expertise are reliable; the high relationships to the triangulation scales give support to their validity – Involvement (Pearson Correlation r =.829) – Expertise ((Pearson Correlation r =.766), and they are particularly useful to researchers where they are used as part of, rather than the main focus of, the research.

The triangulation question "I would consider myself to be an expert on automobiles" was tested for socially desirable responding bias using partial correlation; results showed little effect on the outcome.

The reliability statistics compared well with previous studies (Figure 13)

	Current Study	2008 Study by Taylor-West et al.	2003 Study by Lennox & MaClarrren	1983 Study by Shimp & Sharma	1999 Study by Kleiser and Mantel
Expertise	.89	.87	n/a	n/a	.86
AIS Scale	.83	.86	.90	.84	n/a

Figure 13 - Comparisons of Previous studies - Reliability Statistics (Cronbach alpha)

The findings indicate strong correlations and construct validity for the reduced item and triangulation scales.

3.5 CONSUMER DISCUSSION GROUPS

After several meetings and interviews with automotive manufacturers (details in Section 3.3), it appears that currently all automotive launches send the same marketing message to all consumers; they do not take into account how consumers are likely to respond to the new products. To investigate this further it was decided to explore new technological advances in the automotive industry by obtaining consumer views and perceptions of current new technology.

The new Ford Focus, launched by Ford Motor Company in February 2011 was chosen as the target for the research, as this new mainstream model was introducing a number of advanced technological option packs for the first time, for example the Convenience Pack comprising Active Park Assist, when engaged this function identified parking places that the car could be parked into and took over control of the steering when reversing into this space. A major TV advertising campaign was used to demonstrate and promote this new technology during and after the launch date. Other options included the Driver Assistance Pack comprising Traffic Sign Recognition, Blind Spot Information System, Lane Departure Warning, Lane Keeping Aid, Driver Fatigue Alert, Auto High Beam, and Low Speed Safety System. Discussion groups were identified as a method of exploring customer views and perceptions (Langford et al., 2002; Litosseliti, 2003). The introduction of the Ford Focus, with numerous new technology options, presented the ideal opportunity to gain specific insights. An explanation of the technological option packs for the Ford Focus is provided in Appendix 3.

As the nature of the investigation was exploratory, it was decided that a mixed methods approach was the most appropriate. Discussion groups were chosen as the qualitative method

to stimulate discussions to uncover opinions and explore views (Bader and Rossi, 1999) for cars in general as well as new products; whereas Likert scaling procedures were used as the quantitative method to measure the views of new technological developments, expertixse, involvement and familiarity with the products. This provided information to construct an initial questionnaire to collect a larger qualitative data set. This was achieved through face-to-face meetings with staff and students of a University faculty and an online survey to friends, family and the staff and students who were unable to attend the meetings (Section 3.6).

3.5.1 Background to the Meetings

Three in-depth discussion group meetings were carried out at a Ford Retail Dealership with a random sample of their customers over three evenings – Monday 13th, Wednesday 15th and Thursday 16th June 2011. Each group had four participants and each session lasted between 60 and 90 minutes. The meetings were recorded on video and later transcribed and analysed. Each participant was allocated a number to identify them and care was taken to allocate this number to the transcription extracts. The discussion groups comprised two parts, the first part was concerned with qualitative data collection, the second with quantitative data collection.

3.5.2 Qualitative Discussions

The discussion groups were asked to discuss three open ended topics:

What is new in a new model to you?
What is the minimum it must have?
What is the most/least important thing in a new model?

After transcription the extended text was then searched to highlight and extract sentences which were grouped under the three topics used during the meetings, each sentence was coded with the participants allocated identification number.

The groups were pasted into three separate excel spread-sheets with additional headings added for analysis. The literature suggested several aspects of new products are considered when forming an assessment, these aspects were added as additional columns to each spread-sheet with the following headings:

Newness

Perceptions

Values

Characteristics

Complexity.

Each aspect had descriptives which were all derived from the literature review, for example complexity had low, medium and high categories:

Newness	Perceptions	Values	Characteristics	Complexity
Familiarity	Schemas	Personal	Relative	Low
Exposure	Conceptual blending	Object	Advantage	Medium
Sensory	Benefits	Pseudo	Compatibility	High
Tangible	Needs: Functional	Social Cognition	Complexity	
Intangible	Needs: Social	Instrumental (means)	Trialability	
Novelty	Needs: Experiential	Terminal (end)	Observability	
Variety	How new?	Innate preferences		
Complexity	New to whom?			
Cognitive stimulation				
Perceptual				
Epistemic				
Conceptual				

Figure 14 – Aspects of New Products

This enabled each sentence and aspect to be categorised. Figure 15 provides an example of the spread-sheet headings and responses to the topic ‘What is new in a new model to you?’:

Figure 15 – Sentence and Aspect Categorisation

Q1: What is new in a new model to you?	Newness	Perceptions	Values	Characteristics	Complexity
1. Latest technology on the safety side	Variety	Needs: Experiential	Instrumental (means)	Advantage	Medium
1. …it doesn't have to be that much different. I do like all the new gimmicks… they're nice.	Familiarity	Schemas	Instrumental (means)	Relative	Low
1. I change my car for exactly the same sort of car but with a different engine…	Familiarity	Schemas	Instrumental (means)	Relative	Low
2. I try to balance off the car the financials against the functionality, I think the car for me has to do everything I need it to do, whether it's taking the dog for a walk or you know collecting form B&Q, fishing gear, it has to do everything… I think it's meeting needs, but if I were to prioritise what I was	Tangible	Needs: Functional	Instrumental (means)	Relative	Low
2. The last car bought… it was the technology…	Variety	Needs: Experiential	Instrumental (means)	Complexity	Medium
2. It has to be visibly different…	Perceptual	Needs: Social	Object	Observability	Low
2. …it has to have better credentials in terms of its performance and economy…	Tangible	Benefits	Instrumental (means)	Advantage	Low
get from A to B and enjoy driving	Cognitive stimulation	GAP	Personal	Advantage	Low
3 The car would have to be attractive… design is important..	Perceptual	Needs: Social	Object	Observability	Low
3. …the next thing is the quality of the car…	Tangible	Benefits	Terminal (end)	Advantage	Low
3. It would have to look different..	Perceptual	Needs: Social	Object	Observability	Low
3. …you expect it to be up with things up with technology, up with everything else.	Variety	Schemas	Object	Advantage	Medium
4. It's got to look right	Perceptual	Needs: Social	Object	Observability	Low
4. With me it's more… economy	Tangible	Benefits	Instrumental (means)	Advantage	Low
5. You just need to define a new model really, whether it's a brand new model, or an existing model that has been revamped.	Sensory	How new?	Object	Relative	Low
5. It's the actual performance etc that comes into it.	Tangible	Benefits	Instrumental (means)	Advantage	Low
5. Body shape isn't the same as I have as present.	Perceptual	Needs: Social	Object	Observability	Low
6. …it's slightly dependant on your own knowledge of cars, someone with a greater interest, knowledge, background in cars and what models look like and how they differ, might	Exposure	New to whom?	Object	Advantage	Low

The categorisation process was repeated three times, on separate occasions, by the author of this report to validate the selections (Krippendorff, 2004) – there were 6 conflicts overall, that were resolved by agreement in the third iteration.

3.5.3 Quantitative Data Collection

The opportunity was also taken to investigate the involvement, expertise and familiarity variables identified in the literature review. Reduced item scales were used to identify the participants Involvement and Expertise with automobiles. Likert scales, on a range of 1 to 7 (1 = Strongly Disagree; 7 = Strongly Agree), were used throughout for all qualitative scales.

The 2 item instrument - Involvement - proposed by Taylor-West et al. (2012) as a reduction of the Shimp and Sharma (1983) 8 item AIS scale, was used to measure Involvement, with the addition of a triangulation question which had been used previously at the Geneva Motor Show (see Table 9 below)

.

The 3 item instrument – Expertise - proposed by Taylor-West et al. (2012) as a reduction of the Kleiser and Mantel (1999) 10 item Consumer Expertise scale, was used to measure Expertise, with the addition of a triangulation question which had been used previously at the Geneva Motor Show (see Table 9 below).

In addition two questions were asked to identify how familiar the participants were with Ford, and in particular the Ford Focus (see Table 9 below).

Construct	Items
Involvement	1. Cars offer me relaxation and fun when life's pressures build up 2. Sometimes I get too wrapped up in my car 3. I really enjoy driving. (triangulation question)
Expertise	1. I enjoy learning about cars 2. I can recall almost all existing brands of cars from memory. 3. I would consider myself to be an expert on automobiles (triangulation question)
Familiarity	1. I am very familiar with Ford cars 2. I am very familiar with the Ford Focus

Table 9 - Measure Items

They were then asked a number of questions relating to the advanced technological options of the new Ford Focus.

To test their knowledge of an option they were asked to respond to:
'I know what the blind spot information system is' (example of one of the questions).

They were then shown a short video which explained the option in detail.

They were then asked if they would buy the option:
'I would buy the blind spot information system option' (example).

Finally they were asked if the option was something they would like to have:
'I would like to have the blind spot information system' (example).

Although this investigation was not about the price of the options, the participants were interested in the cost. To satisfy their interest, the cost of all the options was provided at the

end of the discussions, and they were asked if they would purchase the options now they had been provided with detailed information.

The scale data was then transformed into an overall mean score for the following constructs:

Knows the options

Would buy the options

Would like to have the options

In addition questions were asked to collate data for age, gender, current car owned and year of registration. Although the discussion group data was too small for any statistical analysis, cross-tabs were run to identify relationships with the constructs.

3.5.4 Combined Data

The headings used for the mean data was then added as additional columns to the qualitative spreadsheet. This allowed the quantitative measurements to be matched to the qualitative responses to provide a depth of richness to the observations, for example it allowed you to compare the views of novices with experts, by what they said. Additional columns were added to the qualitative spreadsheets (example in Figure 15) for the mean scores of the quantitative responses for the variables: Expertise; Involvement; Familiarity; Knows the option; Would buy the option; Would like to have the option. For an example of the combined display data please refer to Appendix 4. This process revealed a number of associations and patterns which are discussed in the result section.

3.5.5 Findings

The data reduction and combined qualitative data provided a strong visual representation on how the participants viewed new products; in particular new complex technological developments. It also allowed an observation of what the participants said (qualitative) and if this matched their responses to the quantitative measurements. This process also highlighted a gap in the literature.

As expected there was a linear relationship between Expertise and Knows the option; the lower the expertise the less knowledge participants had of the technological options; Involvement had a similar relationship with Knows the option. However, in this study, eight out of the twelve participants had high Familiarity with the Ford Focus, yet only three of the eight had high Knows the options, further investigation revealed that this was due to low Expertise.

There was no clear indication of any relationship between Would buy the option and Involvement, Expertise or Familiarity, whereas all participants responded that they would Like to have the options.

Responses to the topic 'What is new in a new model to you?' indicated that newness had to be tangible, *"…it has to have better credentials in terms of performance and economy…"* but also perceptual *"It would have to look different"*. In terms of perceptions it had to have benefits, *"…it had more features on it than the one I had previous…"* and meet their needs; social, functional and experiential, *"The last car bought… it was the technology"*. In terms of value most had instrumental values, *"With me it's more… economy"* or object value, *"It has to be visibly different"*. For characteristics, it had to be relative, *"I change my car for exactly the same sort of car, but with a different engine"*, as well as observability, *"Sometimes it has to be how a car looks"*, and have advantage, *"It has to be a new product as opposed to a facelift product"*. Finally for this topic most of the comments were related to low complexity.

Responses to the topic 'What is the minimum it must have?' indicated that newness had to have familiarity, *"What I have in the car now"*, perceptions had to be functional, *"You want at least what you've got at the moment…"*, values had to have innate preferences, *"Air conditioning… park sensors"* and characteristics aspects were the same as the previous topic, relative, observability and advantage. Finally for this topic all comments were related to low complexity.

Responses to the topic 'What is the most – least important thing in a new model?' revealed that all aspects of newness had to be tangible or perceptual. Perception aspects were functional needs or benefits, values were either terminal or personal and the aspects of characteristics were relative, advantage or compatibility. For this topic, 90% of the comments were related to low complexity and 10% to medium complexity, for example the

most important in a new model were appearance, economy and reliability; there were no significant least important comments.

3.5.6 Discussion and Conclusions

Involvement and Expertise had linear relationships with Knows the options, this suggests that you do not have to be an expert to have knowledge of new technology. In addition there is some concern that most of those with high Familiarity of the Ford Focus were low in knowledge of the new options, yet they scored high in Like to have the option. Although low knowledge is explained by low Expertise it does not explain why they would still Like to have the option. The answer lies in the short videos, which explained the options in detail. These were shown to the participants between the questions: Knows the option and Would buy the option which was then followed by the question Like to have the option. Clearly no one is likely to buy or like to have an option if they do not understand what it is, therefore it was important to explain the options to be able to gain those responses.

There was a clear indication that all would Like to have the option, whereas responses were very mixed to Buy the option. This suggests that whilst they attached some value to the option they were not prepared to pay for it. What is interesting, is that throughout the meetings many of the participants asked the price of the options, however it was explained that purpose of the discussions was to focus on the options for what they were and how they are viewed, rather than the price of the option, although it was acknowledged price is an important consideration in the final decision. However, at the end of each meeting prices were revealed for the two option packs – Convenience Pack - comprising of Active park Assist at a price of £525 and the Driver Assistance Pack – comprising several technological options at a price of £750 (see Appendix 3 for complete details), and every participant said they would buy the options as they thought they were good value. Clearly consumers are price conscious and will not buy at any price.

The qualitative data reveals that new products need to be visibly different, something tangible with features and benefits that met their social functional and experiential needs. It needs to meet instrumental and object values in what it does and how it looks to them while being relative to what they already know, yet different – not just a “facelift product”. The indications are that whilst the product needs to be different it still needs to be familiar with

what they know, there is a strong underpinning that they need to have at least what they have already have, based on innate preferences which were tangible rather than experiential in nature. This was borne out by the discussions and comments which were low in complexity, including the majority of comments made by those with high expertise.

In conclusion, if consumers needs are found to be low in expertise then adequate information needs to be supplied so they have a clear understanding of the product and what it does. If they are unable to identify the product with what they already know and understand then it will not be considered and is likely to go unnoticed, this supports Rogers (1995) view; if the product is too complex it can become a potential barrier to adoption by the consumer. This is particularly relevant for consumers with high familiarity of a product, but low in expertise; they may be expected to be aware of changes to the product, but because they don't understand them the result is they are overlooked.

The evidence suggests that gathering data from consumers on their involvement, expertise and familiarity provides a more effective segmentation tools and if this was operationalized it would allow marketers to communicate more relevant messages to the consumer segments, and increase response to their marketing campaigns.

3.5.7 Limitations

This study was carried out with only a small group of participants and care has been taken to avoid any reliance on statistical data, the focus was intended for the qualitative analysis, however, the results only provide pointers for further research and cannot be relied on as a generalisation.

One limitation is that the Expertise scale may have been subject to participants scoring higher than their true score, a limitation pointed out by Mehta et al. (2011), in this case it is possible the relationship between Expertise and Knows the option scales could have been lower than reported, however this would not have distorted the subsequent questions as the short videos explaining the options levelled all the participants knowledge.

3.6 INITIAL QUESTIONNAIRE PRE-TEST

This section provides a background as to how the initial questionnaire was set up. This part of the research follows on from the findings from the consumer discussion groups carried out in June 2011 (Section 3.5). The objective was twofold. Firstly, to obtain a larger data set, based on the framework of questions and product videos used in the consumer discussion groups; this would enable statistical analysis. Secondly, to obtain feedback from academic peers on the construction and content, as well as any amendments needed for errors and omissions.

Five face-to-face meetings were held at the end of April/early May 2012 with students and staff of the School of Business and Economics, Loughborough University. The structure of the meetings was a short background presentation before participants viewed the product videos and completed a hard copy questionnaire. Face-to-face meetings were chosen so that any difficulty with the complexity or interpretation of the questions could be clarified, as suggested by Malhotra and Birks (2007); although notes were taken to make any amendments required, none were needed.

3.6.1 Construction of the Initial Questionnaire

The framework of questions was based on the questions used in the consumer discussion groups. These were expanded to include questions relating to how many cars had been owned or shared previously and reasons for changing their last car, this was to obtain more insight into the depth of knowledge and familiarity through the previous product exposure, as well as the things consumers look for in a new model. The same product videos on the Ford Focus and 7-point Likert scales used in the consumer discussion groups were kept in the same format. Details of the questionnaire are provided in Appendix 5.

3.6.2 Data Collection

Although the five sessions were run on separate days and over lunchtimes, the response was lower than expected, only 32 over the period. To provide more flexible access, an online questionnaire was made available to those who could not attend. The Ford Focus product videos were embedded into the online questionnaire.

A number of reminders were sent to increase response; this raised the completed questionnaire total to 61. To increase the data set an invitation was also emailed for the same

online questionnaire to family and friends; two reminders were sent to increase responses, and a further 99 questionnaires were completed, making a combined total of 160 responses. Response rates from friends and family was 99 from a total of 141 invitations (70.21%) and 61 from the University total of 283 invitations (21.55%). Friends and family were chosen because of availability and convenience (Aaker et al., 2007).

All survey questions required an answer therefore, there were no incomplete surveys. Free text responses were subsequently coded into descriptive groups, for example the free text responses to the question "What was the reason for changing your last car?" Subsequent analysis of all the survey data was carried out using the SPSS statistical analysis programme.

Respondents were asked to actively feedback any aspect of the survey that they did not understand, including any errors. As a result several amendments were made for possible use in the main survey.

3.6.3 Findings

Results confirmed positive correlations between Expertise, Involvement and 'Knows the option' ($p=<0.05$), the lower the expertise or involvement the less knowledge participants had of the technological options, this supports the earlier research that suggested to be aware of an innovation it is not necessary to have in-depth technological knowledge. The relationships were as follows:

Correlations

		Expertise	Involvement	Average of all Knows options
Expertise	Pearson Correlation	1	.708**	.558**
	Sig. (2-tailed)		.000	.000
	N	160	160	160
Involvement	Pearson Correlation	.708**	1	.387**
	Sig. (2-tailed)	.000		.000
	N	160	160	160
Average of all Knows options	Pearson Correlation	.558**	.387**	1
	Sig. (2-tailed)	.000	.000	
	N	160	160	160

**. Correlation is significant at the 0.01 level (2-tailed).

Table 10 - Expertise, Involvement and Knows Options Correlations

There was a strong linear relationship between ‘Expertise’ and ‘Involvement’, those who are highly involved with automobiles having more expertise than those who are not and vice versa (Pearson Correlation r =.708, n= 160, p <.05), note: r =.50 to 1.0 is considered to be a large relationship (Pallant, 2010).

Yet the depth of expertise was clearly much deeper for Experts than those who were Involved. The relationship between ‘Expertise’ and the average of all the ‘Knows the options’ (that is the knowledge participants had of the technological options) was much larger than those with ‘Involvement’ (Expertise: r =.58, n= 160, p <.05; Involvement: r =.387, n= 160, p <.05 - Note: r =.30 to .49 is considered to be a medium relationship; r =.50 to 1.0 is a large relationship. (Table 11).

		Expertise	Involvement
Average of Knows the options	Pearson Correlation	.558	.387
	Sig. (2-tailed)	.000	.000
	N	160	160
Involvement	Pearson Correlation	.708	n/a
	Sig. (2-tailed)	.000	
	N	160	

Table 11 - Correlations

There was an expectation that consumers who were more familiar with a particular product were more likely to be aware of the current available options. As expected there were positive correlations between Expertise and Familiarity with Ford cars and the Ford Focus, this was similar for Involvement, however the strength of the relationship was much less. Findings revealed a large relationship between ‘Familiarity with the Ford Focus’ and ‘Knows the options’ (r =.509, n= 160, p <.05). A partial correlation of the qualitative data controlling for ‘Expertise’ revealed only a small relationship (r =.292, n= 160, p <.05 – Note: r = .1 to .29 is considered to be a small relationship (Table 12).

Control Variables			Familiar with Ford Focus	Average of all Knows options	Expertise
-none-[a]	Familiar with Ford Focus	Correlation	1.000	.509	.548
		Significance (2-tailed)	.	.000	.000
		df	0	158	158
	Average of Knows options	Correlation	.509	1.000	.558
		Significance (2-tailed)	.000	.	.000
		df	158	0	158
	Expertise	Correlation	.548	.558	1.000
		Significance (2-tailed)	.000	.000	.
		df	158	158	0
Expertise	Familiar with Ford Focus	Correlation	1.000	.292	
		Significance (2-tailed)	.	.000	
		df	0	157	
	Average of Knows options	Correlation	.292	1.000	
		Significance (2-tailed)	.000	.	
		df	157	0	

a. Cells contain zero-order (Pearson) correlations.

Table 12 - Partial Correlations

In addition there were large positive relationships with Familiarity with Ford Cars and the Ford Focus and 'Knows the options' (Pearson Correlation r-.513 and r.509 respectively), this supports the research proposals that familiarity is a moderator; the more familiarity with the Brand and Model, the more likely they are to be aware of the options.

The indications are that Expertise, Involvement and Familiarity overlap and are key to the awareness of options, see Figure 16 below. A partial correlation suggested that controlling for Familiarity with Ford cars had very little effect in the relationship between Expertise and Involvement (Pearson Correlation r-.708 reduced to r=.676) whereas Familiarity with the Ford Focus did have an effect (r=.615). However, this needs further support and expansion and the main survey included more questions on the background of their familiarity, particularly with the Ford brand as well as questions to identify how they became aware of the information.

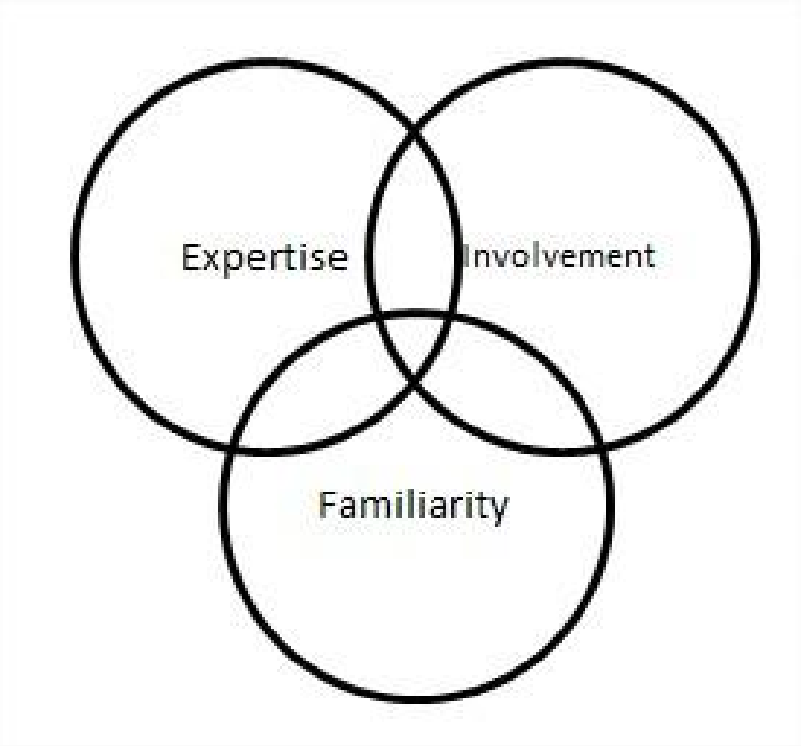

Figure 16 - Expertise, Involvement and Familiarity overlap

The question of ‘Knows the options’ also had a medium positive relationship with ‘Like to have the option’ and the ‘Would Buy the option’ (Pearson Correlation r-.407 and r.348 respectively) whereas ‘Like to have the option’ had a large positive relationship with ‘Would Buy the option’ (Pearson Correlation r-.769). The obvious view is that a consumer is unlikely to buy something that they do not know about, but the key here is that once they are made aware of it and like the option, they are more likely to buy the option, just knowing about the option is not good enough (see Table 13 for full correlations).

Correlations

		Expertise	Involvement	Average of all Knows options	Average of all Like to have options	Average of all Buy options	Familiar with Ford cars	Familiar with Ford Focus
Expertise	Pearson Correlation	1	.708**	.558**	.277**	.084	.464**	.548**
	Sig. (2-tailed)		.000	.000	.000	.288	.000	.000
	N	160	160	160	160	160	160	160
Involvement	Pearson Correlation	.708**	1	.387**	.183*	.020	.293**	.458**
	Sig. (2-tailed)	.000		.000	.020	.797	.000	.000
	N	160	160	160	160	160	160	160
Average of all Knows options	Pearson Correlation	.558**	.387**	1	.407**	.348**	.513**	.509**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	160	160	160	160	160	160	160
Average of all Like to have options	Pearson Correlation	.277**	.183*	.407**	1	.769**	.104	.193*
	Sig. (2-tailed)	.000	.020	.000		.000	.192	.014
	N	160	160	160	160	160	160	160
Average of all Buy options	Pearson Correlation	.084	.020	.348**	.769**	1	.031	.092
	Sig. (2-tailed)	.288	.797	.000	.000		.700	.249
	N	160	160	160	160	160	160	160
Familiar with Ford cars	Pearson Correlation	.464**	.293**	.513**	.104	.031	1	.819**
	Sig. (2-tailed)	.000	.000	.000	.192	.700		.000
	N	160	160	160	160	160	160	160
Familiar with Ford Focus	Pearson Correlation	.548**	.458**	.509**	.193*	.092	.819**	1
	Sig. (2-tailed)	.000	.000	.000	.014	.249	.000	
	N	160	160	160	160	160	160	160

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 13 - Correlations in detail

In brief, the other correlations of note were as follows:

The 35 to 49 age group had the strongest positive correlation between Expertise, Involvement and ‘Knows the options’ (Pearson Correlation r-.772; r.748 and .803 respectively), whereas the 20 to 34 age group had the lowest, with no correlation with ‘Knows the options’.

Males had a large relationship compared to the medium relationship females had with Expertise. However, this was reversed for ‘Knows the options’. This supports the need to identify how they became aware of the information.

Lastly, car age groups show a changing correlation with Expertise and Involvement, it revealed that the 10 year or more age group had the largest relationship; this may be because of necessity e.g. carrying out their own repairs. This data for this sector is mostly student cars, so this could be likely.

Finally, comparison of the averages of ‘Like to have the options’ and ‘Buy the options’ showed a reduction in the average quartile scores, the top quartile reducing from an average of 5.27 to 4.27 (see Table below).

		Average of Like to have options	Average of Buy options
N	Valid	160	160
	Missing	0	0
Percentiles	25	3.30	2.27
	50	4.36	3.09
	75	5.27	4.27

Table 14 - Like versus Buy

3.6.4 Limitations

Because the sample was friends and family, and University students and staff, there may be some bias in the results and findings and may not representative of the wider population. As might be expected, because of the student’s low age group, and for most it was their first car which had a fairly old average age (7 to 10 years group) they scored low in ‘Knows the options’. As the research is aimed at innovations in new cars they were not representative of new car buyers. However, the objectives of the research was to explore customer views and perceptions of new technological advances in the automotive industry and provide an insight for the questionnaire and main data collection with a more general public sample of car owners.

3.7 EXPLORATORY STUDIES SUMMARY

The evidence suggests that manufacturers and practitioners use a number of well-known commercial products for identifying the target market for their marketing communications, some have established internal methods and categorisations, but all of them use high level groupings. Most are based on a limited survey of consumers and can only be used as generalisations or representations of the market, whereas this thesis is concerned with the capturing and categorisation of individuals. The exploratory studies provided detailed information and insights into how the study should move forward.

The findings from the Geneva Motor Show found positive relationships between Expertise and Involvement and suggest that the scales are valid constructs for this research.

Data from the consumer discussion groups and questionnaire pre-test suggests that there are strong relationships between expertise, involvement and familiarity. Results from the questionnaire pre-test found correlations with Familiarity and the variables of Expertise, Involvement 'Knows the options'. However, in the discussion groups 67% of participants had high 'Familiarity with the Ford Focus', yet only 37% those had high 'Knows the options', further investigation revealed that this was due to low 'Expertise'. In comparison, Involvement and Expertise had linear relationships with 'Knows the options', the indications being that although those with Expertise had a greater depth of knowledge, it suggests that you do not have to be an expert to have knowledge of new technology. The evidence suggests that those with high involvement may know what the new innovations do, but not necessarily how they work. Similarly, Expertise moderates familiarity, there is a significant reduction in the relationship between 'Familiarity with the Ford Focus' and 'Knows the options' when there is low expertise. This indicates that owners of a Ford Focus may be aware of the new options, through marketing and a general interest in their vehicle, but it is likely that they do not understand what they actually do. This is supported by the findings of the discussion groups, those with high 'Familiarity of the Ford Focus' were low in knowledge of the new options.

Interestingly, although low knowledge is explained by low Expertise, all participants in the discussion groups stated they would still 'Like to have the option', but this was only after viewing the short videos, which explained the options in detail. Clearly no one is likely to buy or like to have an option if they do not understand what it is; the evidence suggests that it is important to explain the options to be able to stimulate those responses. More insight is given by the results from the questionnaire pre-test survey which showed a drop in the percentile average scores from 'Like the options' to 'Buy the options', indicating that whilst they attached some value to the options they were not prepared to pay for it. Despite that, 71.9% of respondents in the quantitative survey said they would buy the option packs, presumably for the same reasons given by the discussion group participants, that they represented good value. Although the price of the options are not the focus of this research, the findings show that consumers are price conscious and will not buy at any price and certainly not without a clear understanding of what they are buying. The evidence suggests

that even when consumers are aware of new options, unless they understand what they do, they will not be considered, whereas this behaviour changes when consumers are provided with product knowledge. This still does not mean that consumers will buy the product; the change simply means it will be considered, rather than ignored or overlooked.

According to Glass's guide, who set residual values for second-hand cars, ideally new models should be visibly different in the eyes of the consumer to the previous model or other competitors in the market (Section 3.3.4). They suggest that the failure to attract consumers to new innovations is because they do not compute to some buyers; it is simply something they do not understand.

The information obtained from meetings/interviews with key informants from the automotive sector revealed that positioning of the product in the mind of the consumer and aspirational methods, such as behavioural lifestyles (Alpert and Gatty, 1969; Ries and Trout, 1986; Chapman, 2005), are used in marketing communications of new models. This also forms the basis of automotive product development. The Marketing Department establishes a consumer profile that characterises a typical consumer for a new model, this is given to the product development teams along with a "wish list" that has been provided by the manufacturers sales field teams, with feedback from their retail dealership network as to what is selling well or how the markets respond to product; the product team, APG at a Ford, described this as being an internal view. APG stated that they preferred to work to the external view - looking at what is happening through consumer research, however they are not involved in establishing the consumer profile, known as the Ford Consumerscape, they are simply given the profile to work to. What they do try to do is develop brand new products where nothing else currently exists in the market – 'White Space Products' – but these are developed with the Consumerscape profile in mind.

It appears that product profiling does have its limitations, in the case of the failure of the Ford Fusion model there was a mismatch of the profile with the market segment; incorrect advertising and a poorly formed Consumerscape being cited as the reasons. In part this is likely to be because targeting the market is a problem, as none of the consumer data held by Ford or their marketing agencies have any of the Consumerscape characteristics; they only capture demographic data. The FoB Communications Manager acknowledged this: 'Databases are not as sophisticated as some people feel'. BMW also highlighted the problem

by admitting that they had no data on any emotional factors: ‘they can’t capture that, they come up with a composite profile and then make the product to fit that profile. The difficult thing is then to decide who fits those profiles, with the data they have already.

Lastly an interesting variable, that Ford use on a global basis, is Familiarity, this is one of five key items used in their Brand Equity and Awareness Tracking (BEAT) metrics.

The exploratory studies provided an insight into consumer perceptions and how manufactures and practitioners develop and communicate new models. This provided valuable information for conceptualising the study (CHAPTER: 4) and additional questions for the pilot questionnaire (Section 5.8).

CHAPTER: 4 CONCEPTUALISATION OF THE STUDY

4.1 INTRODUCTION TO THE CHAPTER

This chapter pulls together the theoretical basis for the development of the main empirical research using information and insights gained from the literature review (CHAPTER: 2) and findings from the exploratory studies (CHAPTER: 3), this conceptual model justifies the direction of the research and provides the conceptual framework and hypothesis for testing the proposals.

The exploratory studies reveal that manufacturers and practitioners use segmentation data that has limited effectiveness, with broad product consumer profiles that are an unlikely fit, not only with the data, but also consumer behaviour. The studies identified in the literature review provides more insight, but even these are very general in nature and need to be unpacked to focus on the key concepts and ideas that capture and categorise new innovative products and consumer perceptions. The following sections provide the framework and representation of this model.

4.2 PHILOSOPHICAL ASPECTS

Philosophy as a discipline strives to gain a deeper understanding of how and why things happen in our lives. It achieves this by questioning what we take for granted by focusing on two things, Ontology, which is the nature of existence and how that came to be, and Epistemology, the theory of knowledge. Those defined concepts result in the construction of theories that support the ideas of our existence and knowledge (Teichman and Evans, 1991).

To understand how things are developed and moved forward, the branch of philosophy relevant to this research is metaphysics, the study of being and knowing. Metaphysics was developed through the works of Aristotle (382 – 332BC). Aristotle described his theory of logic as the study of proof, and proposed that although formal logic is concerned with strict or deductive proof, it is not necessary to consider questions of true and false, it is more concerned with soundness i.e. is it logical.

Aristotle also systematised logic, working out which forms of inference were valid and those that are invalid i.e. what in reality follows what, and what only appears to be. He established

that a thing is whatever it is by virtue of its form, and forms can change. For example, human beings get older and change over time, but they are still human beings. Aristotle suggests that the real point of everything is what it does and what it is for, and this is how we learn to understand things (Magee, 2010). However, Heidegger (1889 – 1976) points out that although things do change, sometimes we have to make choices without any certainty of the outcomes (Teichman and Evans, 1991). In this research consumers are shown to consider new innovations with little understanding and are faced with making choices without any certainty.

