

What do YOU think about this car?

Perception and meaning of automotive design in New Zealand and Taiwan

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A thesis submitted for the degree of Master of Design at
College of Creative Arts, Massey University, Wellington, New Zealand

February 2008

Approximate word count: 35,700

ABSTRACT

This investigation examines the relationship between perception and meaning on automotive exterior designs in New Zealand and Taiwan. The Visual Product Experience framework [Warell, 2007] categorises perception and meaning *Impression, Recognition, Appreciation, Association* and *Comprehension*. This study uses the VPE framework to examine the perception and meaning of the specific car models from BMW and Lexus in two markets. It did so through the collection of qualitative data from questionnaires conducted through a semi-structured interview, with a total of 60 participants in automotive-related events in both New Zealand and Taiwan.

The background of this project was established through the secondary research that explored a wide range of topics including the theoretical knowledge review, characteristics of the markets and design philosophies of the car brands. Through these researches, the differences in the market characteristics and design focuses of the brand BMW and Lexus are verified.

The findings indicate that the BMW 320i has strong visual impression on consumers in both markets with regard to aesthetics and identity. This

strong visual impression was attributed by the overall coherent visual composition of the 320i. The design features of the Lexus IS250 were more recognised by Taiwan consumers than New Zealand consumers.

The visual features designed to express and describe on both cars were perceived consistently by consumers in both market. Interestingly, the Lexus Arrowhead motif was not recognised as an overall visual appearance, but as individual details. However, the grille of the Lexus was not consistently indicated as a signifier of the Lexus brand. This was in contrast to the BMW 'Kidney Grille', which was consistently recognised as a BMW signifier.

The results of this study were consistent with the findings of the literature review. This is evident because the participants from Taiwan strongly associate the cars with their values in society. Between the two markets, differences in interpretation of the design features is apparent, Taiwan consumers appreciates smaller details more than New Zealand consumers.

The VPE framework is proven to be a highly comprehensive model in this research project. This is because it allows categorisations and hence an inclusive understanding on the design intents and analysis on the 320i/IS250 both in the secondary and primary research design and analysis.

To

K. H. Wang

ACKNOWLEDGEMENTS

I would like to acknowledge my supervisor Associate Professor Dr Anders Warell, Massey University of Wellington for his guidance, patience and wisdom throughout this research project.

As a colleague, thank you Kenneth Young for your constructive criticism towards my research and help during my stay in Wellington. I also thank my friends and colleagues at Massey University for their support in the postgraduate programme.

To Q. Xing, thank you for all your patience with me and always being there when I needed help. Last but not least, I would like to acknowledge my family and friends in Taiwan for their encouragement and support during this study.

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Chapter 1. INTRODUCTION

In the contemporary global economy, designing for markets with different socio-cultural backgrounds has become a central issue for both product companies and industrial designers. This research seeks to examine the relationship in product perception and meaning between a Western and Eastern market, specifically focusing on automotive design. By further understanding the culturally influenced perception of motorcars, different characteristics on visually perceived meanings and preferences between these markets can be identified.

1.1 Background and significance

A vast amount of marketing-related research commissioned by product companies has been conducted to understand different market characteristics and consumer preference. The scope of such market research is often limited to overall consumer preferences, which require periodical updates to maximise product competitiveness. Moreover, the reasoning and meaning behind aesthetic preferences has not been the focus of most of this marketing research.

The field of research that studies the relationship between human perceptions on products is still in its infancy compared to other related academic fields of arts, marketing and psychology. This topic is, however,

gaining increasing interest amongst academics, industries, designers, and design schools around the world. This all-round interest has grown in importance in the light of academic research which offers more authority to designers' communication and design decision-making; a decision-making process which has up to now relied upon the designer's subjective reasoning to support her/his own preferences and opinions.

Within newly established theories and research on product meaning and perception, few [e.g. Fjellner, Stridsman-Dahlstrom, 2004] have investigated the relationship between internal and external perceptions and meanings in product design. This comparative research study focuses on car design and markets in New Zealand and Taiwan. It will focus on mapping the visual features of two cars with a different design focus, but from the same market range for compatibility. As a basis for the design and discussion of the primary research, the market profile of the 320i and BMW will be compared against the IS250 and Lexus.

In this study, the word "**Consumer**" refers to members of the public who might experience the products, either through visual perception or physical interaction, but not necessarily owning the product. This research aims to examine the visual experience of perception and meaning on automotive exteriors. "**Experience**" is the process through time whereby people encountered the event which resulted a psychological reaction. This

process contributes to people's memories of a particular feeling that occurred through the event, and contributes to their impression of the process.

1.2 Central proposition

The central proposition of this research states that cultural values have a major influence on the process of meaning and perception in cars. This project will cover two aspects of the meaning in design; this includes the intended meaning from the car manufacturers, and the perceived meaning of exterior design on consumers. To understand the various aspects of perception and meaning of automotive designs, a framework is required to allow the analysis and identification of the intended meanings at various levels, including formal aesthetics and design semantics. This research adopts the Visual Product Experience (VPE) framework by Warell (2007) as its base structure.

1.3 Research aim

The aim of this study is to examine and evaluate the relationship between product meaning and visual perception of two automotive designs in two markets. An important aspect of the literature review is to identify theories and other frameworks on the topic of design semantics as the basis for this research.

This research seeks to address the following questions:

- What visual elements are perceived as signifiers (i.e. carry meaning) and what meanings are conveyed by those visual elements?
- How are the two cars perceived and interpreted in the two markets?
- What visual elements are perceived as characteristic for the selected models (i.e. are visually distinctive)?
- Are there any differences in perception and meaning in different markets? What are those differences?
- What are the intended messages and aesthetic qualities from the point of view of the manufacturers (i.e. the internal design intent)?
- Do internal intentions and external perceptions map? What are the differences and coherencies?
- What are the implications for design?

1.4 Scope of research

This research project is limited to assessing the differences in the perceived meanings of two cars for consumers based in different cultures. The selection of cars for this research is based on the differences in their associated brand heritage and design focus. The selected car models are the 320i by German car maker BMW, and the LS250 from Japanese car maker Lexus. The chosen countries for this study are New Zealand and Taiwan. This selection of New Zealand is due to its significance as a Western country, and the ease of access to local literature and participant groups. Similarly, the selection of Taiwan is based on its Confucius-influenced socio-cultural background and the geographical and language differences to New Zealand.

The selected focus participant group is car enthusiasts due to their potential interest and likelihood of having good levels of knowledge in the design and styling of cars. Although it is desirable to study perception from a targeted consumer group, this particular group is not included in this research as the project's aim is to study the relationship between meaning and perception of cars in different markets. This exclusion is also due to potential responses bias if the participant groups are included on the customer database from a premium car brand. Also the accessibility to the database of the targeted consumers raised issues over customer privacy.

Chapter 2. METHODS – SECONDARY RESEARCH

This chapter covers literature reviews on theories relating to design semantics and background research on the cars and associated brands, and investigates the culture and market of the two countries in this project. Research on existing knowledge and background information serves as context for the design, analysis and discussion of the primary research. Figure 2-1 indicates the sections in this chapter and how they relate to this research project:

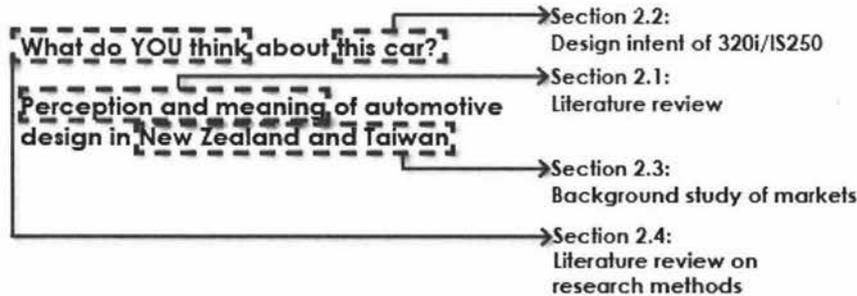


Figure 2-1. List of sections relating to the research aim.

2.1 Literature review

The aim of this literature review is to evaluate the existing body of knowledge under the categorisations of the VPE framework [Warell, 2007]. As identified in the central proposition, this review also covers the socio-cultural influences as a factor in meaning interpretation. The VPE framework will first be introduced to establish its categorisations to allow a comprehensive understanding of the relationships between visual perception and meaning of products. This section then reviews the current body of knowledge on physical aesthetic design and semantics. Emphasis is placed on cross-examining the VPE framework with other contemporary frameworks.

2.1.1 Visual Product Experience framework

The **Visual Product Experience (VPE)** Framework [Warell, 2007] is a theoretical model which outlines how products are visually perceived at various levels, based on **Sensory**, **Cognitive** and **Affective** modes in the perception process. The VPE framework is structured into two models: one on the pure visual perception of products without meanings; and the other focusing on the meanings interpreted through this visual experience. Figure 2-2 displays the relationships between the domains. The dashed lines in black represent domains that are interrelated. The colour coded lines indicate the relationship between the modes. The purple dots

represent the sensory-based perceptions on which the cognitive and affective modes are based.

Visual Product Experience Framework [Warell, 2007]

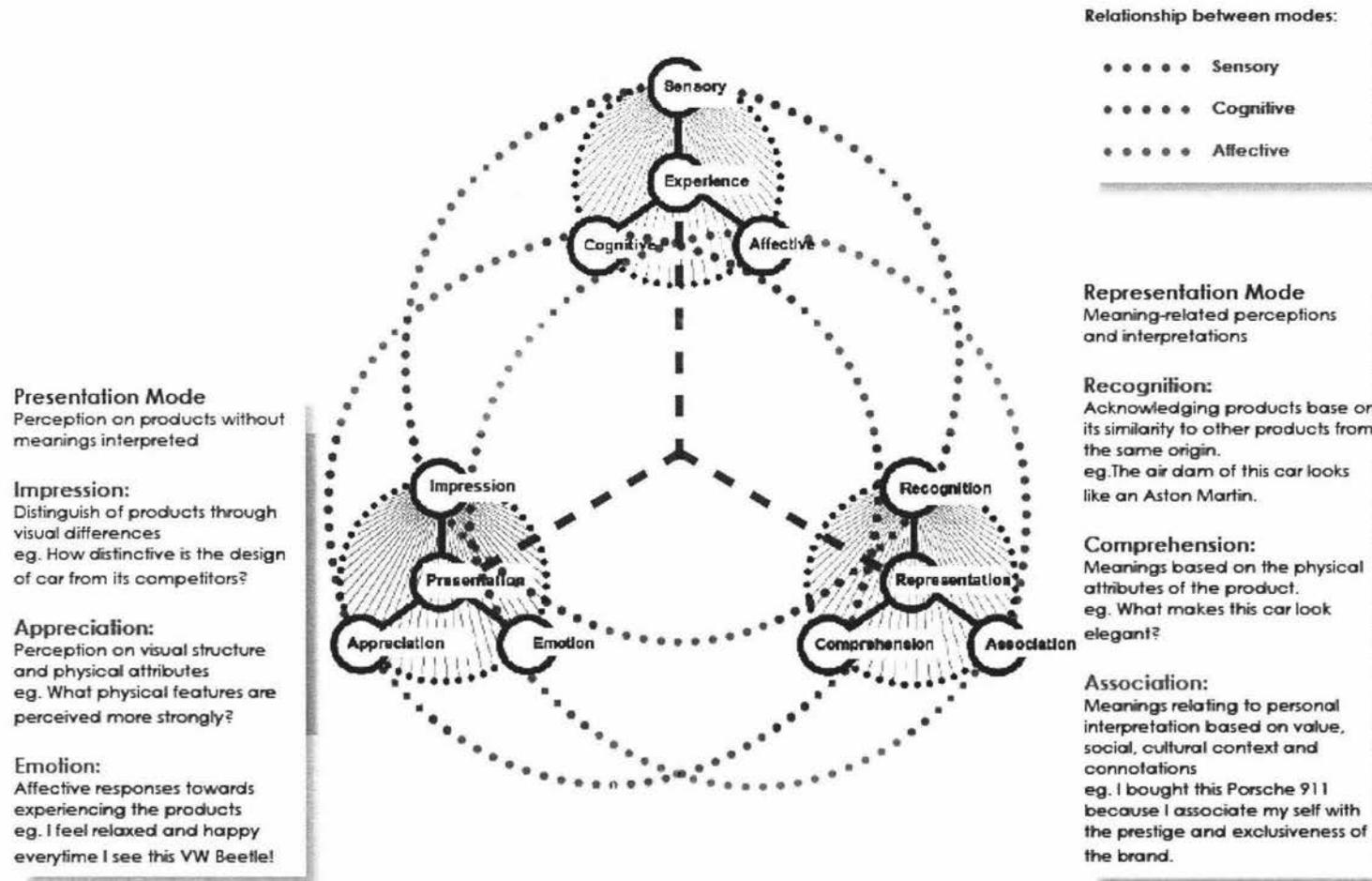


Figure 2-2. Domains of VPE framework [Warell; 2007] with colour coded lines explaining the relationships.

2.1.2 The role of aesthetics in design

It is essential for a product to attract consumers through a desirable differentiation in the appearance products. The term "**aesthetics**" is "**The study of the mind and emotions in relation to the sense of beauty**" [Stein & Urdang, 2006]. Historically, the word 'aesthetics' (*Ästhetik*) was first used by the German philosopher Alexander Gottlieb Baumgarten (1714-1762) in 1750. Baumgarten defined aesthetics as '**sensual knowledge**' in his work, derived from the Greek word 'aisthetes', which means *one who perceives*. Before the 1980s, aesthetics were studied under the field of psychological science [Julian Hochberg, 1964; Westerman, 1976] but this shifted due to disagreeing critiques amongst researchers in the field [Pye, 1978]. Referring to Figure 2-3, the history of research in aesthetics has been extensively reviewed by Monö (1997) who described it as the "**information one gathers through senses rather than through logical perception**" [Monö, 1997:24]. Essentially, the notion of aesthetics adopted in this research is *the study of the effect of product gestalt on human sensations*.

According to Taiwanese literature on the understanding of aesthetics [Zhao, 2006:30], one approach taken is the abstract science of human perception and recognition of one's surroundings through sensory experiences related to different models of emotions. [Zhao, 2006:1] Although certain methods have been established aiming to measure the human reaction and perception towards colour, sound and form. The science of

aesthetics today might not be categorised as an individual form of knowledge, due to the lack of systematic methods [Zhao, 2006:1], and the subjective nature of opinions. Zhao's identification of the lack of systematic methods further emphasises the importance of theoretical models such as the VPE framework [Warell, 2007] with its categorisations of aesthetic-related perceptions and interpretations.

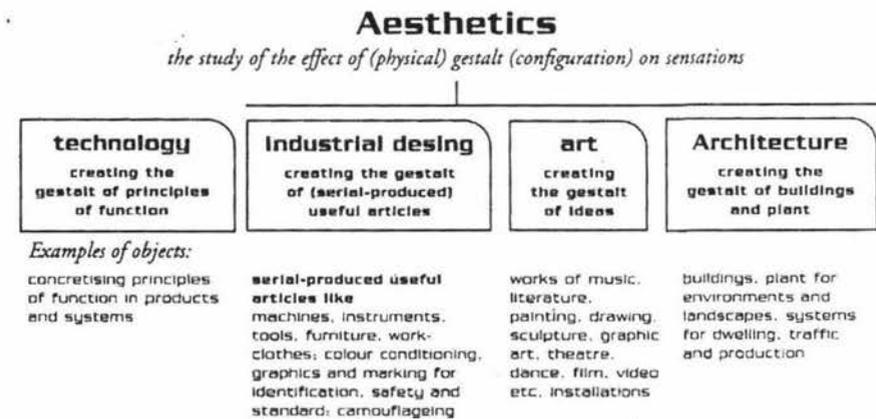


Figure 2-3. Relationship between the notion of Aesthetics and fields of design [Monö, 1997:24].

2.1.3 Formal aesthetics

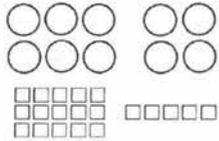
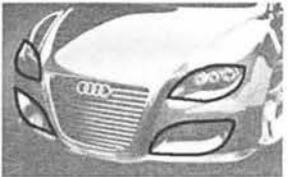
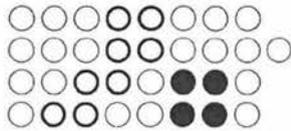
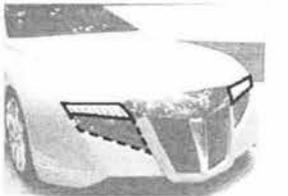
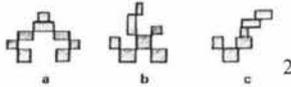
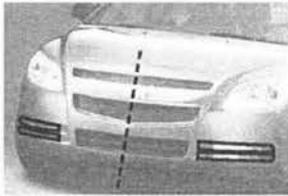
A product communicates its value and identity by presenting its appearance and functions. Of the five senses, visual perception is considered the most dominant and can override or influence experience from the remaining four perceptions. For example, a chair that doesn't "look Comfortable" can often have an impact on tactile and hepatic experience and hence the overall experience of using the chair.

The formal aesthetics of products relates to the physical attributes or design features of products. The **Gestalt theory** [Proust, 1993] describes the holistic experience of an event or objects that is based on various parts or attributes that function as a whole. The understanding of this theory is based on Monö (1997). This theory can be applied to different sensory models and is not limited to the forms of the products. Table 2-1 lists the principles of the Gestalt theory as discussed by Monö (1997:35) with examples of physical attributes on automotive exteriors. In the example of automotive design, it suggested that **the stronger the gestalt, the stronger the visual experience, and hence the potentially stronger perception or interpretation of the exterior of a car.** The *symmetrical* Gestalt principle is less emphasised in this research. This is because, like majority of the industrial designed products, the exterior of a car consists of a series of symmetrical parts and components to compliment the car as a whole object.

In formal aesthetics, Muller [Muller. 2001:82] summarised different theories including Berlyne's (1971) suggestion based on the physical attributes of products. This suggests that having a moderate complexity in product form, instead of maximisation or minimisation, optimises the visual perception of the viewer and hence stimulates a pleasant experience. Warell [Warell. 2001:58-59] on the other hand discusses the notion of "**aesthetic appreciation**". This involves **Minimalist**, and **Semantics aesthetics**; which was further integrated into his *VPE framework* in 2007. From the literature review of formal aesthetics, modes from the VPE framework have the most comprehensive structure with clarity in their categorisations.

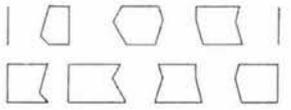
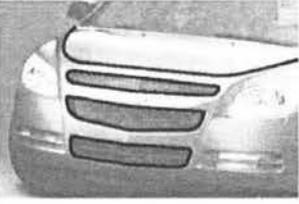
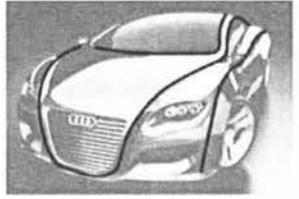
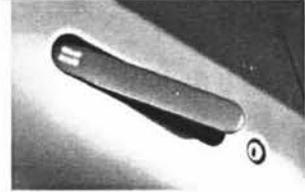
Through the use of form and ordering principles, certain features of an object form are often designed to comprehensively and clearly define in order to avoid ambiguity in consumer recognition and interpretation. Such features are called "**Explicit features**" and often relate to the design intent. For example, a classical car could have a distinctive grille referencing, but this specific grille design is **model-specific and not a brand-specific** feature. Part of this research aims to analyse and examine how these explicit features are perceived and interpreted by consumers from different markets.

Table 2-1. Key principles of Gestalt theory in formal aesthetics and relation to automotive design [Monö, 1997:35]. NOTE:: Descriptions on the principles adopted from Monö, but original theory by Marcel (1993).

Gestalt principles:	Description:	Visual examples by Monö (1997) ¹	Relation to car exteriors:	Examples
Proximity	The closer the grouping of parts, the clearer the gestalt		This grouping of features serves a similar function, one example is the grouping of elements and features on the interior and instrument cluster	
Similarity	The repetition of similar or same elements		The use of repetitive elements and curves to create brand recognition and visual coherence	
Area	Smaller areas are more easily perceived than bigger areas regardless of the colour tone		Complex and smaller features such as headlights and grille are perceived strongly amongst the car body that has a larger area and simpler surface transition	
Symmetry	Symmetrical composition creates gestalt		Similar to most of the sophisticated and industrialised products, the compositional arrangement are symmetrical	

¹ Illustrations by Monö (1997:36-39)

² Diagram from Warell (2001) original by Tjalve (1979). a. Symmetrical, b. Asymmetrical, c. Visually imbalance

<p>Enclosedness</p>	<p>The positive shape or enclosed space are more easily perceived as a whole</p>		<p>Elements such as the headlights or grille consists of enclosed shapes and hence create stronger gestalt</p>	
<p>'The good curve'</p>	<p>The flow of lines or curves that are constructed in a visually continuous manner</p>		<p>The use of line work on the body to express the sense of flow or movement</p>	
<p>Common movement</p>	<p>The grouping of movements in the same direction creates gestalt</p>		<p>The use of lines or shapes in a group to create stronger perception</p>	
<p>Experience</p>	<p>Recognition of a gesture, shape, or functional movement based on existing understanding of the object/shape</p>		<p>Car features such as the door handles are usually expected to be found along the bone lines and open upwards</p>	

2.1.4 Meaning communication

To understand how the cars in this research are visually perceived, one must examine the process of "meaning communication". All communication firstly requires perception. Human perceptions are based first on the "sensory experience" [Warell, 2007] which involves any perception by the five senses. From the sensory experience, people develop "cognitive experiences" [Warell, 2007] involving interpretations on the subject perceived. "Semantics" is the scientific study of people's interpretation of signs [Monö, 1997; Warell, 2001]. To achieve differentiation between products expressing brand identity, products are often designed with "semantic function" by embedding signs within products to signify the intended messages to consumers. Within different types of signs, "semiotics" focuses on the study of signs in relation to their symbolic or iconic aspects [Monö, 1997]. Monö (1997:42) based his approach on the transmission model from Shannon [Shannon & Weaver, 1948:379-423] with the design message and communication as the product gestalt, transmitted into a message and interpreted by the receiver, as shown in Figure 2-4. Further, Figure 2-5 identifies the potential difficulties relating to the design message and this process of communication. One of the key potential difficulties relating to design is *designing with unclear and ambiguous semantics*; this can be seen in many emerging automotive brands where the design language and brand-specific cues are not developed enough to achieve the desired level of brand recognition.

However, one potential drawback of the transmission model is its lack of emphasis on social and cultural-related aspects in product perception and interpretation.

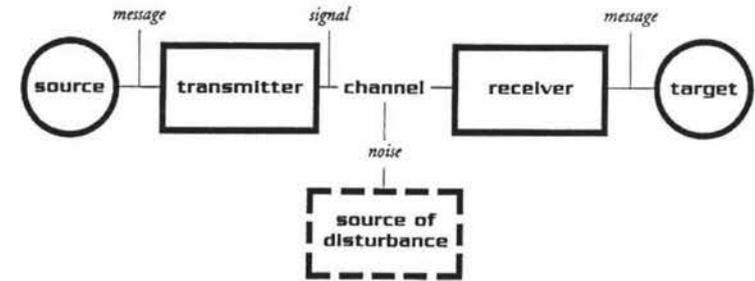


Figure 2-4. Flow of meaning communication based on the transmission communication model by Shannon and Weaver [Monö, 1997: 43].

As a result of disturbances there can be:

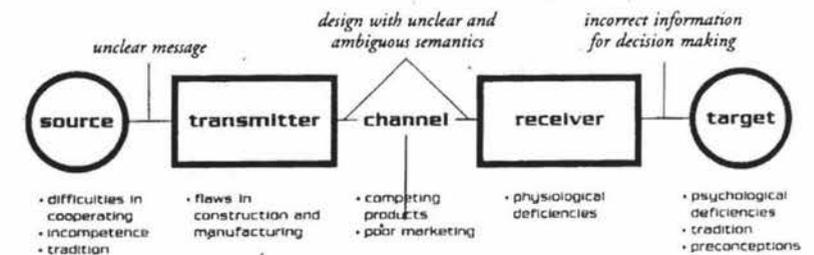


Figure 2-5. Flow and potential disruptions of meaning communication based on the transmission communication model by Shannon and Weaver [Monö, 1997: 45].

Derived from the transmission communication model, researchers [Muller, 2001; Crilly et al., 2004] described various processes of communication models. The communication function suggested by Muller (2001), displayed in Figure 2-6 includes secondary aspects from the internal intention to the perceived meaning of products. Consumers are generally unaware of the designer's intentions to communicate using the product as a medium. Therefore the consumers' perception solidly relies on their experience with the product through interaction. This experience could occur in the context of interaction in real time, the imagery product of the goods, or word of mouth impression. The model shown in Figure 2-7 identifies the basic framework for communication relating to perception and meaning [Crilly et al., 2004]. However, this categorisation of functions and process shows a lack of consideration of the cultural and social contexts that this research is investigating.

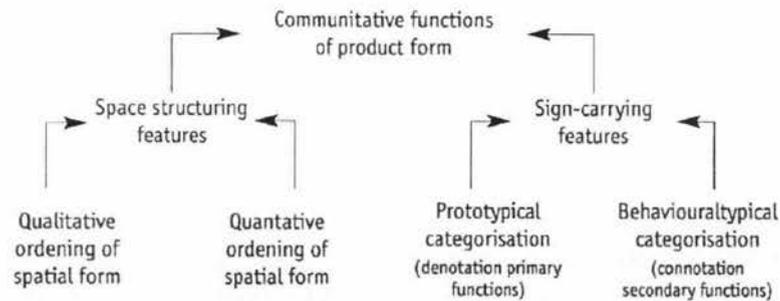


Figure 2-6. Categorisation on the communication functions of product form [Muller, 2001:301].

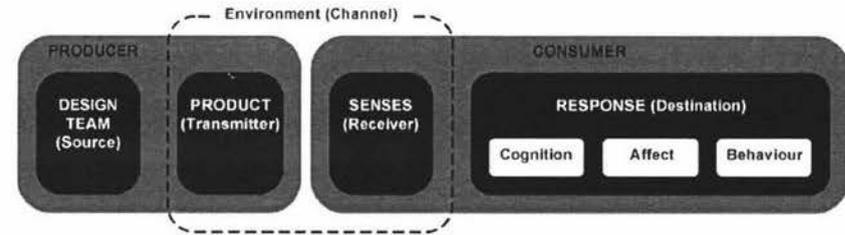


Figure 2-7. Basic framework for design as a process of communication based on the Transmission Model by Shannon and Muller [Crilly et al., 2004].

2.1.5 Design and identity

In the context of product design, "*identity*" is the consumer's meaning-related interpretation of semiotic signs from a product [Warell, 2005], based on one's understanding of the brand and social-cultural values. This meaning-related aspect in visual product perception is categorised by Warell (2005) into three modes based on the sensory and cognition experiences identified in the last section. A "**Brand**" is a collection of symbols, marks, logos, or words that represent and distinguish an economic entity from its competitors [Thompson, 1996:95]. This is established from aspects such as the company culture, value, or identity with the aim to gain business success. As it is desirable for companies to create products that convey brand identity, designers adopt the use of "*brand-specific*" features through the repetition of certain design cues across the product range [Monö, 1997:102]. However, the use of brand-specific features relies on the degree of "*traceability*" within the

products. The term *traceability* relates to the manner or degree a specific product's physical design contains and references back to the branding image of the company. For a product to be traceable, the meaning has to be successfully and profitably interpreted by, at least, the targeted consumer. Examples of culturally influenced factors would be identifying that certain styling or colours of car exteriors are more popular in certain markets. As a design semiotic example, Audi was very unpopular when it first entered the Chinese market due to people being unfamiliar with Audi as a name and their interpretation of the four circle-shaped logo. In Chinese culture the circle symbolises bad luck or death. Later the company refocused its branding strategy and re-promoted the logo as a "good omen", and Audi has since gained popularity amongst consumers in China.

Today, the majority of consumers still have a tendency to associate product values with its country of origin; this often has a significant influence on the semantic interpretation of products. For example, some people still hold strong stereotypic perceptions towards Japanese, German and Italian cars. In the last decade, researchers have started to include cultural aspects when examining product identity. Amongst these studies, Karjalainen's discussion on global identity and local flavours [Karjalainen, 2004:41] and how these meanings can be perceived differently in different cultures has been useful in understanding semantic transformation through product

design for this research project. While Karjalainen's focus is on the 'semantic transformation' from brand identity to product design, his research did not focus on how products are perceived by consumers and if the interpreted meanings are desirable for the product and its brand.

Various researchers [Sandstrom, 1973; Gros, 1983; Vihma, 1995] have attempted to categorise the different functions of perception. However, this review of the literature revealed that the terminology is inconsistent, with little comprehensive understanding of semantic functions. On the other hand, Warell's (2005) VPE framework clarifies the relationship between perceptions in 'presentation' and 'representation', each with three sub-modes that covers the various aspects discussed by other researchers.

2.1.6 Design semantics

Following on from the literature review on design and identity, this section examines the various categories in meanings-based interpretation of physical aesthetics. This section is separated into two parts the first is based on semantics, and the second on semiotics which further examines the types of signs. Semantics is the study of signs relating to the 'identity' aspect of product design. Semiotics is the study of sign functions with further categorisation into icon, symbols, and index signs [Monö, 1997:53-55].

Amongst the literature exploring design semantics [Monö, 1997; Norman, 2004; Crilly et al., 2004:558; Warell, 2005] term usage is sometimes inconsistent between theories, and the emphasis of the majority of the literatures is on specific aspects of semantics; few [Crilly et al., 2004; Warell, 2005] offer an overall perspective. Table 2-2 shows Monö's [Monö, 1997: 82-111] categorisation of the semantic functions into *Description, Expression, Exhortation, and Identification*. On the other hand, Norman established three semantic methods, namely *Affordances, Constraints and Mappings*, aimed at contributing to usage design related to the visual appearance of a product [Norman, 2004]. However, although these categorisations are related to the function and form of products, it has not been further researched in the context of this research in automotive exteriors.

Table 2-2. Semantic design functions by Monö (1997) and its relation to automotive design.

	Describe	Express	Exhort	Identify
description	The appearance or feature on a product which suggests functional aspects to the user	The descriptive aspects that a product is intended to signify (express stability, common appearance, lightness, flexibility)	The product function which appeal to the receiver as commands or requests	A certain range of aspects and characters that are designed to be recognised as representing the company brand
Example	The shape of door handles are designed to suggest its function and movement through pulling	Use of bone lines and belt lines at an angle to express the stance and forward movement of a car	Expression of high speed in the design of a sports car through consistent emphasis in details	Brand-specific features that create brand recognition by repeating physical features across models

Semantic aesthetics categorized by Warell (2001) is a combination of both the semantic functions and semiotic signs identified in Table 2-2 and 2-3. As discussed on the significance of cultural and social influences on the interpreted meaning of a product, the Representational dimension of the VPE framework incorporates these factors with the semiotic and semantic functions. This particular model of *Representation* is ideal for examining the various meanings occurring from product experiences since it includes meanings relating to value, cultural, social, and interpretation on the signifiers that function as *symbols* or *icons* or *indices*.

Crilly et al. (2004) are varied and some have overlapping or ambiguous definitions that are potentially unclear to understand visual perceptions and meanings. After reviewing the framework, it has been identified that the categorisation of the consumer response domains lacks a sense of clarity and definition. That is, the types and terms under the visual references are fragmented and incomplete. Would it aid understanding of product meaning and perception if the categories on *symbolic* and *semantic* were combined? For example, the *metaphoric reference* is a highly subjective interpretation of the product by the consumers, and the term *similar products* relates to the repetition of a particular product to consumers.