In comparison, Plato (427 – 347BC), theorised that individuals are made up of three conflicting elements: passion, intellect and will, and suggested that intellect must be in control, governing passions through the will. He also believed there are two worlds, one being only accessible by your intellect, a world of concepts and forms in which knowledge is more real than in the other world, your everyday life, which is experienced through your senses and opinion. The theory being that things can exist that we do not know about. This is partly supported by the much later work by Kant (1724 – 1804) who proposed that things can exist that we do not know about, not in Plato's two worlds, but simply as being things that we are unable to comprehend. His theory is that knowledge is gathered through experience and understanding using our five senses. Anything that we are unable to understand or deal with cannot become an experience and consequently cannot become knowledge, yet it does not mean that it cannot exist (Magee, 2010). Searle (1995) argues that the only thing anyone really knows is what they have derived from experiences, and it would be impossible to talk about something that you couldn't possibly know about unless you had experienced it; to do so you would be making claims about something you could not possibly validate. This research gathered knowledge through a consumer's expertise, experience and understanding.

Yet research only moves forward if existing knowledge is developed by questioning accepted paradigms and theories; through Socratic discourse - Socrates (470 – 399BC). This is the teaching method that all of academia is built on to investigate and discover the truth using questions and answers (Magee, 2010). In reality, we continually search for better theories in our search for certainty. However, although a theory cannot be proven conclusively, they can be disproved, which means they can be tested. Popper (1902 – 1994) suggests that theories are only valid until others come along that are nearer the truth, in the meantime we use existing theory providing it works (Magee, 2010). This research shows that demographic

based segmentation is inadequate and that using a consumer's Expertise, Involvement and Familiarity provides a better basis for segmentation.

4.3 RELEVANCE OF EXISTING RESEARCH

Studies identified in the literature review provide categorisations of product innovation and aspects of consumer behaviour in the assessment of new products, but none of them match the complexity of innovations with consumer product knowledge. Most agree that for something to be new it must have some perceivable change (Rokeach, 1973; Rogers, 1995; Johannessen et al., 2001; Chapman, 2005; Conway, 2010; Peter and Olsen, 2010), but others suggest that new innovations are often misunderstood by consumers because they are too complex, coupled with the lack of digestible information (Johannessen et al., 2001; Chapman, 2005; Gibson, 2010; Sasu and Ariton, 2011; Wiedmann et al, 2011; Tobin, 2012a; Wilcox, 2012). Rogers and Shoemaker (1971) points out that whilst a consumers understanding of a new product is important, it does not result in automatic adoption, but it does mean it will be considered instead of being overlooked.

Johannessen et al. (2001) suggests two aspects – 'How new' and 'New to whom' - should be considered in all new product developments, suggesting a measurement of both the product and consumer, but from the consumer's viewpoint, not manufacturers. Most studies concerned with the measurement of product newness, identified in the literature, only investigate the manufacturer's view, the focus being centred on the technical aspect of innovation (Booz et al., 1982; Meyer and Roberts, 1986; Gobeli and Brown, 1987; Urban et al., 1996; Gregan-Paxton and John, 1997; Veryzer, 1998;Cooper et al., 2002; Talke et al., 2009; Conway, 2010), most authors surmising that product complexity determines the actual newness of the product, yet Kock (2007) suggests that innovativeness on its own could not be relied on for product success.

If complexity determines the actual newness, then the aspect of 'How new', proposed by Johannessen et al. (2001) would be more accurately represented by 'How complex' when delineating this aspect, especially when Robertson (1971, p.199) states that consumer perceptions set the level of innovation, and that a consumers understanding of product complexity is required before it will be considered; views which are supported by a number of other authors (Rogers and Shoemaker, 1971; Gatignon and Robertson, 1991; Ozaki, 2011).

Most authors agree that knowledge is key to understanding innovative products, the understanding of their complex nature being dependant on the level and type of knowledge that an individual holds. The antecedents of knowledge are described in Table 15.

Antecedent	Description/Context for this study	Authors
Expertise	Actual Knowledge	Zaichkowsky (1985c); Alba and Hutchinson (1987); Gregan-Paxton and John (1997); Novick (1998); Kleiser and Mantel (1994; 1999)
Involvement	Perceived or Accumulated Knowledge (gained through a keen interest with a product)	Bloch (1981, 1984); Shimp and Sharma (1983); Lennox and MaClaren (2003); Kassubeck et al. (2011)
Familiarity	Previous Exposure (through ownership or access to a specific product)	Rogers and Shoemaker (1971); Alba and Hutchinson (1987); Danneels and Kleinschmidt (2001)

Table 15 - Antecedents of Knowledge

The exploratory research suggests that consumer knowledge may be singular or a combination of all three aspects. For example, an expert does not have to be involved or familiar with a particular product and visa-versa for involvement and familiarity, although the likelihood of recognising a new innovation diminishes if knowledge comprises only one aspect and strongest when it is comprised of all three aspects. Data from the consumer discussion groups and questionnaire pre-test, found strong relationships between expertise, involvement and familiarity. The findings suggest that you do not have to be an expert to have knowledge of new technology; the indications were that those with high involvement may know what the new innovations do, but not necessarily how they work. In comparison some respondents with high familiarity of the product were found to be low in expertise; although they were aware of the innovation, they did not understand what it does. In the exploratory research Glass's Guide supported these findings (Section 3.3.4), they suggest that innovations do not compute to some buyers; it is simply something they do not understand.

The view held by Michaut (2001a; 2004a) is that some complexity is required to hold a consumers interest (epistemic newness), but the prerequisite is that the product is noticed first, during the initial product exposure (perceptual newness). The inference in Michaut's work is that initial exposure is something visual, but most automotive innovations are under-the-bonnet, in which case product information provides the initial exposure and the degree to how this is communicated is key to how it is perceived and understood by consumers. This is the main gap in the framework. The current situation is for manufacturers to develop new products based on their perceptions of a consumer profile formed from behavioural lifestyles (Section 3.3). This is then communicated using product positioning marketing methods that appeal to consumer aspirations, a one-size-fits-all with limited product information, whereas new products and consumers should be matched by their complexity levels, providing manufacturers with the ability to supply appropriate levels of product information in their communications to more accurate consumer segments.

In the exploratory studies, the FoB Communications Manager stated that their databases were not very sophisticated (Section 3.3.1) and demographics were likely to remain the method of targeting future marketing communications. Although the databases may be restricted to demographics one important piece of data, that they appear to overlook, is that they have a record of every customer that purchased one of their vehicles, something that could be used as a key Familiarity variable. In this case it would seem to be more appropriate to send differing marketing messages to existing owners, rather than the one-size -fits –all, when changes and new innovations are made to that model.

In summary, the existing research reveals a number of gaps. Firstly, no scales exist which measure the complexity of new innovative products, from a consumer's perspective. Secondly, existing scales which measure consumer product knowledge are only one-dimensional e.g. Expertise; the evidence suggests this is multi-dimensional. Lastly, a gap exists between consumer perceptions of new product innovations and manufacturer mass marketing communications.

4.4 KEY CONSTRUCTS AND IDEAS

This section deals with the development of constructs and ideas in more detail to justify their inclusion in the main data collection.

4.4.1 Complexity Construct

Current constructs measure the technical aspect of complexity from a manufacturer's view, none measure consumer perceptions of how complex a product appears to an individual (Booz et al., 1982; Meyer and Roberts, 1986; Gobeli and Brown, 1987; Urban et al., 1996; Gregan-Paxton and John, 1997; Veryzer, 1998; Cooper et al., 2002; Talke et al., 2009; Conway, 2010). Johannessen et al. (2001) posited that 'What is new', 'How new' and 'New to whom' are questions that manufacturers should consider in the development of new products. The evidence suggests that asking consumers 'What is new' and 'How new' would be a more useful construct as they are the 'New to whom' for this research. The degree of complexity will vary between individuals. Michaut (2001b, 2004a) proposed that products need some complexity to attract and stimulate interest it may be possible to identify an optimum complexity range with upper and lower limits to achieve this. For example, too much complexity and it is not understood and ignored; too little complexity and it is not viewed as being new and is overlooked. The questions and scales used in the research by Johannessen et al. (2001) had to be changed from manufacturer to consumer perspectives; the changes are discussed in Section 5.7.2.

4.4.2 Expertise Construct

Knowledge is delineated as Expertise, Involvement and Familiarity – antecedents that represent the level and type of knowledge that an individual holds. To avoid any confusion, consumer expertise in this research is used in the context of actual technical knowledge; expertise being the adjective of expert knowledge (Zaichkowsky, 1985a; Alba and Hutchinson, 1987; Gregan-Paxton and John, 1997; Novick, 1998; Kleiser and Mantel, 1994, 1999). This research argues that expertise gained through use of a product or service is know-how or tacit knowledge, which is related more to familiarity than expert knowledge. Similarly, as a result of exploratory research, it is proposed that awareness of a product or service is possible without any detailed technical knowledge. For this research the Kleiser and Mantell (1994) Expertise construct was found to be the most appropriate measure of expert knowledge, with some adaption to the questions for the automotive study; the changes are discussed in Section 5.7.3.

4.4.3 Involvement Construct

It is argued here that the second antecedent of Knowledge is Involvement. The aspect adopted for this research is the perceived or accumulated knowledge gained through a keen interest with a product, advocated by Bloch (1981), Shimp and Sharma (1983), Lennox and MaClaren (2003) and Kassubeck et al. (2011). The literature review identified other areas of Involvement that proposed a temporal rather than enduring nature of the construct. For example the increase of intensity during the actual purchase phase. For this research the Shimp and Sharma (1983) Automobile Involvement Scale (AIS) was found to be the most appropriate measure of Involvement, with some minor changes for this study; the changes are discussed in Section 5.7.4. This is support by the findings from the Geneva Motor Show (Section 3.4.2), which also found positive relationships between Expertise and Involvement and suggest that the scales are valid constructs for this research.

4.4.4 Familiarity Construct

The last antecedent of knowledge, proposed here, is Familiarity. It is proposed that this is know-how or tacit knowledge, gained through the use of a product or service. A number of authors support his view (Rogers, 1971; Alba and Hutchinson, 1987; Danneels and Kleinschmidt, 2001) suggesting familiarity is gained through previous exposure; this could be through ownership or access to a specific product.

Bettman and Park (1980) developed an instrument to group consumers with prior knowledge and product experience; this was based on previous ownership of a specific product, use of that product and if they had searched for previous information on that product, the results placed respondents into low, medium and high familiarity groups. Although relevant to this study, the Bettman and Park (1980) method appears too simplistic. Consumers can still have familiarity with a product without ownership, use or information searches for that specific product. For example, in this research familiarity could be with the manufacturer (Ford) rather than the specific model (Ford Focus), or someone they know who owns that model. Equally, the level of familiarity could be high because they are an expert or have a keen interest (involvement) in automobiles. Recency of ownership is also relevant; it is likely that current owners will be more familiar than past owners and possibly more alert to new developments of that model. This instrument was subsequently expanded to provide

triangulation of the familiarity groupings and provide the basis of the Familiarity construct, the details on how this was developed is provided in Section 5.7.5.

In the introduction to this chapter it was observed that manufacturers hold data on existing car owners which is something that could be used as a key Familiarity variable. It was also observed that manufacturers hold demographic data for existing car owners as well as potential customers, gained through marketing campaign enquiries. If records are matched by house number and postcode data it is likely to identify the number of instances of current and previous ownership for all the members of a family of a particular make and/or model. Using Ford as an example, if one or more members of the same household owned a Ford, the other members of the household are likely to be more familiar with Ford products than those in households that did not own a Ford. The level of familiarity would be more focused if the matching was made for a specific model, and more so if members of the household shared or had access to that model. This suggests that questions relating to the background of car ownership/usage would provide a much deeper insight into the level of familiarity with a specific product; i.e. the Ford Focus; questions used to identify this are discussed in Section 5.7.6.

Whilst familiarity, in this context, contributes to consumer knowledge, it is limited to a specific product and it only has value if the focus is on that product, in the wider aspect of automotive knowledge only expertise and involvement are the basis of a consumers product experience (CPE), whereas familiarity is an intervening variable which may moderate the outcomes of CPE and new product complexity (NPC), the overall outcome being a consumers categorisation of innovation (CCI).

4.4.5 Ideas

Although the key constructs are central to this study, demographics are needed to be able to provide group segmentation. Not only will it indicate what the groups look like such as i.e. age, gender, marital status and location. In addition there are other dynamic factors that need to be considered i.e. life cycle stage, education, household income and occupation. All these variables may change over time, suggesting data updates should be an ongoing housekeeping process, but their dynamic nature may have a moderating effect on the key constructs. For example, a change in occupation to the automotive industry may increase product knowledge.

Other changes, such as life cycle stage may change attitudes towards convenience (size of car), the environment (Co2 emissions) and performance (engine size; electronic connectivity such as Bluetooth); van Rijnsoever et al. (2009) found correlations with the most important aspects of car purchase and involvement (Section 2.2.10). In addition to dynamic and attitudinal changes there may be other reasons for changing a car. In Section 2.2.9, Punj and Staelin (1983) suggest that a change may simply be that the consumer just fancied a new car – something that was mentioned in the consumer discussion groups (Section 3.5) – or the consumer thought it best to change every two or three years - these type of responses may indicate the laissez-faire attitude associated with the inertia segment of consumers (Section 2.2.8).

It is likely that manufacturers will continue to use lifestyle marketing communications, despite calls to change the strategy to provide product information that consumers will understand (Wood, 2012; English, 2013). The indications are that consumers must access secondary sources of information to obtain the level of automotive product knowledge required, this may be ongoing for those with a keen interest or something they notice because of familiarity. The study by van Rijnsoever et al. (2009) not only looked at the most important aspects of car purchase, it also investigated the information sources used by consumers. Information sources would reveal how consumers obtain new product information and it likely that the amount and depth of information sourced will differ between those with Expertise, Involvement and Familiarity. For this study the sources and categorisations of information, with minor amendments to update current consumer considerations, used by van Rijnsoever et al. (2009) are used in the main questionnaire (Section 5.7.7)

The following section summarises the major dependent and independent variables used in this research followed by a schematic diagram that presents the relationships as a conceptual framework (Section 4.7).

4.5 VARIABLES

The following variables represent the main constructs to measure, consumer product experience (CPE), new product complexity (NPC) and the overall outcome of a consumer's categorisation of innovation (CCI)

4.5.1 Independent (presumed cause)

Expertise

Involvement

Complexity

4.5.2 Dependent (presumed effect)

Consumer Product Experience

New Product Complexity

Consumer's Categorisation of Innovation

4.5.3 Intervening (presumed moderators)

Product Information

Socio-Demographics

Familiarity

4.6 HYPOTHESIS

Reflecting on the conceptualisation of the study, the identification of the main constructs and variables, the following hypotheses are proposed:

Hypothesis 1a: A Consumer's Product Experience (CPE) is based on their Expertise and Involvement with the product
Hypothesis 1b: Socio-demographics have a direct relationship with CPE

Hypothesis 2a: Familiarity has a direct relationship with socio-demographics
Hypothesis 2b: Higher levels of Familiarity has a positive effect on CPE
Hypothesis 2c: Lower levels of Familiarity has a negative effect on New Product Complexity (NPC)

Hypothesis 3a: The provision of relevant product information has a positive effect on NPC
Hypothesis 3b: Inadequate product information has a negative effect on the Consumer Categorisation of the Innovation (CCI)

Hypothesis 4: Higher levels of CPE has a positive effect on NPC

Hypothesis 5: Lower levels of NPC have a positive effect on CCI

4.7 CONCEPTUAL FRAMEWORK

This framework provides a visual presentation of the main constructs and variables with their presumed relationships and hypothesis (Figure 17), as advocated by Miles and Huberman (1994) and is a reflection of the conceptualisation of the study (Smyth, 2004).

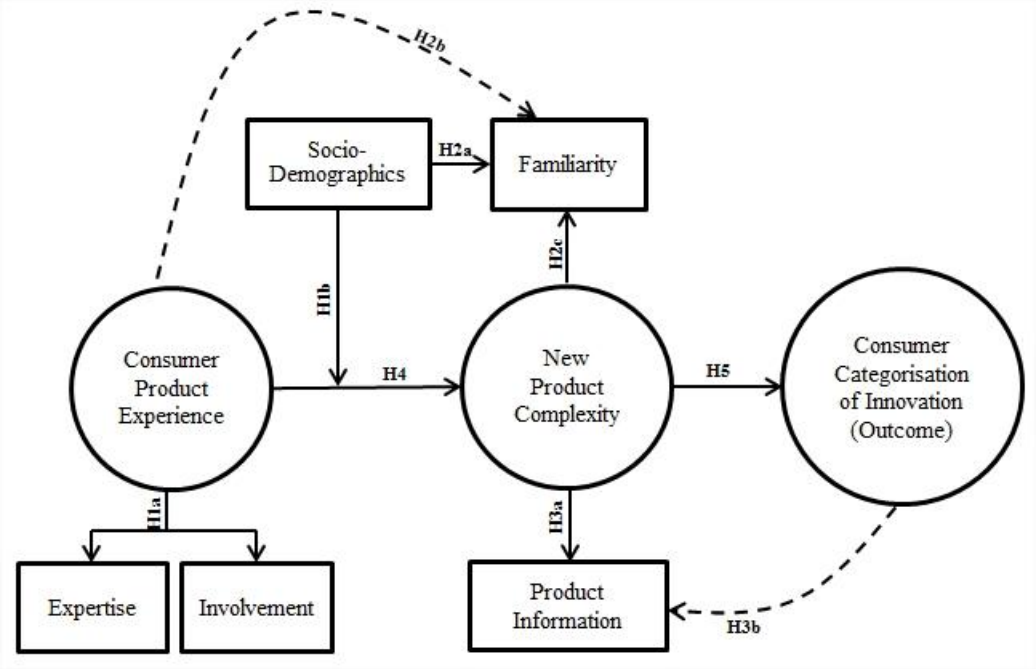

Figure 17 - Conceptual Framework

Currently there are no relationships between CPE and Product Information. This gap is likely to remain until manufacturers start to supply relevant Product Information that is matched to CPE to reduce NPC. In doing so it allows manufacturers to identify an optimal level of CCI for new innovative products and increases consumer awareness.

4.8 MODEL SUMMARY

This chapter discussed the theoretical background and conceptualisation of the study through a model of constructs and variables that affect consumer perceptions of new product innovations. A framework was developed to show how consumer perceptions fit within a manufacturer's product development and marketing communications, and identifies gaps within that framework.

The resulting hypothesis and conceptual; framework provides the way forward from descriptive explanations to empirical investigations, in line with the theoretical background, and forms the basis of the methods employed to collect empirical data.

CHAPTER: 5 METHODS

5.1 INTRODUCTION TO THE CHAPTER

This chapter provides a detailed description of the methods used for the research, including methods to collect empirical data, the sampling frame, questionnaire design, pre-testing and the main survey procedure. An overview is shown in Figure 18.

To develop a robust investigation, a post-positivist approach was taken to the research, rather than relying on the assumptions of previously used scales and constructs (Cresswell and Clark, 2007). A positivist view is that things can be understood through scientific methods and that there are things that are known to be true, compared to a post-positivist who questions known assumptions, especially when they are ambiguous or complex in nature, their view is that predictability cannot be a foregone conclusion (Bryman, 2001; Groff, 2004). The approach adopted was to consider how consumers responded to questions and enquiry; the purpose was to discover if the methods used were objective or subjective and that they did not stretch the bounds of realism (Groff, 2004).

Initial enquiries into literature involved desktop research searching for relevant topics related to this study (Dunleavy, 2003; Oliver, 2004; Quinton and Smallbone, 2006; Lee and Lings, 2008); a retrospective approach was taken initially followed by the citation approach (Brown, 2006; Brewer, 2007). This identified core texts and search items which were used to set up alerts with Zetoc and ScienceDirect databases for future publications of relevant papers, using the following crtiteria: journals, authors and keywords/phrases (Appendix 14). In addition, the motoring sections of the national press and magazines, e.g. The Daily Telegraph, were monitored as well as automotive websites e.g. Society of Manufacturers and Motor Traders (SMMT) for relevant articles. A critique was made of each source of information, with extracts and comments indexed by source and then grouped by topic/theme of information (Hair et al., 2007).

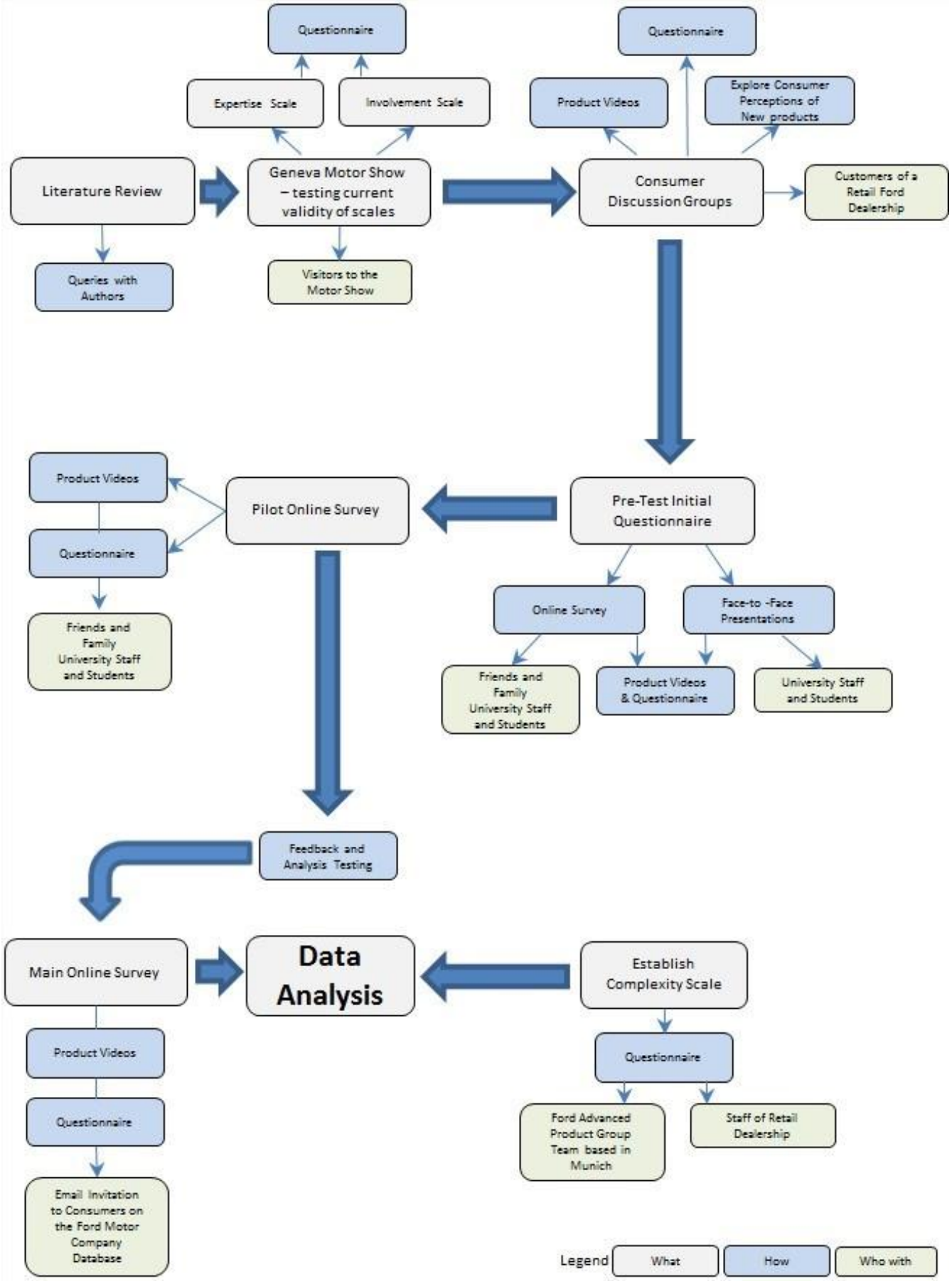

Figure 18 - Overview of Methods

A mixed methods approach of qualitative and quantitative research was used for the exploratory studies. The rationale for using mixed methods is that neither qualitative nor quantitative methods are sufficient on their own to understand the research problem completely (Cresswell and Clark, 2007), but when used in combination they complement each other and allow for more complete analysis (Neuman, 1991; Teddlie and Tashakkori, 2009). Whereas quantitative methods rely on numerical data for testing the predictive power of variables, they are unable to capture consumer views or explore trends and tangents with key informants to the extent of qualitative methods (Greene, 2008). By using mixed methods it provided the opportunity to explore theoretical concepts with consumers as well as manufacturers to find out what happens in real situations, e.g. how marketing information is received and understood by consumers.

5.2 METHODS AND DIRECTION

The literature review suggested that the practice of developing new products is based on manufacturing processes, their capability and practical competences. The evidence suggests that these take priority over user needs and wants and very little focus is given to consumer issues or involvement (Section 2.4), this required further investigation. The first part of the process was to gather information on how new cars are developed, in particular the new Ford Focus launched in February 2011. The Ford Focus was chosen because it had several technological developments that have not been seen before in a mainstream volume model, and also because of the timing of the launch in relation to this research. It has been reported as the most average car on the road (Williams, 2012).

To gain access to sources of information a relationship had to be established with Ford Motor Company Ltd. A sponsor was required within Ford, to act as a supporter of the research and facilitate referrals and introductions to the product development and marketing personnel. The sponsor was the Manager of the Henry Ford College, who was chosen because of the close relationship between the Ford College and Loughborough University; formal approval was given by the Marketing Director, Ford of Britain (FoB) who also approved the supply of consumer data for the target population and sample (Section 5.5) used for the main survey of this study.

The second part of the process was to gather information on consumer perceptions of new automotive products. Malcolm Waite Ltd., a Ford Retail Dealer based in Sandwich, Kent, agreed to provide support and resources to carry out face-to-face meetings and discussions with their customers. Gaining support from both these sources was a key milestone.

The research commenced with an early opportunity to carry out exploratory research at the Geneva Motor Show in March, 2011 (Section 3.4). This enabled the testing of two previously used scales identified in the literature review: AIS (Shimp and Sharma, 1983) and Expertise (Kleiser and Mantell, 1994), (Section 3.3). The scales were found to be reliable and had current validity. These were used with participants in the consumer discussion groups (Section 3.5).

There were three consumer discussion group meetings (4 attendees each meeting), these were carried out over 3 evenings in June 2011. They were chosen to gain insights into their perceptions of new innovations and assisted in the development of questions for the surveys. It also allowed feedback on their views of the product videos which were being used for the first time. The qualitative and quantitative data collected and feedback from these meetings were used to construct the pre-test presentations and questionnaires (Section 3.6).

The pre-test was carried out at the end of April/early May 2012 with students and staff of the School of Business and Economics, Loughborough University. These were five face-to-face presentations using an expanded format of the product videos and a paper-based questionnaire using in the consumer discussion groups and the scales tested at the Geneva Motor Show. The purpose of the pre-test was to gain direct feedback from participants on the structure and content so that errors and improvements could be carried out. This was then developed into an online questionnaire and rolled out to students and staff who were unable to attend the face-to-face presentations and friends and family, the purpose being to obtain high numbers of data collection and feedback on the clarity and understanding of the online survey. Participants were actively encouraged to point out any errors or omissions and raise any concerns over the wording of the survey. Feedback enabled minor changes and amendments to be made. The pre-test also provided sufficient data to carry out the statistical analysis and gain an early insight into correlations.

Having gained feedback the final version of the main survey was constructed (Section 5.9). Invitations to the main survey were sent out to 91,968 consumers (Section 5.6.1) by email in August 2012. This was a one-off opportunity that did not allow any follow-ups, therefore it was decided to carry out a pilot survey (Section 5.8) in July 2012, with staff and students and friends and family as per the pre-test questionnaire rather than risk any problems with the main survey. No errors were reported or any further amendments.

Following the main survey data collection, and subsequent analysis, training courses for the product launch of two new automotive models were attended, in October 2012 (Section 7.2). The objective was to identify and observe the marketing plans and methods used to communicate the innovative features through the resources of mass media and front-line sales personnel in the automotive dealerships.

Part of the training courses was delivered using product videos and previews of TV adverts for the diffusion of information, this prompted further investigation into which type of video/advert consumers are likely to prefer. To achieve this, a further online survey was carried out in February 2013 to gain insights into consumer preferences; this was carried out with an Automotive Research Panel that was established for this research (Section 5.3).

5.3 RESOURCES

The instruments identified in the literature required a review of the scale and items used. It was decided to establish a panel of industry experts to scrutinise the instruments and items and advise/approve the wording and clarification of questions and to trim redundant or irrelevant questions, so that participants in the survey had a clear understanding. The panel consisted of five experts with extensive experience of the automotive industry with dealership and academic backgrounds.

Two key aspects of newness, identified in the literature review (Section 2.3.2), were ‘What is new?’ and ‘How new?’ (Johannessen et al., 2001). This required scales that categorise the aspects of newness of a car and provide complexity ratings of the models innovations. These were devised in collaboration with the Ford of Britain Advanced Product Group (APG) and their team of six experts based in Cologne, who were involved in the development of the

Ford Focus. By having this resource of people, who were knowledgable in this area, their review of scales and items served as a measure of content validity (DeVellis, 1991)

It was decided that would be useful to establish a consumer research panel to carry out any further investigations or clarification required after the main survey was completed. This was acheived by inviting respondents to the main survey; 178 respondents agreed to participate (Section 5.9.4).

5.4 EXPLORATORY RESEARCH

Details on the exploratory studies are provided in CHAPTER: 3. The justification for placing this part of the research before the Methods chapter was because the investigations and pre-tests were necessary to test the appropriateness of existing constructs and the conceptualisation of the study.

5.5 TARGET POPLULATION AND SAMPLE

The unit of analysis for this study is individual consumers, with the level of analysis being owners of new cars. The study is concerned with how consumers perceive the complexity of new car innovations, therefore the sampling population was restricted to owners of cars up to four years old; it was agreed by the panel of experts that recall and experience of new cars would diminish after this period. In addition, an age criteria of 18 or over was also agreed, as the amount of new car owners below this age would be limited.

Ford Motor Company agreed to supply the sampling frame of consumer data for carrying out the research surveys for this study. As well as the criteria for new car ownership and minimum age, a random mixture of Ford customer and prospects (50/50) was applied as well as an even split of gender - male/female.

5.6 DATA COLLECTION

For this study, secondary data was not available, therefore primary data was required. To achieve this, a mixed methods approach was used. Firstly, qualitative data was obtained through discussion groups and in-depth interviews with consumers, and semi-structured interviews with automotive industry staff and practitioners. The qualitative methods were

chosen to stimulate discussions to uncover opinions and explore views, as suggested by Bader and Rossi (1999).

Qualitative data collection used paper-based and online survey methods; data was analysed using SPSS and LISREL statistical programs; the tests used for correlation, analysis of variance, regression and structural equation modelling are given in CHAPTER: 6.

A Gantt chart (Clark and Gantt, 1938) provides an overview of the timings of the data collection (Figure 19).

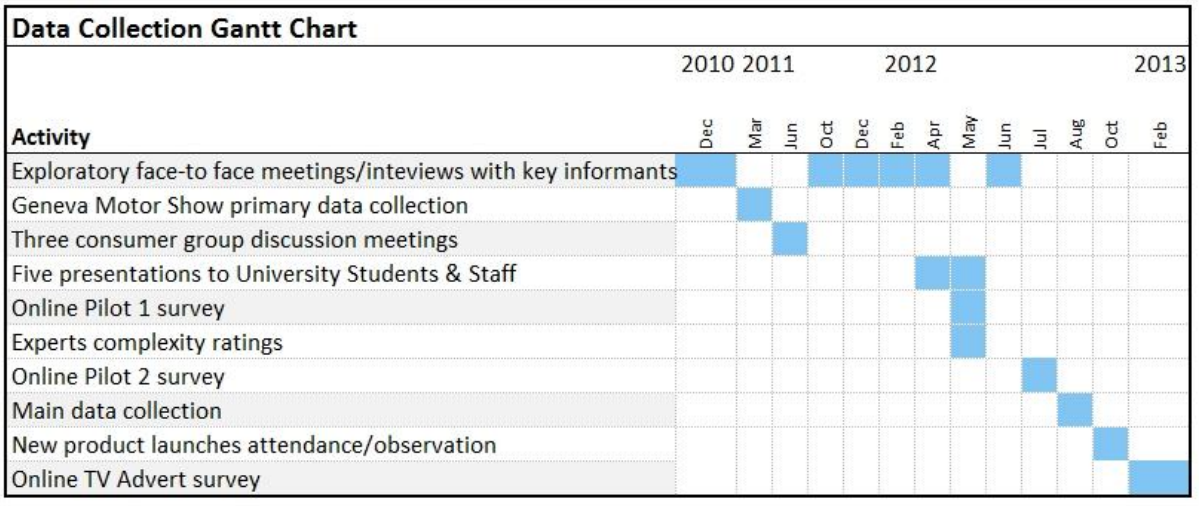

Figure 19- Meetings/Interviews and Data Collection Time Frame

Nine exploratory interviews were carried out with key informants of the automotive industry during the research, these were face-to-face or by telephone (Appendix 15); some required further discussion and clarification.

5.6.1 Main Survey Data Source

Approval had been obtained from the Marketing Director, Ford of Britain (FoB) for the supply of consumer contact information in the form of email addresses to carry out an online survey. The original approval was for 50,000 email addresses to be supplied, subsequently because of concerns with data protection the survey was administered through Ford's marketing agency – Wunderman.

The original proposal was to send out an initial email invitation, followed by two reminders to participate in the survey, at weekly intervals, however only one email was allowed as they did not want to 'overfish' their consumers.

As the survey was administered by Ford concerns over the possible negative reaction by consumers to what might appear to be a Ford marketing campaign were expressed, as well as the reduced responses due to the lack of any follow-up reminders. As a result, an agreement was made to use an email supplied by the researcher of this study, including the Loughborough University logo and researchers contact details. The contents of the email were subjected to Ford scrutiny by their legal department who required several amendments before acceptance. It was also agreed that whilst the email was to be sent out by Wunderman (Ford's agency), the 'From:' address would be Loughborough University. In addition a request to increase the volume of emails from 50,000 to 150,000 was approved to alleviate the problem of only one email attempt, although subsequently only 91,968 emails were available on their database that fulfilled the sample criteria, a breakdown of the 91,968 was supplied: 89,510 (97.33%) were Ford customers and 2,458 (2.67%) were prospects; 62,170 (67.6%) were male and 29,798 (32.4%) were female.

A number of online survey providers were considered to set up and run the research questionnaire, the final choice was FreeOnlineSurveys.com as they provided the facility for external videos to be embedded into their online surveys (Section 5.7).

5.7 QUESTIONNAIRE DESIGN

To ensure the questionnaire produced reliable and valid data, a systematic process was followed using the nine step procedure suggested by Iacobucci and Churchill, (2010). Similar approaches are advocated by a number of authors of methodological literature – Oppenheim (1992), Jankowicz (2000), Aaker et al. (2007), Hair et al. (2007) and Saunders et al. (2009).

Step	Procedure
1	Specify what information will be sought
2	Determine type of questionnaire and method of administration
3	Determine content of individual questions
4	Determine form of response to each question
5	Wording of each question
6	Sequence of questions
7	Physical characteristics of questionnaire
8	Re-examine steps 1-7 and revise if necessary
9	Pre-test the survey, revise where needed

Table 16- Procedure for Developing a Questionnaire

The initial design grew from questions formed from findings in the literature review and which were used as a framework for the exploratory studies with consumer discussion groups (Section 3.5). They were developed during the pre-test presentations and questionnaire (Section 3.6). Although Aaker et al. (2007) suggests the construction of a questionnaire is an imperfect art, care was taken to obtain as much feedback as possible through the pre-testing and pilot stages to ensure that questions were clearly defined, to avoid ambiguity, so they could be accurately answered by respondents (Hair et al., 2007). The answers given in the pre-test and pilot stages were also scrutinised for response substitution (Gal and Rucker, 2011) where respondents may reflect their attitudes to a brand or model (i.e. bad experiences). There were no answers to indicate ambiguous or response substitution content in the pre and pilot tests, but this could not be ruled out completely.

5.7.1 Information Sought

There is a wide variation in the methods, research designs and model operationalisations of the variables used in the areas of consumer perceptions of new innovative products. Although many instruments and constructs were identified in the literature review, very few are specific to the automotive industry and because of the passage of time some required verification for current validity, others required modification to ensure they were appropriate for this research. A summary of the instruments that underpin this research are provided in Appendix 17. Note: all the scales used in this thesis are 7-point Likert scales; the scales are discussed in the following sections.

5.7.2 Complexity

Innovation implies newness. Johannessen et al. (2001) carried out research to define and measure innovation better, they investigated three dimensions of newness: 'What is new', 'How new', and 'New to whom'. The instrument used 5-point Likert scales measuring six areas of innovative activity by manufacturers: new products, new services, new methods of production, opening new markets, new sources of supply, and new ways of organizing. They found that innovation as newness represents a unidimensional construct, distinguished only by the degree of radicalness/complexity.

The study suggested that success of an innovation is determined by the extent of its adoption rather than how technologically advanced it is, and surmised that what makes it innovative is its newness as judged by consumers. The weakness of this instrument is that the research was industry based; although it identified consumers as the judge of new products, it would have been more beneficial if it had been carried out with consumers.

It was decided that with some modification that the aspects of 'What is new' and 'How new' would be suitable measures of a consumers viewpoint of innovation. 'New to whom' was not required as only consumers would be responding to this question. In the conceptual chapter it was observed that the aspect of 'How new' would be more accurately represented by 'How complex' when delineating this aspect, therefore an additional question was proposed to gain a consumers perception of complexity. Questions were devised through an iterative process with a panel of experts (Section 5.2) to measure these aspects in relation to new innovative options on a new car, the Ford Focus. As a result the following questions were asked after the respondents had viewed short product videos relating to the options:

Innovation aspect	Item to measure the aspect
What is new	I would class this option as being new, e.g. not seen before
How new	I think this option is very innovative, e.g. very advanced; ground-breaking.
Complexity	I think this option is very complex to understand

Table 17 - Items to measure Innovation Aspects

To gain more insight into consumer adoption of new innovations, after discussion with the panel of experts, two questions were added as follows:

I would like to have this option
I would buy this option

In addition to these two questions an additional question was added. The literature review suggests familiarity of a product is an important variable in the initial exposure to a new product as well as schema congruity and product knowledge. To measure prior awareness of the options used in this research, the following question was asked of each option, prior to viewing the product video; respondents were only given the name of the product –as defined by the manufacturer:

I know what the option is

At the end of the survey additional questions were asked to identify if they were aware of the options prior to the product video and if so, the source of information, as follows:

‘Were you aware of any of the options you have just seen prior to this survey? If you were, please click one of the options for how you became aware of that option. If you were not aware, then just leave the option blank.’

Option	Newspaper or Magazine advert	Newspaper or Magazine article	TV Advert	Online Internet information	Manufacturer or Dealer mailshot	Word of mouth – from a friend etc.
e.g. Traffic Sign Recognition	✔					

Table 18 - Prior Awareness: Sources of Information

The categories were an amended extracts of the information sources options used by van Rijnsoever et al. (2009) in their research on consumer car preferences, the changes were agreed with the panel of experts.

The final instrument used for this study contained five questions relating to innovation and one question relating to prior awareness plus six possible sources of that awareness.

5.7.3 Expertise

Kleiser and Mantell (1994) developed an expertise scale based on previous research by Alba and Hutchinson (1987). The original instrument had 39 items scored on a seven- point Likert scale, Kleiser and Mantell (1994) reduced the scale to 15 items using exploratory and confirmatory factor analysis (LISREL) with a sample of 118 students using a camera as the focal point for study. The results suggested four dimensions of customer expertise: cognitive effort, analysis, elaboration and memory with respective alphas of .90, .72, .89 and .86, an overall coefficient was not supplied, although they found that a three-factor model combining the analysis and elaboration dimensions fitted the data as well as the four-factor model. For this study the cognitive effort dimension questions were omitted, this was because the questions were concerned with loyalty and side-by-side brand comparisons rather than knowledge of the product. Similarly a question in the elaboration dimension was omitted as it was concerned with marketing messages. The panel of experts agreed that the omitted questions were redundant; they also approved minor changes to the wording to use cars as the

focal point of the study and clarification. The final instrument used for this study contained nine items relating to the construct of expertise. For the purposes of triangulation the question used for the Geneva Motor Show research (Section 3.4.1) and pre-test questionnaire (Section 3.6.1) – I would consider myself to be an expert on automobiles – was used again in the pilot and main survey.

5.7.4 Involvement

Bloch (1981) developed the Automobile Involvement Scale (AIS), the original scale included 69 items, which was reduced through factor analysis to 17 items. Subsequently, in later studies carried out by Shimp and Sharma (1983) and Lennox and McClaren (2003) this was reduced to an 8 item scale. The original 69 items were analysed by a group of six judges to trim redundant and/or irrelevant statements to 44 retained items, which were reduced further using a student sample (n = 381) via coefficient alpha (.83) and item-to-total correlations. A second student sample (n = 57) was used for test-retest reliability, the retest being taken after a two week interval, alpha was .79 and .78 resulting in a final 17 item measure. Shimp and Sharma (1983) factor-analysed the AIS with a sample of 696 adult non-student respondents to test the dimensionality of the scale and reduced the scale to 8 items; alpha was .76. Lennox and McClaren (2003) ran the reduced 8 item scale (Shimp and Sharma, 1983) with 178 customers of a car dealership reporting; alpha was .71.

All items in the three research projects used a 6-point Likert scale. Terence Shimp (Shimp and Sharma, 1983) was contacted by email and asked why a 6-point scale (instead of a 7-point) had been used, although he was unable to recollect he suggested it was to avoid respondents choosing a middle-of-the-road score. The evidence suggests the eight item scale (Shimp and Sharma, 1983) was the most appropriate and was adopted for this study. For the purposes of triangulation the question used for the Geneva Motor Show research (Section 3.4.1) and pre-test questionnaire (Section 3.6.1) – I really enjoy driving – was used again in the pilot and main survey.

5.7.5 Familiarity

Bettman and Park (1980) developed an instrument to group consumers with prior knowledge and product experience; the focal point of the research was a microwave oven. 99 housewives were contacted by telephone and were asked three questions: had they ever owned a

microwave; used a microwave; and had they searched for information on microwaves. Those who responded negatively to all three questions were assigned to a low group; those who had searched for information or used but not owned a microwave were assigned to a medium group, and finally those who owned a microwave were assigned to a high group. The design of the research suggests this could be applied to a variety of products, including cars.

Discussions with the panel of industry experts agreed that the groups would be appropriate to represent low, medium and high familiarity groupings for the Ford Focus used in this study, obviously the wording of the questions was changed from microwave to Ford Focus. The panel also agreed minor amendments to the second question –used a microwave – to Have you shared or had use of the Ford Focus, as this was more appropriate for multi-car households. However, the Bettman and Park (1980) groupings do not take into account consumers who had no familiarity and group those who had searched for information and those who had past use of the product in a Medium group. It is likely that familiarity would be higher for those who had used a product than those who had searched for information on a product and similarly the groupings do not discriminate between current and past owners of a Ford Focus - the former being likely to have the highest level of familiarity for current and past owners of a Ford Focus, therefore an additional question was added: Is your current car a Ford Focus. This provided five levels of familiarity – None; Low; Moderate; High and Very High.

It was also agreed with the panel of experts to provide triangulation of the familiarity groupings to ask two further questions: I am very familiar with Ford cars; I am very familiar with the Ford Focus. The questions used a 7-point Likert scale to measure the strength of familiarity.

The triangulation questions were expected to correlate with the familiarity groupings. The final instrument used for this study contained six items relating to the construct of familiarity.

5.7.6 Car Ownership/Usage

Punj and Staelin (1983) carried out research into automobile purchase decision; reasons for changing their car; how many makes/models were considered at the time of purchase and how many makes of cars they had owned in the previous 10 years. They suggest that the

more cars owned "…captures a decision-maker's desire to be exposed to new models…" (Punj and Staelin, 1983, p.372). Some questions used in the Punj and Staelin (1983) research were reworded for clarification and to update current consumer considerations i.e. CO2 emissions.

Additional questions were added to obtain a profile of the experience with manufacturers and car models. For manufacturers - 10 classifications were established using the top five car manufacturer registrations in the UK in 2011 with a market share >5%, e.g. Ford; Vauxhall, the rest being grouped by manufacturing region, e.g. Asian; Japanese. Secondly, to identify the segment of their current car, e.g. small - large, the Motor Industry Vehicle Classifications was adopted (Appendix 1). Reasons for changing their car was updated by assembling a document archive from a broad range of manufacturers' product brochures, these were scrutinised using content analysis techniques, at the terminological level (Neuendorf, 2002; Bryman and Bell, 2007) to determine categories of newness that manufacturers describe in communications to target customers, and the way they group such features. Whilst there were differences in terminology across manufacturers, it was possible to categorise them into four main groups: Style and Design; Functionality: On-Board Equipment and Post Purchase Offerings. This categorisation was subsequently agreed with the panel of experts (Section 5.3) and the Ford APG team based in Cologne (Section5.3).

The final instrument used for this study contained nine items relating to car ownership and usage.

5.7.7 Information Sources

The study by van Rijnsoever et al. (2009) investigated relationships between what was most important in the purchase of a car; the information sources consumers used in the appraisal process and their level of involvement (utilising the Bloch, 1981 AIS scale). The instrument used for information sources comprised seventeen items grouped into five factors relating to: internal search, personal channels, mass media channels, Internet searches and retailers. Some items were reworded to accommodate current source i.e. Internet web sites.
This instrument was chosen as it was expected that would correlate with the expertise and involvement scales. The final instrument used for this study contained fifteen items relating to information sources.

5.7.8 Most Important Aspect of Car Purchase

The other instrument used in the van Rijnsoever et al. (2009) research contained nineteen items and three factors to measure the most important factors when deciding which cars consumers would consider. The items were grouped into three factors relating to: environment, performance and convenience.

Some questions were reworded for clarification i.e. CO2 emissions, rather than Greenhouse gas emissions, others to accommodate current technology e.g. blue tooth and phone connectivity. All changes were agreed by the panel of industry experts. The final instrument used for this study contained fifteen items relating to the most important aspects of car purchase.

By utilising the van Rijnsoever et al. (2009) most important aspects of car purchase and sources of information constructs in the main survey of this study it provided more insight into consumer profiles, particularly for those with low involvement - the so-called inertia segment.

5.7.9 Socio-Demographics

Socio-demographics are a representation of the attributes of consumers; some of these are readily available and can be verified, such as the respondent's age, gender, marital status, formal education and location. Others, such as social class and cultural aspects can only be relative, rather than absolute measures of an individual's place in society (Hofstede et al., 1999). Income and occupation can also be difficult to verify, particularly in self-reporting situations, because some respondents may want to appear to have a higher level/status than they currently have (Dibb and Lyndon, 1996; Hofstede et al., 1999; Weinstein, 2004; Aaker et al., 2007; Hair et al., 2007; McDonald and Dunbar, 2004; Lacobucci and Churchill Jr., 2010; Wells et al., 2010; Tkaczynski and Rundle-Thiele, 2011).

Some demographics change over time, e.g. age and marital status and there are numerous categorisations in use by authors and researchers (Dibb and Lyndon, 1996; Hofstede et al., 1999; Weinstein, 2004; Aaker et al., 2007; Hair et al., 2007; McDonald and Dunbar, 2004; Iacobucci and Churchill, 2010; Wells et al., 2010; Tkaczynski and Rundle-Thiele, 2011). For

this study, extracts were made of these categorisations and proposed and agreed through an iterative process with the panel of experts. The education categorisation was based on four groupings taken from the National Qualification Framework (NQF). Five lifecycle classifications were considered (Wells and Grubar, 1966; Murphy and Staples, 1979; Gilly and Ennis, 1982; Lawson, 1988; Watson, 1999), the three stage Lifecycle scale (Watson, 1999) was chosen for ease of completion by respondents (Rolstad et al., 2011); some changes were made to the wording used after feedback from the pilot survey; these were also agreed by the panel of experts. The final categorisations used in this study are provided in Appendix 16.

5.8 PILOT QUESTIONNAIRE

A pilot questionnaire was carried out prior to the main survey after additional questions were added to the pre-test questionnaire: socio-demographic; car ownership; information sources and most important aspect of car purchase.

The product videos used in the pre-test surveys were retained, as well as 7-point Likert scales. All questions required a response, any missing answers prompted a reminder and respondents were unable to proceed to the next page of the questionnaire until they were completed. If respondents failed to complete the questionnaire, the system discarded the record. This ensured that there were no incomplete questionnaires or missing data and avoided detailed data checking routines before analysis could be carried out.

The survey went live on schedule in the second week of July, 2012. Email invitations were sent out to the same sample as the pre-test survey; students and staff of the School of Business and Economics, Loughborough University and to family and friends. This time no reminders were sent, instead an incentive of a £25 cash prize draw was offered for completion. There were 114 responses. Response rates from friends and family was 66 from a total of 141 invitations (46.8%) and 48 from the University total of 283 invitations (16.96%). Respondents were asked to feedback any queries or comments that had errors or required clarification. Monitoring of the responses over the seven day period that the questionnaire was open revealed an early surge in responses, but this quickly subsided and the result was a much lower response rate, compared to the pre-test survey (Table 19).

Respondents	Pre-test Response	Pilot Response
Friends & Family	99 (70.21%)	66 (46.80%)
University	61 (21.55%)	48 (16.96%)

Table 19 - Pre-Test and Pilot Questionnaire Responses

It was anticipated that there would be fewer responses to the pilot questionnaire, as the questionnaire was similar to the pre-test survey, a number of authors point this out as one of the negative outcomes of frequent requests for respondents to participate in online surveys (Oppenheim, 1992; Nakash et al., 2006; Aaker et al., 2007; Iacobucci and Churchill, 2010). The pilot proved to be a precautionary measure as further feedback was obtained for items that required clarification as well as errors that needed to be corrected for the main questionnaire; a sample of the email feedback is provided in Appendix 7. The questions used in the pilot survey are the same as the main questionnaire - after the minor amendments had been applied (Appendix 8).

5.9 CONSTRUCTION OF MAIN SURVEY

The main survey was structured as an undisguised questionnaire with clear guidelines and explanations that followed a structured path (Iacobucci and Churchill, 2010; Slater and Crumley 2011); as this was an online questionnaire the wording and order of the questions were the same for all participants (Hoyle et al. 2001).

Participants were provided with introductions to each section explaining the purpose of the survey and the reasons behind each section. For example, this is an introduction and explanation for one of the sections:

Are you familiar with Ford Cars?

There are a number of cars with new innovations on the market, but for this research we are looking at the new innovations that have been developed on the Ford Focus.

The next questions will let me know how familiar you are with Ford cars in general as well as the Ford Focus.

At the beginning of the questionnaire respondents were assured that all the information supplied was totally anonymous and confidential and that none of the information could identify them individually. As Ford Motor Company sent out the invitations to their customers asking them to participate in the survey, the objective was to ensure this opening introduction would reassure participants (Hoyle et al. 2001).

The option to participate in a prize draw of £100 in Amazon Gift Vouchers was offered as an incentive to all respondents. To participate, respondents had to reveal their email address, with the reassurance that it would be destroyed after the prize draw had taken place.

5.9.1 Structure

The questionnaire had a number of sections designed to capture data identified in Questionnaire Design (Section 5.7). The questionnaire began with a brief introduction indicating the time to complete the questionnaire and a statement of anonymity. Respondents were then asked to provide some information on their background this included socio-demographics and questions relating to car ownership/usage and what was the most important aspect of car purchase to them. These were followed by questions relating to expertise, involvement and familiarity constructs as well as the sources of information they used when looking for a new or newer car.

Questions were then asked on the eleven new innovative options for the Ford Focus; questions were the same for all the options. Firstly the option was described and respondents were asked: 'I know what the option is'. Respondents were then asked to view a product video for that option before continuing to respond the following questions:

- I would like to have the… (name of option)
- I would buy this as an option
- I think this option is very complex to understand
- I would class this option as being new, e.g. not seen before
- I think this option is very innovative, e.g. very advanced, ground-breaking

Respondents were then asked if they had been aware of any of the options they had just viewed prior to the survey and indicate the source from an options list. The price of the

complete options package was then revealed and the final question was asked if they would buy the options at that price.

The survey closed with the option to participate in the prize draw incentive, thank-you message and instructions to exit the survey.

As in the pilot questionnaire, respondents were required to answer all questions for their entry to be recorded; this was to ensure there were no incomplete questionnaires or missing data. A copy of the main questionnaire is provided in Appendix 8.

5.9.2 Procedure

The main survey was launched on 23rd August 2012. As agreed in Section 5.6.1, email invitations with links to the online survey were sent out by Wunderman, the marketing support agency for Ford Motor Company; a sample of the email invitation is provided in Appendix 9.

Under the terms of the agreement of the mailshot, Ford retained all the email contact data and only one mailshot was carried out without any follow ups. However, although it had been agreed that the 'From:' address of the email would be Loughborough University, Wunderman had only changed the hypertext title of the email address they use for marketing purposes. This meant that when recipients hovered over Loughborough University, it revealed the true email address - <news@ukemail.fordvehicles.com>. This was only revealed at the time of deployment when a sample email invitation was supplied (Appendix 9). It was expected that any respondents that became of this were likely to have an adverse reaction, this proved to be the case (see Response, Section 5.9.3).

To recap, the following criteria, discussed in Section 5.5, were applied for data selection:

- Owners of new cars up to 4 years old
- A random mixture of Ford customer and prospects (50/50)
- Even gender split of male/female
- Age criteria is 18 or over

As mentioned in Section 5.6.1 it had been agreed to send out 150,000 email invitations, however only 91,968 consumers met the criteria when the data selection was extracted.

5.9.3 Response

A number of authors have carried out research into online survey response rates (Kaplowitz et al., 2004; Wright, 2005; Edwards et al., 2009; Fan and Yan, 2010; Buhrmester et al., 2011; Jin, 2011). Although they provide some useful guidelines and point out the limitations of this data collection method, there is great variation between authors on what can be expected in response rates (Baruch, 1999; Baruch and Holtom, 2008). The evidence suggests that without being able to send out any follow up reminders, a low response rate of 3% was likely (Edwards et al., 2009). This indicated circa. 2,750 responses to the 91,968 email invitations.

The actual response to the survey was 1,401 (1.53%), much lower than anticipated. Not having control of the contact data it is difficult to provide reasons for this low response rate. For example, it is not known if there were any invalid/incorrect email addresses as the agency who carried out the survey used a no-reply service. However, concerns raised in Section 5.9.2 of an adverse reaction when recipients hovered over the From: section of the email that revealed <news@ukemail.fordvehicles.com>, were founded. An email address for the author of this research had been given on the opening page of the online questionnaire for any respondents to contact in case of any difficulties in accessing the survey. Although this was used by respondents who had difficulties, it was also used by 287 potential respondents that were checking to see if the research survey was genuine, as most suspected it was a ploy by Ford Motor Company to gather data for a marketing campaign. What is unknown is how many consumers deleted the invitation believing it to be junk mail, compared to the ones that took the trouble to investigate further. This is a limitation of not having direct control of a survey (Jin, 2011).

It should be noted that there may be some problems with the low response rate, in that the survey may have attracted only those consumers with a propensity to completing online surveys. However, findings showed similar results with the various groups used in the research – Staff & Students; Friends and Family, as well as respondents to the main survey.

Of the 1,401 respondents to the survey, 1055 (75.3%) provided their email address to participate in the prize draw, unfortunately when notifications were sent out that the draw had been completed, 14 (1.3%) were returned as undeliverable - it was assumed that an error had been made when the respondents had entered their address, but because of the confidentiality of the data, this could not be followed up and resolved. The prize draw took place at Loughborough University on 10th September 2012 using the RAND function of Excel to assign a random number to each email address and again to select the winner. The process was observed and confirmed by a member of the administration staff at the School of Business and Economics at the University. The winner was notified by email the same day.

A breakdown of the respondents, based on the selection criteria, is shown in Table 20

Data Criteria	Number of Respondents	Proportion in Population
Ford Customers	1,177 (84%)	89,510 (97%)
Ford Prospects	224 (16%)	2,458 (3%)
Male	827 (59%)	62,170 (68%)
Female	574 (41%)	29,798 (32%)

Table 20 - Responses based on Data Criteria – Percentages are round up for ease of comparison

Results of the main data collection are provided in Section 6.4.

5.9.4 Participation in Automotive Research Panel

The opportunity was taken to ask the respondents to the main questionnaire if they would be interested in joining an Automotive Research Panel. This was seen as an opportunity to build a resource for further research required for this current study and similar future projects carried out by the Centre for Automotive Management within Loughborough University (the author of this study is a member). In return for participation, they were informed that the results of the findings would be shared with panel members.

Ethical concerns were discussed with the PhD supervisors resulting in the following actions. A thank you email, for taking part in the survey, was sent to all respondents notifying them that the prize draw prize had taken place and the winner had claimed the prize. Respondents were then invited to join the Automotive Research Panel, to do so they had to click on a link to an online form where they had to indicate their agreement to joining the panel by entering

their email address – bearing in mind that the email address, currently held for them, was being deleted. A copy of the invitation to join the Automotive Research Panel and the online consent form is provided in Appendix 10.

Of the 1,041 that received invitations to join the Automotive Research Panel, 184 (17.67%) agreed to join, however 6 (3.26%) of the email addresses supplied were subsequently found to be incorrect, resulting in a net figure of 178 members. This should be noted by future researchers using email addresses for contact data, as this indicates that entry errors are likely when capturing this format of information and may be costly in lost respondents to research surveys – in this study 20 contacts were lost due to respondent input errors.

It should be noted that there may be some limitations with the research panel. Although the members were originally in the 1,041 respondents to the main survey, they are unlikely to be representative of the general population, although they are clearly representative of highly involved consumers (Section 6.5).

5.10 COMPLEXITY RATINGS

One of the objectives of the study is to measure new product complexity. The literature review suggests consumers and manufacturers have differing views of complexity (Section 2.3.2). To test this assumption the Ford Advanced Product Group and a panel of 5 Sales people from the Ford Retail Dealership who hosted the Consumer Discussion Groups, (Section 3.5) were asked to rate the complexity of the eleven innovative options for the Ford Focus (Appendix 3). The Ford Retail Dealership was chosen because they are directly involved in communicating product information to consumers on a daily basis. The findings are discussed in Section 6.4.9.

5.11 POST-MAIN SURVEY RESEARCH

Further research was carried out post-main survey. Evidence from the literature review suggests that complex innovative products are poorly communicated to consumers. The conceptual framework suggests a gap exists between consumer perceptions and new product innovations, because manufacturers provide inadequate product information. To achieve this, two areas were investigated: the product launch of two new automotive models products and

consumer views of TV adverts and product videos. The investigations were carried out post-main survey because of timings of the product launches and the availability of product videos.

5.11.1 Product Launches

There was a need to look at how manufacturers launch new models and the methods and processes used to communicate and diffuse information on new innovations to consumers. To achieve this, two product launches were attended:

- Ford B-Max Launch - Salesman Training Event at the Henry Ford College, Loughborough University, in October 2012

- Toyota Auris Launch - European Train-the-Trainer Event in Madrid, Spain in October 2012

Permission to attend the product launches had to be sought from the Ford sponsor, Stuart Harris and Toyota training organisers, the latter was arranged through Professor Jim Saker, Loughborough University, who was providing training support for the event. Full details on the content and discussion of the events are provided in Sections 7.2.1 and 7.2.2.

5.11.2 : TV Adverts and Product Videos

During the product launches a number of product videos were used in the training sessions and participants were shown proposed TV adverts to support the model launch. To test the assumption that manufacturers provided inadequate information it was decided to carry out further research using the established Automotive Research Panel (Section 5.9.4) to obtain consumer views of TV adverts and product videos, discussion and findings are provided in Section 6.5.

The method for this research was similar in structure and procedure as the main survey. The method used an online questionnaire containing 19 questions and 3 short car videos. Invitations to participate were sent out by email to the 178 members of the Automotive Research Panel, an assurance was given that the information supplied would remain confidential at all times and would not be shared with anyone. This point is reiterated here as

one of the panel members subsequently questioned the validity of the stated confidentially. The panel member had started to receive a number of car marketing emails, a copy of the email exchanges with the panel member addressing their concerns is provided in Appendix 11; the concerns were fully resolved. There were no other queries of this nature. A copy of the email invitation to participate in the TV Advert and Product Video survey is provided in Appendix 12. The response to the survey was high, 150 (84.26%) members completed the survey; a valuable resource for future research.

The questionnaire began with an explanation that some questions had been asked in the previous questionnaire (main survey), but as it was totally anonymous it was not possible to match them to an individual – hence the need to ask these questions again. They were informed that this time the information would be retained so that some of the questions will not need to be answered again in any future research surveys. Email addresses were asked, and retained, for identification.

The structure of the survey utilised similar sections used in the main survey ; socio-demographics, car ownership; Expertise, Involvement and familiarity scales; followed by questions relating to preferences and perceptions of TV Adverts and Product Videos. The latter was carried out in two parts:

First Part

Participants were asked to view two videos:

- Toyota Auris TV Advert
- Toyota Auris Hybrid System Product Video

This was followed by 2 single choice questions with a free-text comments box to give the reasons for their choice:

1) Indicate which video appealed the most
2) Indicate which video they would prefer to see on TV

Two further questions using a 7-point Likert scale - 1 Strongly Disagree to 7 Strongly Agree were used to indicate how complex respondents thought each video was to understand.

Second Part

Participants were then asked to view one video:

- Audi A6 TV Advert

They were then asked to say what the thought the video was about in a free-text comments box.

This was followed by a 7-point Likert scale - 1 Strongly Disagree to 7 Strongly Agree to indicate how complex respondents thought the Audi video was to understand

As in the previous questionnaires, respondents were required to answer all questions for their entry to be recorded to ensure there were no incomplete questionnaires or missing data. A copy of the TV Adverts and Product Videos questionnaire is provided in Appendix 13. Discussion and findings for this part of the research are detailed in Section 6.5.

5.12 METHODS SUMMARY

This chapter provided detailed information on the methods used for this research. Exploratory studies were carried out using interviews with key informants in the automotive sector and discussion group meetings with automotive consumers. These were supported with pre-test and pilot questionnaires using face-to-face and online data collection methods. The pre-test and pilot studies explored theories and tested the suitability of previous constructs for this research. In addition an Automotive Research Panel was established to support the current and future research and was used effectively for a confirmatory survey following the main data collection.

During the period of the research a number of papers based on proposals and findings were subjected to academic rigour involving discussion and peer review at conferences, doctoral colloquiums, seminars and publications in two academic journals.

The pre-test and pilot studies provided confirmation that constructs and questions were clear and unambiguous; a number of triangulation questions were used to establish construct validity. Changes and amendments to questions used in the original constructs were made to update current consumer considerations i.e. Internet web sites, adding incremental validity to

the original constructs (Netemeyer et al., 2003); a panel of experts were used to support, advise and approve the changes. Findings and results enabled modifications to the instruments at each stage, before being finalised for the main data collection.

This chapter provided criteria for the effective capture of data to address the research questions and demonstrates that the research design provides internal validity to the study's ability to determine cause and effect.

Finally the pre-test questionnaire resulted in 160 usable responses; the findings were presented in Section 3.6.3. The pilot questionnaire resulted in 114 usable responses for further analysis; the main questionnaire 1401, the results and findings are presented in Sections 6.2.9 and 6.5.

CHAPTER: 6 DATA ANALYSIS

6.1 INTRODUCTION TO THE CHAPTER

This chapter provides details of the statistical analysis of the pilot and main surveys. It begins with details of the analysis methods and confidence levels used, followed by the rational for using triangulation methods to test the internal validity of the Expertise, Involvement and Familiarity scales. The results of the pilot and main surveys are provided, followed by the findings, discussions and conclusions, and finally the limitations of the analysis. The overall concern is to show that the scales are valid and distinct.

Both online surveys were designed so that respondents answered all the questions. If the survey was started but not completed the system discarded the entries. The objective was to ensure there was no missing data or incomplete records, however frequencies were run in SPSS and checked for any outliers or irregularities to confirm that the system was robust; none were found.

6.2 METHODS USED

Throughout the analysis, 7-point Likert scales (1 = Strongly Disagree; 7 = Strongly Agree), were used and Confidence level: $p<.05$. 7-point scales rather than an even 6 point scale were chosen to offer respondents a 'neutral' or 'not sure response', in most cases the midpoint of 4 being the equivalent of neither agree nor disagree. The reason for this is because of the complex nature of this research, the view held by Netemeyer et al. (2003) that a neutral response is a valid answer, was appropriate and that 7-point scales provide an optimum level of detail than a 5-point scale. A 7-point scale also puts less pressure on respondents than the decision making of larger scales such as 10-point and above (Netemeyer et al., 2003; Pallant, 2010). A number of authors (Nunnally, 1978; Aiken and West, 1991; DeVellis, 1991, 2003; Byrne, 1998; Diamantopoulos and Siguaw, 2000; Curwin and Slater, 2002; Diamantopoulos and Schlegelmilch, 2002; Cohen et al., 2003; Huizingh, 2007; Hair et al., 2010; Pallant, 2010; Schumacker and Lomax, 2010) point out the issues of using appropriate techniques for variables with different scaling properties, it is found to be common practice to use interval-based analytic methods for items in Likert scales where the response format is ordinal. The view by Nunally (1978) and DeVellis (1991) is that it is acceptable in behavioural sciences, but suggests that a practical approach is to follow the acceptable analysis in a particular

research area. The instruments identified in the literature review for this research employed interval-based methods to analyse Likert scale, therefore this practice was adopted for the analysis in this thesis.

6.2.1 Coefficient Alpha

Coefficient alpha (Cronbach, 1951) is the method used for assessing the reliability of the scales. Alpha indicates the proportion of variance in the scale that is attributable to the true score of the latent construct by looking at the items simultaneously (Cortina, 1993). SPSS computes alpha for the full scale taking into account every possible version with a single item removed, it also provides corrected and uncorrected item-scales correlations (DeVellis, 1991; Pallant 2010). In theory alpha values range from 0.0 to 1.0; a negative Alpha indicates something is wrong (DeVellis, 1991), Nunnally (1978) suggests .70 is a lower acceptable boundary, although it is not uncommon to find scales published with lower alphas. DeVellis (2003) provides more guidance: <.60 unacceptable; between .60 and .65 undesirable; between .65 and .70 minimally acceptable; between .70 and .80 respectable; between .80 and .90 very good; >0.90 the researcher should consider shortening the scale, although it is pointed out that longer scales are more reliable. Most studies take >.70 as being acceptable, regardless of the items in the scale, whereas Cortina (1993) compared the alpha values of .80 for scales made up of three and 10 items, which revealed an average inter-item correlation of .57 for the three item scale and only .28 for the 10 item scale, a difference of .29. The view by Pallant (2010) is that small item scales do result in small alpha values but the responsibility lies with researchers to base their decision on whether an alpha value is reliable, not only in value, but also the number of items in the scale; optimal inter-item correlations should be between .2 and .4.

6.2.2 Eta-Squared

Measures of effect summarize the strength of the association between independent and dependent variable and identify precisely how large the effects in data really are (Pallant, 2010). Eta squared is one method that should be routinely calculated for t-tests and ANOVA as part of the evaluative process and reported in the summary analysis (Cohen et al., 2003). Cohen et al. (2003) classifies .01 as a small effect, .06 as a medium effect and .14 as a large effect.