Table 2-3. Types of signs in meaning interpretation [Monö, 1997:53-55].

	Icon	Symbol	Index
description	Visual or physical similarity to what it signifies	Signs relating to social and cultural interpretations	Understanding of forms or physical construction based on its functional purpose
Example	The use of proportion and stance to express the type vehicle	A premium car might symbolise wealth and hence social hierarchy	Features such as a wheel on a car signifies movement as the function of a car

Based on the transmission model discussed in the section on product communication, Figure 2-8 identifies the context of product consumption [Crilly et al., 2004:558]. The authors categorised response outcomes into *Aesthetic, Semantic, and Symbolic interpretations*. The terms adopted by

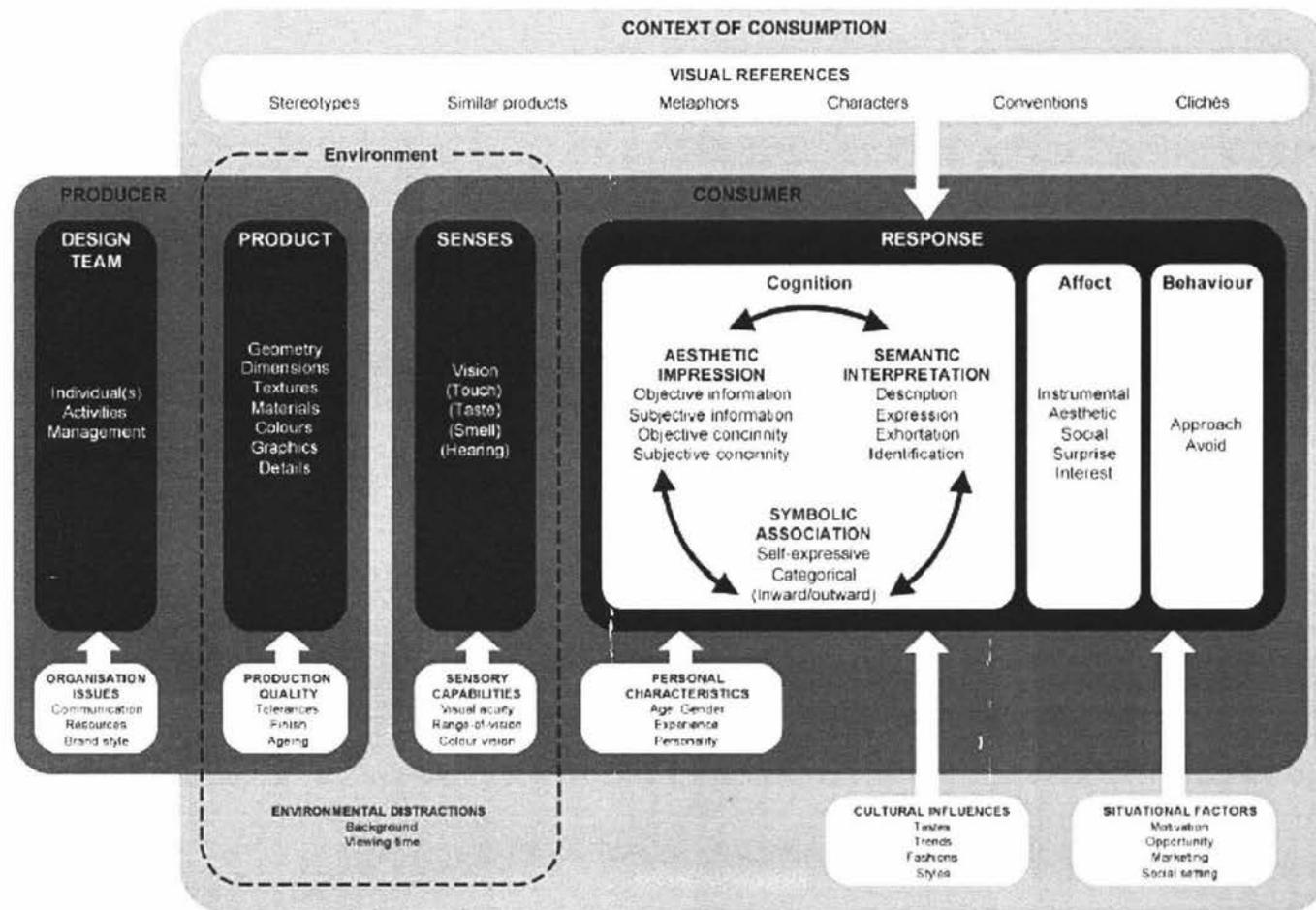


Figure 2-8. Framework on product communication and semantics [Crilly et al., 2004:558]

2.1.7 Visual experience

As identified in the review of the framework by Crilly et al., (2004), further clarification is required to develop a comprehensive framework that would aid the existing body of knowledge. In the context of this research, and based on a similar theoretical background, Warell (2005) developed a clear concept which aimed to assist industry understanding and demonstrate the importance of design in products. However the limitation of the VPE framework lies in the lack of definition within the base descriptions of theories by other researchers. This lack of clear definition could potentially create confusion due to the missing description and structure under each model. Although deeply interrelated, each model in the VPE is well-defined with references to the key findings from the literature review. These levels of definitions allow an in-depth understanding of the "layers" of consumer perception, relating to product design, including social and cultural related interpretations.

Most recently, Desmet and Hekkert (2007) introduced a general framework that is based on the emotional experience contributed by aesthetic and meaning perceptions as shown in Figure 2-9 and 2-10. This system is based on the user perspective, however the framework is too generalised and therefore requires further development and sub-categorisation. This framework shares a parallel perspective to Warell's modes of *Affective*, *Emotion* and *Association*, and to a certain degree on *Recognition*. As the

aim of this research is not focused on the emotional aspect of product perception and meaning, this framework will not be further investigated.

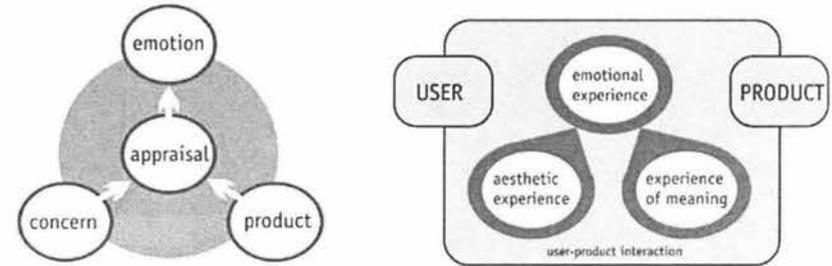


Figure 2-9. (left) Basic model of product emotions by Desmet and Hekkert (2007:62). **Figure 2-10.** (right) Framework of product experience by Desmet and Hekkert (2007:60).

2.1.8 Literature review discussion and evaluation

It is commonly recognised that one value belonging to a specific culture might not be appreciated in the same manner by people from another culture. The process of perception and meaning by Crilly et al., (2004) is categorised by the aesthetic, semiotic, and semantic functions. However, this system lacks resolution and completeness in its structure and terminology, which makes the framework difficult to adopt into the primary research of this study. Furthermore, the content coverage of both Crilly's (2004) theory and the framework from Desmet and Hekkert (2007) is comprehensively considered by Warell (2007) in his framework between the perception and meaning in product experience. In comparison, the

researcher found the VPE framework more adoptable and comprehensible for an articulated analysis on visual perception and meaning in the context of this research.

After evaluating the existing literature to fulfil the aim of this research, the theories cover a broad spectrum, from physical design forms to the meanings it could signify. Although culture-related understanding in design semiotics is one of the two most embraced topics in this field of research [Desmet and Hekkert, 2007:63], the review on existing literature identified that there is a lack of studies involving inter-cultural comparisons and the examination of whether a design is perceived as intended. Through this secondary research on the frameworks of product perception and meaning, it is apparent that Warell's (2007) Visual Product Experience framework is the most comprehensive theory on which to orientate the primary research. This is due to the high level of clarity in the categorisations and the inter-relationships of the VPE framework. Moreover, Warell's research has a stronger emphasis on cultural or social-related aspects of product perception and meaning. By conducting this review on current literature, a theoretical base has been established with a comprehensive framework for this project. The framework will be used to conduct the secondary research on the background of cars in this project and in the primary research.

Although there are exercises and studies conducted on transferring brand identity to another unrelated product design, it is rare to find published research focusing on the relationship between the intended design message and how it is perceived [Fjellner, Stridsman-Dahlstrom, 2004; Karjalainen, 2004]. As this field of research is still new, a large amount of research is still required to gain further knowledge. This study of car enthusiasts both in New Zealand and Taiwan will contribute to this research field and potentially identify areas for future research.

2.2 Design intent of cars

To examine the consumers' perception of the 320i and IS250, the intended meaning lies in understanding the relationship between the internal and external perception of the design of BMW and Lexus cars. Figure 2-11 shows the type of vehicles selected for this research amongst common passenger cars. The selection of premium car models in this research is due to the likelihood of a higher level of focus in the design of formal aesthetics and the prominent branding images. The models 320i and IS250 are also popular models within BMW and Lexus due to their relatively compact size and a more modern design image. Compared to other luxury models as illustrated in Figure 2-12, the 320i and IS250 as premium sports sedans, have a slightly different design language in that they are a mix of sports car and luxury four door sedan. The country of origin of the automotive companies and the level of establishment in the New Zealand and Taiwan markets is also a factor for consideration in a comparative study between consumer perceptions of the two cars and their associated brand.

As the aim of this background research is to identify the design intentions of the 320i and IS250, the majority of the information is based on official or authoritative sources analysing or critiquing the designs. The design philosophy of a car company is largely influenced by the company's brand identity. This identity is greatly influenced by the company culture, which is

largely developed over time through the history of a company. The history and company culture of BMW and Lexus will be briefly introduced based on the written material appended in Appendix C. Following from this, the research findings on the design philosophy will be introduced in relation to the brand heritages or country of origin. Based on the introduction of the above aspects of the cars, the exterior designs of each car will be examined and categorised under the VPE framework [Warell, 2007] to establish a structured understanding of the design of the 320i and IS250.

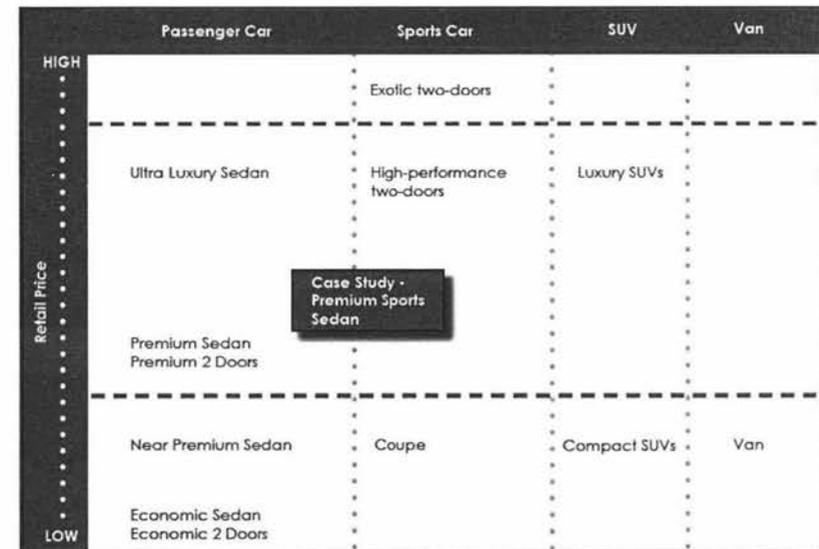


Figure 2-11. Target market and type of vehicle for the cars in this research

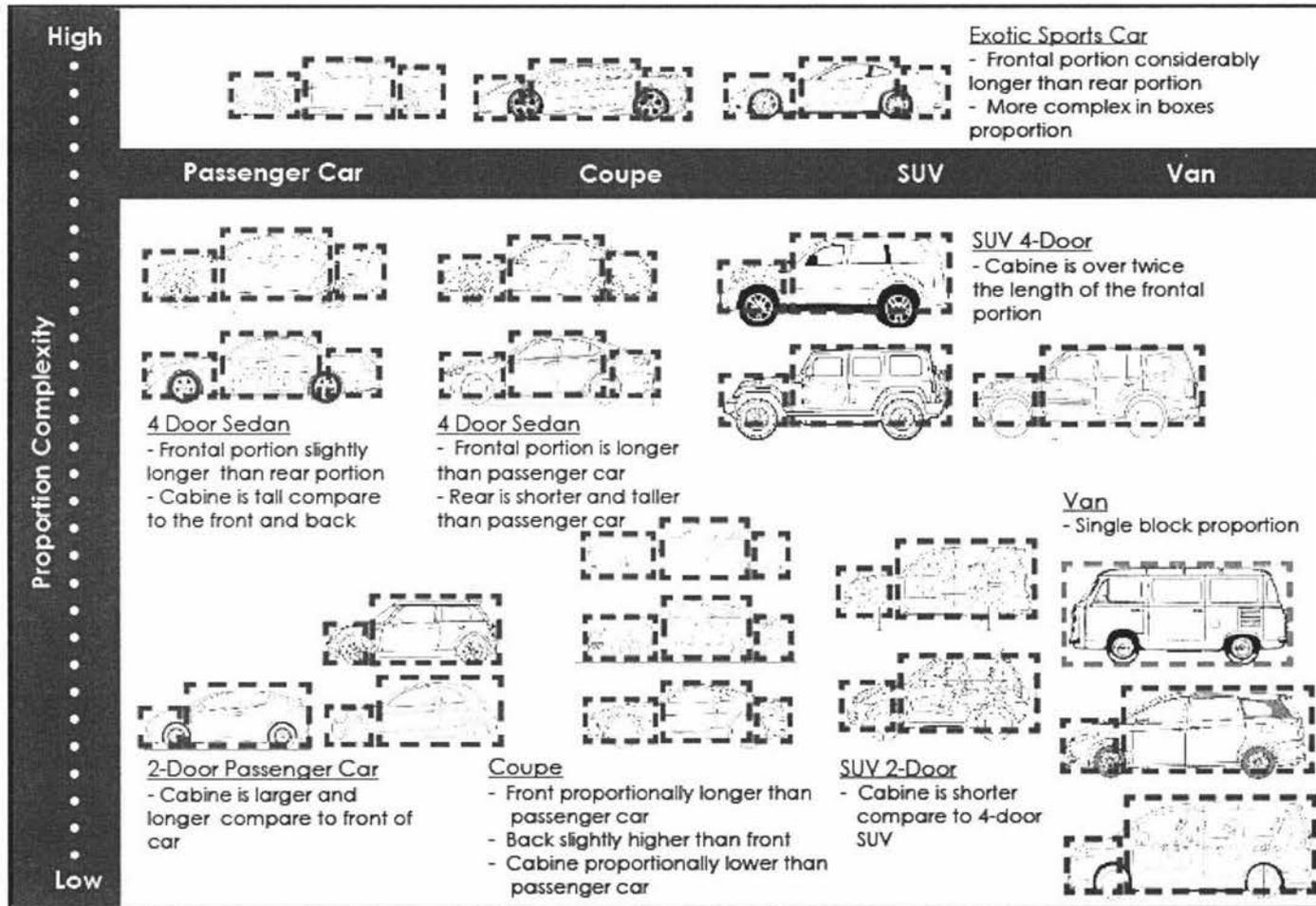


Figure 2-12. Proportion and stance of common domestic motor vehicles.

Figure 2-12 categorises the proportion and type of stance in automotive design, which signifies the type of vehicle. In the context of this research, the intended brand recognition of the 320i and IS250 is as a premium sports sedan. The sports sedan consists of a three-box proportion with a higher and shorter rear box to convey the cab-forward stance suggesting dynamism.

2.2.1 History and company culture of BMW



Figure 2-13. Logo of the BMW Motor company [BMW International, 2007].

Bayerische Motoren Werke AG (BMW) as a car manufacturer has a unique company history regarding its origin in the high-tech aviation production industry. This origin of manufacturing capability suggests that BMW has a strong knowledge base in aerodynamics and solidity in material qualities. Based on this company history, BMW promotes itself as a design-orientated automotive company and puts a strong focus on the driving experience of their cars.

Branding and profile

Through researching how BMW has positioned itself, the branding emphasis could be identified as a semantic intention of BMW cars. This kind of branding imagery is highly desirable for BMW to communicate through the design of their car models. By promoting its culture, BMW established itself as a brand with heritage, constantly challenging traditional aesthetics to develop innovative designs [BMW USA, 2007]. Based on its history and country of origin, BMW's brand image in most markets around the globe has been widely perceived as a luxury car brand, with emphasis on performance. BMW also promotes aerodynamic engineering as company strength, based on its manufacturing capacity and origins. In addition, BMW promote themselves as an independent company with high emphasis on quality and innovation in automotive design. For comparison purposes, it is essential that the target markets for the BMW 320i and Lexus IS250 are identified to ensure an equal market target. The 3 series is BMW's sports sedan range which targets the younger age segment of consumers who desire a sportier sedan in the luxury market. Based on this younger generation market focus, the 3 series has a strong emphasis on the driving experience and sportiness in its design language. Moreover, the 3 series is the most important model range for BMW as it has an iconic value, referencing back to the earliest company history. The 3 series is also the most popular model amongst the BMW models.

Design philosophy

BMW, as an automotive brand, has a long history of strong emphasis on design and quality that is less limited by conventional engineering and production procedures. It is interesting to discover that throughout BMW's history there are a series of brand-specific features, the numbers of which are slowly increasing to achieve a high coherence between models and an expression of brand identity. The new design philosophy of "**flame surfacing**" is a form language created by BMW that consists of concave and convex directional changes aimed at being "**expressive and entertaining aesthetics**". This new style of surface treatment has been controversial amongst the designer community, especially between the European and American designers. The new styling direction is based on BMW's recognition of the increasing emphasis of individuality amongst consumers, and each model of BMW in the premium sector is designed with a different expression for different consumers [BMW USA, 2007].

However, from a review [Cox, n.d.] of BMW's new design direction, including opinions from prominent artists and designers based in the USA, attitudes varied with just over half of the designer/artists appreciating the new design of BMW. A summary of these designers/artists reviews is listed in Appendix B. Interestingly, the interview outcome showed that the majority of comments agreed that there is a trend, and a few commented that BMW is leading the trend in automotive styling [Cox, n.d.]. These

critiques on the 320i would be a useful reference to examine the new BMW design language, and therefore gain further understanding of the consumer response.

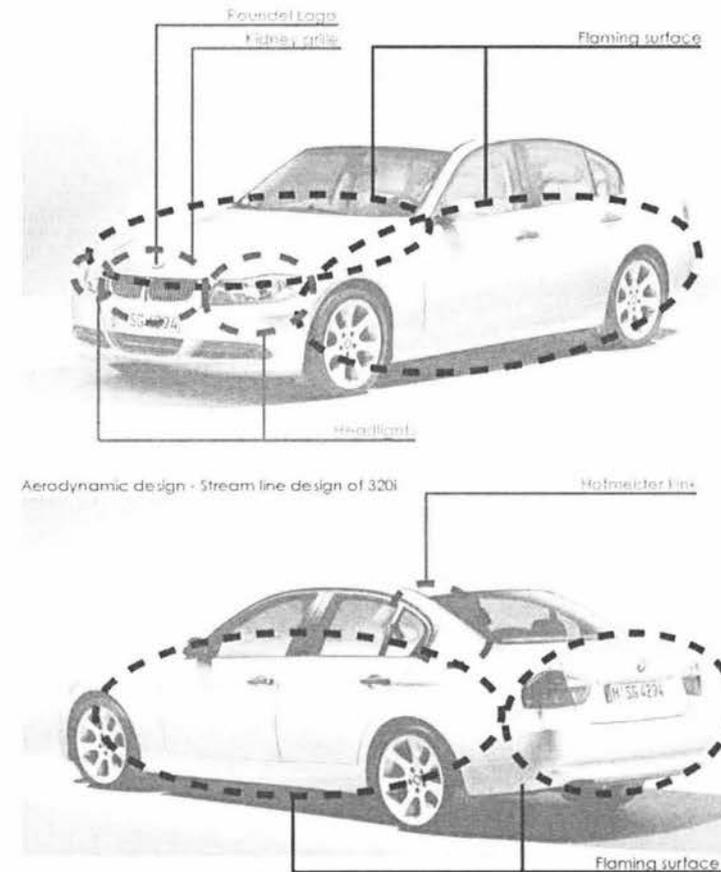


Figure 2-14. Diagram illustrating brand-specific features of BMW on the 320i.

Compared to other automotive brands, BMW cars contain a high number of brand-specific features across their exterior design, as indicated in Figure 2-14. One of the approaches for creating visual brand identity through products is by developing a series of features or elements that is shared across the company's product range. In comparison some newly established automotive companies, like Lexus, have a smaller range of brand-specific features. The new design direction of BMW has developed the concept and usage of brand-specific features into a surface treatment across the models. As car designs are based on proportion, lines and surface, this innovative use of concave and convex surfaces on BMW cars essentially creates the whole car as a brand-specific feature. Table 2-4 summarises the brand-specific features of BMW with quotes or descriptions to determine the meanings associated with each feature.

Table 2-4. Brand-specific features of BMW with intentions or descriptions from BMW USA (2007).

Brand-specific features	Intention
Aerodynamic Design	<i>Form Follows Function</i>
Flame Surfacing	<i>expressive and entertaining aesthetics Bring light and form across surfaces</i>
Hofmeister Kink	<i>visually attractive and distinctive</i>
Kidney Grille	symbolic BMW feature
Roundel Logo	Logo representing the company's heritage
Quad Headlights	<i>Elegant and powerful</i>

Design of model 320i

To understand how BMW promotes the model 320i, Table 2-5 lists a series of expressions and any correlated features used officially in marketing materials. The purpose of this exercise is to establish the internal perceptions of the model 320i and any explicit features to allow an examination on how these expressions are perceived by consumers.

Table 2-5. Expressions used by BMW on the model 320i [BMW, 2007].

BMW expressions	Term	Descriptor	Features
	Dynamic	Well-defined	Whole design, Shark Fin Antenna
	Versatile	Innovative	N/A
	Elegant	Sleek/Lightness	Whole design
	Modern	High-tech/Stylish	N/A
	Desirable	Confident/Focused	N/A
	Sporty	Powerful/Athletic	Whole design (long wheel base and hood). DLO. Rear end.
	Comfortable	Luxuries/Enjoyable	N/A

As a luxury sports sedan, the 3 series has been designed to express **sportiness, dynamism** and **elegance** [BMW International, 2007]. Officially, the identity of the 3 series has been described by BMW as **"uncompromised, authentic and exhilarating to drive."** [BMW USA, 2007]. It is evident from the description of the model identity that there is a strong emphasis on performance in the 320i as a sports sedan. Various online videos were published by BMW [BMW USA, 2007] featuring its head design directors

talking about the design of BMW models. In introducing the design of the 320i, Bangel and Van Hooydonk [BMW USA, 2007] spent a considerable amount of the video time showing the 320i in motion, both from afar and in close-up shots, expressing movement by emphasising the surfaces and its reflection.

The design of the 320i is a cohesive combination of features referencing from the M3 and 5 series, bridging between the performance sports car and the luxury quality [BMW USA, 2007]. Compared to the 5 and 1 series, the design language in 3 series is more conventional with less variation in surface tension; but in turn, it visually expresses more volume to emphasise the size of the car. The surface treatments of the 320i were inherited from the 5 series to provide a reference to the higher class sedans within the BMW range. Lines along the side of this model originated in its previous models, but are now enhanced with the **Flame surfacing** which makes this 3 series more sculptural than the older models. Like most of the car designs, BMW also has a strong focus on the DRG in the design of the 320i [Car Design News, 2005]. Table 2-6 and Figure 2-15 identifies the explicit features of the design of the 320i. The integrated flow of curve from the hood to bumper (**Power Dome**) has changed the **Kidney grille** radically from its original form, composition and order. Furthermore, the **Whiskers chrome** placed around the Kidney grille is based on the 5 series, aiming to visually emphasise this brand-specific feature [Car Design News, 2005].

Table 2-6. List of model-specific features of the 320i and intentions proposed by BMW.

Model-specific features	Intention
Coupe-like DLO	Express Sportiness by referencing a Coupe-like curve that is incorporated with the Hofmeister Kink
Power Dome	Visually enhancing Kidney Grille
'Whiskers' chrome around Kidney Grille	Visually enhancing Kidney Grille
Larger Wheels	Express sportiness with larger wheels
Bone line	Visually enhance the length of the car through flow of line along the side
Corner on tail	Visually widen the rear of 320i for a sportiness stance
Tail lights	Visually widen the rear when the lights are on in the dark
Shark Fin Antenna	Expressing dynamic aggressiveness

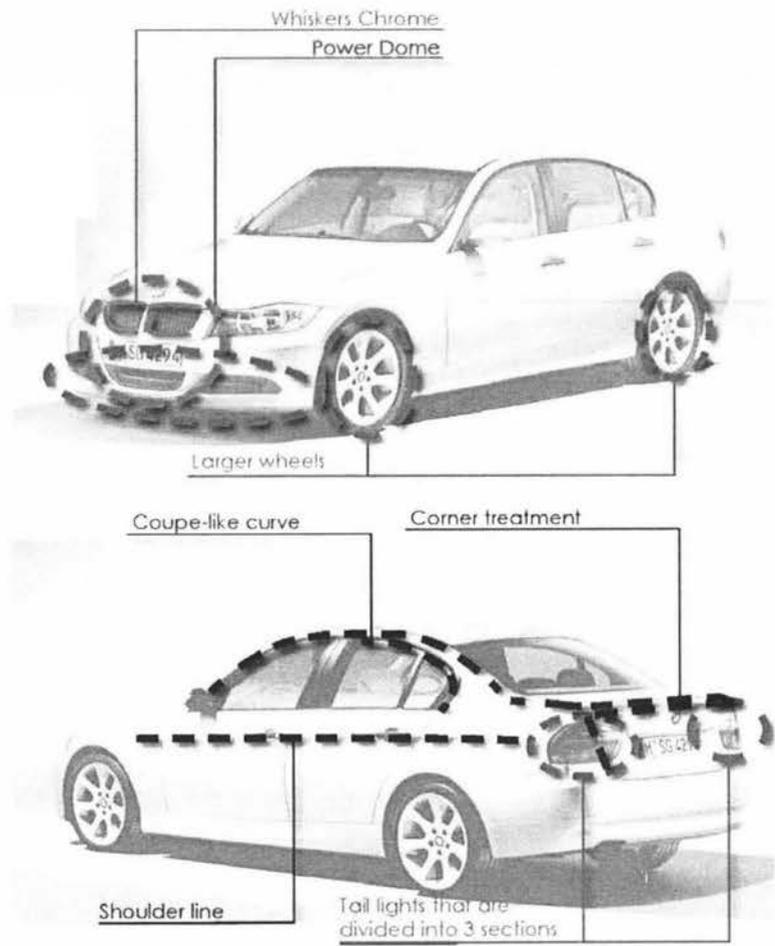


Figure 2-15. Model-specific features of the 320i

2.2.2 History and company culture of Lexus



Figure 2-16. Lexus Logo



Figure 2-17. Toyota Logo

Lexus is the premium car division of the Japanese car maker Toyota motor company established almost two decades ago. After the brand Lexus was successfully accepted in its main target market in America, it has been newly introduced to other markets such as New Zealand and Taiwan. Although the history and culture of Lexus is relatively short compared to other premium car companies, such as the Mercedes Benz and BMW, it is the most well-known of the Asian car companies in the luxury market sector. The company has gained international success and recognition over its relatively short history; which could influence the consumer's brand impression as to what they associate Lexus with. With Japan as its country of origin, Lexus offers an interesting case for the comparison of brand perception and the association of a brand's country of origin, such as the electronic brand Sony.

Branding and profile

Due to the relatively young company history of Lexus, the branding is focused on a young executive image with thoughtfulness in its attention to details. Lexus as a brand, takes advantage of the general impression of Japanese products as being high-end innovative technology with quality assurance. Both traditional and modern Japanese formal aesthetic qualities have also been included in recent branding strategies. One of the main aspects in Japanese art, well-known and recognised in the international market, is its simplicity and elegance in traditional and modern architecture and object design. Initially, Lexus branding targeted its biggest competitor – Mercedes - but now it is also targets BMW consumers by promoting its driving dynamics. As brand, Lexus has been commented as having "**a peculiar mix of prestige and novelty**" [Top Gear, 2005, para. 31].

Rather than focussing a strong emphasis on exterior design or creating strong design cues for brand recognition, the company has established itself through their cars' mechanical performance and technological advancement. In terms of the company's extra-curricular social involvement, Lexus actively sponsors Sky TV's artistic movie channel Rialto, along with prestigious singing contests, in order to promote their brand as *prestigious, luxury, and elegantly artistic* [Lexus, 2007b].

The uniqueness of this company is its short but successful history in the USA, and its gaining of popularity in certain Asian and European countries, along with the fact that Lexus's reputation was not built upon any design tradition. This serves as an excellent case for this comparative study as BMW has a long history of design-oriented company focus. Lexus, on the other hand, has started to emphasise its design philosophy through establishing the L-Finesse, rather than through technological development. This aims to build up depth in design and consumer association of the brand. The company also uses its short history as a strength: i.e. not having "heritage baggage" and offering more modern looks.

Design philosophy

"A journey to refocus Lexus design based on the two factors that we believe define both the history and future of Lexus: the intensity of being at the 'leading edge' and the depth of 'finesse'."

Wahei Hirai - Managing officer of Lexus Global Design. [Top Gear, 2005].

As a young premium brand in the market, the focus of Lexus is towards innovative engineering for performance and interior comfort. Lexus's new L-Finesse design philosophy is drawn from the seamless anticipation of Japanese hospitality and the unique gestures of Japanese martial art. According to Mr W. Hirai [Forrest, 2005], the philosophy of L-Finesse ("L" stands for Leading Edge) is to emphasise the design direction towards a

"contemporary and dynamic position in the premium market."

Automotive reviews approach the L-Finesse philosophy as it is designed - at an in-depth level – and not merely imitating the physical attributes of *Simplicity and Elegance* in Japanese aesthetics. The design philosophy originates from certain ways of Japanese thinking that lead to the creation of aesthetics, and includes the metaphor of Japanese culture as *faultless hospitality*. Lexus describes this traditional hospitality value as *Seamless Anticipation*. An example that demonstrates the value of faultless hospitality is the tea ceremony: the focus of the tea ceremony is not only on consuming the tea itself, it is also on the experience of calmly waiting in a particular spatial setting and anticipating the tea [Top Gear, 2005, para. 17-18].

Lexus designed this philosophy, which combines salesmanship and product experience, with the aim of creating a complex semantic experience and personal relationship with the consumer. This aims to create brand recognition through word of mouth, as in some undesirable cases, people could associate a brand with its country of origin. However, as identified in the introduction chapter, the visual aesthetics of cars or any other products are the key to strong product impression and recognition. This research seeks to examine the importance of visual aesthetics on car design in relation to consumers' perceptions of the associated brand images.

A design essay on the design philosophy L-Finesse [Forrest, 2005, para. 5] described the philosophy of "**Leading Edge designs of finesse**" as a logical approach to the majority of innovative car design studios. The essay emphasised the need for design *anthropology* rather than *technology*, and commented that design by Lexus is overshadowed by its technological advancement.