The formula for calculating eta squared is as follows:

- t-test: $t^2/t^2+(N1+N2-2)$
- ANOVA: Between Groups Sum of Squares/ Total Sum of Squares

6.2.3 t-test

Independent-samples t-test was used to identify differences between dichotomous groups e.g. Males/Females and continuous scales e.g. Expertise (Caputi and Reddy, 1999; Netemeyer et al., 2003; Pallant, 2010). Eta squared was used to calculate effect size.

6.2.4 Pearson Correlation

Pearson correlation (r value) was used to identify and explore the negative/positive strength of relationships between interval scales (Pallant, 2010). The correlation coefficient (r) ranges from -1.00 to 1.00 indicating a perfect negative or positive correlation, the guidelines for the strength of the relationship used in this thesis is: small r=.10 to .29; medium r=.30 to .49; large r=.50 to 1.00, if 'r' is preceded by a negative sign it only refers to the direction of the relationship, not the strength (Pallant, 2010).

6.2.5 One-way ANOVA

One-way analysis of variance (F-value) was used to identify and explore the differences between means for dependent variables e.g. Expertise, broken down by the levels of independent variables e.g. Sources of Information Used. An investigation of the ANOVA multiple comparisons output was used to identify significant differences between the groups of the independent variable (Chatfield and Collins, 1992; Pallant, 2010). Eta squared was used to calculate effect size.

6.2.6 Triangulation

The survey included triangulation questions, the purpose being to provide content validity to the items used in the Expertise, Involvement and Familiarity constructs. Although Rossiter (2002) argues that content validity should not be established through correlation, his proposals are controversial and others argue that statements such as: ' the validity of the instrument had been tested by comments of experts' or 'content validity was determined

through a review of literature or panel experts' are unacceptable and invalid statements (Yaghmale 2009, p26). The view by Pallant (2010) is that validity of a scale is that it measures what it is supposed to measure, but also points out that there is no universal agreement on what does indicate a scale's validity. DeVellis (1991) points out that scale validity is not a one-off, but an ongoing process and care should be taken with the present use of constructs as they may differ to the original validation. This thesis sought to identify a linear relationship between the scale items and the triangulation questions. Correlation establishes this relationship and validates the scale items and their use in this current study.

6.2.7 Socially Desirable Response Bias

One of the triangulation questions 'I would consider myself to be an expert on automobiles' was considered to be susceptible to individuals making themselves to appear to be more expert than they are by giving answers that would reflect a more positive image (DeVellis, 2003). The outcome of socially desirable responding can distort correlations between constructs the phenomenon known as the spuriousness effect (DeVellis 2003). To reveal the presence of bias the Marlowe-Crowne Social Desirability Scale (Crowne and Marlow, 1960), using partial correlation, was used to test for this phenomenon.

6.2.8 Reverse Scoring of Negative Questions

For each of the eleven Ford Focus options participants were asked to respond to the question 'I think this option is very complex to understand' using a 7-point Likert scale (1 = Strongly Disagree; 7 = Strongly Agree). This is a negatively worded question, the purpose of the scale was to have 1-point as the most complex and the 7-point as least complex, so that when it was compared with other variables it would correlate correctly e.g. the higher the Expertise the lower the complexity. All other scales were constructed as 1 = Strongly Disagree through 7 = Strongly Agree. If this scale had been set up differently it is likely that the reversing of the scale for these questions would result in inadvertent responses; by keeping them in the same format it would avoid response myopia. To prevent this happening, responses were reversed after the data was collected (Curwin and Slater, 2002; Devellis, 2003; Pallant 2010).

6.2.9 Structural Equation Modelling - LISREL

To confirm the theoretical factor structure proposed in the conceptual framework and establish goodness of fit to the questions and constructs, structural equation modelling (SEM) using LISREL (Byrne, 1998) was used to apply confirmatory factor analysis (CFA) (Sharma, 1996; Hair et al., 2010).

6.3 PILOT SURVEY RESULTS

The purpose of the pilot survey was to test the final version of the questionnaire with feedback on any errors and omissions before rolling out to the main survey. This was carried out using an email invitation to complete the online survey with friends and family and students and staff at Loughborough University, many of whom had participated in the initial pre-test questionnaire (Section 3.6). The questions used in the pilot and main surveys were the same as no amendments were required.

A substantial number of the respondents were young, single, low income and students/trainees (Table 21). Although this is not surprising due to the sample used, it is not representative of new car owners of cars up to four years old that is used in the main survey and this is evident in the in-depth analysis, particularly for the small sample size (n=114). To alleviate repetitive output for the reader, the results reported here for the pilot survey are limited to the main constructs, whereas in-depth analysis is reported for the main survey.

Total Responses 114	**n**	**%**
Age Group - 20 to 34	42	36.8
Marital Status - Single	42	36.8
Household Income - Less than £15k	39	34.2
Occupation - Student/Trainee	29	25.4

Table 21- Frequencies of Pilot Survey Respondents

All constructs reported good Cronbach alpha coefficients and compared well with previous studies (Table 22Table 22 - Pilot Study - Cronbach Alpha Coefficient Comparisons).

		Pilot Study	Pre-Test	Geneva Motor Show	2008 Study by Taylor-West et al.	2003 Study by Lennox & MaClarren	1983 Study by Shimp & Sharma	1999 Study by Kleiser & Mantel
	Expertise	.936	.739	.890	.870	ns	ns	.860
	Involvement	.953	.770	.830	.860	.900	.840	ns
Most Important for changing car	Environment	.950	ns	ns	ns	ns	ns	ns
	Performance	.821	ns	ns	ns	ns	ns	ns
	Convenience	.794	ns	ns	ns	ns	ns	ns
Sources of Information Used	Internal	.887	ns	ns	ns	ns	ns	ns
	Personal	.818	ns	ns	ns	ns	ns	ns
	Mass Media	.927	ns	ns	ns	ns	ns	ns
	Internet	.788	ns	ns	ns	ns	ns	ns

ns = not significant

Table 22 - Pilot Study - Cronbach Alpha Coefficient Comparisons

Results revealed a large positive relationship between Expertise and Involvement (Pearson Correlation r =.860, n=114, p<.05), this compares well with the Pre-Test findings (r =.708, n=160, p<.05), (Section 3.6.3). This suggests positive relationships exist between a consumer's expertise and their involvement with the product; expertise increases pro-rata to the involvement that one has with an automobile.

Familiarity with the Ford Focus was expected to have a positive moderating effect on Expertise and Involvement. Results show a statistically significant difference at the $p < .05$ level for Expertise and no relationship with Involvement (Table 23), although actual differences in mean scores between the groups was quite small; Eta squared value was less than .01 (eta=.007). The results are likely to be due to the sample used - only 18.4% of respondents currently owned a Ford Focus; 50.9% had no familiarity with the Ford Focus and for the age of cars owned, 67.5% were 4 years or older.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Expertise - actual knowledge on cars	Between Groups	20.333	3	6.778	2.782	.044
	Within Groups	268.027	110	2.437		
	Total	288.360	113			
Involvement with cars	Between Groups	17.390	3	5.797	2.320	.079
	Within Groups	274.864	110	2.499		
	Total	292.254	113			

Table 23 - One-way ANOVA: Familiarity with Expertise and Involvement

Relationships were sought between Information Sources Used by the respondents when they look for a new or newer car and the measures of Expertise and Involvement. Colour highlights are provided for ease of identification. Results from Pearson correlations (Table 24) identified that Internal had a medium positive relationship with Expertise (r =.428). Mass Media had large positive relationships with Expertise (r =.754) and Involvement (r=.549). Internet had a large positive relationship with Expertise m(r=.706) and a medium positive relationship with Involvement (r=.421). Retailer had a medium positive relationship with Expertise (r=.333).

Correlations Matrix – Large Medium

Scale	1	2	3	4	5	6
1. Expertise – actual knowledge on cars	-					
2. Involvement with cars	.860	-				
3. Internal – Information source used	.428	.249	-			
4. Personal – Information source used	sig>.05	sig>.05	sig>.05	-		
5. Mass Media – Information source used	.754	.549	.429	.186	-	
6. Internet – Information source used	.706	.421	.535	.140	.807	-
7. Retailer – Information source used	.333	.258	.394	sig>.05	.426	.423

n=114, p < .001 (2-tailed)

Table 24 - Pearson Correlation: Information Sources Used with Expertise and Involvement

Results from a One-way ANOVA identified that Knows the options Average had medium positive relationships with Expertise, Involvement and Familiarity (Table 25).

Correlations Matrix – Medium

Scale	1	2	3
1. Expertise – actual knowledge on cars	-		
2. Involvement with cars	.860	-	
3. Familiarity	.203	.228	-
4. Knows the options - Average	.419	.300	.332

n=114, p < .001 (2-tailed)

Table 25 - Pearson Correlation: Knows the Options with Expertise, Involvement and Familiarity

A partial correlation to explore the relationships between Familiarity and Knows the options whilst controlling for Expertise, showed only a small decrease in the strength of the correlations: from .332 to .319, suggesting that Expertise had very little effect on the strength of the relationship between these two variables.

No discussion or conclusions are entered into here as the sample used for the pilot survey is not representative of the population used for the main survey and the analysis provided was limited to the main constructs. Greater detail and in-depth analysis is reported for the main survey (Section 6.4).

6.4 MAIN SURVEY RESULTS

6.4.1 Construct Reliability

The first part of the analysis was to test the reliability of the scales. All constructs reported good Cronbach alpha coefficients and compared well with previous studies (Table 25). Inspection of the 'Cronbach's Alpha if item Deleted' column in the Item-Total Statistics matrix revealed that the removal of the second item in the Involvement construct: 'I will search for the latest information on cars before I purchase', increased the final alpha from .948 to 951. As this was only marginal it was decided not to remove the item so that it could be compared with the results of previous studies that had used the scale. No other items in any of the other constructs resulted in an alpha that exceeded the final alpha.

		Main Study	Pilot Study	Pre-Test	Geneva Motor Show	2008 Study by Taylor-West et al.	2003 Study by Lennox & MaClarren	1983 Study by Shimp & Sharma	1999 Study by Kleiser & Mantel
	Expertise	.948	.936	.739	.890	.870	ns	ns	.860
	Involvement	.926	.953	.770	.830	.860	.900	.840	ns
Most Important for changing car	Environment	.913	.950	ns	ns	ns	ns	ns	ns
	Performance	.838	.821	ns	ns	ns	ns	ns	ns
	Convenience	.747	.794	ns	ns	ns	ns	ns	ns
Sources of Information Used	Internal	.879	.887	ns	ns	ns	ns	ns	ns
	Personal	.861	.818	ns	ns	ns	ns	ns	ns
	Mass Media	.857	.927	ns	ns	ns	ns	ns	ns
	Internet	.861	.788	ns	ns	ns	ns	ns	ns

ns = not significant

Table 26- Main Study Cronbach Alpha Coefficient Comparisons

The next part of the process was to test relationships of constructs identified in the conceptual framework (Section 4.7)

6.4.2 Expertise and Involvement Relationships

Results identified that Expertise had a large positive relationship with the triangulation scale: I would consider myself to be an expert on automobiles - (Pearson Correlation r =.973, n= 1401, p <.05); Involvement had a large positive relationship with the triangulation scale: I really enjoy driving - (Pearson Correlation r=.901, n=1401, p <.05).

The results also revealed a large positive relationship between Expertise and Involvement (Pearson Correlation r =.795, n=1401, p<.05), (Table 27). These findings show positive relationships exist between a consumer's expertise and their involvement with the product, this concurs with previous findings by Taylor-West et al. (2008) that expertise increases pro-rata to the involvement that one has with an automobile and provides a reliable measurement of a Consumers Product Experience (CPE). The results compare well with the Pre-Test findings (r =.708, n=160, p<.05), (Section 3.6.3) and the Pilot Survey (r =.860, n=114, p<.05), (Section 6.3).

To reveal the presence of socially desirable responding bias for the triangulation question 'I would consider myself to be an expert' the Marlowe-Crowne Social Desirability Scale (Crowne and Marlow, 1960), using Pearson Partial Correlation, was applied; results showed a small decrease in the strength of the relationship (from .795 to .786) suggesting that controlling for socially desirable responding had little effect on the strength of the relationship between Expertise and Involvement variables.

	Triangulation Scales	Involvement with cars
Expertise – actual knowledge on cars	.973	.795
Involvement with cars	.901	-

Table 27 - Pearson Correlations for Involvement, Expertise and Triangulation scales

The findings show positive relationships exist between a consumer's expertise and their involvement with the product, this concurs with previous findings by Taylor-West et al. (2008) and the results of the Geneva Motor Show research (Section 3.4.2).

6.4.3 Familiarity Constructs and Triangulation

In the conceptualisation of the study (Section 4.5.3) familiarity with a product was identified as an intervening variable; the online survey utilised contained two familiarity constructs. The Bettman and Park (1980) construct (Familiarity LMH) was used to categorise consumers into three groups of familiarity with the Ford Focus – Low; Medium and High. It was proposed in the questionnaire design (Section 5.7.5) that the Bettman and Park (1980) groupings did not take into account consumers who had no familiarity and grouped those who had searched for information and those who had past use of the product into the Medium group. It was observed that it was likely that familiarity would be higher for those who had used a product than those who had searched for information on a product and similarly for current and past owners of a Ford Focus. In comparison the Familiarity 1 to 5 construct categorised consumers into five groups of familiarity with the Ford Focus – None - No Familiarity; Low – Searched for |Information; Moderate – Shared or had use of ; High – Past Owner and Very High – Current Owner.

Two triangulation questions were used to test scale reliability. A one-way between groups analysis of variance was conducted with the nominal constructs: Familiarity LMH;

Familiarity 1 to 5 and the triangulation scales: 'I am very familiar with Ford Cars'; I am very familiar with the Ford Focus'. There was a statistically significant difference at the $p < .05$ level in overall scores for the Low, Medium and High familiarity groups (Table 28). Eta Squared values indicated a medium effect with Familiarity with Ford Cars (eta = .07) and a large effect with Familiarity with Ford Focus (eta = .11).

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Familiar with Ford cars	Between Groups	297.236	2	148.618	60.223	.000
	Within Groups	3449.956	1398	2.468		
	Total	3747.192	1400			
Familiar with Ford Focus	Between Groups	672.572	2	336.286	90.697	.000
	Within Groups	5183.471	1398	3.708		
	Total	5856.043	1400			

Table 28 - One-Way ANOVA: Familiarity LMH Construct

Results for the Familiarity 1 to 5 construct and the triangulation scales show a statistically significant difference at the $p < .05$ level in overall scores for the None - No Familiarity; Low – Searched for Information; Moderate – Shared or had use of ; High – Past Owner and Very High – Current Owner groups (Table 29). Eta Squared values indicated a large effect with Familiarity with Ford Cars (eta = .10) and a large effect Familiarity with Ford Focus (eta = .16).

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Familiar with Ford cars	Between Groups	395.385	4	98.846	41.169	.000
	Within Groups	3351.807	1396	2.401		
	Total	3747.192	1400			
Familiar with Ford Focus	Between Groups	874.901	4	218.725	61.299	.000
	Within Groups	4981.142	1396	3.568		
	Total	5856.043	1400			

Table 29 - One Way ANOVA: Familiarity 1 to 5 Construct

Despite reaching statistical significance overall, inspection of the multiple comparisons of the Familiarity 1 to 5 construct showed there was no significance difference between the Moderate – Shared or had use of and High – Past Owner groups (Table 30). To resolve this,

the construct was modified by combining the Moderate – Shared or had use of and High – Past Owner groups in SPSS into one group. The outcome produced a new construct: Familiarity NLMH which categorised consumers into four groups of familiarity with the Ford Focus – None - No Familiarity; Low – Searched for Information; Moderate – Past Owner, Shared or had use of ; High – Current Owner.

Dependent Variable	(I) Familiarity 1 to 5	(J) Familiarity 1 to 5	Mean Difference (I-J)	Std. Error	Sig.
Familiar with Ford cars					
	3 Moderate – Shared or had use of	1 None - No Familiarity	1.505*	.240	.000
		2 Low – Searched for Information	.654*	.115	.000
		4 High – Past Owner	-.171	.131	.691
		5 Very High – Current Owner	-.561*	.133	.000
	4 High – Past Owner	1 None - No Familiarity	1.676*	.240	.000
		2 Low – Searched for Information	.825*	.114	.000
		3 Moderate – Shared or had use of	.171	.131	.691
		5 Very High – Current Owner	-.390*	.132	.026
Familiar with Ford Focus					
	3 Moderate – Shared or had use of	1 None - No Familiarity	1.831*	.293	.000
		2 Low – Searched for Information	.799*	.141	.000
		4 High – Past Owner	-.343	.160	.202
		5 Very High – Current Owner	-1.138*	.162	.000
	4 High – Past Owner	1 None - No Familiarity	2.175*	.292	.000
		2 Low – Searched for Information	1.142*	.139	.000
		3 Moderate – Shared or had use of	.343	.160	.202
		5 Very High – Current Owner	-.795*	.161	.000

Table 30 - Multiple Comparisons: Familiarity 1 to 5 Construct

Results for the new Familiarity NLMH construct and the triangulation scales show a statistically significant difference at the $p < .05$ level in overall scores for the None - No Familiarity; Low – Searched for Information; Moderate – Past Owner, Shared or had use of ; High – Current Owner groups (Table 29). Eta Squared values indicated a large effect with Familiarity with Ford Cars (eta = .10) and a large effect with Familiarity with Ford Focus (eta = .14).

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Familiar with Ford cars	Between Groups	395.385	4	98.846	41.169	.000
	Within Groups	3351.807	1396	2.401		
	Total	3747.192	1400			
Familiar with Ford Focus	Between Groups	874.901	4	218.725	61.299	.000
	Within Groups	4981.142	1396	3.568		
	Total	5856.043	1400			

Table 31 - 32 - One Way ANOVA: Familiarity NLMH Construct

Results suggest that Familiarity LMH and Familiarity NLMH have construct validity; they are measuring what they are supposed to measure, in this study that is the degree of familiarity that a consumer has with the Ford Focus. As you would expect, there was a large positive correlation between Familiarity with Ford cars and Familiarity with the Ford Focus (Pearson Correlation $r=.508$, $n = 1401$, $p <.05$). Having established construct validity, a decision was taken to carry out further analysis using only the Familiarity NLMH construct. In the context of familiarity with the Ford Focus, the Familiarity NLMH construct is the one to be used when referred to as Familiarity. The reasons for this is that eta squared had large effects with the triangulation questions, and four groupings provide more insight than the three group Familiarity LMH construct by having more degrees of freedom – more independent pieces of information available to estimate another piece of information (Rowntree, 1981). It also supports the proposal in the questionnaire design (Section 5.7.5) that current owners would have the highest level of familiarity with a product compared with past or shared ownership.

The Familiarity construct was expected to have an overall positive moderating effect on the latent variable CPE (Section 4.7) by correlating with Expertise and Involvement constructs. Results show a statistically significant difference at the $p < .05$ level in overall scores for the None - No Familiarity; Low – Searched for Information; Moderate – Past Owner, Shared or

had use of ; High – Current Owner groups (Table 33). Eta Squared values indicated a large effect with Expertise (eta = .34) and a large effect with Involvement (eta = .23).

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Expertise - actual knowledge on cars	Between Groups	1350.775	3	450.258	250.322	.000
	Within Groups	2512.807	1397	1.799		
	Total	3863.582	1400			
Involvement with cars	Between Groups	749.397	3	249.799	141.341	.000
	Within Groups	2468.988	1397	1.767		
	Total	3218.385	1400			

Table 33 - One-way ANOVA: Familiarity with Expertise and Involvement

Post hoc analysis using Tukey subsets show that Familiarity has a greater positive effect with Expertise (Table 34) than Involvement (Table 35). Each of the four familiarity levels give statistically significant differences from each of the other familiarity levels.

Expertise - actual knowledge on cars

Tukey HSD[a,b]

Familiarity - None, Low, Moderate, High	N	Subset for alpha = 0.05			
		1	2	3	4
1 None - No Familiarity	49	1.82			
2 Low – Searched for Information	525		2.94		
3 Moderate – Past Owner, Shared or had use of	557			4.07	
4 High – Current Owner	270				5.44
Sig.		1.000	1.000	1.000	1.000

Table 34 - Mean Scores for Familiarity and Expertise

Involvement with cars

Tukey HSD[a,b]

Familiarity - None, Low, Moderate, High	N	Subset for alpha = 0.05			
		1	2	3	4
1 None - No Familiarity	49	2.18			
2 Low – Searched for Information	525		3.08		
3 Moderate – Past Owner, Shared or had use of	557			3.92	
4 High – Current Owner	270				4.93
Sig.		1.000	1.000	1.000	1.000

Table 35 - Means Scores for Familiarity and Involvement

6.4.4 Socio-Demographics Relationships

It was expected that Socio-Demographics would have a direct relationship with CPE e.g. high levels of education with high levels of expertise.

An independent-samples t-test found that males had more Expertise and Involvement with cars than females and more Familiarity with the Ford Focus: Expertise had a large relationship (eta= .180); Involvement and Familiarity had medium relationships (eta= .64; .119), (Table 36).

Independent samples T-Test - Group Statistics & Eta squared

	Gender	N	Mean	Std. Deviation	Std. Error Mean	Eta squared
Expertise - actual knowledge on cars	1 Male	827	4.42	1.559	.054	.180
	2 Female	574	2.99	1.423	.059	
Involvement with cars	1 Male	827	4.06	1.432	.050	.064
	2 Female	574	3.28	1.516	.063	
Familiarity - None, Low, Moderate, High	1 Male	827	2.98	.777	.027	.119
	2 Female	574	2.41	.718	.030	

Table 36 - T-test and Eta squared values: Male and Female with Expertise, Involvement and Familiarity

Comparisons with the remaining Socio-Demographics were run with One-way ANOVA (Table 37). Statistically significant differences were found with all of the remaining Socio-Demographics, except for the Area they lived in ($p>.05$), although actual differences in mean scores between the groups were quite small; Eta squared values were close to or less than .01 (Table 38).

ANOVA			
	F-values		
Socio-Demographic	**Expertise**	**Involvement**	**Familiarity**
Age Group	4.57	7.18	2.59
Marital Status	3.53	3.91	4.99
Lifecycle stage	sig >.05	7.85	sig >.05
Education	sig >.05	3.67	2.94
Household Income	sig >.05	sig >.05	4.07
Occupation	3.09	2.82	4.2
Area you live in	sig >.05	sig >.05	sig >.05

Table 37 – One-way ANOVA F-values: Socio-Demographics with Expertise, Involvement and Familiarity

ANOVA			
	Eta squared (.01 Small; .06 Medium; .14 Large)		
Socio-Demographic	**Expertise**	**Involvement**	**Familiarity**
Age Group	0.012	0.019	0.006
Marital Status	0.007	0.008	0.009
Lifecycle stage	sig >.05	0.010	sig >.05
Education	sig >.05	0.007	0.006
Household Income	sig >.05	sig >.05	0.011
Occupation	0.021	0.019	0.028
Area you live in	sig >.05	sig >.05	sig >.05

Table 38 – One-way ANOVA Eta squared values: Socio-Demographics with Expertise, Involvement and Familiarity

6.4.5 Car Ownership/Usage Relationships

This section is concerned with relationships of car ownership and usage. The questions were a development of the Punj and Staelin (1983) research (Section 5.7.6). The expectation was to find relationships with Expertise and Involvement, e.g. the more cars owned the greater the Expertise.

The question on the Make of Current Car had to be modified from 10 groups to 9, this was because the American group had only one case and prevented post-hoc ANOVA analysis, therefore the American group was merged with the Other group. Three additional groups were compiled from the data for comparison:

1. 4 Groups –All European; Asian; Japanese; Other
2. 2 Groups – Ford and All other makes
3. Top 5 in the UK – Ford; Vauxhall; Volkswagen; Audi; BMW

The dataset was combined for the first two groups and split using select cases in SPSS to run the analysis for the third group.

One-way ANOVA found statistically significant differences (Table 39), although actual differences in mean scores between the groups were quite small; Eta squared values indicated small effects, some less than .01 (Table 40).

	ANOVA	
	F-values	
Socio-Demographic	**Expertise**	**Involvement**
9 Groups	4.399	4.613
4 Groups	sig >.05	3.327
2 Groups	7.333	11.582
Top 5 in UK	7.570	6.067

Table 39 - One-way ANOVA F-values: Make of Current Car Groups with Expertise and Involvement

	ANOVA	
	Eta squared	
Makes of Car	**Expertise**	**Involvement**
9 Groups	0.024	0.025
4 Groups	sig >.05	0.007
2 Groups	0.005	0.008
Top 5 in UK	0.023	0.018

Table 40 - One-way ANOVA Eta squared values: Make of Current Car Groups with Expertise and Involvement

An inspection of multiple comparisons in the ANOVA output revealed only limited significant differences ($p<.05$) between group items e.g., significant differences between Expertise and Involvement exist with Volkswagen and BMW, but as can be seen from Descriptives, n counts are too small to be able to draw any reliable generalisations (Table 41).

Descriptives

Make	N
1 Ford	1177
2 Vauxhall	24
3 Volkswagen	24
4 Audi	8
5 BMW	26
6 Other European	80
7 Asian	7
8 Japanese	37
9 Other	18
Total	1401

Table 41 – Descriptives: Count of Make of Current Car – 9 Groups

Similar outcomes were found with the analysis output for Type of Current Car (Table 42). Eta squared values indicated small effects.

ANOVA

	Type of Car Comparisons	
	Expertise	Involvement
Eta squared	0.041	0.032
F-value	10.133	17.243

Table 42 – One-way ANOVA F-values and Eta squared values: Type of Current Car with Expertise and Involvement

An inspection of multiple comparisons in the ANOVA output revealed only limited significant differences ($p<.05$) between group items. In this output the means plots (Figure 20 and Figure 21) indicate strong positive relationships between Expertise and Involvement with Sports Car users, which is something that most people might associate with such owners, but as can be seen from Descriptives, n counts (Table 43), there are only 17 in this category and is too small to be able to draw any reliable generalisations.

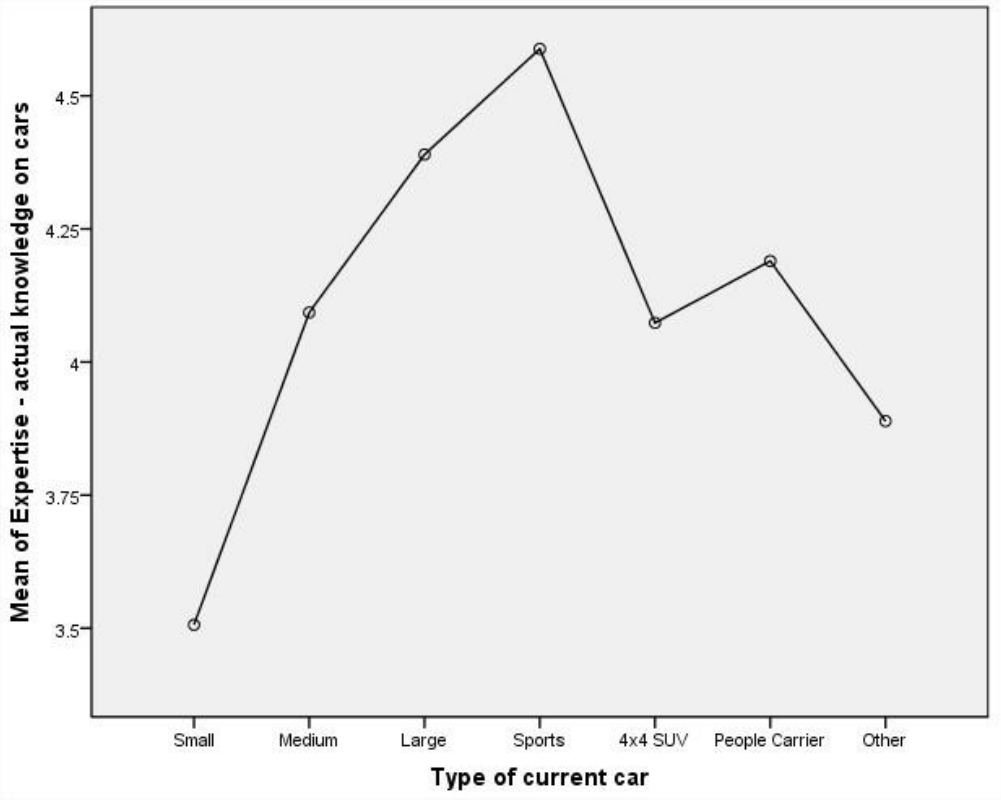

Figure 20 – Means Plot: Type of Current Car with Expertise

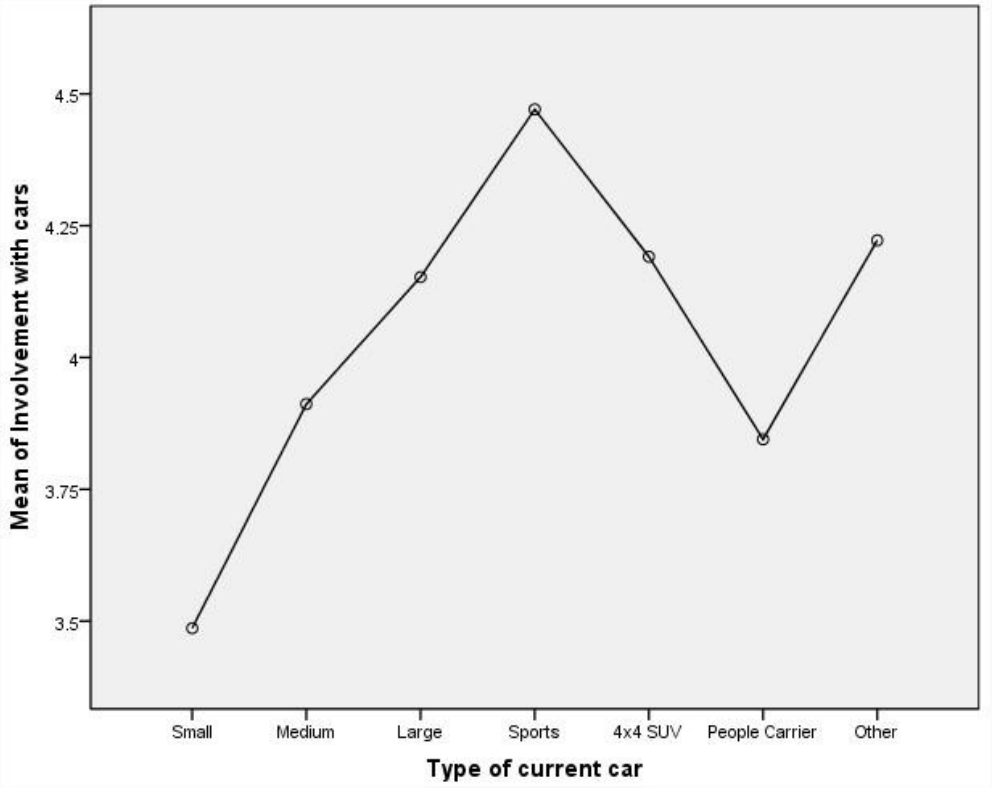

Figure 21 - Means Plot: Type of Current Car with Involvement

Descriptives

Type of Current Car	N
1 Small	701
2 Medium	430
3 Large	118
4 Sports	17
5 4x4 SUV	68
6 People Carrier	58
7 Other	9
Total	1401

Table 43 - Descriptives: Count of Type of Current Car

An independent-samples t-test was run to identify any differences between car owners that purchased a new car or a used car with Expertise and Involvement. There were no significant differences (p<.05). Similarly the results of a One-way ANOVA found no significant differences in the Age of the Current Car with Expertise and Involvement, this was expected as the criteria given for the data selection was Owners of new cars up to 4 years old, the Descriptives n count show that only a small amount of data supplied fell outside this criteria (Table 44). The pre-test results showed a large positive relationship between the Over 10 year group and Expertise, however it was suggested that it may be because of necessity e.g. carrying out their own repairs (Section 3.6.3).

Descriptives

Age of Current Car in Years	N
1. 1 to 3	1177
2. 4 to 6	149
3. 7 to 10	47
4. Over 10	28
Total	1401

Table 44 - Descriptives: Count of Age of Current Car in Years

Results of a One-way ANOVA comparing the Number of Cars Owned or Shared with Expertise and Involvement found statistically significant differences (Table 39). Eta squared values indicated a medium effect with Expertise. An inspection of multiple comparisons revealed the Over 10 group was significantly different (P<.05), the means plot indicating a

positive relationship with Expertise (Figure 22). As can be seen from Descriptives, the Over 10 is the largest group (Table 46).