The uniqueness of the L-Finesse is its symbolic value relating to both modern and traditional Japanese aesthetics, some of which have been widely appreciated in the field of art, interior design, and architecture. However, the proposed brand-specific design language of sharp line transitions in different directions is radical for automotive design. Lexus also claim that the philosophy has been moderated for different cultures in its global market and "***in tune with your needs and ways of thinking***" [Lexus, 2006-2008]. This is an area that will be examined in this study on the comprehension/association model under the VPE framework.

For example, the asymmetrical style and imbalance of flower arrangements in traditional Japanese culture and a hallmark of Japanese aesthetics [Cars and More, 2007] has been adopted in the design of the IS series to "***attractively express tiny things***". [Top Gear, 2005] The key L-Finesse design philosophy also draws on Japanese iconography such as the '**Arrowhead**' motif (see Figure 2-18) a gesture inspired by the rapid and

yet fluid change of direction of "**Kirikaeshi**". The use of the Arrowhead motif is most apparent in the composition of the C-pillar of IS250. Compared to BMW with its larger brand-specific feature vocabulary, Lexus has only two features as listed in Table 2-7. As the L-Finesse is a newly developed design philosophy, its brand-specific features could potentially be less recognised by the consumers due to unfamiliarity with brand-specific features.

Table 2-7. Brand-specific features of Lexus with intentions or descriptions.

Brand-specific feature	Intention
Arrowhead Motif	Swift yet rapid change in directions
Lexus Logo	Signifying the brand



Figure 2-18. Brand-specific design features on the IS250.

Design of model IS250

The model IS250 is the second production model that was designed to express the philosophy of L-Finesse by Lexus. According to Lexus [Cars and More, 2005], the IS model has fully incorporated elegance and sweeping coachwork lines with concave and convex surface tension that has been interestingly described using the word **"intriguing"**. The design of the overall form of the IS250 has also been emphasised in the media as **"incisive simplicity"**, **"intriguing elegance"**, and **"pure"**. Most are to be further enhanced by the design of individual elements [Top Gear, 2005]. Again, Lexus emphasised its **attention to fine details**, which is part of Japanese culture and aesthetics. Proportionally, the new IS model is slightly bigger than previous IS models. The front and rear overhangs have been shortened to proportionally highlight the lower visual centre of gravity, producing a *broad* and *robust* visual impression aiming to compliment the IS250 as a luxury sports sedan. According to an official source on the design of the IS250, the exterior features are described as **"Each element, observed individually, has the power to intrigue but also to inform."** [Lexus, 2007].

Table 2-8 lists expressive terms used by Lexus for describing the design of the IS250. This is to establish an understanding of the internal perceptions in Lexus for the comparative discussion between the car model and consumers' external perceptions. This list of expressions and descriptors will

be further analysed in Section 3.2 on design analysis, to understand the relationship between these expressions and the formal aesthetics of the IS250.

Table 2-8. Expressions use by Lexus for marketing the IS250.

	Term	Descriptor	Feature
Lexus Expression	Luxury	High quality/Exclusive	N/A
	Sporty	State of motion/aggressive	Overall.
	Distinctive	Unique/Refined	Rear end.
	Confident	Bold	N/A
	Simple	Seamless/Flowing	(Panel alignment)
	Style	Elegance/Visually arresting	N/A
	Evocative	Exquisitely beautiful	N/A

Table 2-9. Brand-specific features on the IS250 proposed by Lexus.

Model-specific features	intention
Twin-barrel Headlamp	- Expressing aggressiveness - Disposition the lights higher than the grille to express speed and agility
Grille	- Signifying the IS250 as within the sports vehicle range by Lexus - Vertical elements in the grille is designed to compliment the coachwork
Door mounted mirror	- Expressing Sportiness - Enhancing the narrowing belt-line along the car
Coachwork	Expressing a Clean and Muscular line continuing from bonnet onto A-pillar
LED tail lights	- Expressing uniqueness and unexpected sporting design, and intriguing elegance

Table 2-9 lists the model-specific features of the IS250 and these features are illustrated in Figure 2-19. Compared to the design intents of the 320i, the IS250 has a smaller brand-specific and model-specific design vocabulary.

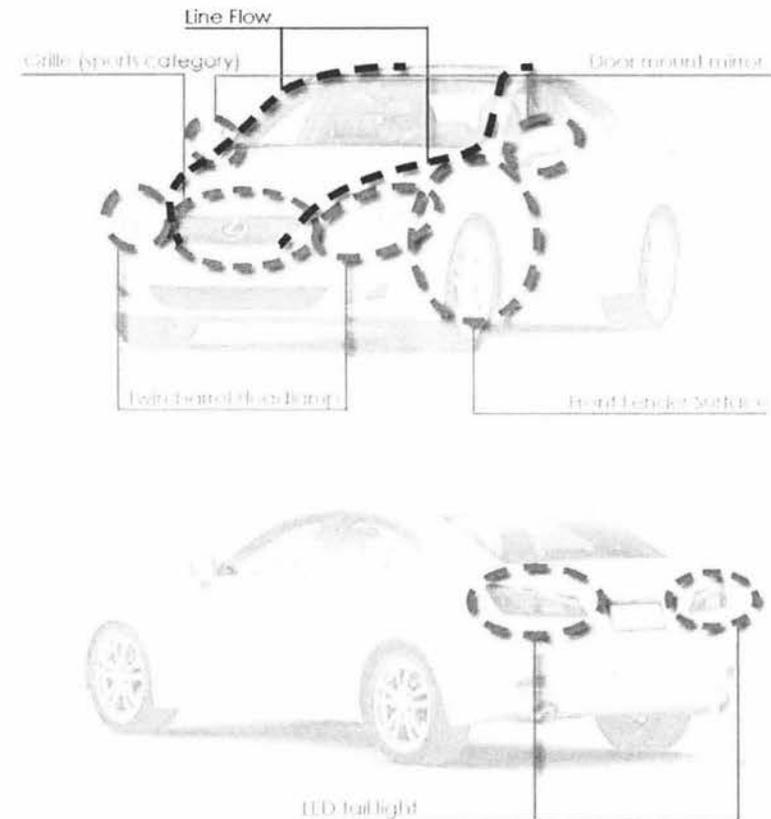


Figure 2-19. Indications of model-specific features on the IS250.

From a review of the IS250 featured on a well-known automotive design website [Hull, 2005, para.1], the front and rear of the IS250 has been criticised as highly complex. However, in the design statement from Lexus this visual appearance has been described as “intriguing elegance”. Next the commentator described the body section of the IS250 as too plain with too little surface interest on a relative large surface plan with a narrow bone line; the wheel arches were pulled too tight and achieved a low stance visual appearance; the tail lights were criticised as being too plain and, to certain extent, the lights appeared dated; and rear bumper was visually too heavy. Finally, the door mounted side mirror, a model-specific feature design of the IS250, appeared to the critic as proportionally too big in its design context [Hull, 2005, para. 6].

“L-Finesse is a tidy adjective being used to describe finished products. But on its own, the necessary depth is missing to convincingly commence the birth of one.” [Forrest, 2005, para. 9]

The quote above from the design review [Forrest, 2005] suggests that the philosophy - and hence the new designs developed so far - lacks coherence in physical design language to form an effective gestalt experience. This perspective is also reflected in the lack of brand-specific and model-specific elements, including design aspects on the composition, complexity and coherence of the design as a whole. Furthermore, the

relationship between the design of the IS250 and L-Finesse philosophy was questioned in this essay [Forrest, 2005: para. 5]. This is based the argument that the emphasis on aerodynamic form and surface is a common practice amongst car designers and engineers and not unique to Lexus in L-Finesse.

Summary of findings – design intent of the 320i and IS250

Table 2-10 is a summary of key findings in this section on the brand values and identities of BMW and Lexus. Referring to the literature review, there are various levels of perception and interpretations of the product forms. The design of the 320i/IS250 will be analysed and examined as part of the primary research using the VPE modes as a basis for the research design and the comparative analysis findings.

Table 2-10. Summary of findings on the 320i/IS250 based on secondary research.

	BMW 320i	Lexus IS250
Country of origin	German	Japan (by Toyota)
History as premium car brand	Long Established in most parts of the globe	Short Established in American market
Main branding expression	<i>"uncompromised, authentic, and exhilaration to drive"</i>	<i>"the pursuit of perfection"</i>
Design intent in different markets	Not specific	Global consumer recognition
No. of brand-specific features	6	2
No. of model-specific features	7	5
Existing reviews on the design	- BMW's new design language relates to contemporary design trend - commented on that BMW is leading the trend in automotive styling	- Design of Lexus models overshadowed by its technological advancement. - criticisms on the design of the IS250

2.3 Background study – markets

To understand how, as luxuries goods, the 320i and IS250 are perceived, and the meaning they have to consumers in different markets, this section focuses on exploring cultural significance in consumer perceptions towards premium products. This secondary research focus on premium products rather than premium cars is due to the lack of comparative literature on the consumption trends of premium cars.

The term "**Value**", in the context of this research, relates to a **set of standards which is highly regarded by a person or business entity**. This is further defined by the following quote from Oxford English Dictionary:

"The principles or standards of a person or society, the personal or societal judgment of what is valuable and important in life." [Thompson, 1996: 1017]

The concept of people's affective emotions occurring from consuming luxury goods is an established theory in Western culture [Campbell, 1987; McCracken, 1988]. This consumption pattern is now a worldwide phenomenon but differs in different cultural contexts with different consumption motives [Belk, 1988b; Wong and Ahuvia, 1998:424]. The popularity of luxury product consumption in most parts of the globe creates a huge international market, with an established value of around \$60 billion based on the study of 14 luxury product categories by McKinsey & Co back

in 1991 [Dubois & Duquesne, 1993]. Today, this figure is likely to have increased considerably.

Figure 2-20 is a study of the characteristics described in Table 2-11, of various European and Asian countries by Schwartz (1992) with the characteristics and country of study highlighted in two colours. This study by Schwartz (1992) suggests that New Zealand and Taiwan as two markets have opposite market characters due to differences in values.

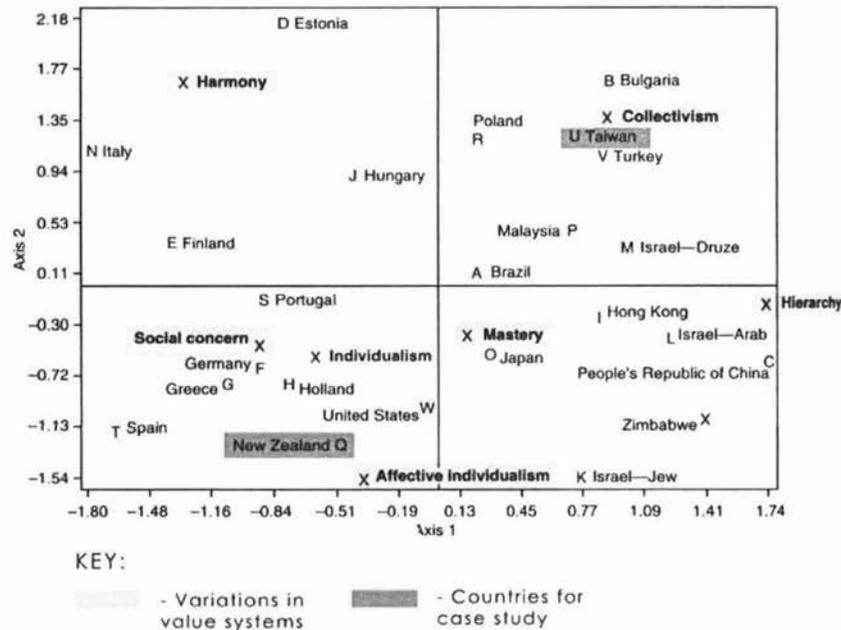


Figure 2-20. Cultural characteristics of various countries including New Zealand and Taiwan [Schwartz, 1992].

Table 2-11. Summary of consumption behaviour in Australia and New Zealand. [Schwartz, 1992].

Categories	Definition
Collectivism	This represents values where the interests of the person are not viewed as distinct from the group; the values emphasise the maintenance of the status quo, propriety and avoidance of actions that might disturb the traditional order.
Intellectual and Affective Individualism	Values that view the person as an autonomous entity entitled to pursue his or her own goal. Intellectual individualism emphasises self direction, with flexibility of thought and feelings. Affective individualism is concerned with stimulation and hedonism and may be a polar opposite to collectivism.
Hierarchy	Representing individual values associated with humility and powers that emphasise the legitimacy of hierarchical roles in society.
Mastery	Concerns over the social environment through self assertion. It represents active efforts to modify one's surroundings and get ahead of others through emphasis stimulating activity and changing social behaviour.
Social Concern	Value express concern for the welfare of others and oppose the hierarchy and mastery types of values.
Harmony	Emphasis on harmony with nature together with other aspects such as the 'world at peace' and 'social justice'.

Individual members are the basis of societies, and hence influence the overall culture of a region or a country. It is critical to understand the concept of self-awareness and the interactions between individuals to understand a culture [Markus & Kitayama, 1991]. Previous research [Lebra, 1992; Markus & Cross, 1990; Markus & Kitayama, 1991] categorized the concept of self-awareness into: *inner private self*, including emotion, memories, or desire; and *outer public self*, which focuses on social representation and acceptance. Furthermore, referring to Figure 2-21, Western culture is described as an *independent* self concept, while Eastern Confucius culture is *interdependent* based. Referring back to the two categories within self-awareness, the *independent* oriented culture focuses more on the *inner private self* while the *interdependent* culture is more concerned with the *outer public self*. Referring to Figure 2-21, the researchers further mapped out the parallel market characteristics in both cultures and different traditions.

With the established cultural value differences between the two markets in this study, New Zealand and Taiwan will be individually discussed with literatures focusing on the market characteristics. Interestingly, based on non-empirical sources, there is a pattern in the relationship between people's sensitivity in noticing details, and their written language. There is also a pattern that Asian designers are more sensitive to details, and in comparison, the Western designers tend to focus on a design holistically.

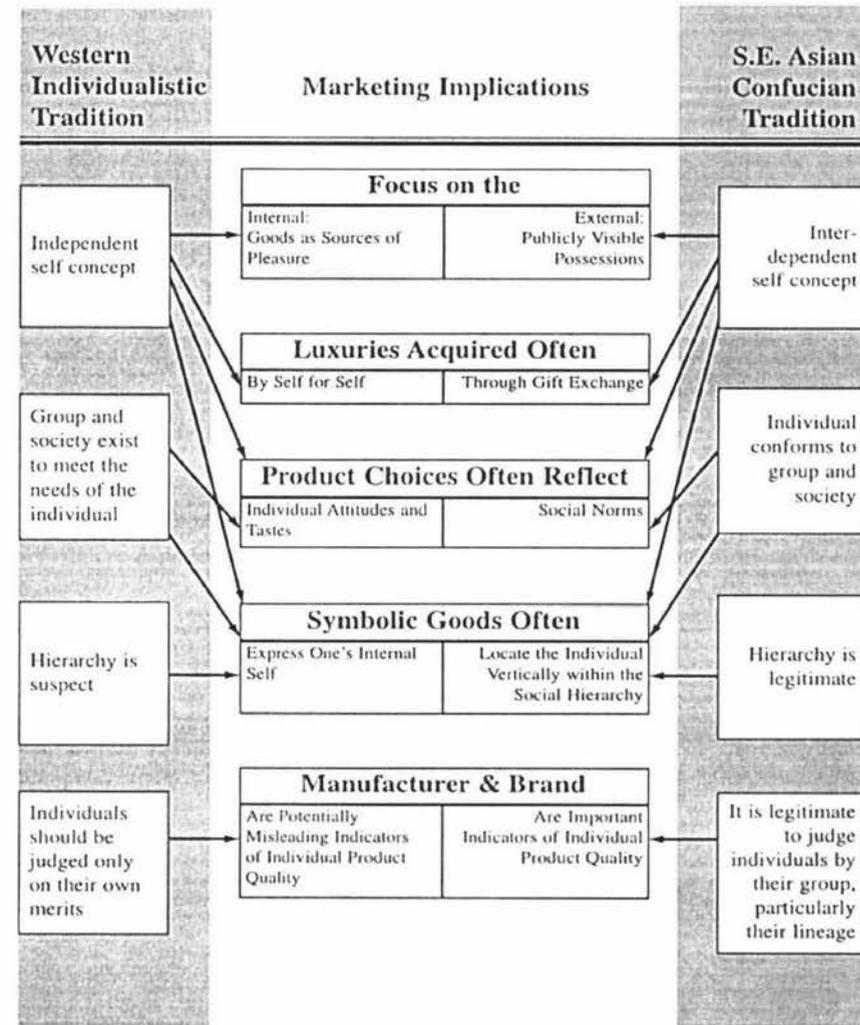


Figure 2-21. Parallel characteristics in culture and tradition between Western and South-East Asia [Wong and Ahuvia, 1998:429].

2.3.1 Culture and history of New Zealand

This section explores the historical background of New Zealand that forms the cultural context of New Zealand as a market. New Zealand is a relative young nation with a population of 4.2 million, with Maori people inhabiting the land before the European settlement. With the establishment of European settlements the influence of Western culture was established in the country. Despite the conflicts between the Western and Maori cultures, New Zealand today is internationally regarded as a Western country, and part of the Commonwealth system. The opening of the nation to immigration has led to a growth in population and a diverse culture within the country. According to the 2006 census, 22.9% of the New Zealand's citizens were born overseas [Statistics New Zealand, 2006].

Like most Western nations, New Zealand has been affected by World War II, the 'baby boomers' and 'Generation X' in terms of the attitudes towards society and personal values [Lawson et al, 1996:37]. Unlike their parents, more emphasis on education is placed on the 'Generation X' for competitiveness in job searching and career development. This results in delaying the family establishments of marriage and child rearing, and stimulates stronger consumption power.

2.3.2 Consumption trend in New Zealand

Although New Zealand is categorised as a Western country with majority of the population as 'Caucasians', there are certain degrees of difference in culture due to the country's compact size and broad social and economical profiles. This diverse mix of cultural and social groups make New Zealand a common testing ground for new products and technology, often placing it ahead of Australia on the adoption of new technological products [Lawson et al, 1996:128]. Compared to Australia, New Zealand has a stronger British influence and this cultural aspect contributes to consumer preferences in consumption [Lawson et al, 1996:126]. Furthermore, the value of competitiveness is weaker in New Zealand compared to Australia; for example, when the same comparative advertisements are played in Australasia, they are less effective in New Zealand [Lawson et al, 1996:127].

In a study conducted in 1989 by the University of Otago on consumer behaviour and attitude differences [Lawson et al, 1996:108] the outcome showed that Caucasian place more emphasis on sports, overseas news, and personal conduct. In contrast, the Maori and Pacific Islander groups have stronger family-oriented values. These self-focused consumer attitudes support the theory of differences between the independent tradition in Westerners and interdependent values in Eastern culture. The

consumption preference and attitude also matches with cross-cultural comparisons on cultural values.

2.3.3 Culture and history of Taiwan

Taiwan is a young Mandarin speaking country with a population of approximately 23 million. Today, Taiwan is the only Chinese-originated country that still uses Traditional Chinese characters on a daily basis. Referring to Figure 2-22, the Traditional Chinese character is the most original written Chinese format, and hence is more complex in its details. This research seeks to examine if consumers based on a different language structure are more sensitive in perceiving visual features.



Figure 2-22. Word "Orchard" in Traditional Chinese (Left) and Simplified Chinese characters (Right).

As the Republic of China, the history and political unstableness of Taiwan has in turn influenced the unstable economical environment today. This economic instability and preservation of traditional Chinese philosophy (Confucius), has strong influence on the capitalist-focused culture and education system in Taiwan. Appendix D presents the background research and literature review on the Culture and History of Taiwan. Today,

the cultural characteristics of Taiwan are still influenced by the Confucius philosophy. The values that influence the market characteristics are illustrated in Figure 2-21 [Wong and Ahuvia, 1998].

2.3.4 Consumption trend in Taiwan

Due to the lack of studies on consumer trends in Taiwan, a range of literature has been reviewed to offer a more comprehensive perspective. These include media studies conducted on ads to reflect the independent and interdependent value of Western and Eastern cultures.

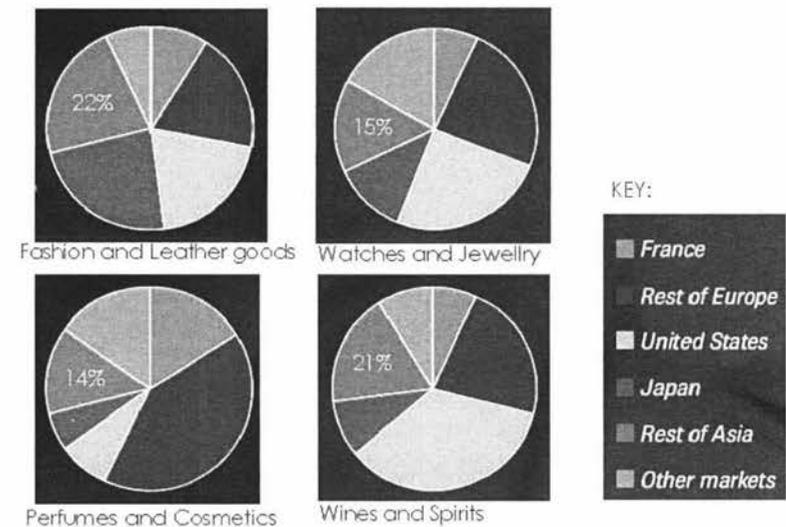
As Brannen (1992a) pointed out, the consumption behaviour in Asia is commonly perceived by Westerners through their own materialist value, with little understanding of the cultural values of Asia. This means that cultural values greatly influence people's understanding, interpretation and perceptions in their daily lives. However, despite similarities in products between Western and Eastern countries, in its social aspect the motivations for consumption are rather different. This relates to the meaning of certain products to the consumers, which are deeply rooted in one's local and cultural context and are hard to convey [Linton, 1936].

The study of Western and Eastern conspicuous consumption by Wong and Ahuvia in 1998 pointed out that East Asia is becoming, or has become, the central focus in the global high end luxury market [Wong and Ahuvia,

1998:242]. This is because the Asian market contributes to approximately 50% of the export figures for one of world's biggest French luxury brand groups, MHLV - Moët, Hennessy, and Louis Vuitton [Wong and Ahuvia, 1998:242]. There are also numerous other luxury brands from France, and other countries such as Germany, Switzerland, Italy, United States of America, and United Kingdom. Furthermore, this figure does not represent total Asian consumption, as it excludes Asian customer purchases in retail outlets outside Asia.

Figure 2-23 draws from the latest global market sales revenues of LVMH group in 2007 on four major luxury goods categories. Interestingly, accessory products that communicate their branding externally through product material and logo have a higher sales figure in Asian countries. These include fashion, leather goods, watches, jewellery, and alcohol; with comparisons drawn with one other category of consumer goods, perfume cosmetics. Although there are other factors which influenced the consumption pattern, compared to makeup or skincare products, items such as bags and watches are common accessories that have a longer product life and communicate their values externally. This finding supports the *interdependent and independent* cultural differences in luxury goods consumption and preference. For example, an inner-self focused person would be likely to prefer skincare products for him/herself rather than external goods, such as a bag which she or he would use for a certain

period of time. One other consideration is that (with the exception of Japan and Singapore) the majority of countries in Asia are still developing or categorised with third world country status and lower average incomes. Yet, people in these countries still constitute a large market sector in the high end fashion accessories categories.



Figures based on The LVMH sales revenue at June 30, 2007
By geographic region of delivery

Figure 2-23. LVMH sales revenue in first half of 2007 [Louis Vuitton . Moët Hennessy, 2007:6 - 9]

According to Cheng and Schweitzer's (1996) findings on advertising in the United States and China, American ads stress the experience of interacting

with the products, and Chinese ads have less emphasis on the affective experience. From another study by Tse, Belk, and Zhou (1989) which focused on Hong Kong (as one of the most westernized regions in Asia) China and Taiwan, it was found that television ads in Hong Kong focused more on the process of experiencing the products than ads in China and Taiwan. This is also evident from a media studies exercise on sports car ads at Auckland University. This found that Lexus focuses its particular ads on the car's technological performance, while European brands such as BMW strongly emphasised the driving and riding experience.

With behaviour defining one's own identity and values through a collective group environment, it is essential for the majority of the East Asians to obtain luxury goods to reflect one's identity, or to be socially appropriate [Miller, 1984]. Within the branding choice, this interdependent culture also reflects the purchasing decisions involved in the product's manufacture and country of origin. As Han & Schmitt (1997) pointed out, the Asian community places more emphasis on the country of origin as a way of associating with a specific group. Based on the researcher's own observation, a lack of cultural identity and confidence in the Taiwanese has greatly contributed to the phenomenon of favouring European, Japanese, and recently Korean brands and style, over locally produced goods.

Hung's (2006) recent study on the difference between the Taiwanese market and the global market in high-end fashion brands further supports the analysis by Wong and Ahuvia (1998) on Western and Eastern cultures. In Hung's study, the researcher commented that although the Taiwanese culture is changing, it is still currently a family and social group orientated culture [Hung, 2006:481]. Taiwanese consumers are less sensitive in their appreciation of the design of a garment as a work of art, but are more aware of the value it represents and its purpose to serve as a reinforcement of one's social status. In the three case studies on the popularity in Taiwan of the international fashion brands Gucci, Alexander McQueen and Issey Miyake's, Alexander Mc Queen was the least successful brand in Taiwanese market due to its *independent* orientated brand value and thus the low degree of recognition.

2.3.5 Summary of finding on market backgrounds

Table 2-12 is a summary of the background of New Zealand and Taiwan in the political, social, and cultural context. This is extracted from the study conducted by Guliz and Russell in 1995 on the level materialism in different cultures from a Western perspective; New Zealand was one of twelve countries studied. The countries studied by Guliz and Russell [1995] were mainly Western-orientated along with a few Western-influenced countries with strong traditional cultures, such as India, Turkey, and Israel.

Table 2-12. Comparative background summary of New Zealand and Taiwan.

	New Zealand	Taiwan
Main ethnic group	European origin (English, Scotland, Ireland)	Chinese origin (Mainland China)
Language structure	English	Mandarin
Political Status	Stable and democratic	Unstable and democratic
Population change	Immigration	Emigration
Time*	P-time – more relaxed attitude towards time	M-time – Utilising time as much as possible for efficiency
Thought and communication pattern*	Direct/linear	Indirect/circular
Religion*	Secularised/Christianity	Confucius values as part of educational material
Competitiveness*	Low	Moderately high
Social Behaviour*	Independent	Interdependent
Value*	Affective individualism and low hierarchical order	Collectivism and high hierarchical order

In addition, Table 2-13 summarises the findings on New Zealand and Taiwan's cultural values and consumption patterns. Both New Zealand and Taiwan have weaker cultural identity with their short histories compared to other European and Asian countries, such as Japan and Korea. However, the value of individualistic opinion and behaviour in New Zealand contributes to the lower degree of conspicuous consumption. The general trend in the New Zealand market could be characterised by high individualistic values and low levels of hierarchical order, which means less

consideration on how people perceive an individual. The New Zealand market values solidity and modesty in products and this could be contributed by a product's country of origin or word-of-mouth publicity. In contrast, the character of the Taiwanese market is one of more conspicuous consumption behaviour contributed to by the collective value in local culture and emphasis on portraying success through materialistic gain. In this aspect, goods in Taiwan rely heavily on marketing strategy and how a product could portray the achievement and social economical status of its user.

Table 2-13. Findings summaries on New Zealand's and Taiwan's cultural identity.

Key overall findings	
Countries with dynamic social and economical environments have the strongest level of materialism. (Includes changes in cultural, society structure, political, or modernisation through extensive emigration or immigration flow.)	
Less developed countries show similar patterns but a stronger level of materialism	
New Zealand	Taiwan*
- Long history of opening immigration and intake of refugees - Diverse culture contributed to the phenomenon in the lack of cultural identity	- Has large amount of emigration due to the unstable political environment - Starting to emphasise on local culture and identity in recent years
- Not Applicable	- developed country with lower than average income compared to most of the Western countries
Finding conclusion:	
- The notion of seeking identity through materialistic means due to the lack of confidence and identity in individual and society	

*country not studied in the research by Guliz and Russell (1995).

2.4 Literature review on research methods

This section discusses the research methodologies adopted by Warell (2006) for conducting his research on cultural-related differences in the meaning and perception of automotive design. Unlike research methods in the field of science or engineering, the results of affective design research are qualitative due to the subjective nature of human perceptions and interpretations. Therefore, this review of current research methods is limited to the affective design research studies. Although academically there are various studies on building brand identity through product design, there are very few case studies that focus on meaning and perception from the consumer's perspective [Warell, 2006; Fjellner, Stridsman-Dahlstrom, 2006].

In his research design, Warell (2006) adopted a semi-structured interview approach with a visual verbal questionnaire. This adoption of qualitative methodology allows a greater focus on the data collected to fulfil the research aim. As indicated in the literature review section discussion, the selection of a framework for this study on perception and meaning of products, Warell's framework was found to be highly comprehensive. Warell's questionnaire research method approach contains several sections that originate from the categories in his framework. This is to ensure that data collected are appropriate to the research aim, and that questions are phrased in a way that would minimise ambiguous responses,

and avoid the researcher's personal interpretation. The interview is to ensure that the participants understood the questions and also for the researcher to fully understand the written responses.

Specific research design techniques were adopted by Warell when designing the questionnaire. For instance, the use of a visual analogue scale (VAS) instead of a quantitative numerical scale to indicate the participant's level of preferences would allow more flexibility and accuracy on the level of agreement or disagreement [Gould et al, 2002]. However, the use of a VAS as a tool might contribute to participants giving less extremely high or low rankings. Furthermore, most of the ranking questions allow participants to leave a written comment to further clarify their marking for the questions.

In summary, the questionnaire method adopted by Warell (2006) in his Paris Auto Show research is more focused on finding data specifically on the research aim and is more flexible in conducting the research. This section reviewed the research methods relating to the research on human perception of products, the specific method design for conducting the primary research will be introduced in Chapter 3.

Chapter 3. METHODS – PRIMARY RESEARCH

Following the review of research methods in Section 2.4, this chapter introduces the primary research method design for this project. Adopting the study method used by Warell (2007), this user-focused approach seeks to gain more understanding of the research questions. To build on the VPE framework [Warell, 2007] by examining consumer perception and meaning of cars, this research will be conducted through a case study on differences in consumer perception. The case study will be conducted in a visual-verbal questionnaire format through a semi-structured interview in two different markets. To ensure differences in market characteristics for a meaningful case study, New Zealand will be studied as an example of a Western country and Taiwan as an Eastern country. The selection of these two countries is supported by the background study on markets in Section 2.3, which explored the history, culture, and consumption pattern of these two countries. The questionnaire was translated into Mandarin with English sub-text for the Taiwan participants.

With reference to the secondary research and analysis on the 320i and IS250, BMW and Lexus are ideal companies for this case study comparison due to their differences in branding and design focus. BMW is a well-established brand with a long history and design-orientated focus. Lexus is a relative new brand to both countries in this case study and the

company emphasis is on innovative engineering and less on exterior design.

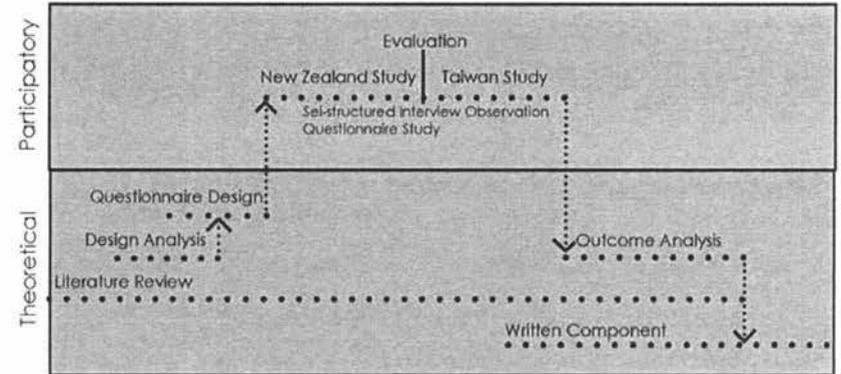


Figure 3-1. Timeline of the primary and secondary research process.

Although it would benefit the automotive design industry, the purchase consumer group is not the focus in this study due the difficulties in accessing premium car dealers' customer databases and their customers' potentially biased preference and opinion of its preferred brands. The question on personal income is not included in this questionnaire due to a potential cause of discomfort for the participants. Furthermore, the annual income of a person does not fully reflect one's savings, purchasing ability, or consumption value. The target consumer group has expanded, as car

companies today offer competitive hire purchase schemes to boost their sales and hence make the premium cars more affordable than before. By comparison, car enthusiast participants with design knowledge would be a more appropriate target group for the purpose of this research. The selected participant groups for this research are, therefore, car enthusiasts who have strong interests in cars but are not necessarily members of the potential purchaser group.

To locate the car enthusiasts as the participant group, this primary research was conducted at an automotive-related event in both countries. The researcher could not identify any auto-related events with the same content in both countries due to the cultural and economic differences, and timeframe for this research. Due to this difficulty, the New Zealand study was conducted at a classic car show and the Taiwan study was conducted at a modified and car parts expo. Both venues offered the opportunity for locating people who are interested in cars; furthermore, both venues required admission fees and this further suggested the likelihood of locating car enthusiasts as participants in the venues.

3.1 Design analysis on the 320i/IS250

As indicated in Figure 3-1, analysis on the visual format of the 320i/IS250 is required for designing the field research questionnaire. The findings from this section are critical for the analysis and discussion between the intended

meanings embodied in the features and how these signifiers are perceived by consumers in different markets. This visual format analysis will be based on the existing automotive design focuses of: 1) proportion; 2) line; 3) surfaces; and 4) details; and will be conducted in the structure used by Warell [2001] displayed in Figure 3-2.

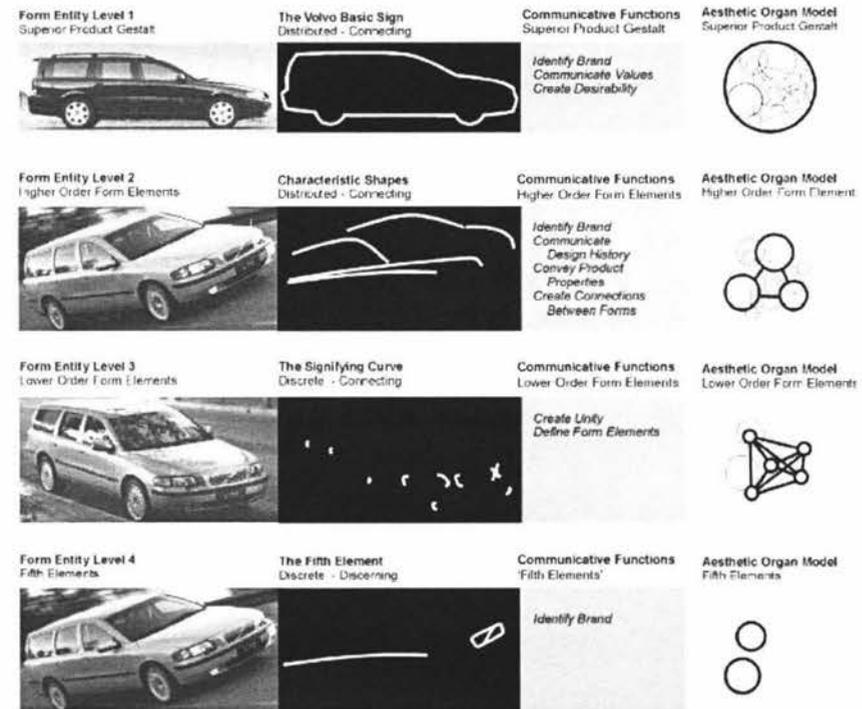


Figure 3-2. Visual format analysis structure [Warell, 2001:113]

The design of the 320i/IS250 will first be analysed on their formal aesthetics to understand the relationship between the primary and secondary form elements [Warell, 2001]. This will allow a basic understanding of the level of coherence between the form elements, which will allow further analysis to determine whether stronger overall design coherence contributes to the level of visual experiences. Once the formal aesthetic language has been analysed, the investigation moves onto the meaning-related internal perceptions based on the research from BMW/Lexus' marketing materials. Establishing the proposed expressions will allow the researcher to assume a relationship between the embodied Gestalt principles in the expressions, based on the analysis of the descriptions of these terms. This assumption of the relationship between the expression terms and embodied Gestalt principles will allow analysis and discussion on the features indicated by consumers, and an examination of the relationship between the two. Through understanding the relationship stated above, implications for design could potentially be made. Lastly, this analysis focuses on the brand-specific and model-specific features proposed by BMW/Lexus for a comparative analysis between the intended signifiers, and to determine whether the meanings intended are perceived in the same manner.

3.1.1 Design analysis of the 320i

This section focuses on understanding the design of the 320i, what design elements contribute to the visual appearances of the 320i, and how this design conveys the brand identity of BMW.

VPE: Appreciation

Appreciation in the VPE framework in the context of this research focuses on the perception of the visual elements of the cars rather than on meaning interpretation. A wide range of visual elements were identified including the use of Gestalt theory to examine the key features of the 320i as a visual composition regardless of any associated meanings. Figure 3-3 analyses the formal aesthetics of the 320i, based on the four design focuses stated earlier, for a level of overall consistency between the primary and secondary elements of the design as a whole. As displayed in Figure 3.2, the formal design language consists of a series of lines that define the characteristic shape of the car. Repetitions of these lines along the form on the sides are designed to create a strong visual experience [BMW International, 2007]. Furthermore, on level three of the analysis, it is evident that both the front and the rear end of the 320i consists of strong groupings of line transitions, which creates a strong kinship between the visual elements when perceived as a whole.

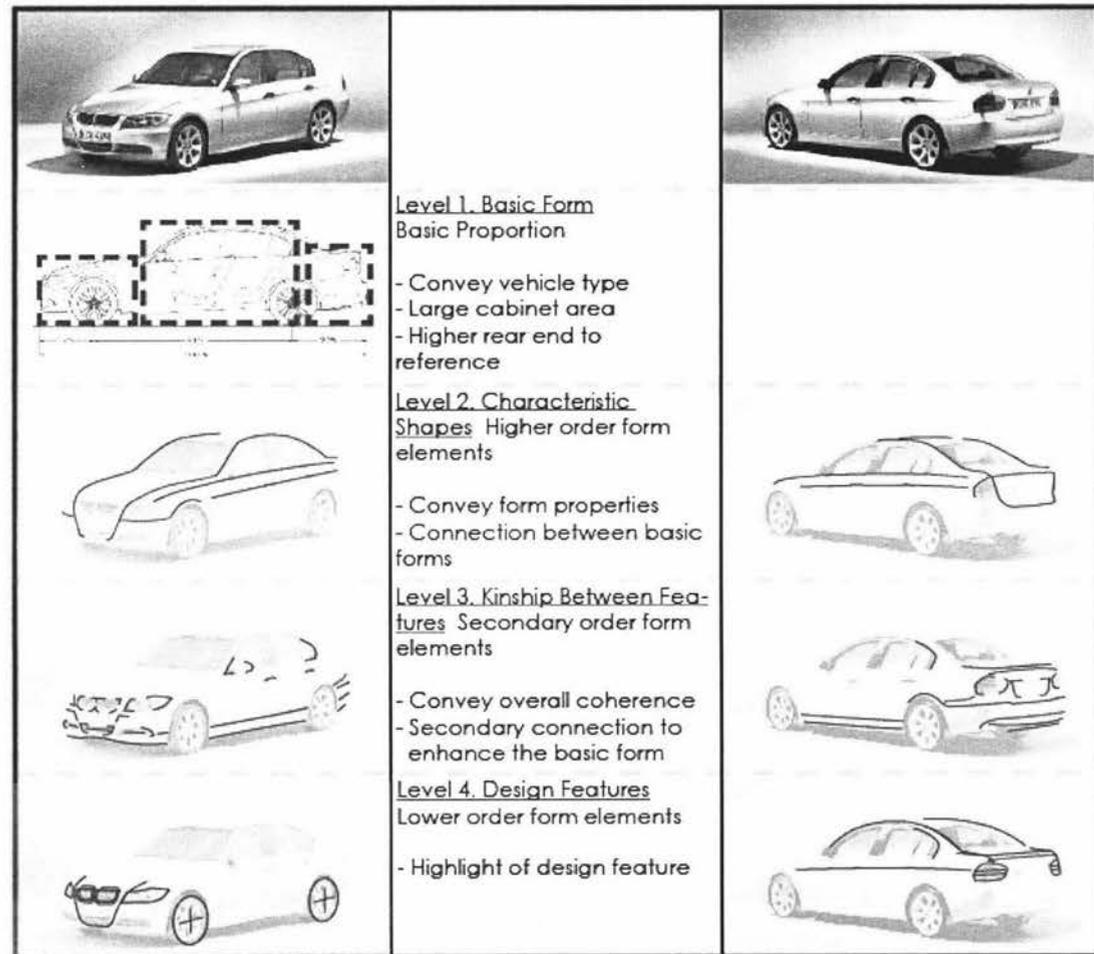
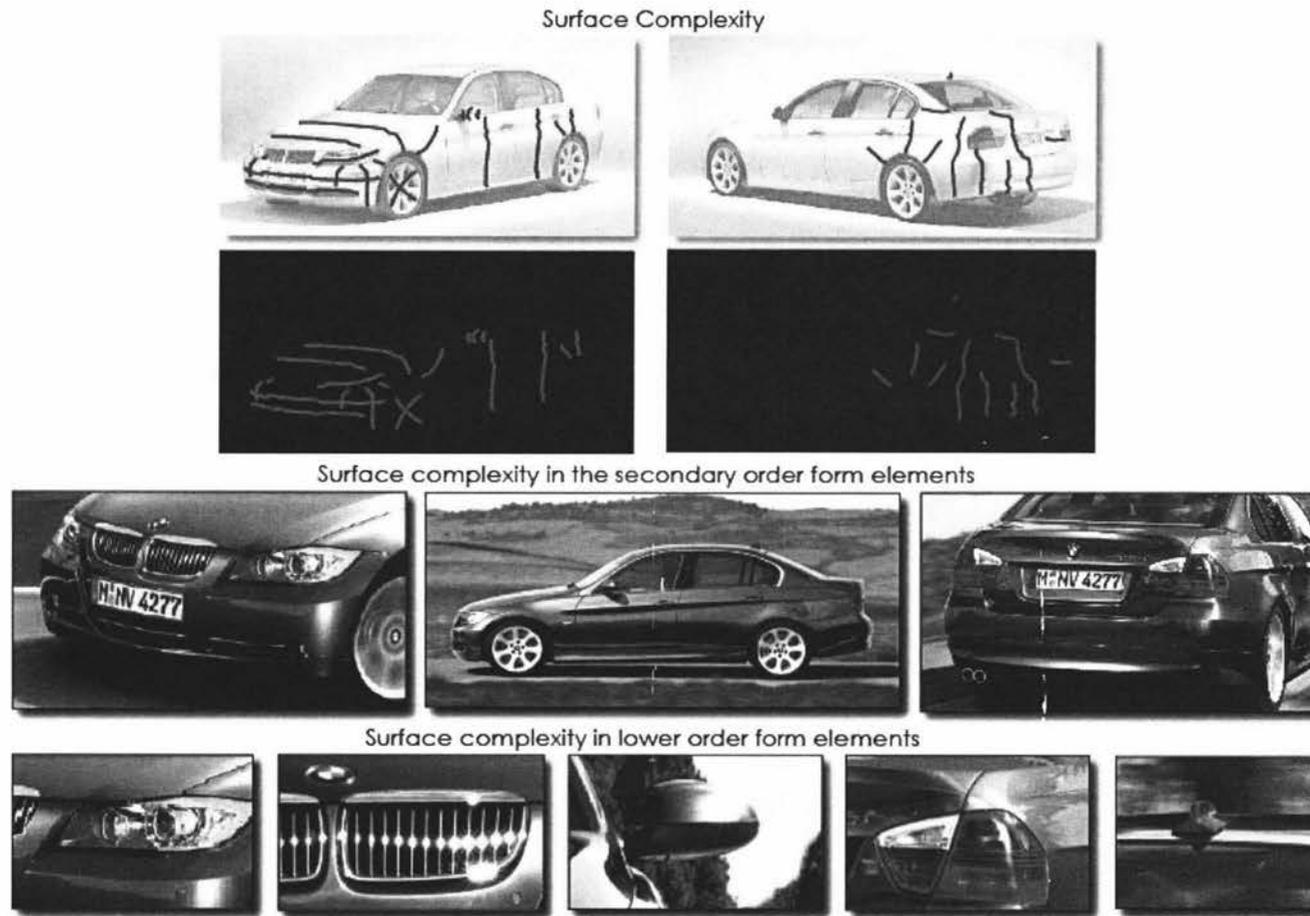


Figure 3-3. Summary of visual elements of the 320i based on automotive design conventions [based on analysis structure by Warell, 2001].



* Images extracted from official BMW 3 series Catalogue.

Figure 3-4. Analysis of the surface tension on the BMW 320i to understand surface complexity.

The surface transitions of the 320i is illustrated in Figure 3-4 with lines indicating the surface tension through the use of concave and convex changes in vertical and horizontal directions. The surface complexity of the 320i is described by BMW as it 'catches the light', making the car appear to be in 'constant movement'. The element and composition of the 320i's Kidney grille and Quad headlights are highly complex, along with the other brand-specific features such as the 'Flame surfacing' involving complex surface transitions. The double grille consists of layers of details and is set back from the front to emphasise the shape of the grille. As part of the research aim is to examine if the perception of features are as intended, the brand-specific and model-specific features will be examined in relation to the visual complexity of composition.

Visual analysis of the 320i – VPE: Association

Association in the VPE framework focuses on the meaning-related signs in products including the brand-specific cues and proportional stance of the car body. As indicated in Section 2.2 on design intent of the 320i and IS250, product type recognition could be achieved through the proportion and stance of the car exterior. Table 3-1 indicates the brand-specific and model-specific features of the 320i that are illustrated in Figure 3-5. To understand the visual properties of these features, an assumption is made on each feature relating them to the Gestalt principles. This assumption,

based on the feature's formal aesthetics, will allow an understanding of how these features are incorporated into the primary and secondary form elements discussed earlier in this section. This analysis of the formal aesthetics of the features is appended in Appendix E and gives a basis for the comparative analysis of the primary research results. This could also possibly provide an explanation between the formal aesthetic attributes and consumer perceptions of the field research outcome.

Table 3-1. Brand-specific features of the BMW 320i with official intentions or descriptions [BMW USA, 2007].

Formal Aesthetic features	Brand-specific Features	Intentions	Gestalt Principles	Physical attributions
	Aerodynamic Design	Provides a <i>flowing aesthetics</i>	Similarity. 'The good curve'	
	Flaming Surface	<i>expressive and entertaining aesthetics</i>	Similarity.	
	Hofmeister Kink	<i>visually attractive and distinctive</i>	'The good curve'	
	Kidney Grille	symbolic BMW feature	Similarity. Symmetry. Enclosedness	
	Roundel Logo	Logo representing the company's heritage	Experience	
	Quad Headlights	Express <i>Elegance and powerfulness</i>	Enclosedness. Symmetry. Area. Proximity	
	Model-specific features			
	Coupe-like DLO	Express Sportiness by referencing a Coupe-like curve that is incorporated with the Hofmeister Kink	'The good curve'	
	Composition of Down Road Graphic	Visually enhancing Kidney Grille	Common movement. Proximity. Symmetry	
'Whiskers' chrome around Kidney Grille	Visually enhancing Kidney Grille	Proximity. Common movement		
Larger Wheels	Express sportiness with larger wheels	Similarity		
Bone line	Visually enhance the length of the car through flow of line along the side	'The good curve'		
Corner on tail	Visually widen the rear of 320i for a sporty stance	-		
Tail lights	Visually widen the rear when the lights are on in the dark	Area. Enclosedness		
Shark Fin Antenna	Expressing dynamic and aggressiveness	Experience		

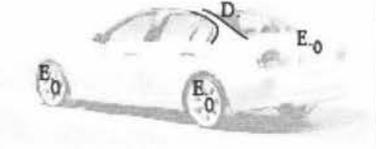
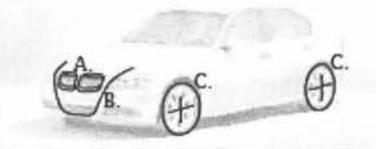
			
	<p>Brand-specific features Symbolises Brand Image</p> <p>A. BMW Logo B. Kidney Grille C. Guard-Headlights</p>		<p>Brand-specific features Symbolises Brand Image</p> <p>D. Hofmeister Kink E. BMW Logo</p>
	<p>Model-specific features Convey Individuality of Model</p> <p>A. Chrome Details to Enhance Kidney Grille B. Intergrated Airdam with Grille C. Large size wheels</p>		<p>Model-specific features Convey Individuality of Model</p> <p>D. Coupe-like curve of DLO E. Shoulder line F. Tail Lights Emphasis Horizontality G. Corner treatment at Rear</p>

Figure 3-5. Table illustrating the visual signifiers intended by BMW..

FIGURE 3-5. BMW 320i – FRONT VIEW (PART 1)

This research sets out to test whether the brand-specific features have been successfully perceived as BMW-only, and how they have been interpreted by consumers under the keywords. Referring to Figure 3-5 illustrating the brand-specific features proposed by BMW, it is apparent that the design of headlights and front grille are the most prominent brand-specific aspects in the design of the 320i. They are also the most obvious elements as they are positioned in the frontal area of the car and likely to be prominent due to their strong referencing of Gestalt principles. The following diagrams examine the consistency and use of the grille and headlights across BMW models as brand-specific features. Listing from the top to bottom are the grille/headlights from BMW's lower priced models to its higher retail price sports car model. The left column shows the feature in black and white while on the right the same images are lightened with coloured lines to illustrate the language of element composition. The black lines are used for identifying the line transition and the red lines identify the quantity and direction of elements. The M series is not included in this analysis as it is an enhanced variation of various BMW models. As BMW's signature feature, the Kidney grille has been greatly modified under the new design direction, from the positive element to a semi-negative element. Some critics comment on this as moving away from the original BMW design philosophy. The primary research outcome will identify if the Kidney Grille is still successfully perceived by consumers in model *recognition* within the new design language.

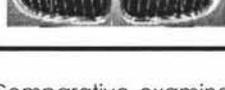
		Consistency in Composition			
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
1 Series			<input checked="" type="checkbox"/>	1 Series	
3 Series			<input checked="" type="checkbox"/>	3 Series	
5 Series			<input checked="" type="checkbox"/>	5 Series	
6 Series			<input checked="" type="checkbox"/>	6 Series	
7 Series			<input checked="" type="checkbox"/>	7 Series	
X3			<input checked="" type="checkbox"/>	X3	
X5			<input checked="" type="checkbox"/>	X5	
Z Series			<input checked="" type="checkbox"/>	Z Series	

Figure 3-6. Comparative examination the Kidney Grille as a brand-specific feature adoption across BMW models.

Other than the outer shapes and the elements within the features, Figure 3-6 and 3-7 also has a series of brown lines representing the flow of lines near the headlights. This aims to examine the relationship between the flow of line and the shape of the headlights; that is, the level of integration between the headlight as a feature as the body of the car. Although some of the shape and line transitions are inconsistent, the shape and secondary element compositions of all the headlights are fully integrated into the body work. The overall adoption of brand-specific features is consistent amongst BMW models. The brand-specific features will be summarised together with the brand-specific features at the end of this section in the structure of the VPE framework for a coherent overall understanding on the design of the 320i.

Visual analysis of the 320i – VPE: Comprehension

The Comprehension mode in the VPE framework focuses on any values, ideas or notions that are intended to be conveyed through the design of the 320i. The descriptions of these official expressions with the correlated Gestalt principles are listed in Appendix E. The expressions and correlated Gestalt principles will be compared to the field research outcome in order to identify any pattern in the markets that exists in the types of features comprehended or associated with the expressions. It will also identify any relationship between the analytical principles assumed with the expression and the features indicated under that specific expression.

		Consistency in Composition			
		Yes	No		
1 Series			■	1 Series	
3 Series			■	3 Series	
5 Series			■	5 Series	
6 Series			■	6 Series	
7 Series			■	7 Series	
X3			■	X3	
X5			■	X5	
Z Series			■	Z Series	

Figure 3-7. Comparative examination of the Quad Headlights as a brand-specific feature adoption across BMW models.

Design analysis of the IS250

This section focuses on understanding the design of the IS250 in relation to the L-Finesse design philosophy, and examines the level of cohesiveness between Lexus' signature brand-specific Arrowhead Motif. Just like the analysis on the 320i discussed earlier, this section will also investigate what design elements contribute to the visual appearance of the IS250 and how this design conveys the brand identity of Lexus.

VPE: Appreciation

A wide range of physical design attributes are identified in this analysis, in relation to the Gestalt principles, to examine types or strategies conducted by Lexus in the design of the IS250. Figure 3-8 displays the analysis of the IS250 based on the four main design criteria in automotive design. Compared to Figure 3-3 on the analysis outcome on the 320i, the IS250 has weaker primary and secondary form elements, as the characteristic shape is less continuous and the kinship between visual features is weaker because it is less concentrated compositionally. As consumers could appreciate visual features based on their formal aesthetics instead of the meanings associated with the features, this design appreciation analysis examines the key features of the IS250 emphasised as brand-specific and model-specific. Table E-3 in Appendix E lists the key visual features identified officially by Lexus with its features' relating to the Gestalt principles.

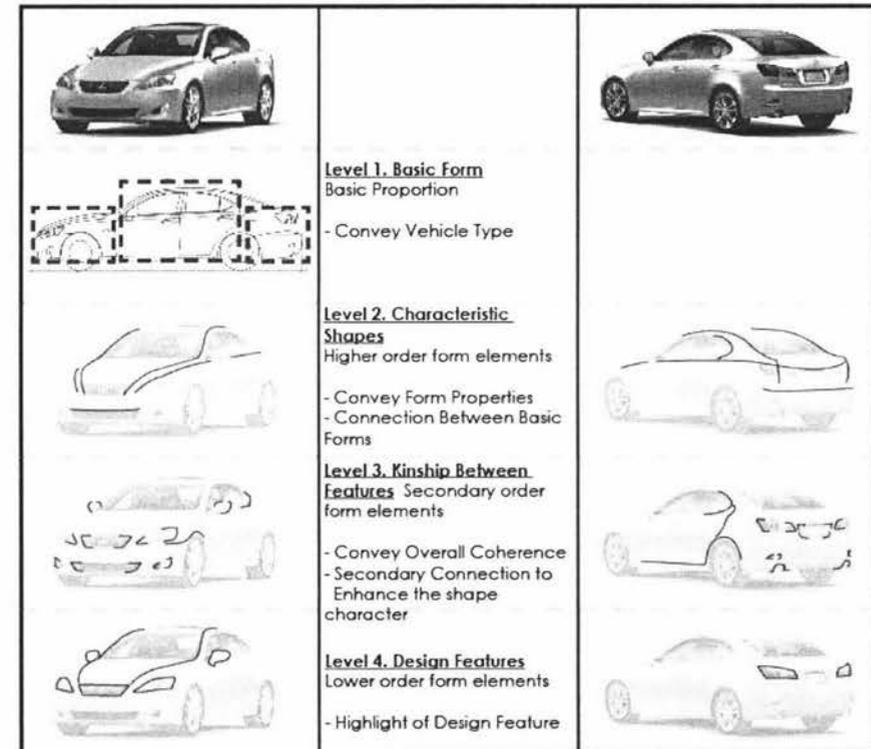
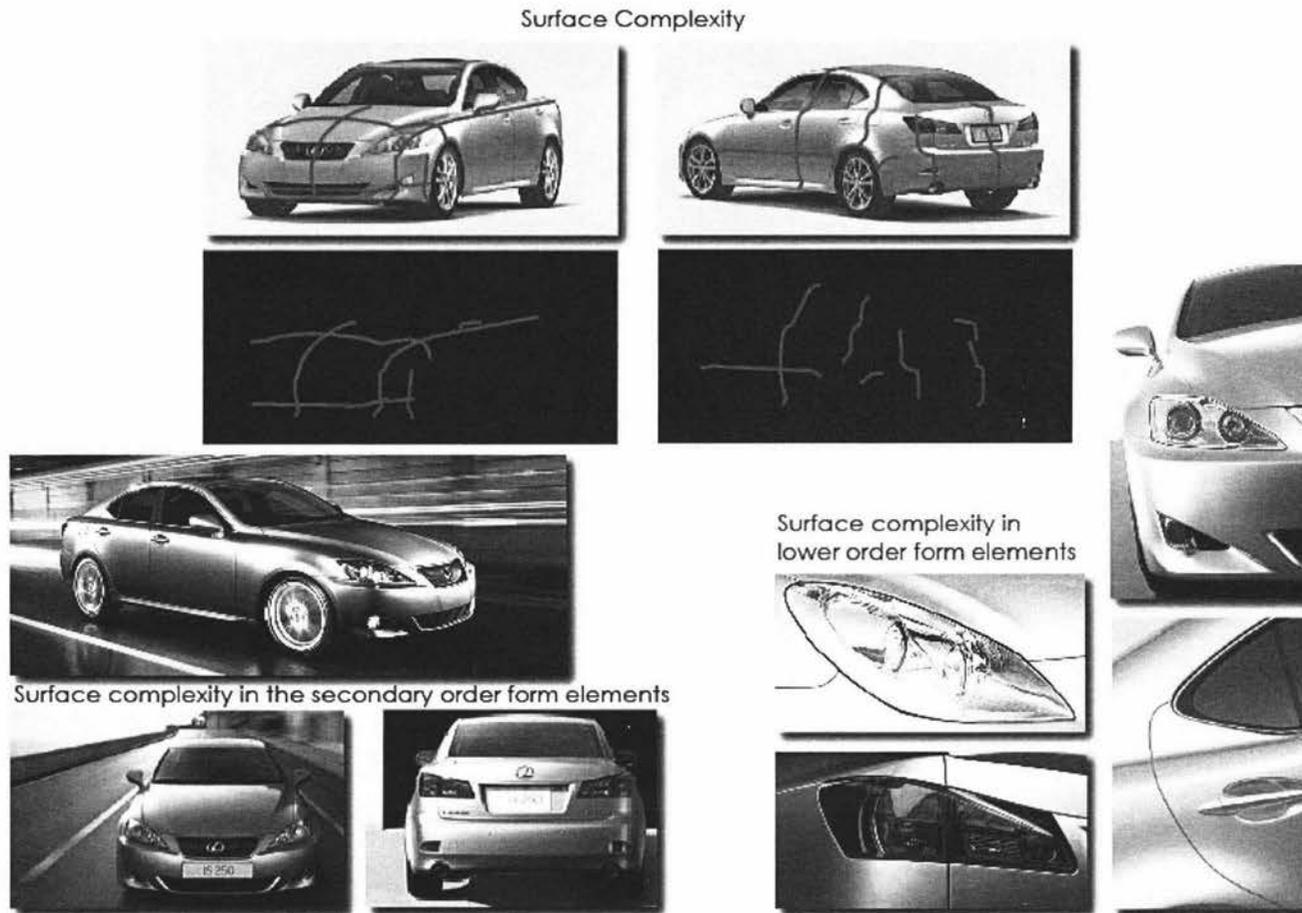


Figure 3-8. Summary of visual elements of the IS250 based on automotive design conventions [based on analysis structure by Warell, 2001].



This part of the analysis examines the changes in surface tension. Similar to many of the cars in production, most of the surface transitions on the IS250 are concave surfaces and involve less complex directional surface tension. This simplicity in surface is evident in the Figure 3-9 and one can see that the grille is treated as part of the surface change and not set backwards as in the 320i. Furthermore, this simpler surface treatment could possibly visually increase the volume of the car being in 'constant movement'; which is intended in this particular design [Lexus, 2007a, b].

Figure 3-9. Analysis of the surface tension on the Lexus IS250 to understand surface complexity.

Compared to the complexity in the main visual features of the BMW 320i identified in Figure 3.4 and 3.5 and features on the IS250 in Figure 3-9, the grille on the IS250 is simpler with fewer elements and a simpler element composition. The vertical grille was emphasised as a feature symbolically representing the sports vehicle category in Lexus. However, this differentiation through different grilles between the SUV, Premium, and Sports range could potentially confuse the consumers in their recognition of brand-specific features.

Similar to some Lexus models, the headlights on the IS range consists of sharp corners that do not incorporate any line flows. For functional reasons, the majority of the headlights on cars are of high elemental complexity as indicated in the visual format analysis [Warell. 2001]. Although they contain a large number of elements, the headlights of the IS250 are simpler compared to the 320i. Other than the multi-angle surface which is designed to reflect the lights, the sides between the headlight components have a simple chromed surface treatment. When in use, the lights light up as an individual light stream, in comparison to the lights on the 320i which light up as multiple circular lights.

Visual analysis of the IS250 – VPE: Association

This section on the Association mode in the VPE framework focuses on any expressions that are intended to be conveyed through the design of the IS250. Table 3-2 identifies a series of expressive keywords representing the intended meaning of the IS250 that is promoted by Lexus [Lexus, 2007]. To ensure all meanings identified for this research are intentions of Lexus and not the researcher's own interpretations, both the expressive terms and descriptors are based on official Lexus market material [Lexus, 2007].

As mentioned in the design intent of IS250, L-Finesse is designed “*in tune with your needs and ways of thinking*” to achieve a strong visual experience for consumers based in markets with different cultural backgrounds. However, expressive terms used in L-Finesse are mostly highly subjective terms relating one's personal preference and cultural background of aesthetic taste, which leads to the question: How has Lexus moderated the design to fit a global market?

Table 3-2. Brand-specific features of the Lexus IS250 with intentions or descriptions from Lexus (2007).