ANOVA

	Number of Cars Owned or Shared Comparisons	
	Expertise	Involvement
Eta squared	0.063	0.03
F-value	31.57	14.566

Table 45 - One-way ANOVA F-values and Eta squared values: Number of Cars Owned or Shared with Expertise, and Involvement

Descriptives

Number of Cars Owned or Shared	N
1. 1 to 3	153
2. 4 to 6	294
3. 7 to 10	362
4. Over 10	592
Total	1401

Table 46 - Descriptives: Count of Number of Cars Owned or Shared

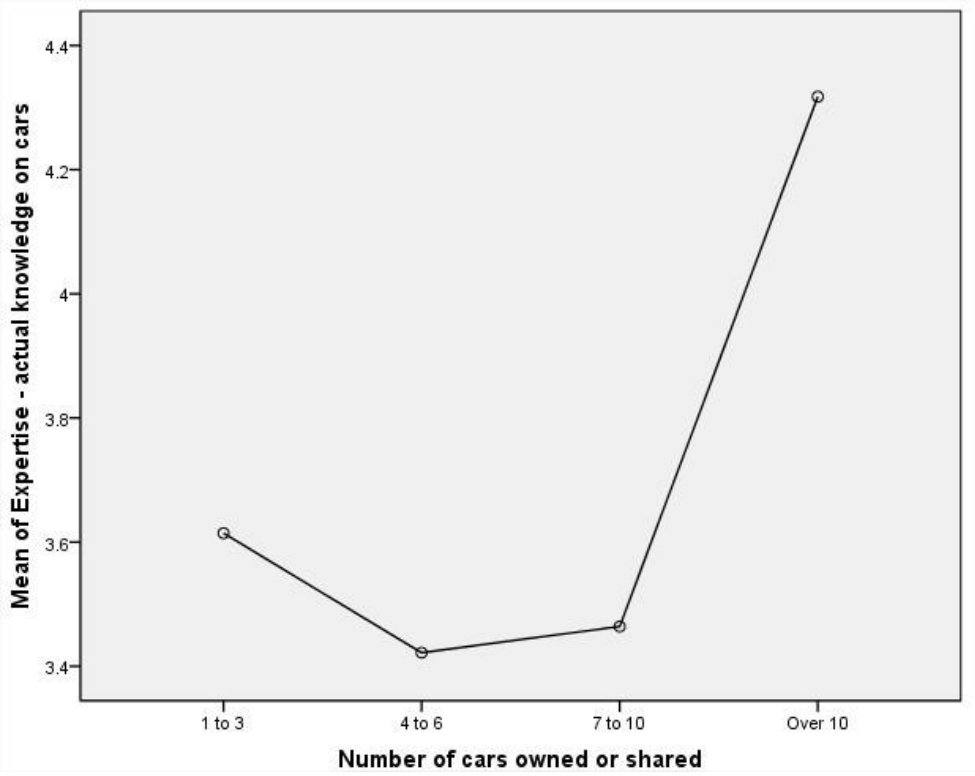

Figure 22 - Means Plot: Number of Cars Owned or Shared with Expertise

A similar question to the Number of Cars Owned or Shared was asked: Number of different Makes (Not Models) Owned or Shared, to compare differences. Results of a One-way ANOVA found statistically significant differences (Table 47), although actual differences in mean scores between the groups were quite small; Eta squared values indicated small effects. Descriptives provide a breakdown of the categories (Table 48).

ANOVA

	Number of Different Makes Owned or Shared Comparisons	
	Expertise	Involvement
Eta squared	0.024	0.014
F-value	11.857	6.764

Table 47 - One-way ANOVA F-values and Eta squared values: Number of Different Makes Owned or Shared with Expertise and Involvement

Descriptives

Number of Different Makes Owned or Shared	N
1. 1 to 3	549
2. 4 to 6	549
3. 7 to 10	200
4. Over 10	103
Total	1401

Table 48 - Descriptives: Count of Number of Different Makes Owned or Shared

Punj and Staelin (1983, p372) suggested that the more cars owned "…captures a decision-maker's desire to be exposed to new models…" (Section 5.7.6), this was not found to be the case in this study, the more cars owned only revealed a moderate increase in Expertise and a small increase in Familiarity. The difference in findings to the Punj and Staelin (1983) paper is that their suggestion is based on qualitative research – no information is supplied to indicate how many cars substantiate 'the more cars owned' whereas this research compared quantitative data and found no justification for their suggestion. In addition differences may be due to the different locations (US versus UK) and due to changes in attitudes over time.

It was also expected that consumers with high levels of Expertise and Involvement would consider more makes and or more models when buying a car. Results of a One-way ANOVA found statistically significant differences with the Number of Makes (Table 49), although actual differences in mean scores between the groups were quite small; Eta squared values

indicated small effects. Descriptives indicate that most consumers (n=1073) considered 1 to 3 makes when buying their last car (Table 50).

ANOVA

	Number of Makes considered when buying last car Comparisons	
	Expertise	Involvement
Eta squared	0.020	0.010
F-value	9.528	4.548

Table 49 – One-way ANOVA F-values and Eta squared values: Number of Makes considered when buying last car with Expertise and Involvement

Descriptives

Number of Makes considered when buying last car		N
1.	1 to 3	1073
2.	4 to 6	289
3.	7 to 10	25
4.	Over 10	14
Total		1401

Table 50 – Descriptives: Count of Number of Makes considered when buying last car

Similar results were found for the Number of Models considered when buying their last car. Results of a One-way ANOVA found statistically significant differences (Table 51), although actual differences in mean scores between the groups were quite small; Eta squared values indicated small effects. Descriptives indicate that most consumers (n=1117) considered 1 to 3 models when buying their last car (Table 52).

ANOVA

	Number of Models considered when buying last car Comparisons	
	Expertise	Involvement
Eta squared	0.015	0.006
F-value	18.674	6.748

Table 51 - One-way ANOVA F-values and Eta squared values: Number of Models considered when buying last car with Expertise and Involvement

Descriptives

Number of Models considered when buying last car	N
1. 1 to 3	1117
2. 4 to 6	231
3. 7 to 10	41
4. Over 10	12
Total	1401

Table 52 - Descriptives: Count of Number of Models considered when buying last car

It was expected that for consumers with high expertise and/or involvement, their reasons for changing their last car would be to obtain a newer model. Results of a One-way ANOVA found statistically significant differences for the Reasons for changing their last car (Table 53), although actual differences in mean scores between the groups were quite small; Eta squared values indicated small effects. Descriptives provide a breakdown of the categories (Table 54).

ANOVA

	Reason for Changing Last Car Comparisons	
	Expertise	Involvement
Eta squared	0.030	0.034
F-value	14.707	13.801

Table 53 - One-way ANOVA F-values and Eta squared values: Reason for Changing Last Car with Expertise and Involvement

Descriptives

Reason for Changing Last Car	N
1 First car - not changing	40
2 I had a car but needed one more	31
3 I just fancied a new car.	201
4 Needed car for a different purpose	149
5 Best to change every 2 to 3 years	244
6 More economy e.g. mpg, Co2 emissions	127
7 I wanted a smaller car	68
8 Old car became uneconomic to run and repair	290
9 To get a newer model (including changing to another brand)	251
Total	1401

Table 54 - Descriptives: Count of Reason for Changing Last Car

If respondents gave the reason to change was to get a newer model, they were asked what was new about it. Results of a One-way ANOVA found statistically significant differences (Table 55). Eta squared values indicated a small effect with Involvement. An inspection of multiple comparisons revealed Style & Design and On Board Equipment was significantly different ($p<.05$), the means plot indicating a positive relationship with Involvement (Figure 23). Descriptives provide a breakdown of the categories (Table 56).

ANOVA

	If reason to change was to get a new model, what was new about it? Comparisons	
	Expertise	Involvement
Eta squared	sig >.05	0.015
F-value	sig >.05	7.061

Table 55 – One-way ANOVA F-values and Eta squared values: If reason to change was to get a new model, what was new about it? With Expertise and Involvement

Descriptives

If reason to change was to get a new model, what was new about it?	N
1 Style & Design	261
2 Functionality	365
3 On Board Equipment	58
4 Post Purchase Offerings	44
Total	728

Table 56 - Descriptives: Count of: If reason to change was to get a new model, what was new about it?

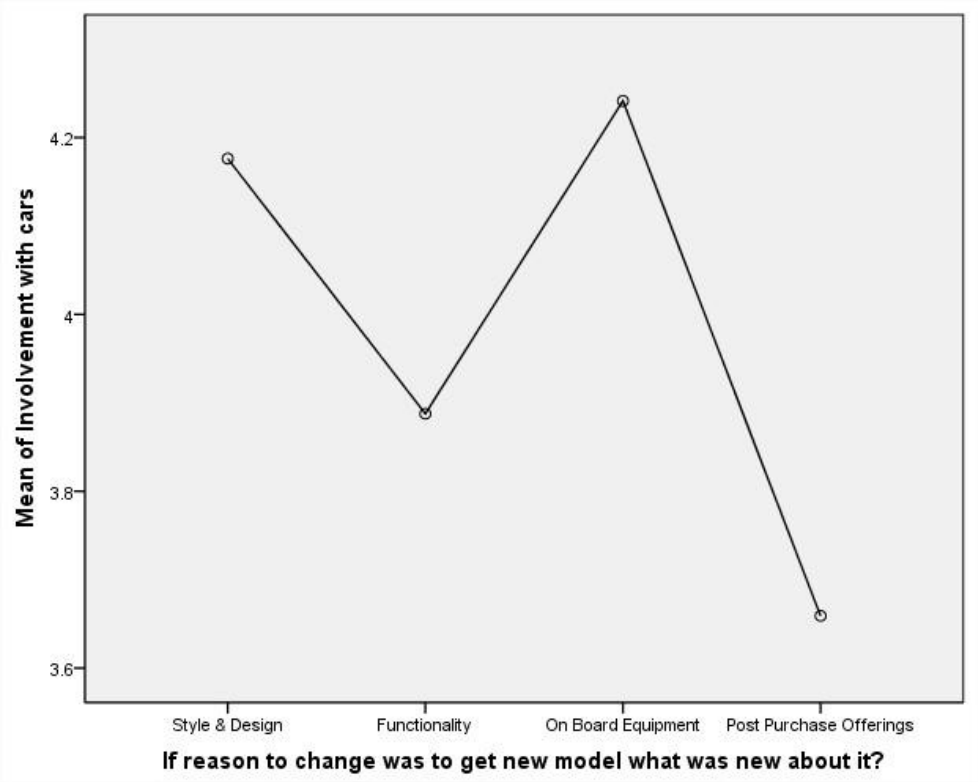

Figure 23 – Means Plot: If reason to change was to get a new model, what was new about it?

In summary for this section, the expectation was to find relationships between Car Ownership/ Usage with Expertise and Involvement. There are significant differences with some makes and types of car but the n counts were too small to be able to draw any reliable generalisations.

Contrary to the assumption by Punj and Staelin (1983) that the more cars owned was an indicator of high Involvement, this was not found to be the case, whereas there was a relationship with Expertise, particularly for the over 10 or more cars group. This indicates that Expertise is gained from product exposure.

It was also expected that consumers with higher levels of expertise and involvement would consider more makes and/or models when buying a car, the findings show that most customers only considered 1 to 3 makes and/or models when they bought their last car. Reasons for buying a new car reveal that Style and Design and On Board Equipment was significantly different and showed a positive relationship with Involvement; no relationships were found with expertise.

The descriptives provide some interesting insights into Car Ownership/ Usage, but no significant relationships in the measurement of Expertise and Involvement. What can be said is that Expertise is gained through product exposure and that those with high Involvement are attracted to the emotional pull of the design and gadgetry of the product rather than the practical aspects.

6.4.6 Product Information Relationships

This section looks at relationships with product information. The analysis investigated relationships between Information Sources Used by consumers when they look for a new or newer car and the measures of CPE (Expertise and Involvement). It also sought to establish correlations between Information Sources Used and Previous Awareness Source - the source of a consumer's prior awareness of the Ford Focus options. Colour highlights are provided for ease of identification.

The first part of the analysis investigated Information Sources Used – Internal; Personal; Mass-Media; Internet; Retailer (Section 5.7.7). Results from Pearson correlations (Table 57) identified that Internal information sources had a large positive relationship with Expertise (r =.550) and a medium positive relationship with Involvement (r=.457). Mass Media had a large positive relationship with Involvement (r=.511) and a medium positive relationship with Expertise (r=.490). The Internet had medium positive relationships with Expertise and Involvement (r =.489; r=.435). Personal and Retailer information sources had small positive relationships that were not significantly different from zero.

Correlations Matrix – Large Medium

Scale	1	2	3	4	5	6	7
1. Expertise – actual knowledge on cars	-						
2. Involvement with cars	.795	-					
3. Internal – Information source used	.550	.457	-				
4. Personal – Information source used	.099	.147	.186	-			
5. Mass Media – Information source used	.490	.511	.391	.413	-		
6. Internet – Information source used	.489	.435	.367	.279	.544	-	
7. Retailer – Information source used	.167	.196	.346	.101	.285	.315	-

n=1401, p < .001 (2-tailed)

Table 57 - Pearson Correlation: Information Sources Used with Measures of Consumer Product Experience

The second part of the analysis investigated Previous Awareness Sources of Information. Respondents only needed to answer this question if they had been aware of the Ford Focus options prior to viewing the product videos. Respondents had six options to indicate the source of their awareness:

1. Newspaper or magazine advert
2. Newspaper or magazine article
3. TV advert
4. Online internet information
5. Manufacturer or Dealer mailshot
6. Word of mouth e.g. from a friend etc.

Non-responses were coded with a zero (0): No Previous Awareness to enable ANOVA analysis to be carried out, if this group was omitted it would have reduced the F-value significantly and made interpreting the output more difficult because there would be no baseline for comparisons. Results of a One-way ANOVA found statistically significant differences with Previous Awareness Sources of Information and Expertise, Involvement and Familiarity. A matrix provides the F-value and Eta squared values (Table 58).

Note that whilst Eta squared values are provided and indicate a number of small, medium and large effects; they are influenced by including the No Previous Awareness group. In particular, it is not possible for that group to have any correlation with the sources of information e.g. TV advert. The significant differences in the Previous Sources of Information between the other groups were identified by inspecting the multiple comparisons output (Table 58), but the bulk of effects are from No Previous Awareness.

ANOVA Matrix

	Expertise		Involvement		Familiarity	
Option	**Eta squared**	**F-value**	**Eta squared**	**F-value**	**Eta squared**	**F-value**
Blind Spot Information System	0.082	20.848	0.048	11.866	0.143	38.783
Traffic Sign Recognition	0.126	33.529	0.078	19.775	0.204	59.614
Low Speed Safety System	0.133	35.706	0.081	20.402	0.189	53.999
Active Park Assist	0.079	19.904	0.047	11.42	0.152	41.685
Torque Vectoring Control	sig>.05	sig>.05	sig>.05	sig>.05	sig>.05	sig>.05
Ford Eco Boost	0.146	39.63	0.09	22.973	0.21	61.652
Power Start Button	0.072	18.004	0.041	9.945	0.092	23.411
Lane Departure Warning	sig>.05	sig>.05	sig>.05	sig>.05	sig>.05	sig>.05
Lane Keeping Aid	sig>.05	sig>.05	sig>.05	sig>.05	sig>.05	sig>.05
Driver Alert	0.055	13.634	0.026	6.17	0.01	25.822
Auto High Beam	0.099	25.517	0.063	15.565	0.15	40.869

p<.05

Table 58 - One-way ANOVA Matrix: Previous Awareness Source (for the options) with Expertise, Involvement and Familiarity

Inspection of the ANOVA multiple comparisons output identified which Previous Awareness Sources of Information items were significantly different (p<.05), the items and means were combined in a matrix (Table 59).

One-Way ANOVA Multiple Comparisons - Significant Differences

		Expertise		Involvement		Familiarity	
		Previous awareness Source	**Mean**	**Previous awareness Source**	**Mean**	**Previous awareness Source**	**Mean**
Blind Spot Information System	Significant variation between:	Word of mouth	3.99	ns	ns	ns	ns
		Newspaper or Magazine Article	4.65	ns	ns	ns	ns
Traffic Sign Recognition	Significant variation between:	Word of mouth	3.89	ns	ns	ns	ns
		Online Internet information	4.59	ns	ns	ns	ns
Low Speed Safety System	Significant variation between:	Word of mouth	3.88	Word of mouth	3.59	ns	ns
		Newspaper or Magazine Article	4.61	Online Internet information	4.28	ns	ns
	Significant variation between:	TV Advert	3.84	Word of mouth	3.59	ns	ns
		Online Internet information	4.57	Manufacturer or Dealer Mailshot	4.24	ns	ns
Active Park Assist	Significant variation between:	Word of mouth	3.43	Word of mouth	3.38	TV Advert	2.67
		Newspaper or Magazine Article	4.62	Online Internet information	4.13	Newspaper or Magazine Article	3.06
	Significant variation between:	Word of mouth	3.43	TV Advert	3.72	ns	ns
		Online Internet information	4.53	Online Internet information	4.13	ns	ns
	Significant variation between:	TV Advert	3.72	ns	ns	ns	ns
		Newspaper or Magazine Article	4.62	ns	ns	ns	ns
	Significant variation between:	TV Advert	3.72	ns	ns	ns	ns
		Online Internet information	4.53	ns	ns	ns	ns
Torque Vectoring Control	No significant variations	n/a	n/a	ns	ns	ns	ns
Ford Eco Boost	Significant variation between:	Manufacturer or Dealer Mailshot	4.16	Word of mouth	3.63	ns	ns
		Newspaper or Magazine Article	4.86	Newspaper or Magazine Article	4.43	ns	ns
	Significant variation between:	TV Advert	4.17	ns	ns	ns	ns
		Newspaper or Magazine Article	4.86	ns	ns	ns	ns

$p<.05$ ns = not significant

Table 59- One-Way ANOVA Multiple Comparisons: Significant Differences with Options and Previous Awareness Source (continued on next page)

Power Start Button	Significant variation between:	TV Advert	3.80	Word of mouth	3.55	TV Advert	2.72
		Newspaper or Magazine Article	4.73	Newspaper or Magazine Article	4.14	Newspaper or Magazine Article	2.83
	Significant variation between:	Word of mouth	3.53	Word of mouth	3.55	ns	ns
		Newspaper or Magazine Article	4.73	Online Internet information	4.06	ns	ns
	Significant variation between:	TV Advert	3.80	Word of mouth	3.55	ns	ns
		Online Internet information	4.47	Manufacturer or Dealer Mailshot	3.98	ns	ns
	Significant variation between:	Manufacturer or Dealer Mailshot	4.08	ns	ns	ns	ns
		Newspaper or Magazine Article	4.73	ns	ns	ns	ns
	Significant variation between:	Word of mouth	3.53	ns	ns	ns	ns
		Online Internet information	4.47	ns	ns	ns	ns
	Significant variation between:	Word of mouth	3.53	ns	ns	ns	ns
		Manufacturer or Dealer Mailshot	4.08	ns	ns	ns	ns
Lane Departure Warning	No significant variations	ns	ns	ns	ns	ns	ns
Lane Keeping Aid	No significant variations	ns	ns	ns	ns	ns	ns
Driver Alert	No significant variations	ns	ns	ns	ns	ns	ns
Auto High Beam	Significant variation between:	TV Advert	3.55	ns	ns	ns	ns
		Newspaper or Magazine Article	4.94	ns	ns	ns	ns
	Significant variation between:	Word of mouth	4.00	ns	ns	ns	ns
		Newspaper or Magazine Article	4.94	ns	ns	ns	ns

p<.05 ns = not significant

Table 59 (continued) - One-Way ANOVA Multiple Comparisons: Significant Differences with Options and Previous Awareness Source

Further relationships were considered to identify relationships between the Information Sources Used by consumers when they look for a new or newer car and Previous Awareness Sources of Information. However, it is not possible to run any statistical analysis unless all of the Ford Focus options had been advertised across all the sources, whereas this was not the case. For example, whilst the Ford Focus options were discussed in newspaper and magazine articles none of the options were placed as adverts.

Attempts were made to identify the main overall source used for Previous Awareness Sources of Information by taking the Mode and Median values, however some sources only had two responses, making Mode impossible. Similarly Median gave middle values e.g. 4.5, meaning

it has no category as it this is halfway between 4 - Online internet information and 5-Manufacturer or Dealer mailshot.

A clearer picture of the Previous Awareness Source for the Ford Focus options is provided by a frequency matrix (Table 60). The matrix reveals that those with No Prior Awareness had high frequencies across most categories. It also reveals that the highest source was a TV Advert for the Active Park Assist and Power Start Button options (Table 60 – highlighted in green). Ford did run TV adverts when the Ford Focus was launched; both options were shown in the adverts which featured Active Park Assist.

Crosstabulation

Option	No Previous Awareness		Newspaper or Magazine Advert		Newspaper or Magazine Article		TV Advert		Online Internet Information		Manufacturer or Dealer Mailshot		Word of mouth e.g. from friend etc.	
Blind Spot Information System	775	55%	29	2%	105	7%	34	2%	201	14%	150	11%	107	8%
Traffic Sign Recognition	747	53%	21	1%	101	7%	41	3%	234	17%	168	12%	89	6%
Low Speed Safety System	674	48%	16	1%	127	9%	49	3%	271	19%	164	12%	100	7%
Active Park Assist	58	4%	25	2%	85	6%	744	53%	142	10%	209	15%	138	10%
Torque Vectoring Control	983	70%	15	1%	67	5%	8	1%	199	14%	68	5%	61	4%
Ford Eco Boost	528	38%	27	2%	96	7%	186	13%	186	13%	300	21%	78	6%
Power Start Button	210	15%	35	2%	81	6%	453	32%	144	10%	264	19%	214	15%
Lane Departure Warning	985	70%	22	2%	100	7%	26	2%	184	13%	23	2%	61	4%
Lane Keeping Aid	1054	75%	18	1%	59	4%	13	1%	182	13%	25	2%	50	4%
Driver Alert	1026	73%	24	2%	44	3%	25	2%	189	13%	30	2%	63	4%
Auto High Beam	903	64%	14	1%	95	7%	20	1%	188	13%	110	8%	71	5%

Table 60 – Crosstabulation: Ford Focus with Previous Awareness Source

Further investigation of the TV advert for Active Park Assist was carried out using the SPSS split cases method, this allowed cross-tabulation comparisons of Expertise, Involvement and Familiarity. Cross-tabulations (Table 61 and Table 62) show split case totals as well as total cases to indicate the percentages for those that responded to being previously aware of the Active Park Assist option through a TV advert; bar charts provide a graphical representation of the output. The output suggests that Familiarity with the Ford Focus is the key factor for previous awareness of this option, even for those with low Expertise and Involvement. In Section 6.4.3 Familiarity was found to have a positive moderating effect on CPE (Expertise

and Involvement), whilst this is evident the evidence from the crosstabulation suggests that Familiarity is also a CPE variable in the context of experience of a specific product.

The Split to Total Cases output in Table 61 and Table 62 show there is a good proportion for each category.

Split Groups - Active Park Assist TV Advert Crosstabulation - Familiarity * Expertise - actual knowledge on cars

Count

Active Park Assist - previous awareness source - TV Advert			Expertise - actual knowledge of cars							Split Cases	Total Cases	Split to Total Cases
			1 Low Expertise	2	3	4	5	6	7 High Expertise			
3 TV Advert	Familiarity - None, Low, Moderate, High	1 None - No Familiarity	9	4	0	1	0	0	0	14	49	29%
		2 Low Familiarity – Searched for Information	46	91	76	67	37	8	1	326	525	62%
		3 Moderate Familiarity – Past Owner, Shared or had use of	11	28	58	67	84	45	2	295	557	53%
		4 High Familiarity – Current Owner	0	7	14	9	20	35	24	109	270	40%
	Split Cases		66	130	148	144	141	88	27	744	1401	53%
	Total Cases		111	240	266	279	244	183	78			
	Split to Total Cases		59%	54%	56%	52%	58%	48%	35%			

Table 61 - Crosstabulation: Active Park Assist - TV Advert with Familiarity and Expertise

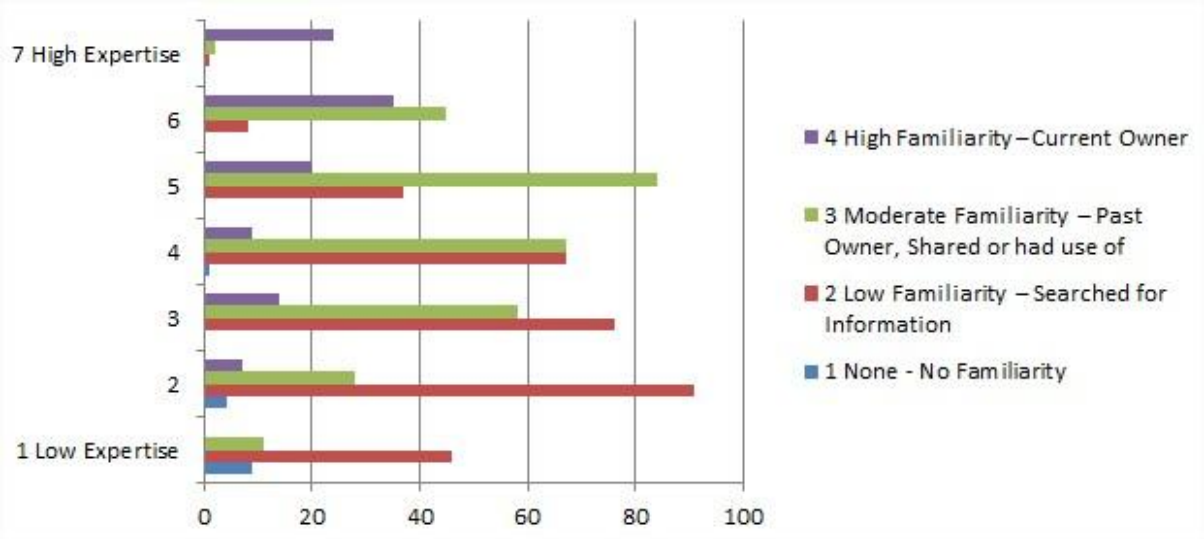

Figure 24 – Bar Chart: Active Park Assist - TV Advert with Familiarity and Expertise

Split Groups - Active Park Assist TV Advert Crosstabulation - Familiarity * Involvement with cars

Count

Active Park Assist - previous awareness source - TV Advert			Involvement with cars							Split Cases	Total Cases	Split to Total Cases
			1 Low Involvement	2	3	4	5	6	7 High Involvement			
3 TV Advert	Familiarity - None, Low, Moderate, High	1 None - No Familiarity	4	7	0	2	1	0	0	14	49	29%
		2 Low Familiarity – Searched for Information	41	78	76	77	38	14	2	326	525	62%
		3 Moderate Familiarity – Past Owner, Shared or had use of	12	24	53	91	82	32	1	295	557	53%
		4 High Familiarity – Current Owner	2	11	9	13	37	25	12	109	270	40%
	Split Cases		59	120	138	183	158	71	15	744	1401	53%
	Total Cases		112	226	258	332	291	157	25			
	Split to Total Cases		53%	53%	53%	55%	54%	45%	60%			

Table 62 - Crosstabulation: Active Park Assist - TV Advert with Familiarity and Involvement

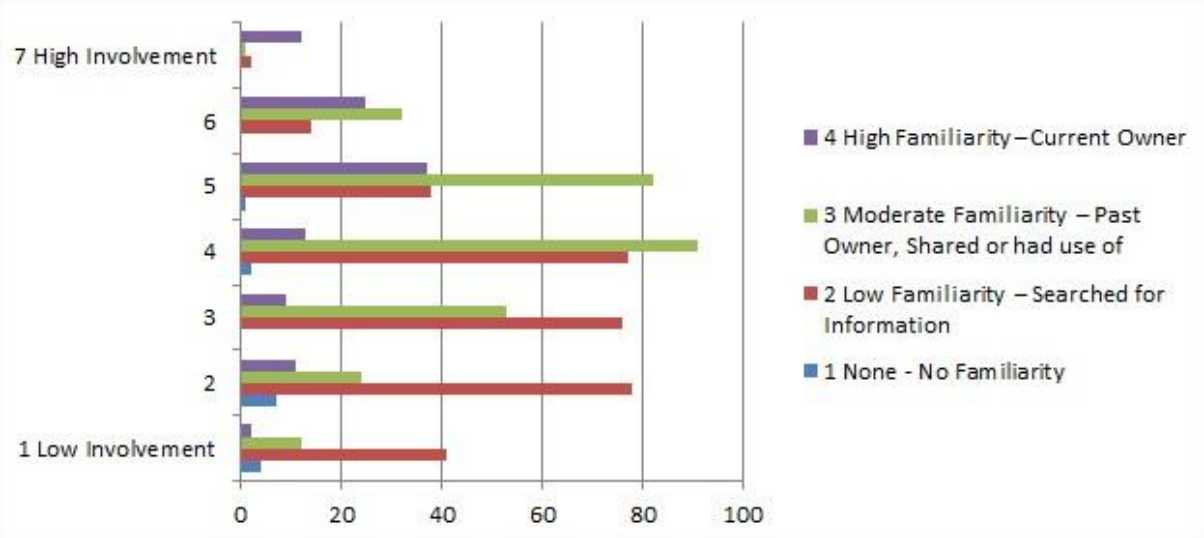

Figure 25 - Bar Chart: Active Park Assist - TV Advert with Familiarity and Involvement

Table 63 summarises the Information Sources Used relationships. A large correlation exists between Mass Media and Involvement; this is corroborated by the findings that 60% of those with 7 - High Involvement also had Previous Awareness through the TV advert source (Table 61). In comparison Expertise shows a large correlation with Internal sources of information (Table 63); whereas only 35% of those with 7 - High Expertise also had Previous Awareness through the TV advert source (Table 62), indicating that they do rely heavily on their own Internal knowledge. Therefore, Table 63 is a reliable representation of the preferences of Information Sources Used by those with Expertise and Involvement.

In addition the evidence suggests that Familiarity is not only a moderator of CPE, but also a variable of CPE in its own right.

Information Sources Used by consumers when they look for a new or newer car

	Large Correlation	Medium Correlation	Small Correlation
Expertise	Internal	Internet Mass Media	Retailer
Involvement	Mass Media	Internal Internet	Retailer Personal

Table 63 - Information Sources Used Summary

In summary for this section, the product information relationships suggest the information sources used by consumers differ according to their Expertise and Involvement when they look for a new or newer car.

6.4.7 Most Important Aspect of Car Purchase

This section is concerned with the Most Important Aspect of Car Purchase when deciding which cars consumers would consider. The items were grouped into three factors: environment, performance and convenience and compared with Expertise, Involvement and Familiarity.

Results from Pearson correlations (Table 64) identified that Performance had a medium positive relationship with Expertise (r =.456) and a large positive relationship with Involvement (r=.055). Convenience had small, but still statistically significant, positive relationships with Expertise and Involvement.

Correlations Matrix – Large Medium

Scale	1	2	3	4	5
1. Expertise – actual knowledge on cars	-				
2. Involvement with cars	.795	-			
3. Environment	sig >.05	sig >.05	-		
4. Performance	.456	.550	.061	-	
5. Convenience	.109	.124	.167	.337	-

n=1401, p < .001 (2-tailed)

Table 64- Pearson Correlation: Most Important Aspect of Car Purchase with Measures of Consumer Product Experience

6.4.8 New Product Complexity (NPC)

NPC is the outcome of a number of constructs and moderators, a latent variable that cannot be measured directly. Firstly, it was proposed in the conceptualisation of the study (CHAPTER: 4) that Expertise and Involvement were the independent variables that formed the dependent variable CPE. Secondly, it was proposed that Socio-Demographics are intervening variables that moderate CPE and Familiarity. Lastly, NPC is the presumed result of moderated CPE and the intervening variables of Familiarity and Product Information. NPC in turn is the basis on which a consumer is able to evaluate new product innovations and establish a Consumer Categorisation of Innovation (CCI) – in this study that relates to an assessment of the Ford Focus options.

The first part of the CCI evaluation is for the consumer to establish if they know what the options are, failure at this stage brings the evaluation to a halt, if not this is followed by subsequent appraisals as to their view of a products complexity, innovativeness and newness before they establish if they like the product and finally decide if they would buy the product. The results of the CCI variables are given in Section 6.4.10.

6.4.9 Complexity Ratings

These ratings are different to NPC, these variables measure a consumer's perceived complexity of the Ford Focus as part of the CCI appraisal process. Respondents were asked to rate the complexity of each of the eleven Ford Focus options, these were combined to provide an overall average complexity rating for the Ford Focus. This enabled comparison with complexity ratings obtained from Manufacturer Experts (Ford Advanced Product

Group) and Retailing Experts (Ford Retail Dealership) on the Ford Focus options. They were asked to measure how complex each option would be from the perspective of the consumer on a 7-point Likert scale, 1 = Low Complexity to 7 = High complexity. The same measures were used in the main consumer survey; this allowed comparisons of complexity perceptions, as shown in Figure 26.

Results reveal differing perceptions, trends are similar but consumers thought the options were more complex than the retailing experts, who in turn thought they were more complex than the manufacturer experts. This might be expected because of the day to day involvement and familiarity with complex innovations. When the scores are added for all the option ratings to provide an overall complexity rating for the Ford Focus, the manufacturer experts complexity rating is 2, retailing experts 3 and consumers 5. This supports the findings from the literature review that consumers and manufacturers have differing views of complexity (Section 2.3.2). The averages were round to the nearest whole number for ease of identification and comparison.

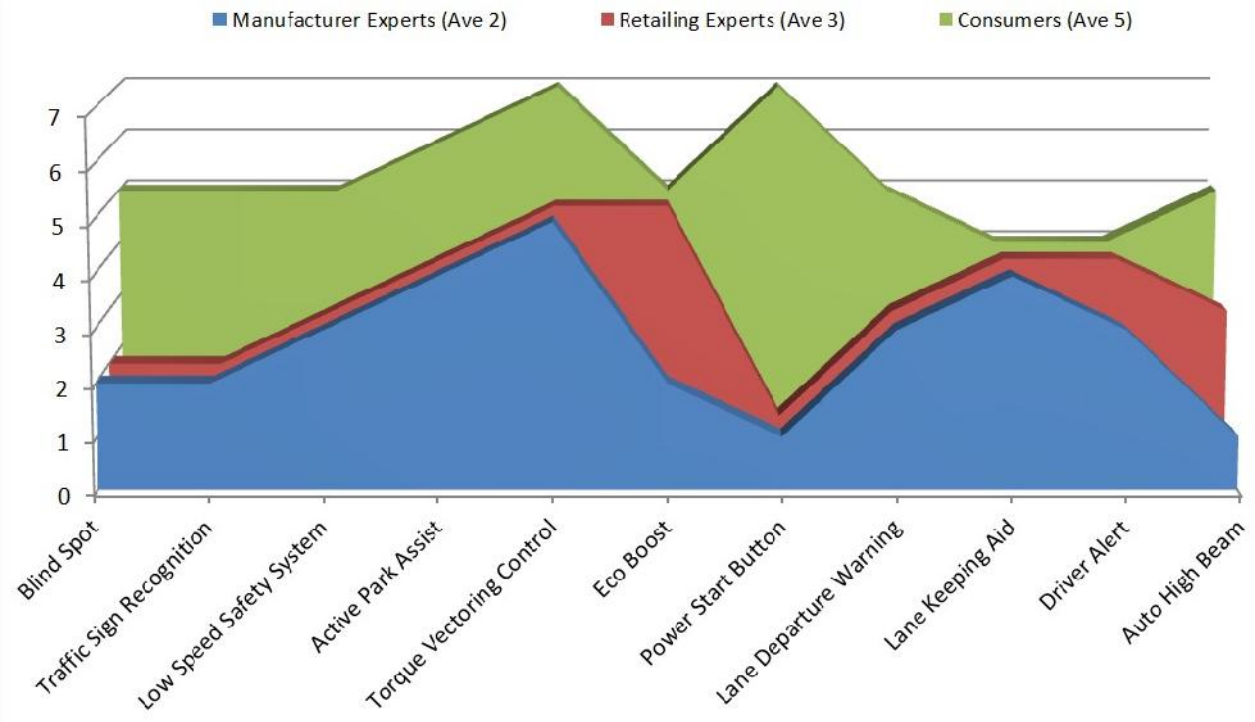

Figure 26 - Complexity Perceptions of Ford Focus Options

6.4.10 Consumer Categorisation of Innovation

This section seeks to establish relationships with CCI and NPC. CCI is a combination of consumer perceptions of a products Newness, Complexity and Innovativeness, and whether they Know the options, Like the options and/or if they would Buy the option. The final three options are identified as Knows, Likes, Buy in the analysis. The summary of the variables are as follows:

- Newness
- Complexity
- Innovativeness
- Knows
- Likes
- Buy

Respondents were asked to rate the eleven Ford Focus options on each of these variables, the responses were combined to provide an overall average rating for each variable. This enabled comparison with the NPC variables.