	Brand-specific Features	Intentions	Gestalt Principles		
Formal Aesthetic features	Arrowhead Motif	Swift yet rapid change in directions	Similarity. Symmetry. Proximity	Physical attributions	
	Lexus Logo	Signifying the brand	N/A – symbolic		
	Model-specific features				
	Twin-barrel headlight clusters	- expressing <i>aggressiveness</i> - disposition the lights higher than the grille to express <i>Speed and Agility</i>	Symmetry. Enclosedness. Proximity		
	Grille	- Signifying the IS250 as part of the sports vehicle range by Lexus - vertical elements in the grille to compliment the coachwork through highlighting	Enclosedness. Proximity		
	Door mounted mirror	- Express <i>Sportiness</i> - enhancing the narrowing belt-line along the car	Experience.		
	Coachwork	Express a <i>Clean and Muscular</i> line continuing from bonnet to A-pillar	'The good curve'		
LED tail lights	- Express <i>unique and unexpected sporting design, and intriguing elegance</i>	Enclosedness. Proximity			

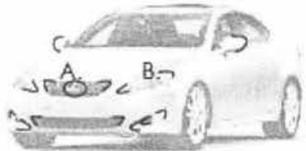
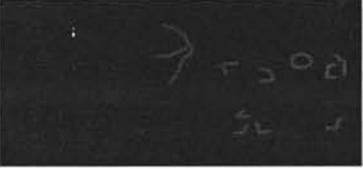
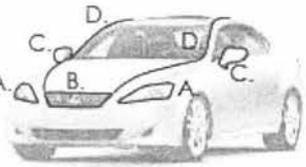
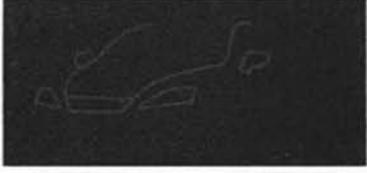
			
	<p><u>Brand-specific features</u> Symbolises Brand Image</p> <p>A. Lexus Logo B. Arrowhead Motif</p>		<p><u>Brand-specific features</u> Symbolises Brand Image</p> <p>C. Lexus Logo D. Arrowhead Motif</p>
			
	<p><u>Model-specific features</u> Convey Individuality of Model</p> <p>A. Twin-barrel Headlights B. Grille C. Door-mount mirror D. Line-work</p>		<p><u>Model-specific features</u> Convey Individuality of Model</p> <p>E. LED Tail Light</p>
			

Figure 3-10. Table illustrating the visual signifiers intended by Lexus.

As illustrated in Figure 3-10, Lexus as a brand lacks an elemental feature that signifies its brand identity, since the Arrowhead Motif relates to kinship between visual features. This lack of a brand-specific elemental feature indicates that the design language of Lexus is unlikely to be associated as brand-specific. Referring to Table 3-1 and the identifications of model-specific design emphasis, a key visual feature of the 320i is the headlight and the grille. For a comparative analysis between the 320i and the IS250 the grille and headlights have been compared across all Lexus models to examine any brand or model-specific relationship between the cars. As indicated in Table 3-2, the IS250's grille consists of vertical elements that are specifically designed for the sports range of vehicles, as intended by Lexus. However, there is an inconsistency between the use of this grille feature as both LX and RX models are SUV cars, but these two vehicles each have a different grille design.

		Consistency in Composition			
				Yes	No
IS 250			<input checked="" type="checkbox"/>		IS 250
GS 300			<input checked="" type="checkbox"/>		GS 300
GS 450h			<input checked="" type="checkbox"/>		GS 450h
SC 430			<input type="checkbox"/>		SC 430
LS 460			<input type="checkbox"/>		LS 460
LS 600hL			<input type="checkbox"/>		LS 600hL
LX			<input type="checkbox"/>		LX
RX 350			<input checked="" type="checkbox"/>		RX 350

Figure 3-11. Study of brand-specific elements across Lexus models.

				Consistency in Composition	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
IS 250			<input checked="" type="checkbox"/>	IS 250	
GS 300			<input checked="" type="checkbox"/>	GS 300	
GS 450h			<input type="checkbox"/>	GS 450h	
SC 430			<input checked="" type="checkbox"/>	SC 430	
LS 460			<input type="checkbox"/>	LS 460	
LS 600hL			<input type="checkbox"/>	LS 600hL	
LX			<input type="checkbox"/>	LX	
RX 350			<input checked="" type="checkbox"/>	RX 350	

Figure 3-12. Study of brand-specific elements across Lexus models.

In addition, Figure 3-12 illustrates that the design of headlights from Lexus is inconsistent as the element compositions consist of various shapes and line transitions. Referring to the black lines on Figure 3-11, the sharp angular corners and high positions of the headlights consists of the brand-specific design motif. However, this comparative outcome also shows inconsistency between models in formal design language as the LX and SC models have a more geometrical shaped light. Relating to the form and ordering principles of the Gestalt theory, the corners of the headlights do not compliment or continue the *common movement* of the secondary lines, identified as brown lines. This research on the brand-specific features and proposed brand-specific features reveals that internally Lexus has a lower level of coherence in its adoption of brand-specific design cues in its models.

Visual analysis of the IS250 – VPE: Comprehension

The descriptions of these official expressions with the correlated Gestalt principles indicates that in comparison to the expressions adopted by BMW, the terms adopted by Lexus are more tangible and hence potentially create a lower level of consumer comprehension towards the design. The expression terms and descriptions for associating to the Gestalt principle are listed in Appendix E for further reference.

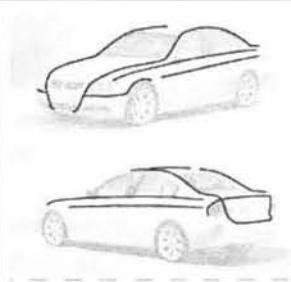
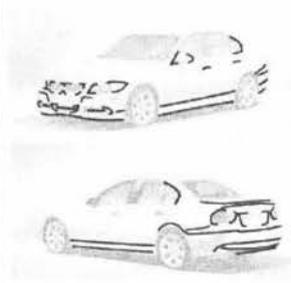
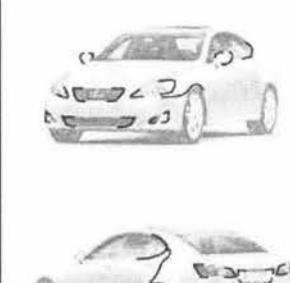
Discussion

Based on the officially published information regarding the design directions and intended expressions of the 320i/IS250, this design analysis section analysed the formal aesthetics of these two models to establish the visual relationship between various levels of form elements. The outcome of the Visual Format Analysis [Warell, 2001] illustrated in Table 3-3 indicates that the BMW 320i has stronger visual aesthetics based on its comprehensive relationship between the form elements. In terms of the level of refinement and complexity in level four form elements, it is also apparent that between the design of the 320i and the IS250, the 320i has stronger visual aesthetics, since the main design features consist of more layers of detail and refinement.

As discussed in this section, the 320i also has stronger brand identity design than the IS250 due to the larger number of brand-specific and model-specific features of BMW compared to Lexus. Next, in the analysis using the Gestalt principle on the model expressions in the 320i/IS250, the findings indicate that some of the wording used by Lexus is non-explicit and more tangible.

These findings, based on the design analysis, will be incorporated into the design of the questionnaire for the field research. This is to ensure that data collected from the field research is appropriate and explicit in order to enable robust comparative analysis of the outcomes to answer the research aims.

Table 3-3. Findings comparison of form elements between the 320i and IS250.

Types of findings	Comparison	
	320i	IS250
Form elements [Level 1]		
Form elements [Level 2]		
<p>Finding: 320i has stronger and cohesive relationship between the levels of form elements</p>		

3.2 Aim of primary research

The aim of this primary research is to explore the research questions listed as follow:

- A. How are the two cars perceived and interpreted in the two markets?**
- B. What visual elements are perceived as characteristic for the selected models (i.e. are visually distinctive)?**
- C. What visual elements are perceived as signifiers (ie, carry meaning)?**

This section systematically introduces the research aim and in designing the questionnaire and planning for field data collection. Table 3-4 identifies the types of questions required to answer the research questions. For clarity in the categorisation of the findings chapter for analysis and discussion, the questions required are also further categorised into the brand-specific and model-specific question types under the VPE modes. The description diagrams in Figure 3-13 visually explain the relationship between the tables and the research aim. The first two columns are used to generate the questions to ensure a comprehensive finding for further analysis and discussion. The remaining two columns in this table represent the sub-models for the categorisation of analyses for the discussion chapter.

Table 3-4. Research question analyses for questionnaire design for field research.

Research Questions:	Aim for the questionnaire study	Focuses on Brand/Model	VPE mode
A. How are the two cars perceived and interpreted in the two markets?	A1. Level of brand distinctiveness	Brand	Impression
	A2. Level of model distinctiveness	Model	
	A3. Level of brand appeal	Brand	Association
	A4. How strongly was the perception on the brand?	Brand	Association
	A5. Level of model attractiveness	Model	Appreciation
	A6. How was the brand values perceived?	Brand	Association
	A7. How consumer perceived the car models 320i/IS250?	Model	Recognition
	A8. Continuity of brand identity across models	Brand	Recognition
	A9. Coherence of brand-specific features on the model 320i and IS250	Model	Recognition
B. What visual elements are perceived as characteristic for the selected models (i.e. are visually distinctive)?	B1. Ranking on official descriptive keywords on visual attributes of the design/s	Model	Appreciation
	B2. Features that are perceived with descriptive terms on visual design properties	-	
C. What visual elements are perceived as signifiers (i.e., carry meaning)?	C1. Ranking on official expressive keywords describing to the car design/s	Model	Comprehension
	C2. Features that are perceived with official expressive terms on design features	-	
	C3. Features that are perceived as brand-specific	-	Association

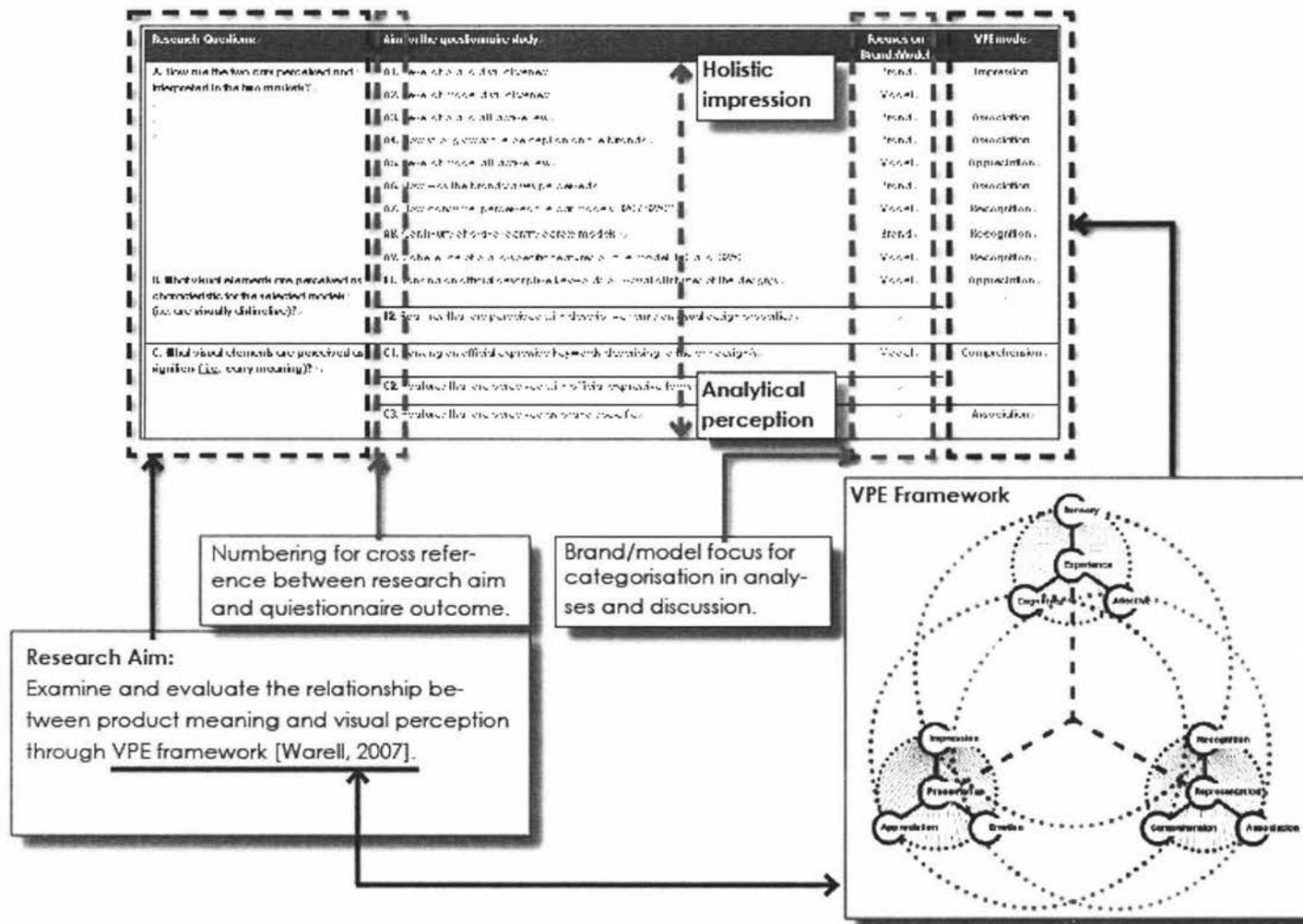


Figure 3-13. Description of research aim analyses for questionnaire design.

3.3 Research design

Amongst the ethnographic research methods for context mapping (including various observations, interviews, and participatory techniques), there are degrees of formality used for different types of research. The strict structure in a formal interview has the downside of limiting the findings to participants' arguments and reasoning. On the other hand, a casual interview is designed for a completely open outcome. This study was conducted through an informal, semi-structured and open-ended interview approach aiming for a focused finding, whilst allowing flexibility through the semi-structured interview responses in arguments and opinions about the 320i and IS250.

A traditional questionnaire based on multiple choice boxes and rating scales is only effective in gaining understanding of explicit consumer responses. One of the aims of this questionnaire is to understand how consumers perceived the physical exterior design of the 320i and IS250 on both the direct presentational level and the dimension of representative meanings. As these findings require deeper understanding of the consumers in how they feel and think about the visual elements, a series of visual stimuli were added to the questionnaires for obtaining this information. To gain understanding of these perceptions relating to design features, this questionnaire included two pictogram sections where participants were asked to identify any specific features by drawing on the images provided.

Furthermore, participants were required to identify a specific quality or expression rating for the design from a list of keywords that was provided earlier with a series of analogue scale questions.

The participatory testing on the 320i and IS250 questionnaire was first conducted by the researcher and secondly by a member of the public with no specific interest in automobiles. The purpose of this test was to ensure that the questionnaire's structure and questions were appropriate and had a logical flow with clear wording.

Following from Table 3-4 in Section 3.2, this section will further develop these questionnaire objectives using a table structure to identify the exact phrasing of the question to ensure the finding is valid for academic study. The full questionnaire is appended in Appendix F, including the visual stimuli that were shown to the participants. This questionnaire is categorised into five sections focusing on how a car is perceived visually and what these perception mean to the recipients:

- 3.3.1 Section 1: Participant background**
- 3.3.2 Section 2: Brand Impression**
- 3.3.3 Section 3: Model Impression**
- 3.3.4 Section 4: Model Appreciation**
- 3.3.5 Section 5: Model Expression**

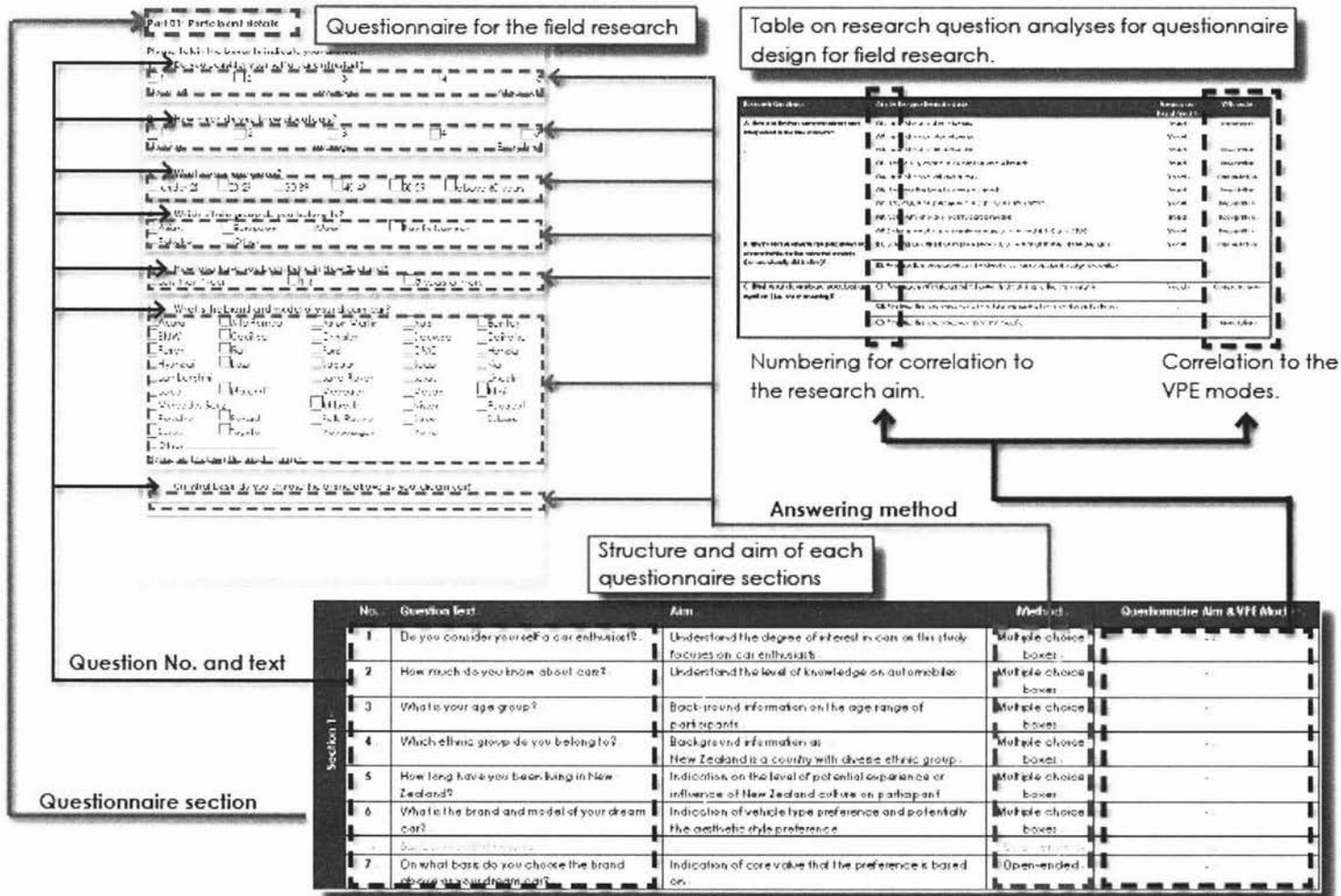


Figure 3-14. Description of questionnaire section design.

3.3.1 Section 1: Background information

Table 3-5. Research design section 1: Participant background.

	No.	Question Text	Aim	Method	Questionnaire Aim & VPE Mode
Section 1: Participant background	1	Do you consider your self a car enthusiast?	Understand the degree of interest in cars as this study focuses on car enthusiasts	Multiple choice boxes	-
	2	How much do you know about cars?	Understand the level of knowledge on automobiles	Multiple choice boxes	-
	3	What is your age group?	Background information on the age range of participants	Multiple choice boxes	-
	4	Which ethnic group do you belong to?	Background information as New Zealand is a country with diverse ethnic group	Multiple choice boxes	-
	5	How long have you been living in New Zealand?	Indication on the level of potential experience or influence of New Zealand culture on participant	Multiple choice boxes	-
	6	What is the brand and model of your dream car?	Indication of vehicle type preference and potentially the aesthetic style preference	Multiple choice boxes	-
		6a. Car model if known	-	Open-ended	-
	7	On what basis do you choose the brand above as your dream car?	Indication of core value that the preference is based on	Open-ended	-

Section one of the questionnaire is designed to gain background knowledge of the participants in order to identify any specific pattern of car type preferences in New Zealand and Taiwan. The type of questions include: the level of interest in automotives, including the basis of their dream car selection; the participant's ethnic background; and how long they have been part of the New Zealand/Taiwan culture.

Figure 3-14 illustrates the relationship between the research aim analysis and design of the questionnaire. The structure and aim of this section is listed in Table 3-5 with various methods used for the different types of data collected. This table has the same structure and layout as the rest of tables in this section. After the questions have been identified, the aim of the question is stated along with the type of methods used. Referring to the questionnaire design section, the last column identifies the questionnaire aim and the VPE mode it relates to for further categorisation with the results in the Findings chapter.

Section 2: Model expression

Table 3-6. Research design section 2: Brand Impression.

No.	Question Text	Aim	Method	Questionnaire Aim & VPE Model	
Section 2: Brand Impression	8	Please write a word/sentence that you would associate with BMW/Lexus:	Identify how consumers perceived the brand associated with the 320i/IS250	Open-ended	A4. Recognition Multiple Model
	9	How appealing do you think BMW/Lexus is?	Determine the degree of brand appeal	Multiple choice boxes	A3. Association
		9a. Why?	Supporting comments for more understanding	Open-ended	-
	10	Do you consider BMW/Lexus a premium/luxury car brand?	How the brand image has been perceived?	VAS	A7. Association
		10a. Why?	Supporting comments for more understanding	Open-ended	-
	11	How distinctive is BMW/Lexus compared to other car brands?	How different is the brand compared to its competitors	VAS	A1. Impression
		11a. Why?	Supporting comments for more understanding	Open-ended	-
	12	Do you think cars manufactured by BMW/Lexus share certain qualities that make them belonging to the same "family"?	People's perception on the continuity of design quality across models from the brand	Multiple choice boxes	A9. Comprehension
		12a. If yes, what kind of quality?	Supporting comments for more understanding	Open-ended	-
	13	Have you ever experienced cars manufactured by BMW before? (including driving/sitting in the car)	Reference to examine if the level of perception on the brand/model is influenced by actual physical experience with cars from BMW/Lexus	Multiple choice boxes	-

This section aims to identify the consumers' model-related perceptions to firstly identify how the brand BMW/Lexus is perceived before more of the specific questions are asked on the perception and interpreted meanings of the models 320i/IS250. Question 13 in this questionnaire is designed to examine whether the perception of BMW/Lexus is influenced by the participant's previous experience with vehicles from this brand. With reference to the research methods review section, VAS in the *methods* column stands for Visual Analogue Scale.

3.3.2 Section 3: Model impression

Table 3-7. Research design section 3: Model Expression.

	No.	Question Text	Aim	Method	Questionnaire Aim & VPE Model
Section 3: Model expression	14	Referring to the picture above, do you think this model is typical for BMW/Lexus?	Perception on the 320i/IS250 relating to its brand identity	Multiple choice boxes	A10. Recognition
		14a. Why?	Supporting comments for more understanding	Open-ended	-
	15	On the bar below and referring to the images provided, please indicate how attractive and distinctive you think each car is?	Comparison of attractiveness and distinctiveness across 7 car models in the same class and targeting the same market segment	-	-
		15A-G. Attractiveness	-	VAS	A3. Appreciation
		15A-G. Distinctiveness	-	VAS	A2. Impression
	16	How strongly would you like to drive/own this BMW/Lexus?	How strongly did the consumer perceived 320i/IS250	Multiple choice boxes	A8. Multi model Association
	16a. Why?	Supporting comments for more understanding	Open-ended	-	

From this section onwards, the remaining three questionnaire sections focus solidly on how the 320i/IS250 is perceived. The purpose of section three is to establish how people perceived the vehicles from an overall perspective both with and without the interpretation of meanings. A series of images on other vehicle models targeting the same market segment is placed together to identify how distinctive and attractive the 320i/IS250 is compared to other car models on the market. This question is conducted by showing the participant visual stimuli and requiring the participant to identify the answer using VAS while viewing the imagery.

3.3.3 Section 4: Model appreciation

Table 3-8. Research design section 4: Model Appreciation.

	No.	Question Text	Aim	Method	Aim & VPE Model
Section 4: Model appreciation	17	Referring to the photos provided, please mark on the bar to indicate what you think about the 320i/IS250's appearance:	How the aesthetic values are perceived by the consumers based on a range of descriptive keywords provided	VAS	B1. Appreciation
		17A. Distinctive/Well-defined	-	-	-
		17B. Consistent/Uniform	-	-	-
		17C. Harmonious/Flowing	-	-	-
		17D. Beautiful/Stunning	-	-	-
		17E. Interesting/Fascinating	-	-	-
		17F. Ugly/Non-appealing	-	-	-
		17G. Balanced/Proportional	-	-	-
		17H. Sleek/Elegant	-	-	-
		17I. Simple/Clean	-	-	-
		18	Referring to the photo, please mark on the picture below to indicate the features of the car that appeals to you.	How specific features are been perceived based on the keywords in question 17	Pictogram

This section is designed to identify how consumers appreciate the visual elements and appearances of the 320i/IS250 holistically and analytically. The participants were shown black and white images depicting the front-side and rear-side corners of the 320i/IS250. The holistic perception of cars was conducted through participants giving a VAS rating, assessing the visual quality of the 320i/IS250 based on viewing the imagery. Following this, the same images were shown again and participants were asked to indicate features using the visual attributes listed in the VAS question. The purpose of this was to understand how participants analytically perceived the designs. Part of the research aims at examining the different attributes

of impression to see if the marks for keywords correlate with the pictogram outcome. Table in Appendix E clarifies the terms that are listed in section four of the questionnaire by defining the terms in accordance with the definitions and how the terms relate to the Gestalt principles. Terms listed in Table 3-8 are selected as a set of different visual qualities and used to gain a comprehensive understanding of the various perceptions from consumers. This analysis on how these terms relate to certain Gestalts will serve a base for the analysis and discussion of the findings.

Section 5: Model expressions

Table 3-9. Research design section 5: Model expression.

No.	Question Text	Aim	Method	Questionnaire Aim				
19	Referring to the photos provided, please mark on the bar to indicate what you think about 320i/IS250's appearance:	How the aesthetic values are perceived by the consumers based on a range of expressive keywords provided	VAS	C1. Appreciation				
Expression terms for 320i and IS250 questionnaire design								
Section 5: Model expression	BMW expressions	Term	Descriptor	Lexus Expression	Term	Description		
		19A. Dynamic	Well-defined		19A. Luxury	High quality/Exclusive	-	-
		19B. Versatile	Innovative		19B. Sporty	State of motion/aggressive	-	-
		19C. Elegant	Sleek/Lightness		19C. Distinctive	Unique/Refined	-	-
		19D. Modern	High-tech/Stylish		19D. Confident	Bold	-	-
		19E. Desirable	Confident/Focused		19E. Simple	Seamless/Flowing	-	-
		19F. Sporty	Powerful/Athletic		19F. Style	Elegance/Visually arresting	-	-
		19G. Comfortable	Luxuries/Enjoyable		19G. Evocative	Exquisitely beautiful	-	-
	20	Referring to the photo, please mark on the picture below to indicate the features of the car that appeals to you. (example given)	How specific features are been perceived based from the keywords in question 20	Pictogram	-			
		20.A-G	Repetition of keywords from question 17	-	C2. Appreciation			
	20H.	Identify which features are been perceived as brand-specific	-	C3. Comprehension				

This section of the questionnaire focuses on the meaning-related perceptions and interpretations of the 320i/IS250. The yellow highlight in Table 3-9 is the list of terms intended to express the design of the 320i/IS250. The use of official expressive terms will allow comparative analyses between the internal and external perceptions of these two cars. The structure of this questionnaire section is the same as the previous section on

model appreciation, enquiring on holistic model comprehension following analytical comprehension. As this section relates to meanings of the design perceptions, the pictogram section has an additional keyword asking the participants to indicate any features that symbolise the brand BMW/Lexus on the 320i/IS250.

3.4 Discussion

To understand consumer perceptions towards two different car designs, this chapter is based on the secondary research outcome that covered the theoretical base and the background of the two markets and design of two cars. The questionnaire design in the primary research study, the design analysis of the two car designs, and the use of explicit expressions drawn from official sources allow a validated comparative analysis of the outcome between internal and external perceptions of the 320i/IS250.

Referring to Appendix C for the full questionnaire, the questionnaire sections are designed to initially establish the participants' background, and then move from brand-related questions towards questions relating to the consumers' understanding of expression-intent by BMW/Lexus. The VAS answering method was commonly used in this section to indicate precise perceptions for the participants. Furthermore, the design of the pictogram sections in the questionnaire was to examine consumers' visual perceptions towards the 320i/IS250 analytically, by indicating visual features on the images. Comparing the VAS and the pictogram outcomes on visual attributes and expressions of the 320i/IS250, a relationship between the holistic and analytical levels of perceptions can be understood. This understanding will potentially establish the patterns of consumer perceptions which could be implemented into the design process in automotive design; or justify design decisions relating to form and ordering

of the car exterior. Furthermore, an understanding between the holistic and analytical perceptions and understanding of designs will open up topics and areas for further research between the formal aesthetics and visual experience. The semi-structured approach was chosen to allow a deeper understanding of participants' responses and to answer any queries they might have regarding the questions. It also allowed the researcher to gain full understanding of the open-ended comments given by participants supporting their VAS or multiple choice answers. In the following chapter (Findings) the outcome of the field research will be described.

Chapter 4. FINDINGS

The aim of this research is to understand how consumers perceive automotive designs in different markets that have a different cultural context. Referring to Chapter Three on Primary Research Design, the questionnaire was designed based on the research questions, aiming to cover perceptions in both presentation and representation domains. Appendix G presents the overall questionnaire outcomes in four sets: first the outcomes for the 320i in both markets and then those for the IS250. Due to the scale of this research and to achieve a flow in presenting the findings, the summarised tabulated findings are attached in Appendix H. Each table number is prefixed with an 'H' and the findings are categorised under the questionnaire sections to allow easier cross referencing to the questionnaire questions.

As identified in the last chapter, the participant groups are compatible because this research was conducted at automotive-related events in New Zealand and Taiwan and targeted car enthusiasts. The data collection in both markets was conducted by semi-structured interview with the questionnaire on a clipboard and a pen provided by the researcher. The participants were randomly selected and no personal information was recorded; all 60 participants voluntarily participated in this research.

The New Zealand study was conducted at a classical car show in Pukekohe, a town near Auckland well-known for its sports car racing facility. This classical car show was an admission-only outdoor event with a popularity contest amongst the viewers held at the end of the show. The field research was carried out in an area where the on-show vehicles were displayed. This venue selection resulted in a minority group of participants giving lower than average responses, based on their comparison between classical and contemporary car designs. On average, the questionnaire took the participants a maximum of 15 minutes to complete. Some participants commented that the questionnaire was too long.

The Taiwan study was conducted at an admission-only automotive modification and automotive parts expo in the capital city Taipei. According to the official expo organiser, this expo is Taiwan's largest annual automotive-related event, attracting local and international visitors. The field research was conducted in the same manner as the New Zealand research but, for the market-related comparison of this study, only show visitors who appeared to be local were approached. On average, the participants in Taiwan spent 20 minutes on each questionnaire and were contemporary car enthusiasts rather than classic car enthusiasts.

4.1 BMW in New Zealand

As identified in the Introduction, the key findings of this field research on the 320i from the Classical Car show are appended in Appendix H in Tables H-01 to H-05. Overall, the results from the first section of questionnaire indicate that the New Zealand participants consisted of a diverse mix of age groups dominated by people in their 40s; the respondents had a good level of interest and knowledge in automotives; and the most popular dream car preference was the super cars, followed by premium, and classical cars (Table H-01).

The outcome of section two (listed in Table H02), shows a mixture of positive and negative written comments which are further supported by medium-level ranking outcomes for the questions. The majority of the participants associated the brand BMW as a premium car brand and very few connected BMW with mechanical performance. A few commented on the commonness of BMW cars on roads, and that the exterior styling of BMW cars did not appeal to them due to their strong preference for other vehicle categories such as SUV or Classical.

The outcomes from section three of the questionnaire are presented in Table H-03. The main emphasis of this section is to examine model impressions across seven cars in the same market segment. Based on the exterior design of these models, BMW 320i was not rated as the most

distinctive car, but was recognised as the most attractive car. The results indicated that cars by Cadillac and Volvo have the largest mark variation between their distinctiveness and attractiveness ratings. The majority of the respondents recognised the exterior of the 320i as a BMW model, with comments based on brand-specific features of BMW such as the Kidney Grille.

Table H-04 shows results from the fourth section which focus on visual appreciation. The results show inconsistency between consumers' appreciation viewing pictures of the 320i and actually identifying features in the pictograms. Overall, the strongly perceived attributes in the outcome for question 17 had low average marks, between 50 and 60 out of 100. Unsurprisingly, the grille was the strongest feature identified in the various written comments.

It is evident from the fifth section on Model Expression (Table H-05) that participants responded differently to viewing the pictures and identifying features in the pictogram. The average mark for the strongest expression outcome for question 19 was between 50 and 60, which is similar to the model appreciation section from Table H-04. The finding from this model expression section shows that participants strongly perceived the whole car and Kidney Grille as strongly expressive.

4.2 BMW in Taiwan

Tables H-06 to 10 in Appendix H present the findings from the BMW Taiwan study. Referring to Table H06, the background information of the participants is similar to the New Zealand study. The participants came from a wide range of age groups, dominated by people between the ages of 20 and 30. In general, the respondents have a good level of interest in cars with an outcome of 3.3 out of 5, where 5 represents strongly interested. However, they are not as knowledgeable as the New Zealand respondents. The most popular preference of dream car was for super cars, followed by premium vehicles and classical cars.

Overall, the written comments from section two of the survey (Table H-07) are mostly positive with even the negative comments having relatively high rankings, compared to the New Zealand public. Furthermore, the Taiwanese participants gave a higher average ranking on the VAS than the New Zealand 320i participants. Similar to the New Zealand outcome, the Taiwan results indicate that people mostly associate BMW with its visual appearance and its representational values.

The outcomes from section three of the questionnaire are shown in Table H-08. As in the New Zealand results, the BMW 320i was not rated the most distinctive car, but was recognised as the most attractive car. One interesting result is that although Mercedes Benz was frequently mentioned

in the dream car question, it was not amongst the top three strongest cars marked for attractiveness and distinctiveness. The level of interests in the 320i is dominated by a mix of aesthetic appreciation and representative association from the respondents.

Table H-09 shows the results from section four focusing on aesthetic-related appreciation. Compared to the New Zealand survey results, the strongest expressions from questions 17 and 18 are inconsistent. However, the keywords for strongest holistic appreciations are similar to the New Zealand findings. The results from this section match the overall positive responses, as the only negative expression keyword is rated the weakest expression by the consumers. The overall whole design of the 320i was rated as the strongest feature of the design by the Taiwan consumers.

It is evident from Table H-10 that the participants responded differently to viewing the pictures and indicating features in the pictogram. Compared to the New Zealand study outcome, the average marks for the strongest expression outcome in question 19 are higher. From this model expression section the findings show that participants strongly perceived the car as a whole as most expressive.

It is interesting to note that Taiwanese participants' focus on the features on the front of 320i as being brand-specific and only the logo was identified on

the tail of the car. Although the whole car has been widely identified under various expressive keywords, the overall design of the 320i is not perceived as brand-specific.

4.3 Lexus in New Zealand

Tables H 11 to 15 in Appendix H present the findings from the study of the Lexus IS250 in New Zealand. Table H11 lists the findings from section one on the New Zealand participant backgrounds. In general, the respondents have a good level of interest in cars and their level of knowledge in cars is similar to the BMW New Zealand outcome.

Table H12 summarises the results from section two of the survey on brand impression. Overall, the written comments relating to the country of origin were largely negative, and the positive comments were mainly based on performance aspects such as engineering and durability. Furthermore, the New Zealand participants gave similar levels of average rankings compared to the BMW participants. One interesting finding on brand image association in question 10 is that two participants recognised Lexus as a premium brand only because it is a competitor to car maker BMW. Compared to the BMW New Zealand study, there were fewer participants who had experienced Lexus cars before.

The outcomes from section three on Model Impression are shown in Table H-13 with its main emphasis on examining model impressions across seven cars in the same market segment. Similar to the BMW finding on question 15, BMW, Mercedes Benz and Audi were rated the most distinctive and attractive cars and in the same order. The level of interest in physically experiencing the IS250 is moderately high in New Zealand, with only one participant giving comments relating to the representational value of the design.

Table H-14 displays the finding summaries of section four on the questionnaire, Model Appreciation. The number of pictograms indicated by the Lexus participant was less compared to the BMW study from New Zealand and Taiwan. Furthermore, the Lexus study findings show that there is no particular expression that was strongly perceived by the consumers analytically. Furthermore, there is a dramatic difference between consumers' holistic and analytical perceptions, this is because the visual appearance of IS250 has been analytically perceived as Ugly/Non-appealing! The results from this section match the large amount of negative perception and responses as the only negative expression. keyword is rated as one of the strongest expression by the consumers. Unsurprisingly, a wide range of features including the whole car were identified as 'Ugly/Non-appealing'.

Table H-15 displays the findings of section five, Model Expression. Unlike the BMW studies, Lexus participants responded very closely to viewing the pictures and identifying features in the pictogram. The average marks for the strongest expression, from the outcome of question 19, are low compared to the New Zealand study outcome, being only in the 50s range. The findings from this section suggested, therefore, that no particular features are particularly strongly perceived by participants. One interesting finding from the perceived expressions of Lexus from the New Zealand consumers is that there is a wide mix of features that were perceived by the participants compared to BMW's results, which the frontal portion of the vehicle attracted most of the attention.

4.4 Lexus in Taiwan

Tables H-16 to 20 in Appendix H presents the findings from the study of the Lexus IS250 in Taiwan. Table H-16 lists the findings of section one of the questionnaire. Similar to the New Zealand study, the Taiwanese participants came from a wide range of age groups, dominated by people aged between 20 and 30 years old. In general, the respondents had a stronger level of interest and average level of knowledge in cars compared to the Lexus participants in New Zealand. The most popular preferences of dream cars were the premium brands, and secondly some super cars.

Overall the written feedback shows a mix of positive and negative

perceptions towards Lexus as a brand. Referring to Table H-17, there is frequent emphasis on the country of origin and preference for European cars over Japanese. Most of the participants' physical experience with Lexus cars perceived the IS250 positively based on their experiences. This is evident because consumers, who had not physically experienced Lexus cars, mostly allocated lower marks and negative written comment associating Lexus as an economical car. Compared to the BMW outcomes, the Lexus results generally show lower average rankings.

The outcomes from section three are shown in Table H-18 with the main emphasis on examining model impressions. Lexus has not been strongly recognised by the Taiwan participants. Interestingly, Cadillac was rated both highly attractive and distinctive by the Taiwan public while the New Zealand participants perceived the Cadillac as less attractive but highly distinctive. Unlike the BMW outcome, the responses on the level of interest in the IS250 show that there is a lack of perception on the representational values of the IS250 or Lexus. The country of origin has been highly associated with positive and negative comments by participants.

Table H-20 shows results from section five focusing on meaning-related appreciations from the Taiwan public. Similar to other questionnaire outcomes, the strongest expressive terms appreciated by the Taiwan participants for question 17 and 18 are mostly inconsistent. Under close

investigation, the term 'Ugly/Non-appealing' has the weakest holistic perception in Taiwan, but analytically from the pictogram outcome, there is a considerable amount of indication of the features on the frontal portion of the IS250. Surprisingly, the strongest feature perceived by the Taiwan participants is the flow of form from the hood continuing onto the beltline.

From Table H-20 it is evident that there is a strong correlation between consumers' holistic and analytic perceptions on the IS250. This is because the same expression has been strongly comprehended on both the VAS and pictogram outcome. The average marks for the strongest expression from the outcome of question 19 on model expression under the VAS method are lower compared to Taiwan BMW study. Similar to question 17 and 18 on model appreciation, the strongest features are the line work from the front onto the beltline, and the headlights. It is interesting to note that the Taiwanese participants only strongly identified the logo at the front and rear of the IS250 as being brand-specific.

Chapter 5. ANALYSIS AND DISCUSSION

The findings on consumer perception of the BMW 320i and Lexus IS250 will be presented in logical steps of product experience. This includes the initial visual impression, differentiating these two cars from their competitors, visual perceptions of the cars, and interpretation of the various meanings. The categorisations of visual experiences of the 320i/IS250 are based on the VPE framework modes [Warell, 2007]. Figure 5-1 displays the primary and secondary relationships between the chapter sections and research questions to clarify the focus in each section. Figure 5-2 introduces the colour coding within the analysis table in this chapter for easy reference and understanding on the relationship between outcomes.

This chapter starts with an analysis and discussion of consumer perceptions of the 320i and IS250 in both markets (section 5.1). Referring to Figure 5-1, this section analyses all four sets of outcomes individually as a foundation for the remaining three comparative sections in this chapter. To avoid repeated analysis and discussions in the body text, the information presented in this section focuses on answering research questions B and C listed in Figure 5-1. As research question B and C focus on the consumers' visual perceptions of the 320i/IS250 with and without related meanings, the analysis and discussions of the VPE modes of Impression, Recognition, and brand association will be appended in Appendix I, due to its secondary

relationship to the aim of this section. The remaining sections focus on the comparative analysis and discussion referring to specific research questions that are structured under VPE modes.

Based on the analysis of the key findings from section 5.1, section 5.2 analyses the differences and similarities in perception between BMW and Lexus in the same markets. This comparison examines how cars with different design intents are perceived and interpreted by consumers.

Thirdly, the analysis and discussion in section 5.3 shifts from looking at the differences between the perception of the 320i/IS250 in different markets to the cultural-related influences between New Zealand and Taiwan. This inter-market comparison on the differences and patterns in consumer perceptions will suggest how culture and social values influence consumers' perception on the same designs.

Based on the previous three sections, section 5.4 examines the relationship between the intended and external perceptions of the design of the 320i/IS250. Through this comparative analysis and discussion the research aim of mapping these various perceptions of 320i/IS250 is possible. This section will thus provide arguments for the implications on automotive design.

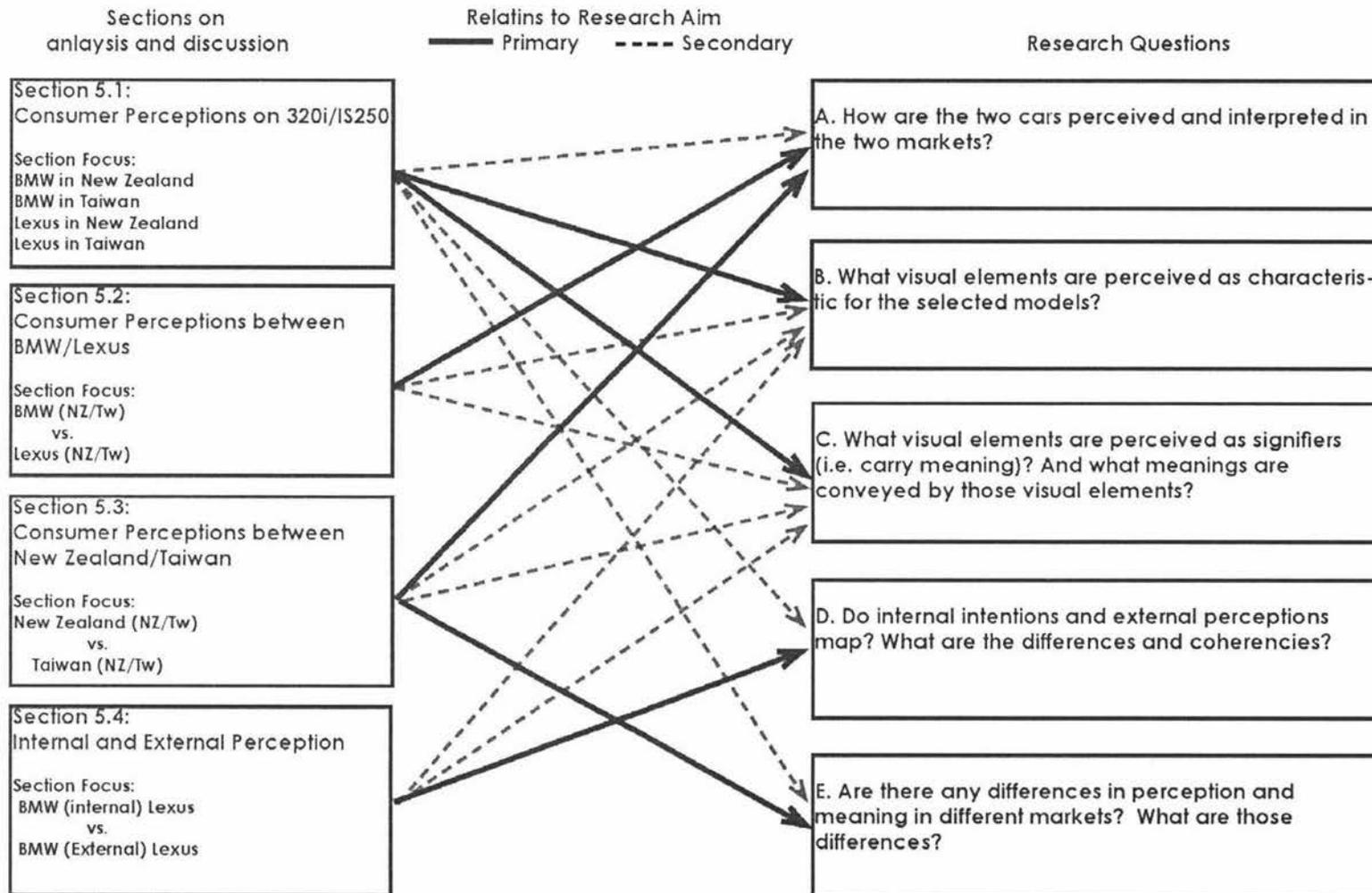


Figure 5-1. Relationship diagram between the various comparative discussions and the research questions.

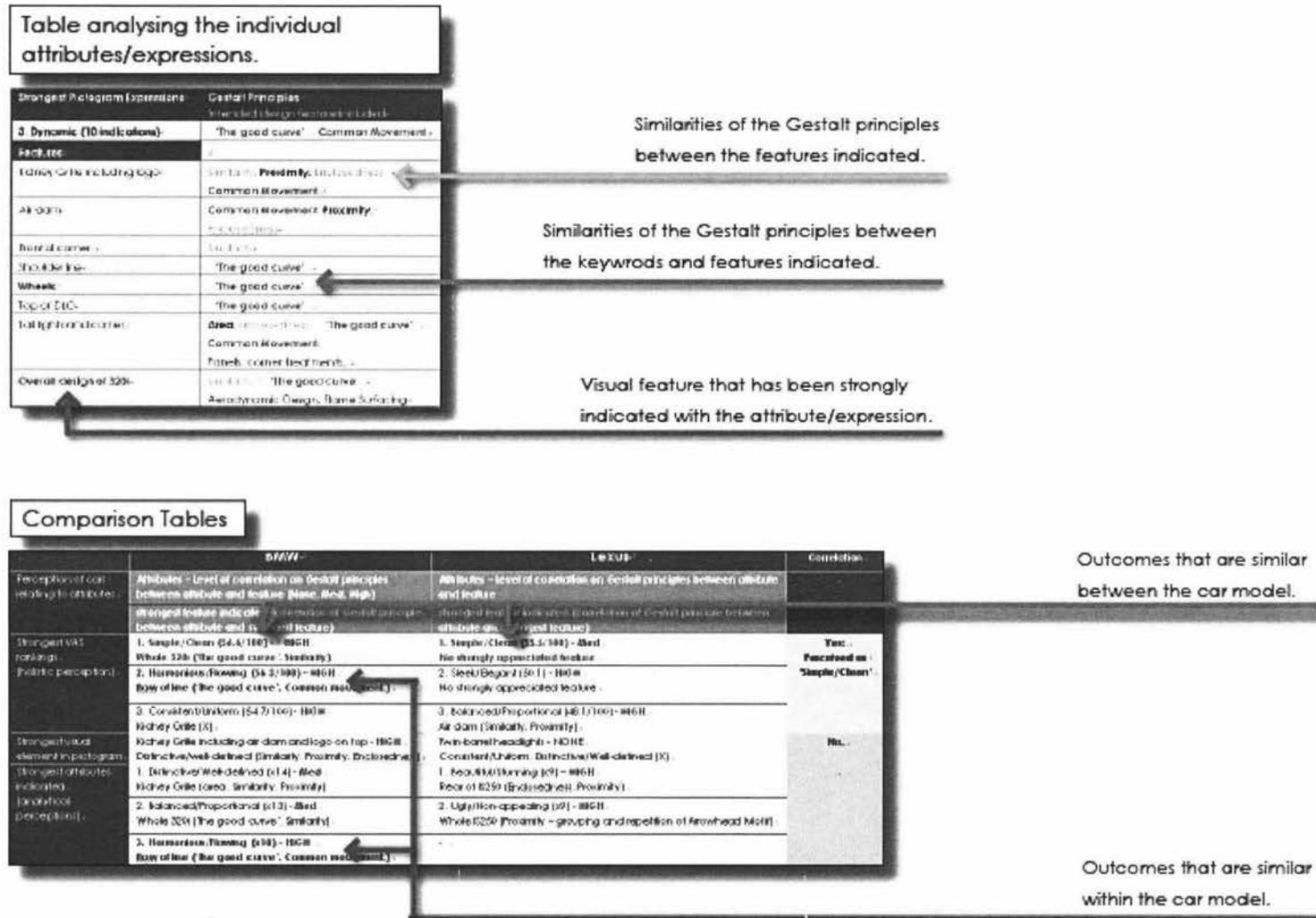


Figure 5-2. Description of the colour coding on text in the analysis and comparison tables.

5.1 Consumer perceptions on 320i/IS250

To understand what visual elements are perceived and interpreted in different markets, the section entitled 'VPE: Appreciation' analyses and discusses findings on consumer perceptions; specifically on the formal aesthetics of the 320i/IS250. First, the strongest holistic perceptions of the 320i/IS250 will be presented with features indicated in the pictogram questions, which examines the relationship between the visual attributes and the features under which they were appreciated. Figure 5-2 describes the colour coding of text for analysing the outcome. The Gestalt principles embodied in the attribute and the feature will then be compared, searching for a pattern of trends in how consumers perceive visual features on the 320i/IS250. The purpose of this is to gain understanding of the relationship between the features appreciated and the visual attributes. Next, the strongest feature from the pictogram findings will be analysed by comparing the Gestalt principles related to both the visual feature and the descriptive attributes for a 'common' Gestalt principle. To conclude the VPE: Appreciation section, the strongest attributes, based on the analytical perception findings, will be analysed in the same manner as the VAS analyses mentioned earlier.

A similar analysis process to that used in the model appreciation section was conducted for the VPE mode: Comprehension, which focuses on the meaning-related perceptions of the visual aesthetics of the cars. The

purpose of adopting the Gestalt principles is to examine whether there is any specific type of quality in a feature that correlates to certain attributes or expressions. Such understanding will allow the establishment of a system that could potentially help designers to justify their design intentions on automotive designs.

Overall, the participants consisted of a mix of gender and age groups, ranging from teenagers to over 60 years of age. Compared to other types of methods, such as multiple choice and open-ended questions, the pictogram questions were the most time consuming. This is because participants spent most of their time thinking and analyzing in order to identify their visual perceptions and understanding on the design of the 320i/IS250. Also, the majority of the participants had the tendency to indicate similar rankings for scale bars that appeared in a set.

One major reflection on the Taiwanese participants is their notion of identifying the car brands before answering the scale ranking questions for attractiveness and distinctiveness on cars. Compared to the New Zealand participants the majority of the Taiwan participants had more difficulty identifying features on the pictograms. In comparison, the New Zealand participants identified more frequently with the pictograms. However, Taiwanese car enthusiasts identified more features than the New Zealand participants.

5.1.1 BMW in New Zealand

The 320i questionnaire participants had an above average level of interest in motorcars. At the same time their level of knowledge in motorcars is also above the average. The participants were, therefore assumed to have knowledge on the super car brands. Their level of interest in motor vehicles could explain why the super car brands were strongly identified as the dream car by 6 out of 15 participants. Interestingly, the main criterion for the dream car selection was the visual appearances of a car rather than performance. This type of vehicle preferences could also be influenced by the independent cultural context of New Zealand; the notion that goods are perceived as a source of pleasure rather than an emphasis on their representational values. For this reason the dream car selections were based on the visual aesthetics of cars which further emphasises the importance of visual perception in products to gain differentiation from one's competitors. It will be interesting to examine the study outcomes from Taiwan since the Taiwanese market is characterised by conspicuous consumption behaviour due to its interdependent culture.

VPE: Appreciation

Table 5-1 lists the findings on the appreciation of visual elements based on viewing the images of the 320i. They are not particularly strong as shown by the average marks in the 50s out of 100. Interestingly, under comparison, the most appreciated terms all share similar visual

characteristics, identified under the Gestalt theory, with stronger emphasis on the lines of the 320i, as indicated in Figure 5-2. The next part of the discussion is based on the analysis of the pictogram findings on consumers' appreciation of the visual elements.

Table 5-1. Findings on highly appreciated qualities on VAS.

Finding Summary	Gestalt's physical attributes
1. Simple/Clean (56.6/100)	'The good curve'. Similarity. Common movement.
2. Harmonious/Flowing (56.3/100)	'The good curve'. Common movement.
3. Consistent/Uniform (54.7/100)	Similarity. Common movement.

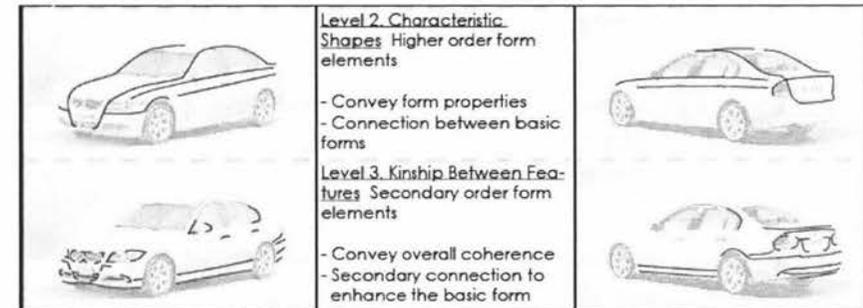


Figure 5-3. Design analysis of 320i on the flow of lines and line transitions.

Table 5-2. Strongly ranked (1st) attributes on the 320i by New Zealand participants.

Strongest VAS Attributes	Gestalt Principles Intended design feature included
1. Simple/Clean (56.6/100)	'The good curve'. Similarity. Common movement.
Features	
Overall car exterior	Similarity. 'The good curve' Aerodynamic Design. Flame Surfacing
Side of 320i	Similarity. 'The good curve' Bone line. Flame Surfacing
Quad headlights	Enclosedness. Area. Proximity
Air dam (corner)	Common movement. Proximity. Part of Down Road Graphic
Rear Bumper	Area. Enclosedness Flame Surfacing
Lower rear side area	- Flame Surfacing

Holistically, the attribute **Simple/Clean** was the most widely appreciated visual quality on the 320i. Unexpectedly, the quality of Simple/Clean is not widely indicated in the pictogram section and no feature was commonly appreciated. This could possibly be because the embodied Gestalt principles relating to this quality are based on the overall shape and visual relationship between elements. As indicated on Table 5-4, there is a lack of coherence between the embodied ordering principles of features indicated and the attribute. Overall the features appreciated as Simple/Clean commonly share the physical attributes relating to repetition, line continuity, grouping of elements, and the use of positive shape.



Figure 5-4. Features on 320i indicated as Simple/Clean in New Zealand.

The attribute of **Harmonious/Flowing** in the 320i has been highly appreciated both from the VAS results and the pictogram findings. The strongest perceptions of Harmonious/Flowing on visual features are the continuous lines and, unexpectedly, the front DLO corner. Other features indicated also share similar Gestalt principles, relating to 'the good curve' and 'Common movement'. It is evident that both attributes Simple/Clean and Harmonious/Flowing share the same Gestalt principles based on the definition of these terms. However, the type of responses on the pictogram are slightly different. The attribute Harmonious/Flowing were perceived and indicated with more use of line and arrow. One other fascinating finding from this exercise is that the type of keywords used could possibly be influencing the mode of response.



Figure 5-5. Features on the 320i indicated as Harmonious/Flowing in New Zealand.

Table 5-3. Strongly ranked (2nd) attributes on the 320i by New Zealand participants.

Strongest VAS Attributes	Gestalt Principles
Intended design feature included	
2. Harmonious/Flowing (56.3/100)	'The good curve'. Common movement.
Features	
Line flow	'The good curve'. Common Movement Bellline, Aerodynamic Design
Side panels (incl lower one)	'The good curve' Flame Surfacing
Bone line	'The good curve'. Common Movement
Kidney Grille	Area. Similarity. Proximity. Whiska's chrome details
Front slope of DLO	Common movement-
Roof	'The good curve'-



Table 5-4. Strongly ranked attributes on the 320i by New Zealand participants.

Strongest VAS Attributes	Gestalt Principles
Consistent/Uniform (54.7/100)	Intended design feature included Similarity. Common Movement.
Features	
Bone line	'The good curve'. Common Movement Bone line
Rear Bone line	Common movement Flame Surfacing
Door handles	Experience. Common movement Flame Surfacing
Kidney grille	Area. Similarity. Proximity. Whiskas chrome details

Similar to the attribute Simple/Clean, the terms Consistent/Uniform were not strongly indicated under the pictogram methods but were highly appreciated in the VAS results. However, a feature relating to this particular attribute was very consistently indicated by New Zealand participants. One striking finding was that the grille, as a feature, was strongly perceived as Consistent/Uniform. When referring to the background research relating key features and the Gestalt principles, the grille is a highly complex element with a high degree of 'Similarity'. This could possibly explain this outcome that the grille has been strongly perceived as 'consistent/uniform'. This also supports the argument that features and attributes that have similar physical order principle are often perceived together. This is based on the outcome that the remaining three features are all in the same area along the bone line of the 320i, and

these features all share the Gestalt principle of 'Common movement' together with the quality Consistent/Uniform.



Figure 5-6. Features on the 320i indicated as Consistent/Uniform in New Zealand.

Amongst all the features indicated under the various attributes, the front grille as a visual element has been strongly appreciated by the New Zealand participants. Table 5-5 is based on the visual analysis study. The Kidney Grille is categorised under three Gestalt principles of *Similarity*, *Proximity*, and *Enclosedness*. The large number of elements positioned within the double grille created a strong and clear Gestalt, which is the most appreciated visual element in the New Zealand study. Based on the pictogram findings, the grille was appreciated under various keywords; the strongest appreciated terms are listed in the right hand column in Table 5-5. Furthermore, the 'Whiskas' chrome detail was added to the 320i to emphasise the grille as a brand-specific feature, and based on the pictogram outcome, the chrome detail possibly contributed to consumers' strong visual perception of the Kidney Grille.

Table 5-5. Comparison between the visual attributes of the feature and terms appreciated with the feature.

Feature	Gestalt Principles	Terms appreciated
Kidney grille	Similarity. Proximity. Enclosedness	
	Proximity. Similarity. Area. Enclosedness	Distinctiveness Well-defined
	Similarity. Common Movement.	Consistent/Uniform
	'The good curve'. Common Movement.	Harmonious/Flowing
	'The good curve'. Similarity. Common Movement.	Sleek/Elegant
'Similarity' and 'Common movement' are the common principle in Kidney Grille and descriptive terms listed above		

The key feature of this research is to understand consumer perception of cars using different types of questionnaire methods to determine how people holistically and analytically perceive cars. Following on from analyses and discussions of the most frequently indicated features from the pictogram findings, subsequent analysis focuses on the attributes that were strongly indicated by New Zealand participants. Comparing the VAS and pictogram findings on consumers' appreciation of the 320i, the same set of attributes of visual qualities are being perceived differently. This suggests that people perceive a car differently when viewing an image of the car and when identifying features on the image. This inconsistency in the outcome between different models of perceptions could possibly be due to the participants' weaker ability - as non-designers - to describe forms and elements of cars. The following pages will analyse and discuss the findings of the pictogram outcomes on attributes, as shown in Table 5-6, and investigate the relationship between the visual implications of the terms and the features indicated based on Gestalt principles.

Table 5-6. Findings on highly appreciated attributes on pictogram.

Strongest Pictogram Attributes	Gestalt's physical attributes
1. Distinctive/Well-defined 14 indications	Proximity. Similarity. Area. Enclosedness
2. Balanced/Proportional 13 indications	Proximity. Similarity. 'The good curve'.
3. Harmonious/Flowing 10 indications	'The good curve'. Common movement.

Table 5-7. Strongly indicated (1st) attributes on the 320i by New Zealand participants.

Strongest Pictogram Attributes	Gestalt Principles Intended design feature included
1. Distinctive/Well-defined	Proximity. Similarity. Area. Enclosedness
Features	
DRG	Common movement. Proximity. Symmetry Composition of the frontal area
Kidney Grille	Area. Similarity. Proximity. Whiskas chrome details
Quad headlights	Enclosedness. Area. Proximity
Air Dam	Common movement. Proximity. Part of Down Road Graphic
Wheel arch	Area. Enclosedness Flame Surfacing
Bone line	'The good curve'. Common Movement

The terms Distinctive/Well-defined as visual attributes have the most indications amongst the terms provided. However, comparatively these terms were not as strongly appreciated under the VAS outcome. Referring to Table 5-7, the Gestalt principles between the term and features identified shows a high degree of consistency in the principle 'Proximity'. This consistency suggests the notion that consumers sub-consciously perceive the visual elements that have similar Gestalt principles as the specific descriptive terms. Figure 5-7 identified that consumers mainly appreciated the attribute on the frontal part of the 320i as distinctive and well-defined. This matches the design intentions of BMW, as the frontal portion of the 320i was highly emphasised with a design that integrated the bumper into the hood and wheel-arches. Interestingly, Gestalt principles relating to the

Kidney grille as a visual element are a total match with the Gestalt principle of the descriptive terms Distinctive/Well-defined.



Figure 5-7. Features on the 320i indicated as Distinctive/Well-defined in New Zealand.

Comparing the visual features indicated as Distinctive/Well-defined, this outcome shows a lesser degree of consistency in the embodied Gestalt principles between the features appreciated. Figure 5-8 and Table 5-8 indicates that consumers mainly appreciated the overall feature and visual continuity of the lines on the panels as Balance/Proportional. Surprisingly, the Shark Fin antenna was appreciated under this particular term but this visual element has a different Gestalt principle to the attribute. This could possible relate to the antenna complimenting the overall exterior through its symmetrical design as a small feature on top of the DLO curvature.

Table 5-8. Strongly indicated (2nd) attributes on the 320i by New Zealand participants.

Strongest Pictogram Attributes	Gestalt Principles Intended design feature included
2. Balanced/Proportional	Proximity. Similarity. 'the good curve'
Features	
Overall exterior	'the good curve'. Similarity. Aerodynamic Design. Flame Surfacing
Air Dam	Common movement. Proximity. Part of Down Road Graphic
Quad Headlights	Area. Proximity. Enclosedness.
Side of hood	Area. Enclosedness Flame Surfacing
Line flow	'the good curve'. Common Movement Aerodynamic Design
Roof	'the good curve'
Bone line and Lower side panels	'the good curve'. Common Movement Bone line. Side
Shark Fin antenna	Experience



Figure 5-8. Features on the 320i indicated as Balanced/Proportional in New Zealand.

The features that have been indicated as Harmonious/Flowing are mostly surface and line flows. Consistency of the Gestalt principles between the attribute Harmonious/Flowing and the features indicated is strikingly high. This match supports the notion that consumers perceived the 'hidden principles' between expression attributes and physical features coherently. Interestingly, the Kidney Grille was indicated by one participant with this descriptive attribute, but the Gestalt principles do not match with the principles relating to Harmonious/Flowing.