It was suspected that the high awareness of the TV Advert - Previous Awareness Source - for the Active Park Assist option may skew the overall average for the Knows the options variable, therefore the Mode was also calculated for this variable to identify differences. Colour highlights are provided for ease of identification.

Results from a One-way ANOVA identified that Knows the options Average had large positive relationships with Expertise , Involvement and Familiarity, in comparison results for Knows the options Mode show a reduction in the size of the relationship; Involvement indicating a medium positive relationship (Table 65).

Correlations Matrix – Large Medium

Scale	1	2	3	4	5
1. Expertise – actual knowledge on cars	-				
2. Involvement with cars	.795	-			
3. Familiarity	.590	.482	-		
4. Knows the options - Average	.617	.507	.951	-	
5. Knows the options - Mode	.533	.416	.824	.864	-

n=1401, p < .001 (2-tailed)

Table 65 - Pearson Correlation: Knows the Options with Measures of New Product Complexity

A partial correlation to explore the relationships between Familiarity and Knows the options whilst controlling for Expertise, showed only a small decrease in the strength of the correlations: from .951 to .923 for Knows the options Average and .864 to .804 for Knows the options Mode, suggesting that Expertise had very little effect on the strength of the relationship between these two variables.

The results suggest that Familiarity has the largest relationship with Knows the options, a clearer picture of this is provided by a One-way ANOVA. Statistically significant differences were found for the four levels of Familiarity with Knows the options Average (F= 4461.735, p < .001), similarly for Knows the options Mode (F=1156.428, p<.001). Eta squared values indicate very large effects: Knows the options Average (eta = .905) and Knows the options Mode (eta = .712). Post-hoc comparisons using the Tukey HSD test reveal significant changes in mean values (Table 66 and Table 67). As expected, the output suggests that the TV Advert did affect the Knows the options Average scores for Low Moderate and High categories, in particular the Low category who had searched for information, the likelihood being that they noticed the TV advert more than any others. The findings are a strong indicator of the positive effect of providing product information through a mass media source of this nature.

Tukey subsets show that each of the four familiarity levels give statistically significant differences from each of the other familiarity levels for Table 66 and Table 67. However, the mean scores for Knows the Options- Average (Table 66) are much lower than those shown

for Knows the Options – Mode (Table 67). This supports the suggestion that the TV advert biased the results and the more reliable comparison is Knows-the Options – Mode.

Knows the options - Average

Tukey HSDa,b

Familiarity - None, Low, Moderate, High	N	Subset for alpha = 0.05			
		1	2	3	4
1 None - No Familiarity	49	1.00			
2 Low – Searched for Information	525		2.56		
3 Moderate – Past Owner, Shared or had use of	557			4.51	
4 High – Current Owner	270				6.34
Sig.		1.000	1.000	1.000	1.000

Table 66 - Mean Scores for Familiarity and Know the Options Average

Knows the options - Mode

Tukey HSDa,b

Familiarity - None, Low, Moderate, High	N	Subset for alpha = 0.05			
		1	2	3	4
1 None - No Familiarity	49	1.00			
2 Low – Searched for Information	525		1.62		
3 Moderate – Past Owner, Shared or had use of	557			4.92	
4 High – Current Owner	270				6.85
Sig.		1.000	1.000	1.000	1.000

Table 67 - Mean Scores for Familiarity and Know the Options Mode

An independent-samples t-test found that males had a higher mean than females for Knows the options Average (eta = .136) and Knows the options Mode (eta = .116), (Table 68).

Independent samples T-Test - Group Statistics & Eta squared

	Gender	N	Mean	Std. Deviation	Std. Error Mean	Eta squared
Knows the Options - Average	1 Male	827	4.48	1.534	.053	.136
	2 Female	574	3.32	1.374	.057	
Knows the Options - Mode	1 Male	827	4.61	2.380	.083	.116
	2 Female	574	2.92	2.240	.094	

Table 68 - T-test and Eta squared values: Male and Female with Knows the Options – Average and Mode

The relationships of the three components of CCI: Newness, Complexity and Innovativeness, and the three components of NPC: Expertise, Involvement and Familiarity were explored. The results are given in a Pearson Correlations matrix (Table 69); the output of correlations between Expertise, Involvement and Familiarity are excluded for ease of identification; they have been reported several times in previous analysis (Table 33; Table 34; Table 35; Table 59; Table 61; Table 62). Colour highlights are provided for ease of identification.

Results identified large negative relationships between Involvement and Complexity; Expertise and Complexity - as Expertise and Involvement increases, Complexity decreases. A similar medium negative relationship was found with Familiarity and Complexity. The evidence suggests that consumers with higher levels of Expertise, Involvement and Familiarity perceived the Ford Focus as less complex.

The results also suggest that consumers with higher levels of Expertise and Familiarity did not view the Ford Focus as being a new model as small negative relationships were found with Expertise and New – average and also Familiarity and New – average, but not Involvement and New – average. The reasons for this are unclear, one possibility is that respondents with high Familiarity may have been comparing changes between the new and old model and those with High Expertise had seen the options before in other products, in both cases this did not manifest itself as a negative relationship with the innovative aspect of the product, one possibility is that although the Ford Focus was not seen as being new, the consumer still perceived it as being innovative. Conversely, products can be viewed as being new, e.g. not seen before, but not necessarily innovative. In this study the findings for the innovative variable revealed a large positive relationship between New – average and Innovative – average.

Correlations Matrix – Large Medium Small

	Expertise - actual knowledge on cars	Involvement with cars	Familiarity - None, Low, Moderate, High	New - average	Complexity - average
New - average	-.174	-.085	-.221	-	-
Complexity - average	-.676	-.857	-.394	sig>.05	-
Innovative - average	sig>.05	sig>.05	-.067	.791	-.085

n=1401, p < .001 (2-tailed)

Table 69 - Pearson Correlation: Measures of Consumer Categorisation of Innovation with Measures of New Product Complexity

The relationships of the two remaining components of CCI: Likes and Buy, and three components of NPC: Expertise, Involvement and Familiarity were explored. The results are given in a Pearson Correlations matrix (Table 70); the output of correlations between Expertise, Involvement and Familiarity are excluded for ease of identification; they have been reported several times in previous analysis (Table 33; Table 34; Table 35; Table 59; Table 61; Table 62). Colour highlights are provided for ease of identification.

Although negative relationships are shown for expertise involvement and familiarity the R-values are <.10 and are not significant. However, there is a large positive relationship between Likes and Buy.

Correlations Matrix – Large

	Expertise - actual knowledge on cars	Involvement with cars	Familiarity - None, Low, Moderate, High	Likes
Likes	-0.069	-0.074	-0.055	-
Buy	sig>.05	sig>.05	sig>.05	0.715

n=1401, p < .001 (2-tailed)

Table 70 - Pearson Correlation: Likes and Buy with Measures of New Product Complexity

Relationships were also explored for Likes, Buy, Newness, Complexity and Innovativeness using Pearson Correlation, but no relationships were found (sig>.05).

During the survey no reference was made to the cost of any of the Ford Focus options, however at the end of the survey this information was provided. All the options were sold as a complete pack price. During the research with the Discussion Groups, participants had been interested in the cost (Section 3.5.3), this was accommodated in the main survey. Respondents were provided with the price and they were asked: 'Now knowing what the options are would you buy the options pack?' (Yes/No) - 66.1% of respondents said they would buy the options pack.

An independent-samples t-test compared the question with the Likes the option and Buy the option variables, a relationship was not found (sig>.05). If a relationship had been found this would have provided triangulation to Likes and Buys; whereas this was not the case. This is the same as findings in the discussion groups, when participants were asked if they would buy the options individually, most said they would not, yet when the price was finally revealed all participants said they would buy the options, when probed as to why, they all said that they thought they were good value, this suggests that this may also have been the case with the respondents of the main survey.

6.4.11 LISREL

Finally, to confirm the theoretical factor structure, and establish goodness of fit, structural equation modelling (SEM) using LISREL was used to apply confirmatory factor analysis (Kelloway, 1998).

Constructs used in the model (Figure 27) are as follows:

- Measures of Consumer Product Experience (CPE) – Expertise, Involvement and Familiarity

- Measures of Product Information – Information Sources Used (INFOSOUR) and Previous Awareness Source for each option (AWARENES)

- Measures of Consumer Categorisation of Innovation (CCI) - Know the options; Likes the options; Buy the options; Complexity; Newness; Innovativeness.

LISREL (SIMPLIS) Structural Equations Model (Confirmatory Factor Analysis)

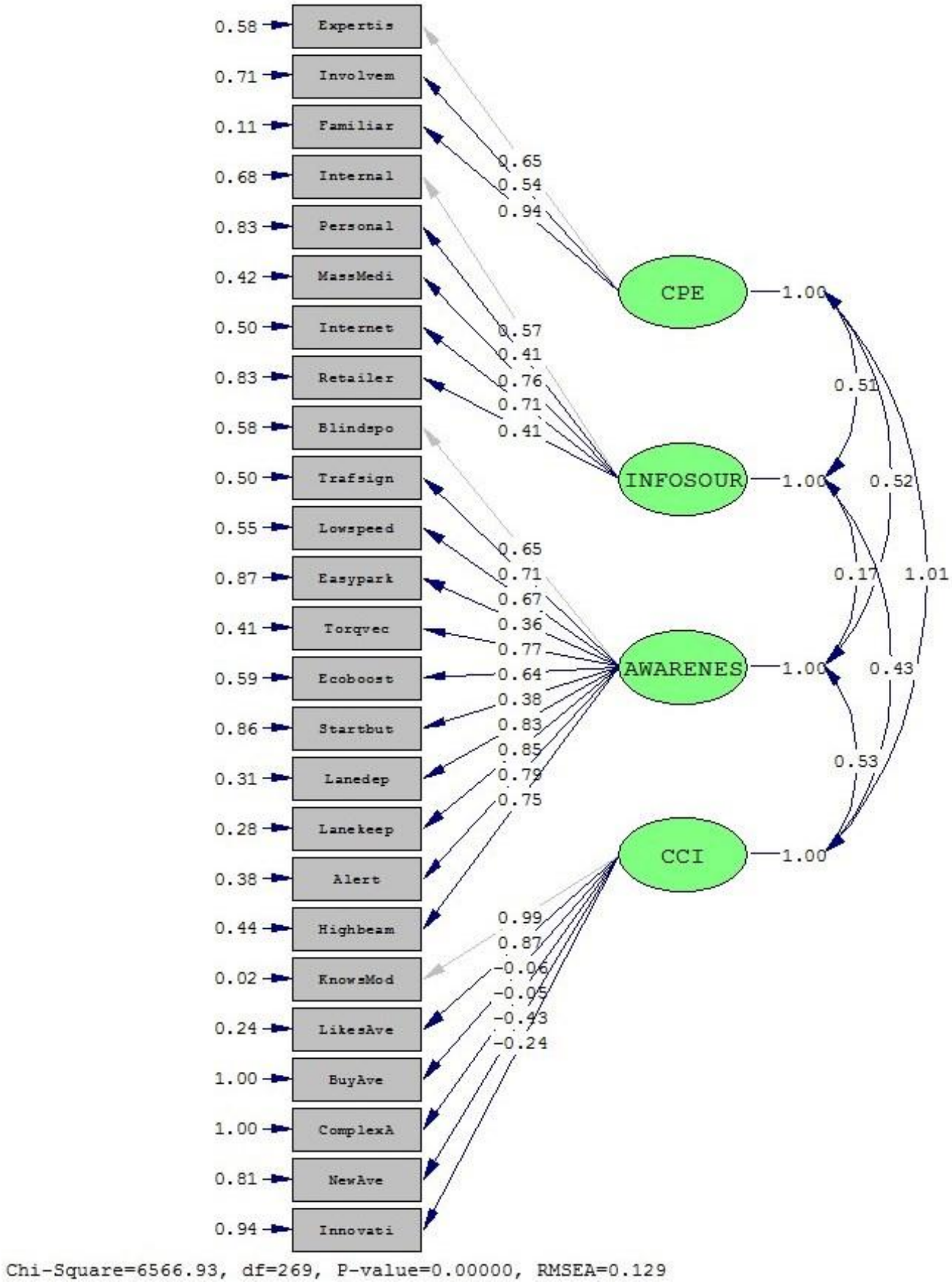

Figure 27 - LISREL: Confirmatory Factor Analysis

Although RMSEA is larger than .10 the reduced chi-squared statistic is 24.41 (chi-squared divided by the number of degrees of freedom – Bartlett, 1954); guidelines suggest that <100 is a good match between the model and data; the smaller the better (Sharma, 1996; Byrne, 1998; Hair et al., 2010). Goodness of fit statistics were acceptable; GFI = 0.727.

As can be seen from the output none of the items load on more than one latent variable making the causal relationships unidimensional. All the items in the model were retained, including the negative loadings in the CCI variable as the model would not converge with their removal.

Confirmatory factor analysis shows that the theory driven structure of the research is justified and that the small set of latent variables are a good fit of the larger set of underlying observed variables. It pulls together all the individual statistical analysis that was carried out with SPSS and completes the findings by providing a sound structural model. The conclusion is that the questions and constructs are reliable and valid, and measure what they are supposed to measure.

6.5 PRODUCT VIDEOS AND TV ADVERTS RESULTS

This section discusses the results and findings of the research into consumer preferences for product video and TV adverts detailed in the methods section (Section 5.11.2). The reason for this part of the research is that it links to all the previous findings and serves as a helpful way in evaluating the outcomes in practical situations.

The research was carried out with the established Automotive Research Panel (Section 5.9.4). The purpose of the survey was to investigate consumer perceptions of TV adverts and product videos. There were 150 responses from the panel of 178 members resulting in a high response rate 84%, this is likely because the respondents had previously consented to join a research panel and therefore interest and participation is likely to be strong.

The profile of respondents is shown in Table 71.

Total Responses 150		20 - 34	35 - 49	50 -64	65 or over
Age Group	n	11	26	70	43
	%	7.3%	17.3%	46.7%	28.7%

		Male	Female
Gender	n	100	50
	%	66.7%	33.3%

		Single	Married/Partner	Divorce	Widower
Marital Status	n	18	112	12	8
	%	12%	74.70%	8%	5.30%

		1 Bachelor or Newly Married	2 Single Parent or Married/Partner with children	3 Retired or Married/Partner, children left home
Lifestyle	n	20	36	94
	%	13.30%	24%	62.70%

Table 71 - Frequencies of Pilot Survey Respondents

The product video and TV adverts were for the Toyota and Audi brands, 86% of respondents were Ford owners. 43% owned a small car (e.g. Ford Fiesta); 34% owned a medium size car (e.g. Ford Focus). Figure 28 provides a graphical representation of responses to Familiarity with Toyota and Audi cars, and the respondent's levels of Expertise and Involvement.

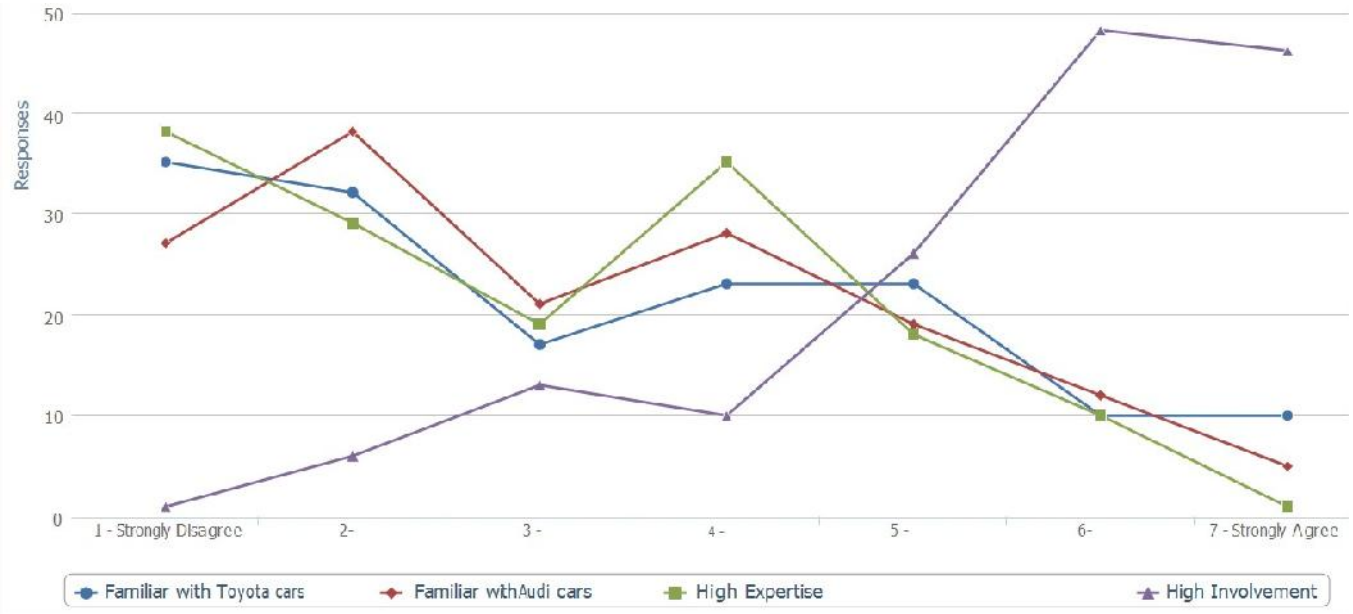

Figure 28 - Responses to Familiarity, Expertise and Involvement

Figure 28 shows that most of the respondents were not high in Expertise, but most of them had high Involvement. This is another indicator for such a high response rate of 84%, and that those with high Involvement have a strong willingness to participate in research.

As another way of evaluating practical situations, participants were asked for their perceptions and views in response to the viewing of a Toyota TV advert and a Toyota Product Video. Findings revealed that 69.3% thought the product video appealed the most; the most typical reason given was that it was more interesting and gave you information. Other responses revealed the following:

- 63.3% would prefer to see the Toyota product video on TV
- The most typical reason given was that it gave you more information.

Figure 29 reveals that most respondents thought the Toyota TV advert was easy to understand (scoring 1 to 3), in comparison most respondents thought the Toyota product video was a bit more complex to understand (scoring 3 to 5)

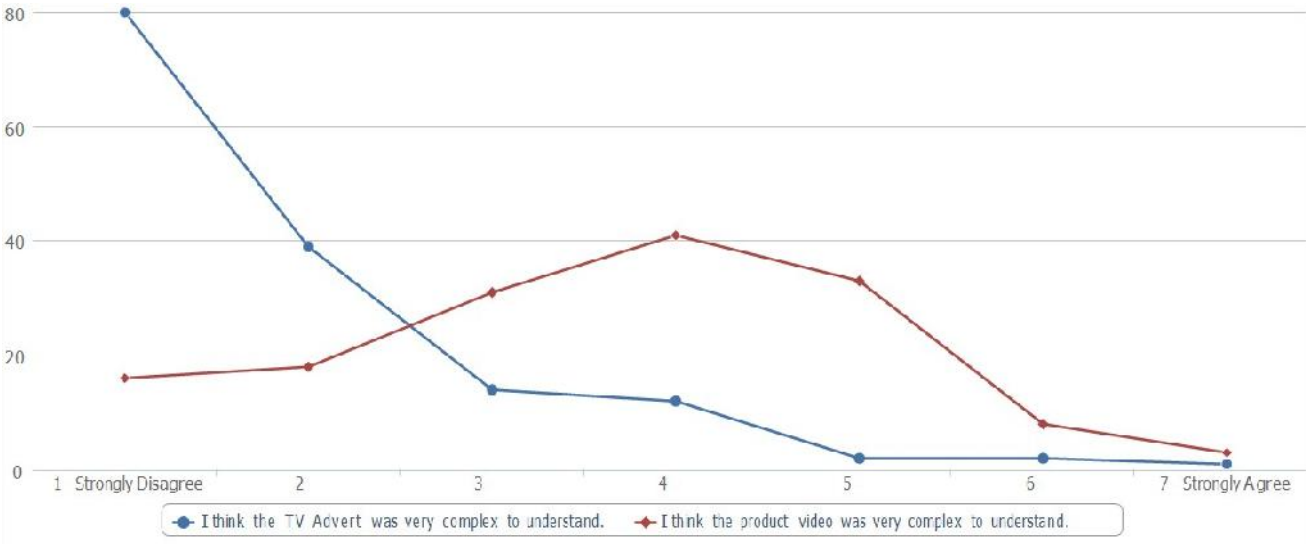

Figure 29 - Responses to the perceived complexity of the Toyota TV advert and Toyota product video

The Audi video, was about new technology, but only three people actually named some (not all) of the features showed. Two of those three were not experts, but scored the maximum (7) for involvement. Most respondents thought the Audi video was fairly difficult to understand

(scoring 6 to 7 – see Figure 30), one commented “You had to know what features were being shown to understand what the car was actually doing”, another commented “I didn’t understand it at all. I have always presumed that adverts like this are for cars that are not meant for me!”

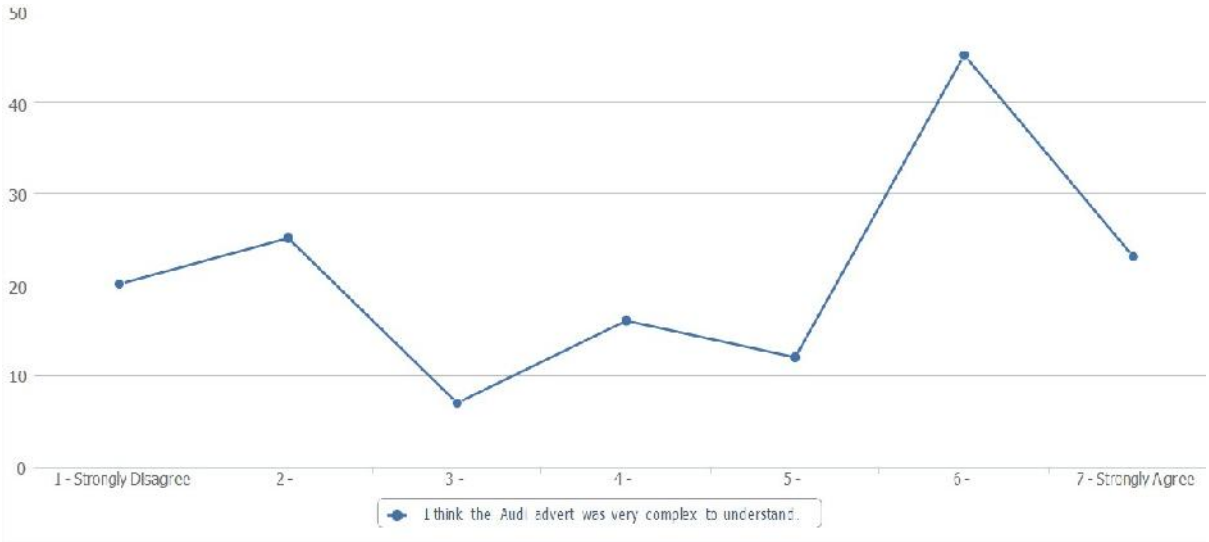

Figure 30 - Responses to the perceived complexity of the Audi TV advert

6.6 DISCUSSION OF ANALYSIS FINDINGS

This section presents a discussion of the findings of the statistical analysis and the relationships between the independent, dependent and the intervening variables.

6.6.1 Constructs

Cronbach alpha results compared well with previous studies and the evidence suggests good construct reliability. This is supported by SEM results which confirmed a good match between the model and data (Section 6.4.11) with none of the items loading on more than one latent variable making the causal relationships unidimensional. More in-depth and detailed insights were provided by the SPSS data analysis (6.4) and qualitative feedback from the online surveys (Section 6.5) to give support for construct validity.

The Expertise scale provides a good measure to identify the level of technical knowledge held by novices and experts; this was cross-validated by triangulation. The findings reflect the view that consumer expertise is the accumulation of expert knowledge (Zaichkowsky,

1985a; Alba and Hutchinson, 1987; Gregan-Paxton and John, 1997; Novick, 1998; Kleiser and Mantel, 1994, 1999).

Similarly the Involvement scale provided a good measure of the keen interest shown in a product; this was cross-validated by triangulation. The results indicate that consumer involvement of this nature accumulate knowledge because of the interest in the product. Those with high involvement may know what the new innovations do, but not necessarily how they work. The results support previous findings (Bloch, 1981; Shimp and Sharma, 1983; Lennox and MaClaren, 2003; Kassubeck et al., 2011). The results also show positive relationships exist between Involvement and Expertise; Expertise increases pro-rata to the Involvement that one has with an automobile, this concurs with previous findings by Taylor-West et al. (2008), but as the LISREL model shows these are still separate constructs.

In comparison, familiarity is knowledge gained through previous exposure through ownership or access to a specific product (Section 4.4.4). The data analysis investigated a number of alternative measures. The Familiarity scale chosen provides a good measure to identify the level of awareness for a specific product, in this case the Ford Focus; this was cross-validated by triangulation. It was hypothesised that familiarity was an intervening variable that moderates the levels of Expertise and Involvement on the assumption that only expertise and involvement are the basis of a consumer's product experience (CPE). The results show that although Familiarity contributes to the highest levels of CPE, Familiarity had a greater positive effect with Expertise than Involvement. The results also showed that Familiarity is a form of localised knowledge, it had the largest positive relationship with Knows the options and was the key factor for Previous Awareness Sources. The largest response was for the TV advert for Active Park Assist, Familiarity was found to be the key factor, even for those with low Expertise and Involvement. This supports previous research that suggested a novice that is familiar with a particular product may have greater expertise, than an expert that is unfamiliar with the same product (Taylor-West et al., 2012). This suggests that Familiarity is not only a moderator of CPE, but also a variable of CPE in its own right in the context of experience of a specific product.

The findings for Familiarity and Involvement support the exploratory research results (3.7) which suggested that awareness of a product or service is possible without any detailed technical knowledge. This is supported by previous investigations that suggest know-how or

tacit knowledge is related to familiarity and exposure to a product (Rogers, 1971; Alba and Hutchinson, 1987; Danneels and Kleinschmidt, 2001). Similarly, consumers with high interest and involvement with a product accumulate knowledge about what the product does (Bloch, 1981; Shimp and Sharma, 1983; Lennox and MaClaren, 2003; Kassubeck et al., 2011). In both cases – Familiarity and Involvement - consumers may know what the product does, but not necessarily on how it does it.

6.6.2 Intervening Variables

As discussed already, Familiarity is a variable of CPE as well as a moderator. Additionally, it was expected that Socio-Demographics would have a direct relationship with CPE e.g. high levels of education with high levels of expertise. This was not found to be the case, although some significant differences were found the actual differences were quite small, with the exception that Males were found to have more Expertise and Involvement with cars than Females and more Familiarity with the Ford Focus. Males were also more likely to Know the option than Females. These fit with usual stereotypes of presumed masculinity associated with automobiles.

6.6.3 Other Relationships

The product information relationships suggest different information sources are used by consumers with high levels of Expertise and Involvement when they look for a new or newer car. Specifically, consumers with high levels of Expertise rely on their Internal sources of information compared to those with high levels of Involvement who look to Mass Media as their main source of information.

Investigations into other variables in the survey revealed several small relationships. Small relationships were found between Expertise and Involvement with Sports Car users. The most important reason for changing a car was found to be Performance – Expertise had a medium positive relationship, Involvement a large positive relationship. The main reasons for changing a car for a newer model was for Style and Design and/or On Board Equipment.

The literature suggested that for experts and those highly involved with a product that there would be a propensity to them own more cars than those who were not, and that they would also consider more makes and/or more models when buying a car (Punj and Staelin, 1983).

This was not found to be the case; most people consider just 1 to 3 makes and/or models, regardless of their level of Expertise or Involvement.

Product complexity also revealed a range of differing views. The literature suggests consumers and manufacturers have differing views of complexity (Section 2.3.2), this was found to be the case in this research, the manufacture rating a lower level of complexity from the Ford Focus compared to the people who retail the product and consumers who purchase the product. The results found that consumers with higher levels of Expertise, Involvement and Familiarity perceived the Ford Focus as less complex.

Large positive relationships were found between Expertise, Involvement and Familiarity with Knows the options. Similarly large positive relationship exists between Likes the option and Buy the option. The key factor here is the variable Knows the option, unless a relationship is established here no further interactions can take place in the appraisal process and this is clearly important. In this research consumers were provided with product information, using product videos, so that comparisons with the Likes the option and Buy the option could take place to highlight their importance in a consumer's intention to purchase.

Finally, the results of the research into TV adverts and product videos clearly show that consumers found the product video to be the most appealing and would prefer to see this type of communication as a TV advert; they were seen as more interesting and provided them with better information. This desire for better information was not because the respondents had high expertise and a desire for more knowledge, the majority of them had high involvement suggesting they seek out information to satisfy their interest in a product. The results also show that the product video shown was seen as more complex that the lifestyle TV advert, and is likely to be indicative of the view identified in the literature that a new product must have some degree of complexity to attract and gain initial interest from consumers (Michaut et al., 2001b). In comparison, the Audi TV advert, which attempts to show new technology, was found to be too complex to understand, making a case for manufacturers and their marketing channels to provide clear unambiguous messages when communicating new innovative products.

6.7 SUMMARY

The concern at the start of the Data Analysis chapter was to show that the scales are valid and distinct. The subsequent sections and detailed analysis show that the findings are consistent with those from previous studies that the scales were appropriate and valid. The structural equation modelling show that the constructs used in this research do measure separate things and that the overall model shows the causal relationships are unidimensional. However, there is strong correlation between Expertise and Involvement. Also, these scales help explain differing views of TV adverts and product videos.

CHAPTER: 7 FURTHER POST-MAIN SURVEY INVESTIGATIONS

7.1 INTRODUCTION TO THE CHAPTER

Due to the timing of events, some of the research had to be carried out after the main survey had been completed. This concerned the research into the methods and processes used to communicate new innovations to consumers. The objective for this part of the research was to gain support to the claim that manufacturers provide inadequate product information, not only to consumers, but also to sales personnel who are the first point of contact for consumers when visiting dealerships.

7.2 ATTENDANCE AT NEW PRODUCT LAUNCHES

Communication is important to the launch of any new product, one major resource in the diffusion of new products for automotive manufacturers are the sales teams of their franchised dealers. To discover how these teams are trained by the manufacturers and the methods used to cascade product information, two major product launches of new car models were attended to observe the methods, quality and depth of information that are provided to the sales teams and how appropriate these are to potential customers.

7.2.1 Ford B-Max Launch - Salesman Training Event

A product training event was attended at the Henry Ford College, Loughborough University, in October 2012. The training was for their franchise dealer network car sales teams on the Sales teams for the pending launch of the new Ford B-Max model. The training event is supported by e-learning (incorporating product videos) and technology courses for the dealers.

The training consisted of a number of training modules within the Henry Ford College – Safety and Quality; B-Max crash test; Design and Loading equipment. This was followed by a test drive of the B-Max and a further training module on the new Ford Sync system: basic operation; functionality; syncing the phone; Blue Tooth streaming; voice control and music via the USB.

Observation of the training did not highlight any obvious weaknesses, however one piece of anecdotal information that was relevant, came from an older salesman attending the training.

When asked if there was any part of the Ford Sync training that they did not understand, he replied all of it! He elaborated that he lost track when the trainer opened the session with “As you all know smart phones…” this was because he did not know, as he had never owned a smart phone. The trainers decided that they needed to change their introduction and provide clearer background and details for this area of training.

7.2.2 Toyota Auris Launch Train-the-Trainer Event - Madrid

The training event for pending launch of the new Toyota Auris, was attended at a temporary training facility in Madrid in October 2012. The training was for Toyota staff: Sales Trainers and Sales Training Managers; Service Advisor and Handover Specialist Trainers; Toyota Financial Services Trainers

Most of the training was centred on how to carry out training, only minimal information was provided on the new innovations of the model, such as the hybrid drivetrain (electric power and petrol engine), although there were a number of videos that provided greater detail. During the course of the training it appeared that most trainers were familiar with the Toyota hybrid technology, which is probably the reason that this area had limited presentations or discussion.

The videos included a TV advert and product videos which explained the innovative aspects in detail, such as how the hybrid technology worked. Toyota is market leader in hybrid vehicles but like most hybrid campaigns they don’t communicate their technology very well (Gibson, 2010). To gain more insight it was decided to obtain consumer views and opinions on the appeal of TV adverts in when compared to internal product videos, full details of how this was carried out is given in Section 6.5.

Overall the level of detail in communicating the innovative aspects of the new model was minimal. Although the personnel who were attending the training were experienced professionals it is unlikely that they will be able to communicate an understanding of the new innovations effectively.

7.3 SUMMARY

In summary, there are weaknesses in how manufacturers diffuse information to sales trainers and sales staff. In the case of the Ford training one participant who was not familiar with the technology being presented, was clearly lost at the start of the presentation, it is possible that there may have been others.

The Toyota training only delivered minimal presentations on new innovations and this is concerning as it was a train-the-trainer event and the likelihood of information being cascaded down effectively to customer facing staff is doubtful.

In the case of cascading information to sales trainers and sales staff, the findings of this part of the research support the claim that manufacturers provide inadequate product information.

CHAPTER: 8 CONCLUSIONS

8.1 INTRODUCTION TO THE CHAPTER

The main purpose of the study was to provide empirical evidence of how consumers perceive the complexity of new innovative products. The basis of the study was to establish and test independent variables that measure consumers' product expertise, involvement and familiarity with a product as measures of a consumer's product experience (CPE). Comparisons were made with the sources of information used by consumers and the information supplied by manufacturers and how each source contributes to product awareness. This framework was used with information related to a specific product, the Ford Focus, to gain consumer perceptions of the new innovative options.

The outcome of this research identified that new product complexity (NFC) can be alleviated through the provision of appropriate product information. This can be achieved by assessing new product complexity through the eyes of the consumer. If consumers know what the innovative options are on a product, they can make a satisfactory appraisal of the product. This research established that consumers who like product innovations are more likely to consider buying the product. Other factors contributing to the appraisal process include perceptions of how new and complex the product is. The outcome of the overall appraisal is a consumer categorisation of the innovation (CCI).

This thesis builds upon previous studies in the areas of product newness (Rokeach, 1973; Booz et al., 1982; Herstatt and von Hippel, 1992; Rogers, 1995; Berlyne 1966; Nurrenbern and Robinson 1998; Johannessen et al., 2001; Moors et al. 2003; Michaut et al. 2001a; Chapman, 2005; Vercauteren, 2005; Conway, 2010; Peter and Olsen, 2010; Johannessen and Olsen, 2011; Simonsohn, 2011) and market segmentation (Haley 1968; Alpert and Gatty, 1969; Dibb, 1998; Dibb and Simkin, 1991; Kotler, 1991; Du and Kamakura, 2006; Kotler and Keller, 2006; Malhotra and Birks, 2007; Smith, 2009; Wells et al., 2010; Goyat, 2011; Tkaczynski and Rundle-Thiele, 2011). In doing so it provides important guidelines for manufacturers and marketing departments on the collection of data and the diffusion of product information (Section 8.3).

8.2 HYPOTHESIS CONCLUSIONS

The relationships between the constructs and new product innovations were found to support the structure of consumer product experience (CPE), new product complexity (NPC) and the overall outcome of a consumer's categorisation of innovation (CCI).

In terms of the specific hypotheses put forward in Section 4.6, each hypothesis is presented below with supporting evidence for acceptance or rejection.

8.2.1 Hypothesis 1a and 1b: Consumer Product Experience (CPE)

Strong positive relationships were found between the two components of a consumer's product experience – Expertise and Involvement - identified from the analysis of sixteen measures and two triangulation measures; Expertise increases pro-rata to the Involvement that one has with an automobile. The expertise scale provides a good measure to identify the level of technical knowledge held by novices and experts, similarly the involvement scale provides a good measure of the keen interest shown in a product; both scales were cross-validated by the triangulation questions. The results support previous findings (Bloch, 1981; Shimp and Sharma, 1983; Lennox and MaClaren, 2003; Kassubeck et al., 2011). Therefore, hypothesis 1a: A Consumer's Product Experience (CPE) is based on their Expertise and Involvement with the product, is accepted.

It was expected that socio-demographics would have a direct relationship with CPE. Of the eight components identified from the analysis of thirty eight measures: Age group; Gender; Lifecycle; Education; Income; Occupation; Country of Residence, it was found that only Gender had a significant relationship; males had more Expertise (large relationship) and Involvement (medium relationship) with cars than females. These findings add little value as Automobiles is an area that is normally associated with masculinity, without any other correlations e.g. Education (knowledge) there is not enough support for hypothesis 1b: Socio-demographics have a direct relationship with CPE, therefore this hypothesis is rejected.

8.2.2 Hypothesis 2a - 2c: Familiarity

Familiarity, identified from the analysis of four measures and one triangulation measure, was expected to have a direct relationship with socio-demographics. It was found that only Gender had a significant relationship; males had more Familiarity (medium relationship) with

the Ford Focus than females. Again as with hypothesis 1b, the finding adds little value as Automobiles is an area that is normally associated with masculinity; without any other correlations there is not enough support for hypothesis 2a: Familiarity has a direct relationship with socio-demographics, therefore this hypothesis is rejected.

It was hypothesised that Familiarity was an intervening variable that moderates the components of CPE - Expertise and Involvement. Findings revealed that although Familiarity contributes positively to the highest levels of CPE, it had a greater positive effect with Expertise than Involvement. Findings also reveal that Familiarity is a form of localised knowledge; a novice that is familiar with a particular product may have greater expertise, than an expert that is unfamiliar with the same product, albeit that the knowledge is restricted to an awareness of a product without any detailed technical knowledge. Therefore, hypothesis 2b: Higher levels of Familiarity has a positive effect on CPE, is accepted.

In comparison, findings revealed a medium negative relationship between Familiarity and Complexity. Whilst consumers with higher levels of Familiarity perceived the Ford Focus as less complex, low levels of Familiarity had the opposite effect. This is similar to the intervening effect of Familiarity with CPE (hypothesis 2b); in this case Familiarity has a moderating effect of New Product Complexity (NPC). Therefore, hypothesis 2c: Lower levels of Familiarity has a negative effect on New Product Complexity (NPC), is accepted

8.2.3 Hypothesis 3a and 3b: Product Information

NPC is the outcome of CPE which is moderated by the intervening variables of Familiarity and Product Information. NPC in turn is the basis on which a consumer is able to evaluate new product innovations and achieve a Consumer Categorisation of the Innovation (CCI). Findings revealed that the appraisal of innovative options comes to an abrupt halt unless the consumer is provided with enough information. If consumers do not understand the product or ‘Know the option’ no further interactions can take place in the appraisal process, whereas the provision of Product Information - in this research this was supplied in the form of short product videos – allowed the consumer to continue with the assessment process and achieve their CCI by having a positive effect on reducing their NPC. In this research consumers indicated a preference for product information style TV adverts, as they were more

interesting and gave you information than a typical lifestyle TV advert. Therefore, hypothesis 3a: The provision of relevant product information has a positive effect on NPC, is accepted

In comparison the opposite is true. Whilst consumers can be provided with product information, if the information is insufficient or of an abstract nature, then consumers will ignore or overlook the product. Findings revealed that most consumers found an Audi video about new technology was too complex to understand; only 2% of all respondents knew what the video was about, in this case the appraisal process resulted in a negative CCI. Therefore, hypothesis 3b: Inadequate product information has a negative effect on the Consumer Categorisation of the Innovation (CCI), is accepted.

8.2.4 Hypothesis 4 and 5: New Product Complexity (NPC)

NPC is the outcome of relationships between the components of CPE – Expertise and Involvement, Familiarity and Product Information. Anything that reduces the levels of complexity in a new product has a valid contribution in the formation NPC.

It has already been established that Expertise and Involvement are valid components of CPE (hypothesis 1a) and that Familiarity contributes to consumer knowledge (hypothesis 2b). Confirmatory factor analysis confirms that all three components are valid measures of CPE (Section 6.4.11), and SPSS findings show that those with higher Expertise and Involvement have greater awareness of new product information (Section 6.4.6). The result is that these factors have a positive effect on lowering NPC. Therefore, hypothesis 4: Higher levels of CPE has a positive effect on NPC, is accepted.

Without low levels of NPC a consumer is unable to evaluate new product innovations and establish a Consumer Categorisation of Innovation (CCI). It has been established from key informants (Section 3.3.4) and data analysis (Section 6.4.8) that consumers will not buy what they do not understand. Consumers cannot make an appraisal or categorise an innovation unless they are provided with information that reduces NPC. If NPC remains high then an assessment cannot take place. Therefore, hypothesis 5: Lower levels of NPC have a positive effect on CCI, is accepted.

8.3 IMPLICATIONS AND GUIDELINES

This section summarises the practical implications arising from the findings of this study, including guidelines for manufacturers and practitioners on the collection of data on the diffusion of new product innovations and information sources.

The exploratory investigations found that manufacturers and practitioners use a number of well-known commercial products for identifying the target market for their marketing communications, but all of these products use high level groupings based on a limited survey of consumers and can only provide generalisations or representations of the market. In interviews with key informants (Section 3.3), Ford Motor Company acknowledged that: 'Databases are not as sophisticated as some people feel' and BMW admitted that: '…they come up with a composite profile and then make the product to fit that profile. The difficult thing is then to decide who fits those profiles, with the data they have already'

Ford, like other manufacturers already have data of current/past owners and households that may have shared or used previous models, as well as consumers who have enquired for product information such as brochure requests. In effect they already have access to a lot of information that they do not use to effectively target marketing communications. This data could be used as a key Familiarity variable.

As well as existing car owners, manufacturers hold demographic data for potential customers, gained through marketing campaign enquiries. If records are matched by house number and postcode data it is likely to identify the number of instances of current and previous ownership for all the members of a family of a particular make and/or model. Using Ford as an example, if one or more members of the same household owned a Ford, the other members of the household are likely to be more familiar with Ford products than those in households that did not own a Ford. The level of familiarity would be more focused if the matching was made for a specific model, and more so if members of the household shared or had access to that model.

This research has shown only limited usefulness for Socio-Demographic data, the only relationships being the usual stereotypes of masculinity associated with automobiles.

These findings added little value without any other correlations e.g. Education (knowledge), in fact hypotheses 1b: that Socio-demographics have a direct relationship with CPE, was rejected. Other researchers have also questioned businesses that have become entrenched in using demographic segmentation tools that are no longer appropriate, and that it is not uncommon to find marketing campaigns are carried out without any consideration as to who may be the users of the product (Dibb, 1998; Vercauteren, 2005). This means that manufacturers and practitioners need to look at the type of data they collect from current as well as potential customers.

There is also a need for manufacturers and practitioners to re-assess the type and style of their communication methods, this research shows that product knowledge is gained through product exposure, how much knowledge is accumulated depends on a consumers Expertise, Involvement and Familiarity with the product. The highest level of knowledge was found to be a combination of all three constructs. However, even consumers with low levels of Expertise and Involvement but high Familiarity with a particular product means that a novice may have greater expertise than an expert who is unfamiliar with the same product. This shows that Familiarity for most consumers is of a very localised nature and supports the view by Paredes (2011) that the last purchase experience is the best information for the next purchase.

If consumers have low levels of Expertise, Involvement and Familiarity, it is likely that they will find new innovative products to be high in complexity. To alleviate this adequate and appropriate information needs to be supplied so consumers have a clear understanding of the product and what it does. If consumers are unable to identify the product, with what they already know and understand, then it is likely the product will not be considered. This is particularly relevant for consumers with high familiarity of a product but low in expertise that may be expected to be aware of changes to the product, whereas in practice changes to a product are often overlooked.

The actual measurement of how much complexity is seen to be in a new innovative product is also an area of concern. The research found that not only is there a difference between consumers and manufacturers, there is also a difference with car dealer staff who are consumer facing. The results of the measurement of complexity in a Ford Focus (Section 6.4.9) revealed that manufacturers and dealers viewed the products as less complex than

consumers. The implication is that because of this, they are likely to provide fewer details or explanations when presenting or communicating the product. There is some support for this view, part of the research included the observation of new product launches which revealed weaknesses in how manufacturers diffuse information to sales trainers and sales staff; it was found that manufacturers provide inadequate product information.

This research found that consumers knew about some of the Ford Focus options, but did not understand them. Therefore, the recommendation is for manufacturers to introduce a similar method of complexity scaling to gain insight into consumer perceptions of the complexity of their new products. This would identify which options were perceived as having the most complexity and identify the appropriate levels of communication that are required.

The research found that the method of communication is also a key factor. The information sources used by consumers differ according to their Expertise and Involvement when they look for a new car. Those with Expertise had a preference for using their own Internal knowledge followed by Mass-Media and the Internet and then Retailers e.g. car dealers. In comparison those with Involvement had a preference for Mass-Media followed by the Internet and Internal knowledge and then Retailers.

Findings of the previous awareness of the options for the new Ford focus revealed that the TV Advert, demonstrating the Easy Park Assist option, had a high recall even for those with low Expertise and Involvement. This is a strong indicator of the positive effect of providing product information through a mass media source of this nature. Further research consolidated this view. The comparison of a lifestyle TV Advert and a product video revealed the product video appealed the most and prospective consumers would prefer to see this type of communication as a TV Advert. The most typical reason given was that it was more interesting and gave you information. However, findings also revealed that if the product information is too abstract it resulted in negative outcomes.

The key is to provide consumers with adequate product information, when this is provided it has positive results. After viewing the short product videos for the Ford Focus, all participants in the exploratory studies, and 66.1% of respondents in the main study, stated they would buy the options. Clearly no one will buy an option if they do not understand what it is, therefore it is important to explain the options to be able to stimulate those responses.

This study investigated the appropriateness of measures and constructs required to establish a more reliable segmentation tool for marketing communications in doing so it concludes that collecting data relating to a consumers Expertise and Involvement as well as Familiarity will provide manufacturers and practitioners with an understanding of a Consumers Product Experience. This would enable the tailoring of marketing communications by providing the correct level of product information based on the individual's CPE, rather than the current one-size-fits-all lifestyle messages. This would be particularly useful for manufacture launch campaigns of new products where new complex innovations are not easily understood. Not only would this increase the appeal of the marketing messages, it would make them more cost-effective as they would reach more accurate market segments.

These variables would also be useful in developing new communication channels. In particular where new products contain complex innovative components, whether active or passive, the technology needs to be explained in more detail to avoid them being perceived as being too complex and therefore excluded from the product evaluation process. Explanations could be provided by using language which is more familiar to consumers. For example, innovations that are designed to protect passengers could be communicated as a 'Safety' feature as opposed to the more complex sounding 'Torque Vectoring Control', although care should be taken not to raise concerns about safety issues, because for some consumers safety is taken as being implicit in cars. Explanations could be provided by using language which is more familiar to consumers. For example, innovations that are designed to protect passengers could be communicated as a 'Safety' feature as opposed to the more complex sounding 'Torque Vectoring Control', although care should be taken not to raise concerns about safety issues, because for some consumers safety is taken as being implicit in cars. Clearly, retail marketing channels and the messages they convey need to be investigated in more detail and changed.

This does not mean that all consumers require detailed technical knowledge. It was found that consumers with high Familiarity i.e. the owner of a Ford Focus, but low in expertise may be aware of new options being introduced to that model, through marketing and a general interest in their vehicle, but they do not necessarily understand what they actually do. In contrast those with high involvement may know what the new innovations do, but not

necessarily how they work. This means that you do not have to be an expert to have knowledge of new technology.

One practical suggestion for more localised development would be to investigate the customer qualification process in automotive dealerships. Scripts could be developed to identify Expertise, Involvement and Familiarity, but it may be difficult to ask a customer some of the questions needed to qualify them without alienating them as well as making it feel awkward for sales staff. However, future research into this area should persevere in developing qualification methods that identify the depth of product knowledge a consumer has or needs for a particular product to be able to deliver the relevant level of information.

The findings are useful for academics carrying out future research in this area as well in the establishment and categorisation of automotive product groups. It is suggested that future research investigates where and how consumers source their information, this would provide valuable information for developing the appropriate marketing channels. If this information can be obtained by manufacturers/practitioners during their marketing campaigns, together with Expertise, Involvement and Familiarity it offers academics as well as manufacturers segmentation opportunities for future research, new product launches and may be useful for other high value purchases in other industries.

In conclusion, the findings provide clear implications for automotive manufacturers and practitioners as it gives insight on consumer awareness, acceptance and the appeal of new technological developments and how these are moderated by a consumer's Expertise, Involvement and Familiarity with their products. If these suggestions are put into practice it will provide them with improved consumer segmentation and a more effective measure of their new products.

8.4 LIMITATIONS AND FUTURE RESEARCH RECOMMENDATIONS

This research has clear implications for manufacturers and practitioners but it should be noted that there are a number of possible limitations with the research.

In considering any research, it is important to evaluate the limitations of the work. Firstly, the respondents to the main research were current customers of Ford Motor Company Limited,

with only a small amount of prospects (Section 5.6.1). Research was also centred on a specific model, the Ford Focus. Whilst this was deliberate, to enable the Familiarity construct to be evaluated, the findings can only be relied upon in the context of this specific model. Replication of this research with other manufacturers and models is needed to be able to draw wider comparisons.

Secondly, the constructs and relationships between Expertise, Involvement and Familiarity may only be applicable to mainstream models. For example, they may have no value in the assessment of expensive prestige models such as Rolls-Royce; there is likely to be a variety of other variables and influences that contribute to their appraisal, but these unmeasured variables are beyond the scope of this research.

Thirdly, all questionnaires used in the research were carefully worded to avoid 'the right answers' being given. In addition, because of the nature of an online questionnaire which relied on self-administration by the intended recipients, the validity of respondents cannot be guaranteed. It is also important to note that research methods and practices, including established scales do not remain constant over time, by nature research is in a state of flux and scale items that may well have been reliable and valid in 1981, such as the AIS developed by Bloch, may not hold today. Similarly the scales used in the current research may be subject to change in the future.

Fourthly, the age range and occupation of respondents in the main survey may be typical of people who respond to surveys in general (e.g. elderly and retired). This means that it can only be said that the findings are indicative of this group of people. Future surveys could be carried out using a face-to-face questionnaire with a stratified sample, this would also alleviate the problems of respondent validity to an online survey, but this would limit the volume of responses and increase the cost of data collection considerably.

Lastly, although no useful relationships were found with Socio-Demographic measures, they should not be overlooked. For example, demographics are, and will remain, essential when describing respondents – there is little value in establishing links between variables and constructs without being able to identify what those respondents look like or where they live.

In terms of future research recommendations, there is considerable scope for developing the proposals put forward in this research. The main development would be to apply the theoretical contributions to a practical situation in the workplace environment of a manufacturer, practitioner or dealership. This could be achieved by self-implementation of the guidelines put forward in Section 8.3, but for robustness and rigour the preference would be to carry out longitudinal action research over two/three years in an immersive role to monitor and implement the proposals.

Taking these limitations into account, the current study makes a significant contribution to categorisation theory, consumer behaviour and new product development literature, and has identified a number of potential areas for future development in this important area research.

In the introduction to this thesis it was argued that the focus of explaining and asking questions on “how new” and “new to whom” would be valid questions for marketers when introducing new products. The research has provided evidence that these questions would be valuable alongside a better understanding of Expertise, Involvement and Familiarity.

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APPENDICES

Appendix 1 - Motor Industry Vehicle Classifications

SEGMENT	NOTES	FORD	VAUXHALL	ROVER	OTHERS (for example)
A		-	-	Mini	Fiat Cinquecento, Suzuki Alto
Sub B		Ka	-	Rover 100	Peugeot 107, Citroen Saxo, Seat Arosa
B		Fiesta	Corsa	-	Renault Clio, VW Polo, Fiat Punto, Nissan Micra, Skoda Felicia
C		Focus	Astra	Rover 200/400	Peugeot 307, Renault Megane, Toyota Corolla, VW Golf, Honda Civic, Citroen Xsara
C/D		Mondeo (Focus)	Vectra	Rover 600	Renault Laguna, Nissan Primera, Peugeot 407, VW Passat, Audi A4, BMW 3 Series, Toyota Avensis
D/E		-	Omega	Rover 800	Audi A6, BMW 5 Series, Volvo S/V 70, Mercedes E Class
Speciality(S)	Sports Coupes	Probe Puma (Cougar)	Calibra Tigra	Rover 200 Coupe	Fiat Coupe, BMW 3 Series Coupe, Peugeot 407 Coupe
F	Luxury	(Lincoln)	-	-	Rolls Royce, Jaguar, BMW 7 Series, Audi V8, Mercedes S Class
G	Luxury Sports	-	-	-	Porsche, BMW 6/8 Series, Ferrari, Jaguar XK8
J	Off Road Vehicles	Maverick Explorer	Frontera Monterey	Land Rover Discovery Range Rover	Chrysler Cherokee, Toyota Landcruiser
M	Multi Purpose Vehicles	Galaxy	Sintra	-	Peugeot 807, Renault Espace, VW Sharan
H (Others)		-	-	-	Other Specialist Manufacturers

Appendix 2 – Geneva Motor Show Questionnaire –English version

QUESTIONNAIRE

Loughborough University

Thank you for agreeing to complete this questionnaire. Please begin by giving us some information on your background. This information is totally anonymous and confidential; no information given can identify you individually.

What is your current main car? Make_____ Year of Manufacture _____

In which year were you born? _____ In which country do you reside? _____

Are you (please tick the box): Male ☐ Female ☐

I am here at the Motor Show because..._____

In answer to the following questions please circle the number on the scale indicate your agreement or disagreement with the statement. 1= Strongly Disagree and 7= Strongly Agree

	Strongly Disagree						Strongly Agree
I am very familiar with the Toyota models	1	2	3	4	5	6	7
I would consider myself to be an expert on automobiles	1	2	3	4	5	6	7
I think the new Toyota models are very innovative	1	2	3	4	5	6	7
I really enjoy driving	1	2	3	4	5	6	7
Cars offer me relaxation and fun when life's pressures build up	1	2	3	4	5	6	7
Sometimes I get too wrapped up in my car	1	2	3	4	5	6	7
I enjoy learning about cars	1	2	3	4	5	6	7
I can recall almost all existing brands of cars from memory	1	2	3	4	5	6	7
I can recognise almost all brand names of cars	1	2	3	4	5	6	7

Appendix 3 - Explanation of Technological Option Packs for Ford Focus

Convenience Pack – cost £525 including VAT (available on Zetec and above models only) comprising the following:

Active Park Assist: Uses sensors to park the car without touching the steering wheel. You control the accelerator and brake.

Driver Assistance Pack - cost £750 including VAT (available on Titanium and Titanium X models only) comprising the following items:

Traffic Sign Recognition: Automatically reads standard road signs and displays the speed limit in the cockpit.

Blind Spot Information System: Alerts you to vehicles in your blind spots with a warning light in the door mirror.

Lane Departure Warning: Detects when your car strays unintentionally towards road lane markings and provides a warning via the steering wheel.

Lane Keeping Aid: Applies steering force away from the direction of travel to help you recognise that corrective action is required.

Driver Fatigue Alert: Visual and audio warning if the system detects driving behaviour that indicates a drop in alertness.

Auto High Beam: Switches the headlights from high beam to low beam when oncoming traffic is detected and then back to high beam when the road is clear.

Low Speed Safety System: Automatically applies the brakes in slow moving traffic if the system detects that a collision is likely.

Appendix 4 – Combined Data Display

Q2: What is the minimum it must have?	Newness	Perceptions	Values	Characteristics	Complexity	Expertise	Involvement	Familiarity - Ford	Familiarity - Focus	Knows options	Would buy options	Would like to have options
1. Air conditioning... park sensors	Familiarity	Needs: Functional	Innate preferences	Compatibility	Low	3	5	7	7	5	4	6
2. It would have to have ABS	Familiarity	Needs: Functional	Innate preferences	Compatibility	Low	7	6	7	7	7	4	5
3. Heated front screen... ABS, air conditioning... anything that I can afford really for comfort and pleasure...	Familiarity	Needs: Functional	Innate preferences		Low	6	6	7	7	6	5	5
4. Air conditioning, folding mirrors, city pack, heated front screen... and park sensors	Familiarity	Needs: Functional	Innate preferences	Compatibility	Low	6	4	7	3	2	5	6
4. Door lights in the bottom of the door pocket, puddle light... anything with safety is a plus.	Familiarity	Needs: Functional	Innate preferences	Compatibility	Low	6	4	7	3	2	5	6
5. Reliability	Tangible	Benefits	Terminal (end)	Advantage	Low	3	4	3	5	2	4	4
6. I wouldn't consider now buying a car that didn't have power steering, automatic braking system, those sort of things.	Familiarity	Needs: Functional	Innate preferences	Compatibility	Low	3	2	3	3	2	3	5
7. I think probably the looks... but I would want the functions as well	Perceptual	Needs: Social	Object	Observability	Low	6	7	7	5	3	4	3
8. ... defrosting of the front windscreen	Familiarity	Needs: Functional	Innate preferences	Compatibility	Low	3	5	4	3	4	4	4
9. You want at least what you've got at the moment and if possible something which that makes life a little bit more convenient	Familiarity	Needs: Functional	Innate preferences	Advantage	Low	4	5	2	7	1	2	3
10. I would want everything that was there before, I had an experience when I changed to Toyota... and found I couldn't get traffic reports anymore... I nearly got to the point to taking it back.	Familiarity	Needs: Functional	Innate preferences	Compatibility	Low	2	4	5	5	2	3	5
11.What I have in the car now.	Familiarity	Needs: Functional	Innate preferences	Compatibility	Low	5	7	4	2	3	3	5
12. I agree that people don't like to go backwards because you become accustomed to things don't you.	Familiarity	Needs: Functional	Innate preferences	Compatibility	Low	6	6	5	5	4	3	4

Conceptual headings taken from Literature Review					
Familiarity	Schemas	Personal	Relative	Low	
Exposure	Conceptual blending	Object	Advantage	Medium	
Sensory	Benefits	Pseudo	Compatibility	High	
Tangible	Needs: Functional	Social Cognition	Complexity		
Intangible	Needs: Social	Instrumental (means)	Trialability		
Novelty	Needs: Experiential	Terminal (end)	Observability		
Variety	How new?	Innate preferences			
Complexity	New to whom?				
Cognitive stimulation					
Perceptual					
Epistemic					
Conceptual					

Appendix 5 – Pre-test Questionnaire – Page 1 of 3

Loughborough University

What is your current main car? Make_____ How old is your car? _____years old
Model_____

How many cars have you owned or shared? _____

In which year were you born? _____

Are you (please tick the box): Male ☐ Female ☐

In answer to the following questions please circle the number on the scale indicate your agreement or disagreement with the statement. 1= Strongly Disagree and 7= Strongly Agree

	Strongly Disagree						Strongly Agree
I am very familiar with Ford cars	1	2	3	4	5	6	7
I am very familiar with the Ford Focus	1	2	3	4	5	6	7
I would consider myself to be an expert on automobiles	1	2	3	4	5	6	7
I really enjoy driving	1	2	3	4	5	6	7
Cars offer me relaxation and fun when life's pressures build up	1	2	3	4	5	6	7
I enjoy learning about cars	1	2	3	4	5	6	7
I can recall almost all existing brands of cars from memory	1	2	3	4	5	6	7
I know what the Blind Spot Information System is	1	2	3	4	5	6	7
I would like to have the Blind Spot Information System	1	2	3	4	5	6	7
I would buy the Blind Spot Information System as an option	1	2	3	4	5	6	7
I know what Traffic Sign Recognition is	1	2	3	4	5	6	7
I would like to have the Traffic Sign Recognition	1	2	3	4	5	6	7
I would buy the Traffic Sign Recognition as an option	1	2	3	4	5	6	7

Appendix 5 – Pre-test Questionnaire – Page 2 of 3

	Strongly Disagree						Strongly Agree
I know what the Low Speed Safety System is	1	2	3	4	5	6	7
I would like to have the Low Speed Safety System	1	2	3	4	5	6	7
I would buy the Low Speed Safety System as an option	1	2	3	4	5	6	7
I know what Active Park Assist is	1	2	3	4	5	6	7
I would like to have the Active Park Assist	1	2	3	4	5	6	7
I would buy the Active Park Assist as an option	1	2	3	4	5	6	7
I know what Torque Vectoring Control is	1	2	3	4	5	6	7
would like to have the Torque Vectoring Control	1	2	3	4	5	6	7
I would buy the Torque Vectoring Control as an option	1	2	3	4	5	6	7
I know what Ford Eco Boost is	1	2	3	4	5	6	7
I would like to have the Ford Eco Boost	1	2	3	4	5	6	7
I would buy the Ford Eco Boost as an option	1	2	3	4	5	6	7
I know what the Power Start Button is	1	2	3	4	5	6	7
I would like to have the Power Start Button	1	2	3	4	5	6	7
I would buy the Power Start Button as an option	1	2	3	4	5	6	7
I know what the Lane Departure Warning is	1	2	3	4	5	6	7
I would like to have the Lane Departure Warning	1	2	3	4	5	6	7
I would buy the Lane Departure Warning as an option	1	2	3	4	5	6	7

Appendix 5 – Pre-test Questionnaire – Page 3 of 3

	Strongly Disagree						Strongly Agree
I know what the Lane Keeping Aid is	1	2	3	4	5	6	7
I would like to have the Lane Keeping Aid	1	2	3	4	5	6	7
I would buy the Lane Keeping Aid as an option	1	2	3	4	5	6	7
I know what Driver Alert is	1	2	3	4	5	6	7
I would like to have the Driver Alert	1	2	3	4	5	6	7
I would buy the Driver Alert as an option	1	2	3	4	5	6	7
I know what the Auto High Beam is	1	2	3	4	5	6	7
I would like to have the Auto High Beam	1	2	3	4	5	6	7
I would buy the Auto High Beam as an option	1	2	3	4	5	6	7

What was the reason for changing your last car? _____

_____

If the reason for changing was to get the new model, what was new about it? _____

_____

Cost of the options

Finally - while this research is about your views on new innovations, everyone always likes to know how much all these things cost.

The innovations you have just viewed are available as a complete package for a Ford Focus. You may be surprised to learn how much they cost. We would welcome your opinion.

The price of the package is £750 including VAT.

At that price would you buy the options? (please tick the box): Yes ☐ No ☐

Appendix 6 – Meeting structure with FoB Communications Manager

Meeting with Richard Beard 21.10.11

I want to ask them about segmentation; basically from my own experience from working for a Ford agency, I know they have brand managers that provide a detailed profile of the type of person that will be interested in particular models and I know it is very detailed.

My questions will be about how they come up with the profile – background research, sources of data that kind of thing.

And then I want to discuss how they then identify the market segment to match that profile from their marketing data.

I would also like to discuss how they update the marketing data and how deep they go in their data collection.

I appreciate that some detail of the discussions will have to remain confidential because of their commercial value/intellectual property; all I need is an understanding.

Appendix 7 – Sample of Feedback to the Pilot Questionnaire

Qu 11 seemed odd straight after question 10 because I wasn't sure why you needed a separate question for the Focus and it felt like I had already given you the necessary information – obviously later in the survey I realise that you are looking at the Focus but you might want to look at the way you phrase qus 10&11 to make it clearer or whether you really need qu 11.
Obviously if they own a Focus it could be that they are more likely to be familiar with the options – I could move Q11 to include it in Q19, which would make more sense as Q19 explains why we are looking at the Focus – do you agree?
Yes, particularly if you then make the other questions yes and no
Is your current car a Ford Focus
Have you ever owned a Ford Focus
Have you ever shared or had use etc.

Qu 14 – I would make it clearer that you want people to answer regarding how many cars they have owned in their lifetime (of driving) – I assumed this but only having read qu 15.
I will add 'in your lifetime'
Great – I think this will really help clarity of understanding

Q16 – do you need to separate makes and models?
Good idea – the question was to discover how much searching they do, but separating them out is a good idea.
☺

Q19 – c and d – are yes/no questions not scale questions
Well spotted, thanks I'll change them
☺

Q20 – if it has been a few years since someone bought a new car (6 years in my case ☹) then many of these don't relate to the previous purchase – which is what the question seemed to intimate – I what did you consider. Could you make it a - what would you consider if looking for a new car ....
The main survey will only be going out to people who changed their cars less than 4 years ago (whereas for the pilot I am using Friends & Family and Uni bods, so I don't have that info, I checked that all the questions would be relevant to people who's cars are 3 years old, but your right for older cars.
Cool – will make sense in that context

For the Ford Eco Boost – you don't need to watch the video as the only piece of information offered was already displayed on the still – it wasn't a very informative video. I have not seen anything on the eco boost and I still don't have any clue as to what it actually is and only minimal info on what it does – which made it difficult to answer the questions.
Aha! My fishing rod does work. This is part of the point of my research – consumers are given very little information and are expected to make a decision – would you buy this – probably not – they need to supply a lot more info. If you think the video (which is their training video for salesmen by the way, as are all the videos in this survey) is short on info, you should see the brochure details – non-existant, if you were an expert you would probably already know what this is, or take a stab at it - so there is a need for differing marketing messages. Although I would love to change this I can't as I would bring bias into the research.
Agreed

A tiny quirk was that I had to answer the current question if I wanted to go back to a previous page.
It is a quirk of the system – the only way I could get round this is by making it one long continuous page, but then the progress bar would disappear
No –definitely prefer it with the progress bar and it didn't take too long to figure out to answer and then go back so most people will be fine.

I also found it difficult to think in terms of 'new' and 'innovative' – I keep just ending up with the same scores even though I kind of know what you are trying to get at. You might want to offer some explanation of these.
Not sure about this – I could ask ' I would class this option as being new to me' what do you think?
New to me is good – people might think in terms of I haven't used anything like it before – but then for innovative they would hopefully think 'is this particularly different/new in terms of car capabilities' - if this is what you are trying to get at you might want to provide a bit of context for new to me and innovative with an i.e.????

Loughborough University

Your views on new innovations in cars

Thank you for agreeing to fill in this questionnaire. It will take approximately 20 minutes to complete. All the information is totally anonymous and confidential; no information given can identify you individually.

All the questions have a number of answers to choose from. Please click on the relevant button for your answer to the questions, if you make an error simply delete and press the correct button to change your selection. You can go back to the previous page if you want to make any changes as well, but you will need to complete the questions on the current page first.

If there is a fault with any page or it does not appear to be working correctly please send an email by clicking this link: p.taylor-west@lboro.ac.uk so the fault can be rectified.