Table 5-9. Strongly indicated (3rd) attributes on the 320i by New Zealand participants.

Strongest Pictogram Attributes	Gestalt Principles Intended design feature included
3. Harmonious/Flowing	'The good curve'. Common Movement.
Features	
Kidney Grille	Area. Similarity. Proximity. Grille
Front slope of DLO	Common movement.
Line flow	'The good curve'. Common Movement. Aerodynamic Design
Roof	'The good curve'.
Side (includes bone line, Lower side panels)	'The good curve'. Common Movement. Bone line. Side, Flame Surfacing



Figure 5-9. Features on the 320i indicated as Harmonious/Flowing in New Zealand.

VPE: Association

Table 5-10. The strongest expression on pictogram findings of brand-specific associations on the 320i by New Zealand participants.

Strongest Pictogram Expressions	Gestalt Principles Intended design feature included
1. Brand-specific (x12)	-
Features	
Power Dome	Similarity. Proximity. Enclosedness. Common movement.
DRG	Common movement. Proximity.
Wheels	Similarity
Roundel logo at rear	Experience
Rear area (upper middle)	'The good curve'
Overall design of 320i	Similarity. 'The good curve' Aerodynamic Design. Flame Surfacing

The most highly associated expression of the 320i, as indicated in the pictogram, is the meaning of what represents BMW as a brand. The visual feature of Power Dome is the strongest feature associated as brand-specific. The only brand-specific features that were not indicated by New Zealand consumers were the Quad headlights and the Hofmeister Kink. The model-specific feature, such as the wheels, was also associated as brand-specific by the participants. The strong association of the grille is based on BMW's long history of adopting this shape and form language. The discussions of this feature in model appreciation also indicate that the grille creates a strong Gestalt experience. Compared to the Kidney Grille, the Hofmeister Kink has been less emphasised by BMW as a design feature,

and therefore is not as highly associated as the Kidney Grille. However, BMW's Quad headlights were not associated as an individual visual element. This could possibly be due to the modifications and refinement of the brand-specific features under the new design direction.



Figure 5-10. Features on the 320i indicated as Brand-specific in New Zealand

VPE: Comprehension

The participants perceived the 320i as part of the BMW family, based on the familiarity of the brand-specific features. This comprehension of brand-specific features is based on the continuous repetition or integration of these features into car models by BMW over time. Amongst the features mentioned in the open-ended questions, the Kidney Grille was most commonly indicated by participants.

Table 5-11 identifies the expressive qualities that were strongly comprehended with the 320i by New Zealand consumers. Similar to the findings of descriptive attributes discussed in the last section, the strongly comprehended terms on VAS are different from the pictogram perceptions. However, as these expressions have an abstract and intangible nature that rely more on personal interpretation than on the visual appearance of the 320i, it will be fascinating to examine the comprehension finding between the two markets later in this chapter. Could it be that consumers' visual perception of a car's image is based on their connection with values and not visual features?

The next few pages will follow a similar pattern in presenting analysis and discussions. The aim of this analysis is to examine whether the same pattern of correlation in Gestalt principles exists between the expressive terms and features indicated under these terms.

Table 5-11. Strongly associated terms from VAS outcomes.

Strongly Comprehended Expressions	Gestalt Principles
1. Modern (60.5/100) High-tech/Stylish	Similarity. Symmetry. Experience.
2. Comfortable (58.1/100) Luxuries/Enjoyable	'The good curve'. Common Movement. Experience.
3. Desirable (55.7/100) Confident/Focused	Common Movement. Any ordering principle that are strongly adopted.

Table 5-12. Strongly comprehended (1st) expression on VAS and features indicated from the pictogram findings on the 320i by New Zealand participants.

Strongest VAS Expressions	Physical attributes Intended design feature included
1. Modern (60.5/100)	Similarity. Experience.
Features	
Overall car exterior	Similarity. 'The good curve' Aerodynamic Design. Flame Surfacing
DRG	Common movement. Proximity.
Air dam	Common movement. Proximity. Part of Down Road Graphic
Wheel arch	Area. Enclosedness Flame Surfacing
Side Mirrors	Symmetry. Enclosedness. Experience

The expression 'Modern' from the VAS finding was widely appreciated by New Zealand car enthusiasts. Interestingly, the expression of 'Modern' was not widely indicated in the question with the pictogram method. However, when analysing the terms in the research designs section, the term 'Modern' is an abstract and tangible term, as modern in this context presents the contemporary style. Therefore the 'contemporary style' is the current trend rather than referring to any historical styles or trends. As mentioned in Section 2.1, the principle Symmetry is not included in the main part of this analysis due to the nature of automotive design. However, the side mirrors is one of the few features that was identified as Symmetrical, notable since mirrors could be designed in an asymmetrical manner on

cars. Through analysing the features indicated as Modern relating to the Gestalt principles, it appears that no specific features correlated strongly with the Gestalt principle of 'Modern'. This inconsistency in related Gestalt principles between the expression and features of the 320i suggest that tangible terms such as 'Modern' could be difficult to associate with specific visual features. This raises the questions: are expressions with an intangible nature harder for consumers to indicate? Or, is it that the consumers have perceived the overall design with such expression? The remaining highly associated terms will be analysed to clarify the questions above.



Figure 5-11. Features on the 320i indicated as Modern in New Zealand.

The expression of Comfort in visual perceptions of the 320i was only highly appreciated in the VAS outcome and not in the pictogram findings. Figure 5-12 displays the pictogram outcome. This finding indicates that there are no features that have a particularly strong association with the notion of Comfort. Interestingly, a participant associated the interior space of the 320i by identifying the Day Light Opening as Comfortable. This new finding also supports the pattern of correlation between the various attributes and visual elements indicated with these attributes. This is likely because that the weaker or intangible an expression is, the less the association between this attribute and the features of the 320i. The Gestalt principle of 'Experience' is less adopted in the exterior design language of cars as it is meaning-related or function-use-related and could be based on the user's understanding or experience of cars with similar function.

Table 5-13. Strongly comprehended (2nd) expression on VAS and features indicated from the pictogram findings on the 320i by New Zealand participants.

Strongest VAS Expressions	Physical attributes Intended design feature included
2. Comfortable (58.1/100)	'The good curve'. Common Movement. Experience
Features	
Overall design of 320i	Similarity. 'The good curve' Aerodynamic Design. Flame Surfacing
Daylight Opening (Interior)	Experience Not in the context of this study
Wheels	Similarity



Figure 5-12. Features on the 320i indicated as Comfortable in New Zealand.

Table 5-14. Strongly comprehended (3rd) expression on VAS and features indicated from the pictogram findings on the 320i by New Zealand participants.

Strongest VAS Expressions	Physical attributes Intended design feature included
3. Desirable (55.7/100)	Common Movement. Any ordering principle that are strongly adopted.
Features	
Overall car exterior	Similarity. 'The good curve' Aerodynamic Design. Flame Surfacing
Power Dome	Area. Similarity. Proximity. Grille. Air dam
Air dam	Common movement. Proximity. Composition of Down Road Graphic
Quad headlights	Area. Proximity. Enclosedness.
Tail lights and corner	Area. Enclosedness. 'The good curve'. Common Movement Rear wheel arch, corner treatment
Roof (DLO)	'The good curve'

Surprisingly, the grille as a feature was strongly perceived as Desirable. Opposite to the expression Comfortable, the term Desirable is more strongly perceived under the pictogram methods as being more symbolic towards the brand impression, in terms of desirability of owning this car. Moreover, the grille was very consistently perceived. Table 5-14 is based on the background research listing the Gestalt principles relating to the attribute and features indicated in Figure 5-13. Based on the analysis of expression terms (see Section 3.2 and Appendix E), the term Desirable lacks a descriptive association and could be associated under any principle that's been strongly incorporated into the design. In the design of the 320i, the

Kidney Grille is a highly complex element with a high degree of *Similarity and Proximity*. This could possibly be explained because the grille has been strongly perceived as *Consistent/Uniform* with its elements highly ordered.



Figure 5-13. Features on the 320i indicated as Desirable in New Zealand.

Akin to the model association outcome, the Kidney Grille is one of the most commonly indicated features on the 320i, together with the design of the whole car. Table 5-15 lists the expressions that are comprehended with the Power Dome and Table 5-16 lists the same information with regards the whole design of the 320i. Interestingly, the Power Dome consisting of the Kidney Grille and the air dam was indicated as one visual feature, a model-specific feature that was emphasised by BMW on the 320i. It appears that the integrated grille has been perceived by New Zealand participants as the same visual feature as intended by BMW. Furthermore, as highlighted in blue in Table 5-16, there is a correlation in the embodied Gestalt principle of 'Common movement' between associated expressions and the visual feature.

Table 5-15. Comparison between the physical attributes of the feature and the terms comprehended with the front grille area.

Feature	Gestalt Principles	Comprehended Expressions
Power dome	Similarity. Proximity. Enclosedness. Common movement.	
	-	Brand-specific
	Common Movement Or Any ordering principle that are strongly adopted	Desirable
	'The good curve'. Common Movement	Dynamic
	Similarity. 'The good curve'. Common Movement	Elegant
Summary	'Common Movement' is the main Gestalt principle comprehended with the Power dome	

The overall design containing various forms and ordering principles, such as continuity of lines, surface and proportion is highly refined, as identified in the visual analysis of the 320i. This refinement in design language on the 320i has been widely indicated by the New Zealand consumers through their various comprehensions. However, there are several ways of explaining this outcome. One is that comprehension of the overall design of the 320i is based on the refinement of this design; or secondly, it is the result of the consumers' lack of ability to indicate specific visual features, and therefore generalises the perceptions. This issue will be analysed and discussed in the section on the BMW and Lexus comparison.

Table 5-16. Comparison between the physical attributes of the feature and the terms associated with the design of 320i as whole.

Feature	Gestalt Principles	Comprehended Expressions
Design of 320i as a whole	Similarity. 'The good curve'	
	'The good curve'. Common Movement.	Dynamic
	Similarity. 'The good curve'. Common Movement	Elegant
	Relation indefinable	Versatile
	Similarity. Symmetry. Experience.	Modern
	Common Movement and any ordering principle that are strongly adopted.	Desirable
	Proximity. Similarity. Area. Enclosedness	Sporty
	'The good curve'. Common Movement. Experience.	Comfortable
-	Brand-specific	
Summary	'Common Movement', 'The good curve' and 'similarity' are the Gestalt principles correlated with design of the 320i as a whole	

Table 5-17. Strongly comprehended (2nd) expressions on the 320i by New Zealand participants.

Strongest Pictogram Expressions	Gestalt Principles Intended design feature included
2. Elegant (12 indications)	Similarity. 'The good curve'. Common Movement
Features	
Kidney Grille including air dam and logo	Similarity. Proximity. Enclosedness. Common movement.
Power Dome	Common Movement. Proximity. Enclosedness
Wheels	Similarity
Quad Headlights	Enclosedness. Symmetry. Area. Proximity
Side Mirrors	Experience
Top of DLO	'The good curve'
Lower side panel detail	-
Rear overall	'The good curve'
Rear corner	'The good curve'. Common Movement
Overall design of 320i	Similarity. 'The good curve' Aerodynamic Design. Flame Surfacing
'Common Movement' and 'Similarity' are the main Gestalt principles correlated with Elegant and features indicated by consumers	

The findings from the New Zealand study on model association indicate that the expression of elegance in the 320i has been strongly comprehended by participants. Table 5-15 lists the Gestalt principles relating to both the expression and features indicated under Elegant in Figure 5-15. It is evident that the formal aesthetics of continuing lines and smooth curves have been perceived as Elegant in New Zealand. Moreover, the other embodied Gestalt principles, identified in orange in

Table 5-17, are all similar to each other. These correlations between the formal aesthetic qualities embodied in the expression and features comprehended, supports the pattern that occurred in the model appreciation section discussed earlier.



Figure 5-14. Features on the 320i indicated as Elegant in New Zealand.

The expression of Dynamic has been widely associated with a range of visual elements or features. This strong correlation of Gestalt principles between the expression and features associated is another example supporting the pattern of how meanings and visual attributes on automotive design are perceived by consumers.

Table 5-18. Strongly comprehended (3rd) expressions on the 320i by New Zealand participants.

Strongest Pictogram Expressions	Gestalt Principles Intended design feature included
3. Dynamic (10 indications)	'The good curve' . Common Movement.
Features	
Kidney Grille including logo	Similarity. Proximity. Enclosedness. Common Movement.
Air dam	Common Movement. Proximity. Enclosedness
Frontal corner	Similarity
Shoulder ine	'The good curve'
Wheels	'The good curve'
Top of DLO	'The good curve'
Tail lights and corner	Area. Enclosedness. 'The good curve' . Common Movement Panels, corner treatments.
Overall design of 320i	Similarity. 'The good curve' Aerodynamic Design. Flame Surfacing



Figure 5-15. Features on the 320i indicated as Dynamic in New Zealand.

Following from the analysis and discussion on findings from the New Zealand study of the BMW 320i, it is evident that the 320i as a car and BMW as its associated brand has been highly perceived as a premium car/company with good automotive designs. The coherence of the design of the 320i from details in the car as a whole could possibly contribute to the strong perceptions of visual aesthetics in the 320i instead of other marketing emphasis, such as the performance of the car. This suspicion that consumers perceive coherent and refined designs more successfully than weaker designs with less refinement could only be discussed in the section on BMW and Lexus after the four set of studies have been discussed. The following paragraph will summarise the discussions sections listed under the VPE modes.

These discussion findings are important as they suggest how New Zealand consumers perceived the exterior of the 320i and demonstrate the comprehensiveness of the VPE framework as a theory. As a highly refined design, the 320i has made a strong consumer impression in the New Zealand study since the model was rated as both highly attractive and distinctive amongst other cars in the same market. Furthermore, the consumer recognition of this model correlates with BMW's intended brand image of heritage and reputation; on aesthetic design and performance; and the type of brand image that has been established through the brand's achievements and its cars. These independent self-concepts are

values that are emphasised by people from Western cultures, such as the New Zealand Western-dominated culture. The overall appreciation and comprehension of the 320i show a pattern of correlating Gestalt principles between the descriptive/expressive attributes and features indicated. However, the attribute/expression strongly perceived under the VAS (holistic perception) method differs from the indications of the pictogram (analytical perception) based on the same attribute/expressions. This pattern of differentiation in the level of perception between these two research methods was more prominent in the model expression analysis. This suggests that consumers perceived the internal expressions differently, one based on the subconscious comprehension of the 320i and BMW, and the other based on visual comprehension through indications of visual features. The next section follows a similar structure and analyses and discusses the findings from Taiwan's BMW outcome.

BMW in Taiwan

The findings show that the Taiwan consumers who participated in this research had a similar level of interest in automotives, but were not as knowledgeable as the New Zealand participants. The outcome shows that participants in Taiwan's BMW study have an above average level of interest in cars with the average outcome of 3.3/5, with five representing 'strongly interested'. However, the average level of car knowledge was only 2.5/5, with five representing 'knows everything about cars'. This weaker knowledge in cars likely contributed to the dream car selection responses showing 12 out of 15 participants indicated premium car brands as their dream cars instead of the super car brands. One reason for this could be Taiwan's geographical setting and the higher prices of super cars in the region than in New Zealand. Less super cars are seen on the road, and therefore people have less design knowledge and are unlikely to be as familiar with the super car brands. However, it could also possibly relate to people's values regarding the representational value of the more well-known premium car brands: the greater the representational value the greater likelihood that the owner of a particular car brand is recognised as 'successful and rich'. Nine out of 15 dream car selections were based on the visual appearances of the car, and surprisingly in the Eastern culture context, only two indications were based on representational values.

VPE: Appreciation

Referring to Appendix F, based on the seven images of cars targeting the same market, the top three cars that rated the most attractive are shown in Table 5-19. Surprisingly, and unlike the New Zealand outcome, BMW was rated less attractive than Lexus by the Taiwanese BMW participants.

Table 5-19. The most attractive cars indicated in Taiwan based on selections of seven premium cars.

Visual stimuli of cars provided as part of the questionnaire			
Order of ranking			
	1. Lexus (avg mark: 67.9/100)	2. BMW (avg mark: 65.8/100)	3. Audi (avg mark: 52.0/100)

Also, referring to Table H-03 and H-08, it indicates that the cars appreciated in these two markets are different. However, although the cars are ranked differently, the average marks given by New Zealand consumers on the same models are lower than the Taiwan outcome. The high average marks given by Taiwan consumers could simply be due to the fact that these models are perceived more strongly in Taiwan; or due to the interdependent culture that people responded indirectly to the questions. Part of the analysis focus in this section on Taiwan BMW will be identifying patterns in responses relating to correlations and average marks.

Following the individual research analyses on the 320i and the IS250, differences in appreciation between the 320i and IS250 will be further examined in the comparative discussions of the brands,

Table 5-20. Finding on highly appreciated qualities on the analogue scale and pictogram.

Finding Summary	Gestalt's physical attributes
1. Simple/Clean (76.1/100)	'The good curve'. Similarity. Common movement.
2. Harmonious/Flowing (71.6/100)	'The good curve'. Common movement.
3. Sleek/Elegant (71.3/100)	'The good curve'. Similarity. Common Movement.

Table 5-20 displays the results from Section Four of the questionnaire, focusing on aesthetic-related appreciations. Akin to the New Zealand study results, the perceptions between viewing an image and indicating actual features on the same image are inconsistent. This suggests that, in both markets, the same design could be perceived differently between appreciations based in the holistic and analytical perceptions. Two out of the top three most appreciated attributes on the 320i perceived by Taiwan consumers were the same attributes as those indicated by the New Zealand participants. However, the average marks indicated in Taiwan were higher than for the New Zealand outcome. These results match the overall positive responses since the only negative response, Ugly/Non-appealing was the weakest rated expression in Taiwan. It will be interesting to

examine how the term 'Ugly/Non-appealing' is rated in the Lexus study and in the comparative discussion between the two vehicles. The most appreciated attributes using VAS and pictogram findings will be analysed and discussed using the same structure as in the New Zealand study. However, the overall pattern of differences in modes of perceptions that was established in the New Zealand BMW section will not be repeated in this section.

Table 5-21 lists the visual elements indicated on Figure 5-17 that were indicated with the attribute Simple/Clean in the pictogram findings, and the Gestalt principles, relating to both the attribute and the features. Surprisingly, the features indicated with this attribute by the Taiwan consumers are highly cohesive, with a large number of participants perceiving the overall design of the 320i as Simple/Clean. Moreover, consumers appreciated the formal aesthetic qualities relating to the primary form elements on the 320i as Simple/Clean.

Table 5-21. Strongly ranked (1st) attributes on the 320i by Taiwan participants.

Strongest VAS attributes	Physical attributes Intended design feature included
1. Simple/Clean (76.1/100)	'The good curve' . Similarity. Common movement.
Features	
Overall design of 320i	Similarity. 'The good curve' Aerodynamic Design. Flame Surfacing
Line flow	'The good curve' . Common Movement Aerodynamic Design
Side of the hood	Area. 'The good curve' Flame Surfacing
Bottom side area	'The good curve' . Common Movement
Wheels	Similarity



Figure 5-16. Features on the 320i indicated as Simple/Clean in Taiwan.

Table 5-22. Strongly ranked and indicated (2nd) attributes on the 320i by Taiwan participants.

Strongest VAS Attributes	Physical attributes Intended design feature included
2. Harmonious/Flowing (71.6/100) * strongest attribute in pictogram	'The good curve' . Common movement.
Features	
Overall design of 320i	Similarity. 'The good curve' Aerodynamic Design. Flame Surfacing
Grille and headlights	Area. Similarity. Proximity. Enclosedness
Quad Headlights	Area. Similarity. Proximity. Enclosedness
Corner of DLO and hood	'The good curve'
Side area and line feature of the hood	Area. 'The good curve' Flame Surfacing
Bone line	'The good curve'
DLO	'The good curve' . Common movement.
Interior	Experience. Not covered in this case study
Door handles	Similarity. Experience.

Table 5-22 lists the features indicated in Figure 5-18 by the Taiwan consumers that were perceived as 'Harmonious/Flowing'. This attribute was also the most highly appreciated attribute analytically in the pictogram section. Interestingly, the interior of the 320i was perceived as 'Harmonious/Flowing' by Taiwanese consumers. As the quality of car interiors are less visible from the windows, this design feature relies on expectation or experience of BMW cars. Does this suggest that the experiences of tactile comfort contribute to how people visually perceive

the car? Amongst the features such as the door handle and the curve between the hood and DLO indicated under this attribute, it is apparent that the Taiwanese consumer notices more smaller design details than the New Zealand consumer. This particular culture-related finding will be discussed in the market comparative section.



Figure 5-17. Features on the 320i indicated as Harmonious/Flowing in Taiwan.

As identified in Table 5-23, the embodied Gestalt principles in the features listed and the attribute of 'Sleek/Elegant' are highly coherent. This high level coherence is similar to the analysis on the attribute 'Sleek/Elegant'. However, both of these attributes were not as strongly appreciated in the pictogram section. This new pattern of specific terms that are appreciated more cohesively relating to its embodied Gestalt principle is fascinating. This suggests that certain visual attributes are more successfully appreciated by consumers.

Table 5-23. Strongly ranked (3rd) attribute on the 320i by Taiwan participants.

Strongest VAS Attributes	Physical attributes Intended design feature included
3. Sleek/Elegant (71.3/100)	'The good curve'. Similarity. Common Movement.
Features	
Overall design of 320i	Similarity. 'The good curve' Aerodynamic Design. Flame Surfacing
Air Dam and close detail	Common movement. Proximity. Part of Down Road Graphic
Quad Headlights	Area. Similarity. Proximity. Enclosedness
Side Mirrors	Symmetry. Enclosedness. Experience
Bone line	'The good curve'
DLO	'The good curve'
Rear end	'The good curve'
Tai lights	Area. Enclosedness



Figure 5-18. Features on the 320i indicated as Sleek/Elegant in Taiwan.

The visual features that were strongly appreciated in the pictogram findings are the Kidney Grille and the design of the 320i as a whole. Table 5-24 lists the embodied Gestalt principles of these attribute and features. The Kidney Grille as part of the Power Dome is also the strongest feature appreciated by the New Zealand consumers. Furthermore, the attributes appreciated with the grille are similar; consumers from both countries appreciated this brand-specific feature as 'Distinctive/Well-defined' and 'Consistent/Uniform'. However, as mentioned in this section, the Taiwan outcome indicates that the Taiwanese consumer perceives visual features or attributes in a similar manner. This is evident as less attributes were appreciated with the Kidney Grille.

Table 5-24. Comparison between the physical attributes of the feature and the terms appreciated with the front grille area.

Feature	Gestalt Principles	Appreciated attributes
Kidney Grille (including BMW logo)	Similarity. Proximity. Enclosedness. Common movement.	Distinctive/Well-defined (x4) Consistent/Uniform (x3) Interesting/Fascinating (x1)
	Proximity. Similarity. Area. Enclosedness	
	Similarity. Common Movement.	
	Experience.	
Summary	'Similarity' is the most correlated Gestalt principle between the design feature and appreciated attributes	

Compared to the Kidney Grille, the whole design of the 320i is appreciated with more visual attributes. As suspected, the whole of the 320i also consists of various features and details, and therefore the correlation of Gestalt principles is also weaker. These strong appreciations on the 320i suggest that this highly refined automotive design has been perceived strongly as a whole. Moreover, this might also suggest that the 'flame surfacing' design language on all exterior surfaces of the 320i has contributed to the high level appreciations of the design as a whole. This speculation will be further discussed in the analysis and discussion on model associations when examining the features indicated as 'brand-specific'.

Table 5-25. Comparison between the physical attributes of the feature and terms appreciated with the front grille area.

Feature	Gestalt Principles	Appreciated attributes
Design of 320i as a whole	Similarity. 'The good curve'	Sleek/Elegant (x4) Simple/Clean (x4) Harmonious/Flowing (x3) Balanced/Proportional (x2) Consistent/Uniform (x2) Beautiful/Stunning (x1)
	'The good curve'. Similarity. Common Movement.	
	Area. Enclosedness.	
	'The good curve'. Common Movement.	
	Proximity. Similarity. 'The good curve'	
	Similarity. Common Movement.	
	Multiple principles.	
	Summary	

Based on the embodied Gestalt principles indicated in Table 5-26 based on Figure 5-20, the attribute of 'Balances/Proportional' shows a strong pattern of correlation in perceptions between different visual features relating to a specific descriptive quality. This is the first case in this study where consumers appreciate the curve of BMW's brand-specific feature, the Hofmeister Kink. Surprisingly, unlike the New Zealand BMW findings, no visual features on the front of the 320i have been indicated with this attribute. This difference between features appreciated in different markets will be discussed in the comparative analysis between the two markets.

Table 5-26. Strongly indicated (2nd) attributes on the 320i by Taiwan participants.

Strongest Pictogram Attributes	Physical attributes Intended design feature included
2. Balanced/Proportional (13 indications)	Proximity. 'The good curve'. Similarity.
Features	
Overall design of 320i	Similarity. 'The good curve' Aerodynamic Design. Flaming Surface
DLO	"The good curve"
Hofmeister Kink	"The good curve"
Bone line	"The good curve"
Bottom side area	'The good curve'. Common Movement
Wheels	Similarity
Rear end	"The good curve"



Figure 5-19. Features on the 320i indicated as Balanced/Proportional in Taiwan.

Table 5-27 displays the list of Gestalt principles embodied in the attribute 'Distinctive/Well-defined' and features appreciated with this term, and Figure -21 indicates the features that were appreciated with this attribute. It is evident that features on the front area of the 320i have more correlations between the embodied Gestalt principles. Moreover, these features are more strongly appreciated by the consumers, as there are more indications, compared to features on others areas of the 320i. This strong correlation of Gestalt principles between the attribute and features indicated further evidence for the suggestion that Taiwan consumers perceived the design more coherently with embodied form and ordering principles.

Table 5-27. Strongly ranked (3rd) attributes on the 320i by Taiwan participants.

Strongest pictogram attributes	Physical attributes Intended design feature included
3. Distinctive/Well-defined (10 indications)	Proximity. Similarity. Area. Enclosedness
Features	
Kidney Grille	Similarity. Proximity. Enclosedness. Common movement.
Air Dam	Common movement. Proximity. Composition of Down Road Graphic
Quad Headlights	Area. Similarity. Proximity. Enclosedness
Shark Fin Antenna	Experience
Bone line	"The good curve"



Figure 5-20. Features on the 320i indicated as Distinctive/Well-defined in Taiwan.

VPE: Association

As expected, the Kidney Grille was strongly associated with BMW's brand identity. However, unlike the New Zealand outcome, the grille was mainly perceived in Taiwan without the middle portion of the air dam. Other than the association of the grille and logo, the Quad headlights - as a brand-specific feature - were perceived as a whole feature including the upper frontal portion of the 320i. Surprisingly, there is no brand-specific association on the design of the 320i as whole. This suggests that the brand-specific feature of flame surfacing has been highly perceived by consumers in Taiwan, but not in the brand-specific manner intended by BMW.

Table 5-28. The strongest expression on the pictogram findings, the brand-specific associations of the 320i by Taiwan participants.

Strongest Pictogram Expressions	Gestalt Principles
1. Brand-specific (14 indications)	Intended design feature included
Features	
Kidney Grille	Similarity. Proximity. Enclosedness. Common movement.
Frontal area	Common movement. Proximity. Composition of Down Road Graphic. Grille. Headlights
Air Dam	Similarity
Side area and line feature of the hood	Area. 'The good curve' Flaming surface. Headlights
Roundel logo at rear	Experience
Shark Fin antenna	'The good curve'



Figure 5-21. Features on the 320i indicated as Brand-specific in New Zealand.

VPE: Comprehension

This section analyses how the expressions proposed by BMW are perceived by consumers in Taiwan with the strongest expressions perceived based on the VAS and pictogram findings. These questions were asked in the same manner as the questions on model appreciation, but this time the terms are expressive instead of descriptive while using the same visual stimuli. Surprisingly, the most comprehended expressions in Taiwan are the same expressions indicated in New Zealand. The next few paragraphs will discuss how the visual elements are perceived relating to these expressions.

As listed in Table 5-29 and displayed in Figure 5-23, the visual elements and embodied Gestalt principles indicated by Taiwan consumers are strong comprehensions on the Greenhouse of the 320i, associating the interior with the expression 'Comfortable'. Also, the overall design of the 320i has been perceived as expressing 'Comfort'. One unusual perception of 'Comfort' on the 320i is the wheels. The researcher speculates that this comprehension might relate to the suspension of the car and hence a more Comfortable ride. Interestingly, the same features were also indicated by the New Zealand consumers. Thus, do people's associations of 'comfort' in the riding experience influence their comprehension of visual elements?



Figure 5-22. Features on the 320i indicated as Modern in Taiwan.

Table 5-29. Strongly comprehended (1st) expression on VAS, and features indicated from the pictogram findings on the 320i by Taiwan participants.

Strongest VAS Attributes	Physical attributes
1. Comfortable (75.6/100)	Intended design feature included 'The good curve'. Common Movement. Experience.
Features	
Overall design of 320i	Similarity. 'The good curve' Aerodynamic Design. Flaming Surface
Wheels	Similarity
Interior	Experience Not covered in this case study

The expression of 'Modern' is strongly perceived by the Taiwan participants both in the VAS and pictogram outcomes. Although not identified as an embodied Gestalt principle in the expression 'Modern', the features indicated in the Taiwan study show a high level of comprehension of features relating to Gestalt's 'Area' principle to 'Modern'. As the 'Area' principle and the whole of the 320i is likely to relate to the surfacing of the 320i, this finding suggests that the 'flame surfacing' is perceived as expressing 'Modern'. This is fascinating in reference to the designer reviews on the 320i by Car Design News (n.d). Overall, the interviewee commented that BMW's new design language correlates or leads the current trend in design and arts. As the term 'Modern' refers to 'he contemporary style, this comprehension of the surface and overall design suggests that the 320i has been perceived as 'Modern', part of the internal intention.

Table 5-30. Strongly comprehended (2nd) expression on VAS/Pictogram, and features indicated from the pictogram findings on the 320i by Taiwan participants.

Strongest VAS and Pictogram Attributes	Physical attributes Intended design feature included
2. Modern (74.1/100)	Similarity. Symmetry. Experience.
Features	
Overall design of 320i	Similarity. 'The good curve' Aerodynamic Design. Flam surfacing
Air Dam	Similarity.
Quad Headlights	Area. Similarity. Proximity. Enclosedness
Side area and line feature of the hood	Area. 'The good curve' Flaming surface. Headlights
Quad Headlights	Area. Similarity. Proximity. Enclosedness.
Front wheelarch	Area. 'The good curve' Flame surfacing
Greenhouse	"The good curve"
Tail lights and corner	Area. Enclosedness. 'The good curve', Common Movement Panels, corner treatments



Figure 5-23. Features on the 320i indicated as Modern in Taiwan.



One main discovery from the pictogram indications regarding the 'Desirable' features is the specific indication of the BMW logo as indicated in Figure 5-25 and Table 5-31. Referring to the example of the interpretations in Mainland China of Audi's logo, the logo is insignificant as a visual element when the perceivers do not understand the meaning it symbolises. This symbolic comprehension of the logo further proves the pattern of representational perception discussed earlier: that Taiwanese consumers perceive visual elements with their suggestive meanings. This suggests that a BMW logo symbolises wealth, personal achievements, and therefore style of a BMW model. This contrasts with the New Zealand BMW findings: the New Zealand consumer mainly indicated the Kidney Grille with the logo together as 'Desirable'. However, this pattern on suggestive interpretations on cars is not absolute as participants in Taiwan also highly comprehended the overall design of the 320i as 'Desirable'.