You may have to scroll down on some pages to see all of the page - it depends on your screen size. Please click on the Next Page button to begin the survey.

Please begin by giving us some information on your background.

1) What is your age group?	
Under 20	
20 to 34	
35 to 49	
50 to 64	
65 or over	

2) Are you:	
Male	
Female	

3) What is your current marital status?	
Single	
Married/Partner	
Divorced	
Widow(er)	

4) Where are you in your lifecycle?	
Bachelor or Newly Married	
Single Parent or Married/Partner with children	
Retired or Married/Partner, children left home	

5) What education have you had (please tick the highest one only)?	
Secondary or Comprehensive	
GCSE/NVQ/Certificate	
A Level/Diploma	
Degree (any)	

6) Approximately, what is your household income?	
Less Than £15,000	
£15,001 to £30,000	
£30,001 to £45,000	
£45,001 to £60,000	
More than £60,000	

Background continued

7) What is your occupation (please tick the nearest match)?	
Unskilled Manual Worker	
Semi-Skilled Worker	
Skilled Worker	
Clerical/Admin	
Salesman	
Professional	
Own business/Self-employed	
Student/Trainee	
Housewife	
Retired	
Other	

8) In which area do you live?	
England	
Scotland	
Wales	
Northern Ireland	

Can you now provide some background on the cars you have owned or shared.

For clarification, the options for the makes of car were decided by taking the top 5 manufacturers who had a market share in 2011 of more than 5%, the rest were then placed into regional groups.

9) What is the make of your current car?	
Ford	
Vauxhall	
Volkswagen	
Audi	
BMW	
Other European - Mini, Citroen, Fiat, Mercedes, Peugeot, Renault, Skoda, Volvo etc.	
Asian - Kia, Hyundai, Proton etc.	
Japanese - Honda, Mazda, Toyota, etc.	
American - Chrysler, Chevrolet, Jeep etc.	
Other	

10) What type of car is your current car?	
Small e.g. Ka, Fiesta etc.	
Medium e.g. Astra, Focus etc.	
Large e.g. Mondeo, Jaguar etc.	
Sports e.g. Lotus Elise, MX5 etc.	
4x4 SUV e.g. Rover, Ford Kuga etc.	
People Carrier e.g. Galaxy, Berlingo etc.	
Other	

Background on your cars continued

11) Was your car New or Used when you acquired it?	
New	
Used	

12)				
	1 to 3	4 to 6	7 to 10	Over 10
How old is your current car (in years)?				
Approximately how many cars have you owned or shared, in your lifetime?				
Approximately how many different makes (not models) of cars have you owned or shared?				
Approximately how many different makes (not models) of cars did you consider when buying your last car?				
Approximately how many different models (not makes) of cars did you consider when buying your last car?				

Background on your cars continued

13) What was your reason for changing your last car? (please choose the nearest main reason)	
This was my first car, I was not changing it.	
I had a car but needed one more	
I just fancied a new car.	
Needed to change the car for a different purpose â€“ carrying more things, carrying more people, towing a trailer/caravan etc. or I needed to change to a four wheel (or two wheel) drive.	
I think it is best to change every two or three years	
I needed a more economical car with better mpg and/or C02 emmissions	
I wanted a smaller car.	
Old car became uneconomic to run and repair.	
To get a newer model (including changing to another brand).	

14) If the reason for changing was to get a newer model, what was new about it (please choose the nearest main reason)?	
Style & Design - for example, the shape, colour, interior design, and so on.	
Functionality - for example, the engine type, fuel type, emission technology type, safety features, and so on.	
On Board Equipment - for example, the audio equipment, navigation equipment, and so on.	
Post Purchase Offerings - for example, the warranties, servicing arrangements, and so on.	

Are you familiar with Ford Cars?

There are a number of cars with new innovations on the market, but for this research we are looking at the new innovations that have been developed on the Ford Focus.

The next questions will let me know how familiar you are with Ford cars in general as well as the Ford Focus.

15) In answer to the following questions please click on one of the seven buttons on the scale to indicate your agreement or disagreement with the statement, from 1 = Strongly Disagree to 7 = Strongly Agree							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I am very familiar with Ford cars							
I am very familiar with the Ford Focus							

16) Please answer Yes or No to the following questions:		
	Yes	No
Is your current car is a Ford Focus?		
Have you ever owned a Ford Focus?		
Have you ever shared or had use of a Ford Focus?		
Have you ever searched for information on a Ford Focus?		

Now for some questions on what you consider when you look for a new or newer car.

17) Please click the box under the number that indicates how strongly you disagree or agree with what is most important to you:							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
Co2 emissions							
The energy label of the car							
Environmentally friendly material							
Appearance/Colour							
Brand							
The feeling you get from the car							
Engine size							
Image/Style/Street Cred							
Acceleration and Top Speed							

What you consider... continued

18) Please click the box under the number that indicates how strongly you disagree or agree with what is most important to you:							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
Extra accessories on the inside (such as aircon, heated seating, sunroof)							
Extra accessories on the outside (such as metallic paint, fog lights)							
Electronic equipment (such as a Bluetooth connectivity, phone connectivity, CD player, DVD player, satellite navigation system)							
Size and practicality (boot space, number of doors & seats etc.)							
Comfort							
Reliability							

General questions

Please click the box under the number that indicates how strongly you disagree or agree with the following questions:

19)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
Cars offer me relaxation and fun when life's pressures build up							
Sometimes I get too wrapped up in my car							
Driving along an open stretch of road seem to charge me in body, mind and spirit							
Driving my car is one of the satisfying and enjoyable things I do.							
It is worth the extra cost to drive an attractive and attention getting car							
I prefer to drive a car with a strong personality of its own							
I don't like to think of my car as being ordinary							
I really enjoy driving							

A few more general questions

Again, please click the box under the number that indicates how strongly you disagree or agree with the following questions:

20)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I enjoy learning about cars							
I will search for the latest information on cars before I purchase							
I like to keep up-to-date on the most recent developments in cars							
I consider myself knowledgeable on cars							
My knowledge of cars helps me understand very technical information about them							
I can recall almost all existing brands of cars from memory							
I can recognise almost all brand names of cars							
I can recall product-specific attributes of cars (e.g., engine types, body types)							
I can recall brand-specific attributes of the various brands of cars e.g., their model range, brand image)							
I would consider myself to be an expert on automobiles							

Information sources you use

Now for some questions on what information sources you use when you look for a new or newer car.
Please click the button under the number that indicates how strongly you disagree or agree with the sources of information you use:

21)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
My own experience from the past							
The results of a test drive							
My own knowledge about cars							
My close relatives							
My friends							
People from my direct environment, for example school or work							
Advertisements and magazines about cars							
I look at other cars in the street							
Television programs about cars							
Radio and television commercial							

Information sources... continued

22)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
Internet websites of the various car brands and manufacturers							
Internet web sites of car dealers and lease companies							
Online forums by consumers about cars							
Search engines for car information e.g. Google and Yahoo							
Visit in person to where cars are sold - Car Dealers, Warehouses etc.							

New innovations

The next questions relate to the new developments and innovations on cars that have been recently introduced as options. There are six questions for each innovation. The first one asks if you know what the innovation is â€“ after answering this question and BEFORE you answer all the rest, click on the link to view a video that explains the innovation. Then answer the other five questions.

23) I know what the Blind Spot Information System is.							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I know what the Blind Spot Information System is							

Now, before answering the other questions, please click on the video link below. Replay the video as many times as you like by clicking the circular icon on the bottom left of the video. If it is too small you can click on the bottom right hand corner of the video to view it in full screen - to return to normal size press the Esc key on your keyboard.

After viewing the video click onto the next page to answer the other five questions.

Blind Spot Information... continued

24)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I would like to have the Blind Spot Information System							
I would buy this as an option							
I think this option is very complex to understand							
I would class this option as being new, e.g. not seen before							
I think this option is very innovative, e.g. very advanced, groundbreaking							

Traffic Sign Recognition

25) I know what Traffic Sign Recognition is.							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I know what Traffic Sign Recognition is.							

Now, before answering the other questions, please click on the video link below. Replay the video as many times as you likeby clicking the circular icon on the bottom left of the video. If it is too small you can click on the bottom right hand corner of the video to view it in full screen - to return to normal size press the Esc key on your keyboard.

After viewing the video click onto the next page to answer the other five questions.

Traffic Sign Recognition... continued

26)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I would like to have Traffic Sign Recognition							
I would buy this option							
I think this option is very complex to understand							
I would class this option as being new, e.g. not seen before							
I think this option is very innovative, e.g. very advanced, groundbreaking							

Low Speed Safety System

27) I know what the Low Speed Safety System is.							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I know what the Low Speed Safety System is.							

Now, before answering the other questions, please click on the video link below. Replay the video as many times as you likeby clicking the circular icon on the bottom left of the video. If it is too small you can click on the bottom right hand corner of the video to view it in full screen - to return to normal size press the Esc key on your keyboard.

After viewing the video click onto the next page to answer the other five questions.

Low Speed Safety System... continued

28)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I would like to have the Low Speed Safety System							
I would buy this option							
I think this option is very complex to understand							
I would class this option as being new, e.g. not seen before							
I think this option is very innovative, e.g. very advanced, groundbreaking							

Active Park Assist

29) I know what Active Park Assist is.							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I know what Active Park Assist is.							

Now, before answering the other questions, please click on the video link below. Replay the video as many times as you likeby clicking the circular icon on the bottom left of the video. If it is too small you can click on the bottom right hand corner of the video to view it in full screen - to return to normal size press the Esc key on your keyboard.

After viewing the video click onto the next page to answer the other five questions.

Active Park Assist... continued

30)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I would like to have Active Park Assist							
I would buy this option							
I think this option is very complex to understand							
I would class this option as being new, e.g. not seen before							
I think this option is very innovative, e.g. very advanced, groundbreaking							

Torque Vectoring Control

31) I know what Torque Vectoring Control is.							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I know what Torque Vectoring Control is.							

Now, before answering the other questions, please click on the video link below. Replay the video as many times as you likeby clicking the circular icon on the bottom left of the video. If it is too small you can click on the bottom right hand corner of the video to view it in full screen - to return to normal size press the Esc key on your keyboard.

After viewing the video click onto the next page to answer the other five questions.

Torque Vectoring Control... continued

32)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I would like to have Torque Vectoring Control							
I would buy this option							
I think this option is very complex to understand							
I would class this option as being new, e.g. not seen before							
I think this option is very innovative, e.g. very advanced, groundbreaking							

Ford Eco Boost

33) I know what Ford Eco Boost is.							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I know what Ford Eco Boost is.							

Now, before answering the other questions, please click on the video link below. Replay the video as many times as you likeby clicking the circular icon on the bottom left of the video. If it is too small you can click on the bottom right hand corner of the video to view it in full screen - to return to normal size press the Esc key on your keyboard.

After viewing the video click onto the next page to answer the other five questions.

Ford Eco Boost... continued

34)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I would like to have Ford Eco Boost							
I would buy this option							
I think this option is very complex to understand							
I would class this option as being new, e.g. not seen before							
I think this option is very innovative, e.g. very advanced, groundbreaking							

Power Start Button

35) I know what the Power Start Button is.							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I know what the Power Start Button is.							

Now, before answering the other questions, please click on the video link below. Replay the video as many times as you likeby clicking the circular icon on the bottom left of the video. If it is too small you can click on the bottom right hand corner of the video to view it in full screen - to return to normal size press the Esc key on your keyboard.

After viewing the video click onto the next page to answer the other five questions.

Power Start Button... continued

36)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I would like to have the Power Start Button							
I would buy this option							
I think this option is very complex to understand							
I would class this option as being new, e.g not seen before							
I think this option is very innovative, e.g. very advanced, groundbreaking							

Lane Departure Warning

37) I know what the Lane Departure Warning is.							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I know what the Lane Departure Warning is.							

Now, before answering the other questions, please click on the video link below. Replay the video as many times as you likeby clicking the circular icon on the bottom left of the video. If it is too small you can click on the bottom right hand corner of the video to view it in full screen - to return to normal size press the Esc key on your keyboard.

After viewing the video click onto the next page to answer the other five questions.

Lane Departure Warning... continued

38)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I would like to have the Lane Departure Warning							
I would buy this option							
I think this option is very complex to understand							
I would class this option as being new, e.g. not seen before							
I think this option is very innovative, e.g. very advanced, groundbreaking							

Lane Keeping Aid

39) I know what the Lane Keeping Aid is.							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I know what the Lane Keeping Aid is.							

Now, before answering the other questions, please click on the video link below. Replay the video as many times as you likeby clicking the circular icon on the bottom left of the video. If it is too small you can click on the bottom right hand corner of the video to view it in full screen - to return to normal size press the Esc key on your keyboard.

After viewing the video click onto the next page to answer the other five questions.

Lane Keeping Aid... continued

40)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I would like to have the Lane Keeping Aid							
I would buy this option							
I think this option is very complex to understand							
I would class this option as being new, e.g. not seen before							
I think this option is very innovative, e.g. very advanced, groundbreaking							

Driver Alert

41) I know what Driver Alert is.							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I know what Driver Alert is.							

Now, before answering the other questions, please click on the video link below. Replay the video as many times as you likeby clicking the circular icon on the bottom left of the video. If it is too small you can click on the bottom right hand corner of the video to view it in full screen - to return to normal size press the Esc key on your keyboard.

After viewing the video click onto the next page to answer the other five questions.

Driver Alert... continued

42)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I would like to have Driver Alert							
I would buy this option							
I think this option is very complex to understand							
I would class this option as being new, e.g. not seen before							
I think this option is very innovative, e.g. very advanced, groundbreaking							

Auto High Beam

43) I know what the Auto High Beam is.							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I know what the Auto High Beam is.							

Now, before answering the other questions, please click on the video link below. Replay the video as many times as you likeby clicking the circular icon on the bottom left of the video. If it is too small you can click on the bottom right hand corner of the video to view it in full screen - to return to normal size press the Esc key on your keyboard.

After viewing the video click onto the next page to answer the other five questions.

Auto High Beam... continued

44)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I would like to have the Auto High Beam							
I would buy this option							
I think this option is very complex to understand							
I would class this option as being new, e.g. not seen before							
I think this option is very innovative, e.g. very advanced, groundbreaking							

Previous awareness of the options you have just viewed

Were you aware of any of the options you have just seen prior to this survey? If you were, please click one of the options for how you became aware of that option. If you were not aware, then just leave the option blank.

45)						
	Newspaper or magazine advert.	Newspaper or Magazine article.	TV advert.	Online Internet information	Manufacturer or dealer mailshot.	Word of mouth e.g. from friend etc.
Blind Spot Information System						
Traffic Sign Recognition						
Low Speed Safety System						
Active Park Assist						
Torque Vectoring Control						
Ford Eco Boost						
Power Start Button						
Lane Departure Warning						
Lane Keeping Aid						
Driver Alert						
Auto High Beam						

How much?

Finally - while this research is about your views on new innovations, everyone always likes to know how much all these things cost.

46) The innovations you have just viewed are available as a complete package for a Ford Focus. You may be surprised to learn how much they cost. We would welcome your opinion. The price of the package is £750 including VAT. At that price would you buy the options? (please click Yes or No):	
Yes	
No	

47) If you would like to take part in the prize draw for £ 100 in Amazon vouchers please type your email address in the box below. We will notify you at this email address if you are the winner. Once the draw has been completed, all email addresses will be deleted to maintain complete confidentiality.

Thank you for taking the time to complete the survey. I really appreciate your support.

Now simply click on Finish Survey to exit. Your responses have been recorded automatically.

Appendix 9 – Email Invitation for Main Questionnaire – Page 1 of 2

Paul Taylor-West

From: Loughborough University <news@ukemail.fordvehicles.com>
Sent: 23 August 2012 17:51
To: Taak, Taj
Subject: Can you help a PhD student with a Research Survey?

Contribute to Academic Research
If you cannot see this email properly, follow this link.

Loughborough University

Dear Sir/Madam,

Contribute to Academic Research for a PhD Student and enter a Free prize draw for £100 in Amazon Vouchers.

I am a PhD Research Student at Loughborough University. As part of my PhD thesis I am carrying out research to understand how consumers perceive new car models, in particular their views on new innovations in cars.

In order to conduct my research I have contacted a number of customers who have recently purchased a new vehicle, I apologise if this email is one of a number of emails you have received recently.

To complete my thesis I need consumers like you to give a few minutes of their time to visit my web site and complete my online survey. This will give me an insight into car design and their benefits and how these may be developed in the future.

This is academic research and the information you give is totally anonymous and confidential; no information given can identify you individually.

The survey will ask for some background information about you so I can compare your results with other respondents.

It asks for your attitudes towards cars and driving, followed by a series of short videos and questions about new innovations on cars and how new you think they are as well as how complex you think they are. Some innovations are easy to understand, others are not.

Everyone that participates can also take part in the prize draw for **£100 in Amazon Vouchers**. If you want to participate in the draw please enter your email address on the survey so that I can notify you if you are the winner, once the draw has been made your email address will be deleted to maintain your complete confidentiality.

Please click or paste the following link to access the website survey:

http://freeonlinesurveys.com/s.asp?sid=ymzq8xxrzh13xz080542

The survey takes about 20/25 minutes to complete – a progress bar at the top of each page will indicate how far you are through the survey.

I would be extremely grateful for your time and support to this project.

Good luck with the prize draw if you want to enter it.

Appendix 9 – Email Invitation for Main Questionnaire – Page 2 of 2

Regards

Paul Taylor-West
PhD Research Student
Centre for Automotive Management (CAM)
School of Business and Economics
Loughborough University
Leicestershire
LE11 3TU
United Kingdom

Terms and conditions

Closing date for the survey is Saturday 8 September 2012. The prize draw will be drawn on Monday 10 September 2012 and the winner will be notified by email. The winner must respond and supply an address to post the Amazon Vouchers within 28 days after the draw has taken place, if there is no response then an alternative winner will be drawn. To maintain complete confidentiality all email addresses will be securely deleted after the prize draw has been claimed. There are no 'runner up' prizes.

Unsubscribe if you don't wish to receive any email communications from Paul Taylor-West.

View our Permission Marketing Policy.

Appendix 10 – Automotive Research Panel Invitation and Consent Form - Page 1 of 2

Loughborough University – PhD Student survey - Thank You

Loughborough University

I would like to thank you for taking part in my recent research survey, it was an extremely important part of my PhD, the prize draw has taken place and the winner has claimed the prize.

I am also a researcher in our Centre for Automotive Management within Loughborough University and we carry out similar research projects. We have a panel of consumers that assist us in our research, usually through online surveys similar to the one you completed for me, but usually they are a lot shorter. We also invite panel members to participate in Focus Groups which we hold at the University, or sometimes through online conferences.

In return we share the results of our findings with panel members, some of which are published in trade publications as well as academic journals.

Your contribution to my research was very valuable and I would urge you to join our panel so that we can strengthen our research resources.

You will not be bombarded with survey requests, our research projects take at least 6 months or more to complete and you can opt in or out of the research, it is not obligatory that you participate in everything we do. And it is up to you how much you would like to be involved, we have several members that contact us regularly with a number of ideas and views for possible research topics.

If you have any concerns or would like to discuss any aspect of joining our research panel please send your enquiry by replying to this email.

This will remain absolutely confidential at all times and will not be shared with anyone outside of the Centre for Automotive Research or used for any other purpose than to assist in our research activities.

Loughborough University works to strict ethical codes of practice, the following link takes you our web page concerning the use of data: http://www.lboro.ac.uk/admin/committees/ethical/gn/dcas.htm

To give your consent to join our research panel please click on the link below which takes you to our online survey facility to record your email address. Just as a note, we use freeonlinsurveys.com simply because they provide the technical ability to view videos, as well as the cost! I mention this because some people have said they thought it might not be a genuine site. This is the link to take you to where you can enter your email address:

http://freeonlinesurveys.com/s.asp?sid=2b1bb5v48pjewi0109430

The other reason for this email is that to maintain complete confidentiality, your email address that you supplied for the prize draw (and used for this email) will be securely destroyed as soon as this email has been sent to you. I will only be able to contact you again if you choose to join our research panel or if you reply to this email asking for further details.

Regards

Paul Taylor-West
PhD Research Student
Centre for Automotive Management (CAM)
School of Business and Economics
Loughborough University
Leicestershire
LE11 3TU

Appendix 10 – Automotive Research Panel Invitation and Consent Form - Page 2 of 2

Consent to participate in future research

Loughborough University

Thank you for agreeing to participate in our future research by providing your email address. This will remain absolutely confidential at all times and will not be shared with anyone outside of the Centre for Automotive Research or used for any other purpose than to assist in our research activities.

Loughborough University works to strict ethical codes of practice, the following link takes you our web page concerning the use of data:
http://www.lboro.ac.uk/admin/committees/ethical/gn/dcas.htm

If you change your mind or would like to withdraw at any time, please send an email to me at p.taylor-west@lboro.ac.uk and any details I have for you will be securely deleted..

1) Please type your email address in the box below

Appendix 11 – Confidentiality Query by Panel Member

Paul Taylor-West

From: Veronika Simons
Sent: 24 February 2013 09:40
To: Paul Taylor-West
Subject: Re: Loughborough University - Centre for Automotive Management - Research Panel survey request

Dear Paul,
Thank you for your very reassuring reply. I had assumed that as you are working at an academic centre, you would never have exploited the data that you held, and I am very glad to have that confirmed. Sorry to have doubted you! I'm happy to continue to be part of your Research Panel if you still want a technically illiterate driver whose only interest in cars is to get from A to B as easily and comfortably as possible.

I do wonder whether Ford may not have been so scrupulous; however, as I had originally bought a new Ford they presumably already held my email address and have now passed/sold it on.

Anyway, good luck with your research.

Best wishes,
Veronika

Veronika Simons

----- Original Message -----
From: Paul Taylor-West
To: 'Veronika Simons'
Sent: Saturday, February 23, 2013 2:31 PM
Subject: RE: Loughborough University - Centre for Automotive Management - Research Panel survey request

Absolutely not Veronika, the only time I had your email address was when you responded to the questionnaire to enter the prize draw and it was only retained when you consented to be part of the Research Panel and we have not run any online surveys until this one.

The invitations to the original questionnaire was sent out on my behalf by Ford Motor Company who I asked to sponsor my PhD project, but for data protection and total autonomy they never released the email addresses to me at any time. It may be that Ford themselves are carrying out marketing campaigns by themselves and their associated companies such as Mazda, but as a University we would never release your information to any other department within the University never mind anyone outside.

Your research panel information is not even shared within our research team. I alone hold the data and no one else has access to it, so I can control the content and maintain confidentiality.

I hope this reassures you and that you continue to be involved with our research panel. Your assistance is of great value and we have absolute discretion at all times so that we never jeopardise that relationship.

Regards
Paul Taylor-West
PhD Student
Loughborough University

From: Veronika Simons
Sent: 23 February 2013 12:57
To: Paul Taylor-West
Subject: Re: Loughborough University - Centre for Automotive Management - Research Panel survey request

I have participated in your survey. However, since I completed your first survey I've had had numerous messages from car makers and dealers - is this a coincidence or did you pass on my email address? I hope not, because it's not something I would have consented to.

Best wishes,
Veronika
Veronika Simons

Appendix 12 – TV Car Adverts Invitation

Loughborough University – Centre for Automotive Management – Research Panel survey request

Loughborough University

It has been some time since you consented to join our research panel. I have been extremely busy with the data as I collected from the questionnaire you completed for the, as well as writing up my PhD thesis. As I said we would not bombard you with survey requests.

I now have a much shorter survey that takes about 10 minutes that I would like you to complete. This one is about your views on car adverts/videos.

There are 3 short videos to watch and a total of 19 questions. You answered some of the questions in the previous questionnaire, but as that was totally anonymous I cannot match them to an individual. This time I do ask for your email address so that some of the questions will not need to be answered again in the future.

I would reiterate that the information you supply will remain absolutely confidential at all times and will not be shared with anyone outside of the Centre for Automotive Research or used for any other purpose than to assist in our research activities.

Your contribution to my research was very valuable and I would urge you to participate in this short survey.

Please click on the link below to take you to the start of the survey:

http://freeonlinesurveys.com/s.asp?sid=25y45076swdgxqb205645#

Regards

Paul Taylor-West
PhD Research Student
Centre for Automotive Management (CAM)
School of Business and Economics
Loughborough University
Leicestershire
LE11 3TU

Appendix 13 – TV Adverts and Product Video Questionnaire – Page 1of 6

Your views on car adverts and videos

Loughborough University

Thank you for agreeing to fill in this questionnaire. It will take approximately 10 minutes to complete.

All the questions have a number of answers to choose from. Please click on the relevant button for your answer to the questions, if you make an error simply delete and press the correct button to change your selection. You can go back to the previous page if you want to make any changes as well, but you will need to complete the questions on the current page first.

If there is a fault with any page or it does not appear to be working correctly please send an email by clicking this link: p.taylor-west@lboro.ac.uk so the fault can be rectified.

You may have to scroll down on some pages to see all of the page - it depends on your screen size. Please click on the Next Page button to begin the survey.

Please begin by giving us some information on your background.

Loughborough University

1) To identify you can you please enter your email address

2) What is your age group?	
Under 20	
20 to 34	
35 to 49	
50 to 64	
65 or over	

3) Are you:	
Male	
Female	

4) What is your current marital status?	
Single	
Married/Partner	
Divorced	
Widow(er)	

5) Where are you in your lifecycle?	
Single with no children or Newly Married	
Single Parent or Married/Partner with children	
Retired or Married/Partner, children left home (or never had children)	

Background continued

6) What is your occupation (please tick the nearest match)?	
Unskilled Manual Worker	
Semi-Skilled Worker	
Skilled Worker	
Clerical/Admin	
Salesman	
Professional	
Own business/Self-employed	
Student/Trainee	
Housewife	
Retired	
Other	

Can you now provide some background on the cars you have owned or shared.

For clarification, the options for the makes of car were decided by taking the top 5 manufacturers who had a market share in 2011 of more than 5%, the rest were then placed into regional groups.

7) What is the make of your current car?	
Ford	
Vauxhall	
Volkswagen	
Audi	
BMW	
Other European - Mini, Citroen, Fiat, Mercedes, Peugeot, Renault, Skoda, Volvo etc.	
Asian - Kia, Hyundai, Proton etc.	
Japanese - Honda, Mazda, Toyota, etc.	
American - Chrysler, Chevrolet, Jeep etc.	
Other	

8) What type of car is your current car?	
Small – Ka, Fiesta etc.	
Medium – Astra, Focus etc.	
Large – Mondeo, Jaguar etc.	
Sports – Lotus Elise, MX5 etc.	
4x4 SUV – Land Rover, Ford Kuga etc.	
People Carrier – Galaxy, Berlingo etc.	
Other	

Are you familiar with Toyota and Audi cars?

Loughborough University

Shortly you will be viewing three videos on Toyota and Audi cars. The next questions will let me know how familiar you are with these makes.

There are also questions that will indicate to me how much you know about cars and how you feel about cars - please try to be as honest as you can with your answers, I don't expect everyone to be an expert.

Appendix 13 – TV Adverts and Product Video Questionnaire – Page 4 of 6

9) In answer to the following questions please click on one of the seven buttons on the scale to indicate your agreement or disagreement with the statement, from 1 = Strongly Disagree to 7 = Strongly Agree							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I am very familiar with Toyota cars							
I am very familiar with Audi cars							
I would consider myself to be an expert on automobiles							
I really enjoy driving							

Car Videos

Loughborough University

Can you please view the first video below, then go to the next page to view a seond video - both videos are based on the new Toyota Auris.

Now,please click on the video link below. The video is just over 2 minutes long.

Replay the video as many times as you likeby clicking the circular icon on the bottom left of the video. If it is too small you can click on the bottom right hand corner of the video to view it in full screen - to return to normal size press the Esc key on your keyboard.

After viewing the video click onto the next page to view the second video.

Second video on the Toyota Auris

Loughborough University

Now, please click on the video link below. The video is just 2 minutes long.

Replay the video as many times as you likeby clicking the circular icon on the bottom left of the video. If it is too small you can click on the bottom right hand corner of the video to view it in full screen - to return to normal size press the Esc key on your keyboard.

After viewing this second video click onto the next page to answer six questions.

Questions on the Toyota Auris

Loughborough University

10) Please click on the video which appealed to you most?	
The first video	
The second video	

11) In the box below can you type just a few words to say why it appealed to you.

12) If you had a choice which video would you prefer to see on TV etc?	
The first video	
The second video	

13) In the box below can you type just a few words to say why you preferred the video.

14)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I think the first video was very complex to understand.							
I think the second video was very complex to understand.							

Audi TV advert

Loughborough University

Now, please click on the video link below. The video is just 41 seconds long.

Replay the video as many times as you likeby clicking the circular icon on the bottom left of the video. If it is too small you can click on the bottom right hand corner of the video to view it in full screen - to return to normal size press the Esc key on your keyboard.

After viewing the video click onto the next page to answer two questions.

Questions on the Audi TV advert

Loughborough University

15) In just a few words can you say what you think the advert is about.

Appendix 13 – TV Adverts and Product Video Questionnaire – Page 6 of 6

16)							
	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
I think the Audi advert was very complex to understand.							

Thank you

Loughborough University

Thank you for taking the time to complete the survey. I really appreciate your support.

Now simply click on Finish Survey to exit. Your responses have been recorded automatically.

Appendix 14 – Doctoral Colloquiums and PhD Seminars attended

Doctoral Colloquium Papers

European Marketing Academy, Ljubljana, Slovenia – May, 2011
'Empirical investigation into the use of complexity levels in marketing segmentation and the categorisation of new automotive products'

Academy of Marketing, Liverpool – June, 2011
'Empirical investigation into the use of complexity levels in marketing segmentation and the categorisation of new automotive products'

Midlands Regional Doctoral Colloquium, Birmingham Business School – April, 2013
'The benefits of using reduced item variable scales in marketing segmentation'

PhD Seminars

Marketing & Retailing Doctoral Presentations, Loughborough University, School of Business & Economics, - May, 2011.
'Using complexity levels as a tool for marketing segmentation and the categorisation of new automotive products'

Graduate School Research Gala, Loughborough University, - May, 2011.
'Epistemic and Perceptual Newness – Segmentation Strategy in the European car Market'

Marketing & Retailing Doctoral Presentations, Loughborough University, School of Business & Economics, - May, 2013.
'Empirical investigation into the use of complexity levels in marketing segmentation and the categorisation of new automotive products'

Appendix 15 – Core Texts and Search Terms Used

Zetoc Alerts by Journal – http://zetoc.mimas.ac.uk

Journal Title	ISSN
Advances in Consumer Research	0098-9258
Journal of Business Research	0148-2963
Journal of Consumer Marketing	0736-3761
Journal of Marketing	0022-2429
Journal of Marketing Management	0267-257x
Journal of Marketing Research	0022-2437
Journal - Academy of Marketing Science	0092-0703
Marketing Science	0732-2399
Journal of Mixed Methods Research	1558-6901

Zetoc Alerts by Author – http://zetoc.mimas.ac.uk

Name of Author
Michaut, A.
Blythe, J.
Danneels, E.
Shimp, T.
Dibbs, S.
Ziamou, P.
Ofek, E.
Johannessen, J.
Gregan Paxton, J.

Alerts using Search Terms through Science Direct – http://www.sciencedirect.com

Search terms for all Journals and All Books in subject areas:- Business Management and Accounting and Social Sciences
Market Segmentation
Consumer Segmentation
Product Complexity
Product Involvement
Product Familiarity
Product Expertise
Consumer Product Knowledge

Appendix 16 – Summary of Exploratory Meetings and Interviews

Meeting/Interview with:	Type of contact:	Details:
Branislav Bucan, FoB, Brand and Product Insights Manager	Phone	Section 2.5.3
Orlando Machado, Head of Analytics, Knowledge & Business Solutions, Wunderman Ltd	Phone	Section 2.5.4
Robin Lauffer, Head of Strategy and Consumer Insights, Euro RSCG Worldwide	Face-to Face & Phone	Section 2.5.7
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Appendix 17 – Socio-Demographic Categorisations used in the study

Socio-Demographic	Categorisation
Age group	Under 20; 20 to 34; 35 to 49; 50 to 64; 65 or over
Gender	Male/Female
Marital status	Single; Married/Partner; Divorced; Widow(er)
Lifecycle	Single with no children or Newly Married; Single Parent or Married/Partner with children; Retired or Married/Partner, children left home (or never had children)
Household income	Less Than £15k; £15,001 to £30k; £30,001 to £45k; £45,001 to £60k; More than £60k
Education	Secondary or Comprehensive; GCSE/NVQ/Certificate; A Level/Diploma; Degree (any) (Based on 4 groupings of NQF levels)
Occupation	Unskilled; Semi-Skilled; Skilled; Clerical/Admin; Salesman; Professional; Own business; Student/ Trainee; Housewife; Retired; Other
Location	England; Scotland; Wales; Northern Ireland

Appendix 18 – Summary of Instruments used in the surveys

Title (paper, book etc.)	Author(s)	Instrument
Innovation as newness: what is new, how new, and new to whom?	Johannessen et al. (2001)	Complexity
Consumer car preferences and information search channels	van Rijnsoever et al. (2009)	
The Dimensionality of Involvement: a test of the Automobile Involvement Scale	Shimp and Sharma (1983)	Involvement
The Dimensions of Consumer Expertise: A Scale Development	Kleiser and Mantell (1994)	Expertise
Effects of Prior Knowledge and Experience and Phase of the Choice Process on Consumer Decision Processes: A Protocol Analysis	Bettman and Park (1980)	Familiarity
A Model of Consumer Information Search Behavior for New Automobiles	Punj and Staelin (1983)	Car ownership/usage
Consumer car preferences and information search channels	van Rijnsoever et al. (2009)	Information sources
Consumer car preferences and information search channels	van Rijnsoever et al. (2009)	Most important aspect of car purchase
A Cross-Cultural Comparison of the Explanatory Power of Materialism and Life Cycle Stage For Important Possessions	Watson (1999)	Socio-Demographics