Figure 5-24. Features on the 320i indicated as Desirable in Taiwan.

Table 5-31. Strongly comprehended (3rd) expression on VAS and features indicated from the pictogram findings on the 320i by Taiwan participants.

Strongest VAS Attributes	Physical attributes Intended design feature included
3. Desirable (71.7/100)	Common Movement. Any ordering principles that are strongly adopted.
Features	
Overall design of 320i	Similarity. 'The good curve'. Aerodynamic Design. Flam surfacing
Air Dam	Similarity.
Kidney Grille	Similarity. Proximity. Enclosedness. Common movement.
Logo	Experience
Interior	Experience Not covered in this case study



The overall design of the 320i is the strongest feature perceived by Taiwanese consumers. This strong perception of the whole 320i indicates that the refined and coherent design, with the flame surfacing feature on the body work, is successfully perceived. Table 5-32 lists the expressions indicated with this feature and the Gestalt principles embodied within the features and expressions. Excepting the expression of 'Modern', all of the other expressions have the embodied Gestalt principle of 'The good curve', which correlates with the principles on the design feature. Referring to the model appreciation of the 320i, the attributes indicated also correlate with the same Gestalt principle of 'The good curve'. This supports the pattern that there is a closely correlated relationship based on form and ordering principles in consumers' perceptions and interpretations between both descriptive and expressive terms and visual features.

The strongest two expressions comprehended with the whole 320i are 'Modern' and 'Comfortable'. As the term 'Modern' relates more to the visual aesthetics, and the expression 'Comfortable' relates more to suggestive meanings, the emphasis that the Presentation and Representation domains of VPE are inseparable. Although it was discussed earlier that Taiwanese consumers perceived car designs suggestively, visual aesthetics still plays an essential role in the visual product experience of cars.

Table 5-32. List of expressions comprehended with the overall design of 320i as the strongest feature perceived by Taiwan consumers.

Feature	Gestalt Principles	Appreciated attributes
Design of 320i as a whole	Similarity. 'The good curve'	
	Similarity. Symmetry. Experience.	1. Modern (x5)
	'The good curve'. Common Movement. Experience	2. Comfortable (x5)
	Similarity. 'The good curve'. Common Movement.	3. Elegant (x3)
	Common Movement. Any ordering principles that are strongly adopted	4. Desirable (x3)
	'The good curve'. Common Movement	5. Dynamic (x1)
Summary	'The good curve' is the most correlated Gestalt principle between the design feature and expressions	
Summary from model appreciation	'The good curve' is the most correlated Gestalt principle between the design feature and appreciated attributes	

Table 5-33. Strongly comprehended (3rd) expression on pictogram and features indicated from the pictogram findings on the 320i by Taiwan participants.

Strongest VAS and Pictogram Attributes	Physical attributes Intended design feature included
3. Elegant (10 indications)	Similarity. 'The good curve'. Common movement
Features	
Overall design of 320i	Similarity. 'The good curve' Aerodynamic Design, Flam surfacing
Air Dam	Similarity.
Side Mirrors	Symmetry. Enclosedness. Experience
Quad Headlights	Area. Similarity. Proximity. Enclosedness.
Greenhouse	"The good curve".

Table 5-33 lists the features that have been perceived as 'Elegant', as displayed in Figure 5-26. The continuous line flow of the 320i and the whole design has been interpreted as 'Elegant' and as expected from previous analysis and discussions, the embodied Gestalt principles correlate between the comprehended expression and features. Surprisingly, no feature from the rear view of the 320i has been perceived as 'Elegant' by the Taiwan consumers. However, the headlights, the curve of DLO, and the whole 320i have all been perceived by consumers from New Zealand and Taiwan as Elegant. The similarities in features comprehended between the markets suggest that the model-specific features of coupe-like DLO, the whole design of the 320i, and the headlights have successfully been interpreted by consumers. Referring to Figure xx, the Taiwan consumers' perception of features that are 'Sleek/Elegant' in

regards the rear of 320i were similar to the New Zealand results. Strangely, the rear of the 320i was not perceived as 'Elegant' in Taiwan.



Figure 5-25. Features on the 320i indicated as Elegant in Taiwan.

5.1.2 Lexus in New Zealand

This section examines the findings from the questionnaires for Lexus in the New Zealand market. The level of enthusiasm for cars is 3.6/5, where five is strongly interested in cars; and the level of knowledge is 3.1/5. Both of these outcomes indicate that the participants in the Lexus study are similar to participants in both of the BMW studies, enabling the comparative discussions between markets and companies presented in the following sections. The most common car brand indicated in the dream car preference question was the classical cars from Chrysler. Akin to the BMW New Zealand outcome, 12 participants based their dream car selections on the visual aesthetics and appearances of a car. Only two out of 15 participants based their dream car preferences on the social and cultural representational values of the car/brand. This outcome matches the independent cultural characteristics of New Zealand as indicated in the chapter on secondary research. This statement is based on Western culture's emphasis on individualistic qualities in products, such as visual appearance, rather than the representational values.

VPE mode: Appreciation

Table 5-34 indicates that car design was strongly appreciated by the New Zealand participants. Referring to the lower than average marks awarded in brand impression and recognition, it is assumed that the IS250 has not been strongly appreciated as appealing compared to the other six designs by premium car brands. The next part of this discussion will focus on the visual features that were indicated by New Zealand participants relating to the descriptive attributes. This aims to identify how the aesthetic design of the IS250 has been perceived in the New Zealand market and the number of indications there are compared to the 320i study outcome in the same market.

Table 5-34. The top three most appealing car designs based on selections from seven cars targeting the same market segment.

Visual stimuli of cars provided as part of the questionnaire			
Order of ranking			
	1. BMW (avg mark: 53.8/100)	2. Mercedes Benz (avg mark: 52.4/100)	3. Audi (avg mark: 50.1/100)

The VAS and pictogram findings on consumer appreciations of the IS250 (Table 5-35) show a high level of inconsistency between the VAS and pictogram perceptions of the design. Both the VAS and pictogram outcome is weaker compared to the 320i responses, and it is interesting to note that the perceptions of the IS250, based on the two different methods, contradict each other, as the pictogram finding indicates that New Zealand consumers visually perceived the IS250 as 'Ugly/Non-appealing'.

Table 5-35. Findings on highly appreciated qualities on the analogue scale and pictogram.

	Finding Summary	Gestalt's physical attributes
VAS	1. Simple/Clean (55.5/100)	Area. Enclosedness
	2. Sleek/Elegant (50.1/100)	'The good curve'. Similarity. Common movement.
	3. Balanced/Proportional (48.1/100)	Proximity. Similarity. 'The good curve'
Pictogram	1. Beautiful/Stunning (9 indications)	Multiple principles
	2. Ugly/Non-appealing (9 indications)	Disruptions of 'The good curve'. Comment movement
	Multiple keywords that has 8 indications	-

Following the same format as the previous discussions on the 320i, Table 5-36 lists the features indicated in Figure 5-27 with its embodied Gestalt principles to analyse whether there are specific Gestalt principles that are commonly perceived. Surprisingly, the visual features appreciated as 'Simple/Clean' were mainly elements of, and not in, the overall design of the IS250, as in the BMW response. This difference in perception in these two different designs suggests that, compared to the 320i, the IS250 has a less refined and cohesive design language as a whole design and hence not perceived as an overall design.

Table 5-36. Strongly appreciated (1st) visual attributes on VAS and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest VAS attributes	Physical attributes Intended design feature included
1. Simple/Clean (55.5/100)	'The good curve'. Similarity. Common movement.
Features	
Grille including the logo	Enclosedness, Proximity
Headlights	Enclosedness, Proximity
Bone line	-
Rear corner from the side	Similarity.
Wheels	Similarity.
Design of the rear end	Similarity, Proximity



Figure 5-26. Features on the IS250 indicated as Simple/Clean in New Zealand.

The overall design of the IS250 and various surface transitions on the bodywork has been perceived as 'Sleek/Elegant' by New Zealand consumers. Both the overall design and surface transitions mostly relate to Lexus's new brand-specific feature, the Arrowhead Motif. This rapid change in the directions of corners was perceived and indicated with lines and arrows as displayed in Figure 5-28. This outcome suggests that the visual quality of the Arrowhead motif has been appreciated in New Zealand.

Table 5-37. Strongly appreciated (2nd) visual attributes on VAS/Pictogram and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest VAS and Pictogram Attributes	Physical attributes Intended design feature included
2. Sleek/Elegant (50.1/100)	Similarity. 'The good curve'. Common movement
Features	
Overall design of IS250	Similarity. Proximity Arrowhead Motif
DLO	'The good curve'.
Line flow along the hood	Similarity. Proximity.
Form of the car	Common Movement.



Figure 5-27. Features on the IS250 indicated as Sleek/Elegant in New Zealand.

There were no features indicated on the rear image of the IS250 and therefore this image is not shown as part of Figure 5-29 on consumers' indications of visual features that appear 'Balance/Proportional'. Interestingly, two participants indicated the tight line transitions on DRG with the visual quality of Balanced. Referring to Table 35-38 in this section, the correlations between the embodied Gestalt principles are contributed by the lack of embodied Gestalt principles and therefore the constant repetitions of principles embodied in the Arrowhead Motif as it is widely adopted on the kinship between features.

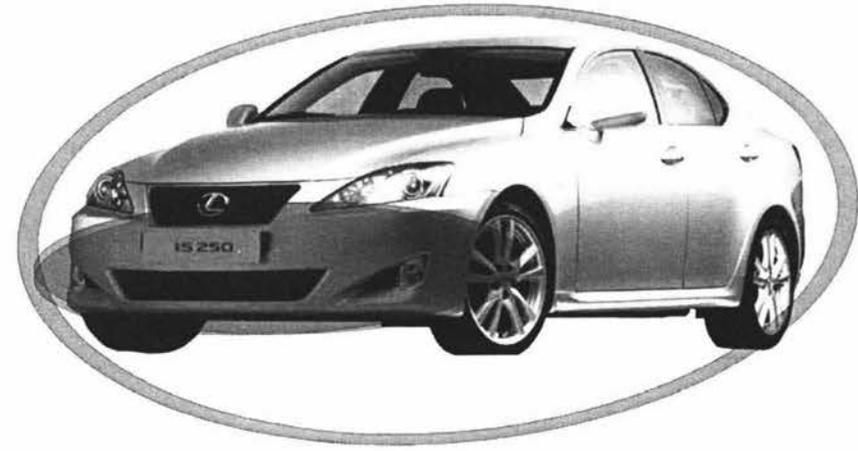


Table 5-38. Strongly appreciated (3rd) visual attributes on VAS/Pictogram and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest VAS and Pictogram Attributes	Physical attributes Intended design feature included
3. Balanced/Proportional (48.1/100)	Similarity. 'The good curve'. Proximity.
Features	
Overall design of IS250	Similarity. Proximity. (Arrowhead Motif)
Down Road Graphic	Similarity. Proximity. (Arrowhead Motif)



Figure 5-28. Features on the IS250 indicated as Balanced/Proportional in New Zealand.

Unlike the outcome for the 320i, the strongest visual feature on the IS250 appreciated in New Zealand is the Twin-barrel headlights. Moreover referring to Table 5-39, there are almost no correlations between the embodied Gestalt principles of the attributes and features indicated. This lack of correlation is due the IS250's less refined design language, as discussed in the visual analysis of the model. This difference in the pattern of perceptions between the 320i and the IS250 is very likely to be design-related, as a similar pattern of correlations between the embodied Gestalt principles exists in the 320i outcomes in both markets. Interestingly, the attribute 'Ugly/Non-appealing' and 'Beautiful/Stunning' are the most appreciated attributes based on the pictogram outcomes. This further reinforces the opinion stated earlier that there are contradictions between the perceptions of the IS250 from the New Zealand outcomes. Further analysis will be conducted on the most appreciated attributes in the pictograms to examine what types of features are perceived as 'Ugly/Non-appealing' by New Zealand consumers.

Table 5-39. List of attributes appreciated with the overall design of the IS250 as the strongest feature perceived by New Zealand consumers.

Feature	Gestalt Principles	Appreciated attributes (no. of indications)
Twin-barrel Headlights	Enclosedness. Proximity.	1. Consistent and Uniform (x3)
	Similarity. Common Movement.	
	Proximity. Similarity. Area. Enclosedness	2. Distinctive/Well-defined (x2)
	Multiple principles.	3. Beautiful/Stunning (x1)
	'The good curve'. Common Movement.	4. Ugly/Non-appealing (x1)
	'The good curve'. Similarity. Common Movement.	5. Simple/Elegant (x1)
Summary	There is no correlated Gestalt principle between the design features and attribute	

The attribute 'Beautiful/Stunning' in this context is defined as a form or features that is visually attractive. Due to the definition of this attribute, there are no embodied Gestalt principles defined with this attribute. However, as discussed before, the majority of the embodied principles in the visual features on the IS250 are the same principles as the brand-specific design language of the Arrowhead motif, widely adopted in the car. The features indicated are visually presented in Figure 5-30 and Table 5-40 also indicates that only one visual element has been indicated more than once. This lack of any unified perception on any specific features suggests that the design of the IS250 is weaker compared to the 320i, and hence perceived differently by consumers.

Table 5-40. Strongly appreciated (1st) visual attributes on pictogram and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest Pictogram Attributes	Physical attributes Intended design feature included
1. Beautiful/Stunning (9 indications)	Multiple principles.
Features	
Overall design of IS250	Similarity. Proximity. Arrowhead Motif
Grille	Enclosedness. Proximity.
Line flow along the hood	Similarity. Proximity.
Twin-barrel Headlights	Enclosedness. Proximity.
Bone line	-
Rear portions of the car	Enclosedness. Proximity.



Figure 5-29. Features on the IS250 indicated as Beautiful/Stunning in New Zealand.

Table 5-41. Strongly appreciated (2nd) visual attributes on pictogram and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest Pictogram Attributes	Physical attributes Intended design feature included
2. Ugly/Non-appealing (9 indications)	Disruptions of 'The good curve'. Comment movement
Features	
Overall design of IS250	Similarity. Proximity. Arrowhead Motif
Grille	Enclosedness. Proximity.
Twin-barrel Headlights	Enclosedness. Proximity.
Wheels	Similarity.
Rear corner from the side	Similarity.

In contrast, the other highly appreciated attribute of the IS250 is 'Ugly/Non-appealing' (see Table 5-41 based on features indicated in Figure 5-31). Compared with other pictogram outcomes, the frontal features such as the grille, air dam, and headlights have been perceived with the 'Pleasant' attributes as well as being indicated as 'Ugly/Non-appealing' by other participants. As the definition of 'Ugly/Non-appealing' is a contradiction of 'The good curve', the visual analysis of the IS250 suggests the design of this car is not as defined, and the use of the Arrowhead motif could possibly be visually unpleasant due to its tight line transitions. It is apparent that the design of the IS250 is not as visually pleasing for some participants in New Zealand and this will be further compared and discussed in the section between BMW and Lexus.

Overall, no specific features have been indicated strongly, that is, with more than three indications on any of the design features of the IS250 under any specific descriptive attributes. This outcome suggests that the design of the IS250 has not been strongly perceived, as discussed earlier in this section.



Figure 5-30. Features on the IS250 indicated as Ugly/Non-appealing in New Zealand.

VPE mode: Association

Table 5-42. Features indicated as 'Brand-specific' on the IS250 by New Zealand participants.

Pictogram Attributes	Physical attributes Intended design feature included
1. Brand-specific (4 indications)	-
Features	
Logo	Experience
Grille	Enclosedness, Proximity
DLO	'The good curve'
Rear portions of the car	Enclosedness, Proximity

Unlike the 320i associations in both markets, the associations of brand-specific features on the IS250 are poor in New Zealand with only four visual elements (displayed in Figure 5-32) indicated in the pictogram method. Table 5-42 indicates the embodied Gestalt principles identified in the features. However, as the numbers of features indicated are so small, there is a lack of pattern or explanation on the visual relationship between these features. The only brand-specific feature of Lexus that has been indicated with by New Zealand consumers is the logo of Lexus. Although various features have embodied the Arrowhead motif design language, similar to the Flame Surfacing of BMW, the Arrowhead motif is a feature that is related to the overall design of a car exterior. Based on the lack of indication on the overall design of the IS250, this suggests that although the

design of the Arrowhead motif is mostly been appreciated between the visual elements, it has not been associated as a feature that contributes to the whole appearance of IS250.



Figure 5-31. Features on the IS250 indicated as Brand-specific in New Zealand.

VPE mode: Comprehension

Table 5-43. Strongly comprehended (1st) visual attributes on pictogram and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest VAS/Pictogram Attributes	Gestalt Principles Intended design feature included
1. Simple (53/100)	'The good curve'. Common Movement
Features	
Door mounted side mirror	Experience.
Wheels	Similarity.
Side of IS250	-
Rear of the boot	'The good curve'. Area.

Compared to the BMW outcome, the average marks from the VAS questions on the IS250 are lower in New Zealand. The expression 'Simple' in this context is defined as 'Compositions of car exterior and features that are combined through the use of smooth continuous line or surface'. This is perceived strongly in the VAS and pictogram method, and in Figure 5-33 the features indicated as 'Simple' by New Zealand participants correlate with internal design intents. As indicated in Table 5-43, there is a lack of correlation between the embodied Gestalt principles and between the expression and features identified. This lack of correlation is due to the low number of indications on features and the plain design language of the IS250 based on the results from the visual analysis.



Figure 5-32. Features on the IS250 indicated as Simplistic in New Zealand.

The expression 'Luxury' and features comprehended is listed in the bottom half of Table 5-44, and Figure 5-34 which identifies the features and how they were indicated. Interestingly, the side of the IS250 and side mirrors that were perceived as 'Simple' are also perceived as 'Luxury'. Does this mean that the expression 'Simple' relates with the expression 'Luxury'? The following paragraph will analyse the third strongest VAS attribute to examine this relationship.

Table 5-44. Strongly comprehended (2nd) visual attributes on pictogram and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest VAS/Pictogram Attributes	Gestalt Principles Intended design feature included
2. Luxury (51.4/100)	'The good curve'. Experience
Features	
Door mounted side mirror	Experience
Greenhouse	'The good curve'
Side of IS250	-



Figure 5-33. Features on the IS250 indicated as Luxurious in New Zealand.

Table 5-45. Strongly comprehended (3rd) visual attributes on pictogram and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest VAS/Pictogram Attributes	Gestalt Principles Intended design feature included
3. Style (47.3/100)	Strong adoption of any specific principle to create clear gestalt
Features	
Front corner	Proximity
Grille	Enclosedness, Proximity
Bone line	Similarity
Rear portions of the car	Enclosedness, Proximity. 'The good curve'.
Wheels	Similarity
Overall IS250	Similarity. Proximity Arrowhead Motif

Referring to Figure 5-35 identifying the features indicated with the expression 'Style', the perceptions are scattered with no coherent features that are perceived by more than one participant. This suggests that the design of the IS250 is not strong in creating a strong visual product experience; which is a statement based on the visual format analyses. There are no embodied Gestalt principles specifically under the expression 'Style'; instead, it is a strong adoption of any Gestalt principle to create a strong visual perception. When examining the Gestalt principles in Table 5-45, it is apparent that the principle of 'Similarity' and 'Proximity' are closely correlated from the features indicated. The principle of 'Similarity and Proximity' in this design relies on the repetition of curves/elements and the grouping of these similar elements, as in the repeated curve or feature in the Arrowhead Motif of Lexus. This correlation between the Gestalt

principles suggests that the Arrowhead Motif has been perceived strongly as 'Stylish' by New Zealand consumers.



Figure 5-34. Features on the IS250 indicated as Stylish in New Zealand.

The strongest feature perceived by New Zealand consumers is the side of the IS250 with a total of only nine indications and three expressions comprehended with the design listed in Table 5-46. The Gestalt principle of 'Common Movement' is the most closely correlated principle between the expressions indicated. However, as the side of the IS250 lacks a form ordering language, this outcome suggests that the visual quality created through the grouping of movement in the same direction, defines the form language of the side of the IS250.

Other features such as the logo, headlights, and rear side of the boot all have relatively strong perceptions from consumers with a total of seven indications for each feature. The logo of Lexus is incorporated into the grille and interestingly, this brand-specific feature is perceived individually without the surrounding grille elements. This perception of the logo without the grille suggests that, due to a weak design identity of IS250, only the brand logo has been perceived by consumers in New Zealand.

The comprehension of model in the IS250 between the VAS and pictogram method in New Zealand shows a high level of correlations. This is evident as the strongest expression indicated under the VAS method is also the strongest expression perceived in the pictogram section. This correlated pattern of perceptions suggests that the design of the IS250 is perceived incoherently as the majority of the features indicated under the

attribute/expression have only one or two indications. The next section analyses and discusses how the Taiwanese consumer perceives the IS250 and Lexus. This will examine whether the Taiwan participants perceive the IS250 in a similar manner to the New Zealand consumers and whether the design is perceived with strong suggestive associations, similar to the BMW Taiwan discussion.

Table 5-46. List of attributes comprehended with the overall design of the IS250 as the strongest feature perceived by New Zealand consumers.

Feature	Gestalt Principles	Appreciated attributes (no. of indications)
Side of IS250	-	
	'The good curve'. Common Movement	1.Simple (x3)
	Common Movement. Proximity. Similarity	2.Sporty (x3)
	Strong adoption of any specific principle to create clear gestalt	3.Style (x3)
Summary	'Common Movement' is most correlated Gestalt principle between the design features and attribute	

5.1.3 Lexus in Taiwan

In general, the Lexus participants in Taiwan had a higher level of interest in automotives than the New Zealand participants, with the average of 3.7/5. However, similar to the BMW responses on participant backgrounds, the car enthusiast participants in the Lexus study in Taiwan had a slightly lower level of knowledge in automotives, with an average of 3/5.

Nine out of the fifteen responses on dream car preferences were based on the premium car brands. Referring to the BMW Taiwan discussion on participant backgrounds, this high degree of preference of premium cars by the Lexus participants in Taiwan is likely to be due to their lower level of knowledge in cars, their culture, living standards, and the geographical position of Taiwan. However, relating to the written responses given for the reasons for their dream car selection, only five participants indicated visual-related appearances while eight participants indicated the performance of the car. This stronger emphasis on the performance than the visual aesthetics of cars suggests that the Lexus participants were more focused on the speed and mechanical advances, such as the stereo. This suggests that the responses on the brand appeal of Lexus might relate to its engineering advances.

VPE mode: Appreciation

As indicated in Table 5-47 on the ranking of cars based on their appeal, the IS250 was not strongly perceived as a visually appealing car by the Taiwan consumers. In comparison, the 320i was indicated amongst the most strongly attractive designs.

Table 5-47. Top three most appealing cars based on selections of seven cars targeting the same market segment as the 320i and IS250.

Visual stimuli of cars provided as part of the questionnaire			
Order of ranking			
	1. BMW (avg mark: 70.3/100)	2. Mercedes Benz (avg mark: 62.6/100)	3. Cadillac (avg mark: 57.3/100)

Table 5-48 lists the strongest descriptive attributes appreciated by the Taiwan consumers and the Gestalt principles embodied within these attributes. As discussed in the Lexus study outcomes, there is a close correlation between the perceived attributes of the IS250 when the same questions were asked in VAS and pictogram. This correlation of attributes is highlighted in the red-coloured text in Table 5-48. Compared to the New Zealand Lexus outcome, the average rankings and the number of indications in the pictograms questions were slightly higher in Taiwan.

Table 5-48. Findings on the highly appreciated qualities on analogue scale and pictogram.

	Finding Summary	Gestalt's physical attributes
VAS	1. Harmonious/Flowing (64.5/100)	'The good curve'. Common movement.
	2. Simple/Clean (63.4/100)	Area. Enclosedness
	3. Sleek/Elegant(59.3/100)	'The good curve'. Similarity. Common movement.
Pictogram	1. Harmonious/Flowing (16 indications)	'The good curve'. Common movement.
	2. Simple/Clean (15 indications)	Area. Enclosedness
	3. Consistent/Uniform (10 indications)	Similarity. Common movement.

Table 5-49. Strongly appreciated (1st) visual attributes on VAS/pictogram and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest VAS and Pictogram attributes	Physical attributes Intended design feature included
1. Harmonious/Flowing VAS: (64.5/100) Pictogram: (16 indications)	'The good curve'. Common movement.
Features	
Headlights and area of front corner	Proximity. Enclosedness
Top of Greenhouse	'The good curve'
Belt line continuing to the bonnet	Common movement 'The good curve'
LED tail lights	Enclosedness. Proximity
Line work across the boot	Common Movement
Curve of C pillar on DLO	Similarity. Proximity. 'The good curve'

The attribute of 'Harmonious/Flowing' is the strongest attribute in the pictogram with a total of 16 indications. As indicated in Figure 5-36, the features perceived by the Taiwan consumers are much more coherent, indicated by the higher number of repetitions indicating the features. Furthermore, the embodied Gestalt principles are more correlated between the attribute and features in this study than in the New Zealand outcome. The correlated Gestalt principles are indicated in the blue text in Table 5-49 and the strongly appreciated features are highlighted in red in the left hand column. The strongest visual element perceived by the Taiwan consumers was clearly the continuous line along the body which has the embodied Gestalt principles that matches the principles relating to

the attribute. This suggests that a design that has weaker visual appearance based on visual format analysis can still be perceived cohesively, depending on market context.



Figure 5-35. Features on the IS250 indicated as Harmonious/Flowing in Taiwan.

Compared to the analysis on the feature indicated as 'Harmonious/Flowing', the outcome on the attribute 'Simple/Clean' displayed in Table 5-50 shows a lack of correlations in Gestalt principles between the two. However, when examining the features indicated, as displayed in Figure 5-37, there is a lack of coherence between the features perceived as 'Simple/Clean'. This supports the discussion on the emerging pattern that there is a close relationship between the embodied Gestalt principles in attributes/expression and features indicated. The indication of the twin exhaust pipes supports the discussion that Taiwanese consumers have the tendency to notice the smaller and finer details of a car.

Table 5-50. Strongly appreciated (2nd) visual attributes on VAS/pictogram and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest VAS and Pictogram attributes	Physical attributes Intended design feature included
2. Simple/Clean VAS: (63.4/100) Pictogram: (15 indications)	Area. Enclosedness
Features	
Grille including the logo	Enclosedness. Proximity.
DLO	'The good curve'.
Belt line	Common movement. 'The good curve'.
Rear corner from the side	Similarity.
LED tail lights	Enclosedness. Proximity.
Design of the rear end	Similarity. Proximity.
Curve of C pillar and line along the side	Similarity. Proximity.
Exhaust pipes	Symmetry



Figure 5-36. Features on the IS250 indicated as Simple/Clean in Taiwan.

The features indicated as 'Sleek/Elegant' from the Taiwan outcome are listed in Table 5-51 and indicated in Figure 5-38. Referring to the pattern identified earlier regarding the levels of correlation between the Gestalt principle and how strongly the feature/s are perceived with the attribute, although this outcome shows a close correlation, there is no strong appreciation of any particular feature. As stated earlier about the assumption that, formal aesthetics consists of strong primary form elements are perceived as 'Elegant'. Interestingly, no feature on the rear of the IS250 was perceived as 'Sleek/Elegant' from the Taiwan outcome. This is possibly due to the lower level of ordering and coherence on rear of the IS250, as discussed in the Visual Format Analysis earlier.

Table 5-51. Strongly appreciated (3rd) visual attributes on VAS and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest VAS attributes	Physical attributes Intended design feature included
3. Sleek/Elegant (59.3/100)	'The good curve'. Similarity. Common movement.
Features	
Top of Greenhouse	'The good curve'
Belt line	Common movement. 'The good curve'
Upper frontal portion	'The good curve'
Twin-barrel headlights	Symmetry. Enclosedness. Proximity
Side of IS250	-



Figure 5-37. Features on the IS250 indicated as Sleek/Elegant in Taiwan.

Table 5-52. List of attributes appreciated with the continuous line on the IS250 as the strongest feature perceived by Taiwan consumers.

Feature	Gestalt Principles	Appreciated attributes (no. of indications)
Longitudinal line from hood to the bellline:	Common movement, 'The good curve'	
	'The good curve'. Common movement.	1. Harmonious/Flowing (x7)
	Similarity. Common movement	2. Consistent/Uniform (x2)
	Area. Enclosedness	3. Simple/Clean (x2)
	'The good curve'. Similarity. Common movement.	4. Sleek/Elegant (x1)
Summary	'Common movement' is most correlated Gestalt principle between the design features and attribute	

As indicated in Table 5-52, the strongest feature appreciated by the Taiwan consumer has the embodied Gestalt principles that match the strongest attributes it is appreciated with. With the exception of 'Simple/Clean', all attributes appreciated with the feature of the continuous line along the IS250 have the embodied quality of 'Common Movement'. Interestingly, compared to the BMW's appreciation of features between the markets, the Lexus results have a wider variation in outcomes from the different markets. This is evident from the side of the IS250 being the most strongly appreciated feature from the Lexus New Zealand study, while the strongest feature appreciated in Taiwan is 'the continuous line'. This suggests that different qualities of design are perceived differently in the different markets. This suggests that less-refined qualities of design are perceived differently in

the different markets, while a well-refined design shows a more similar pattern of perception.

Consumer appreciation on the design of the IS250 relating to the attribute 'Consistent/Uniform' shows no apparent pattern in the features indicated or relations between Gestalt principles in Table 5-53. Referring to Figure 5-39, the visual format analysis, the line flow on the IS250 lacks refinement and could be visually perceived as exceedingly plain, or as a design that has a 'lack of depth'. While the New Zealand consumers' emphasised the headlights as features that were 'Consistent/Uniform', the features on the IS250 indicated as 'Consistent/Uniform' by the Taiwan consumers mostly related to the use of curves on the design. This market-related difference between consumer perceptions will be compared and discussed later in this chapter.

Table 5-53. Strongly appreciated (3rd) visual attributes on pictogram and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest Pictogram attributes	Physical attributes Intended design feature included
3. Consistent/Uniform (10 indications)	Similarity. Common movement
Features	
Grille including the logo	Enclosedness, Proximity
Logo	experience
Top and side of DLO	'The good curve'
Belt line (to the hood)	Common movement 'The good curve'
Side skirt	Common movement
Design of the rear end	Similarity. Proximity



Figure 5-38. Features on the IS250 indicated as Consistent/Uniform in Taiwan.

VPE mode: Association

Table 5-54 lists the indicated features that are perceived as brand-specific by Taiwan consumers and Figure 5-40 displays an indication of these features. Overall, consumers in Taiwan perceived the Lexus logo as brand-specific. The other brand-specific feature - the Arrowhead motif - has not be associated with the brand Lexus. This association on only the company logo is also apparent from the BMW Taiwan outcome. However, the number of associations on just the logo in the BMW outcome was less than the number associations on the logo in the Lexus outcome. This pattern of associating the logo as an individual visual element in Taiwan possibly relates to the stronger representational association of brand image than visual aesthetics, in the context that the formal aesthetics is weaker.

Table 5-54. Features indicated as 'Brand-specific' on the IS250 by New Zealand participants.

Strongest Pictogram Attributes	Gestalt Principles
	Intended design feature included
1. Brand-specific (10 indications)	-
Features	
Logo	Experience
Line along bonnet	Common movement. 'The good curve'



Figure 5-39. Features on the IS250 indicated as Brand-specific in Taiwan.

VPE mode: Comprehension

Table 5-55 lists the expressions strongly comprehended by consumers at a holistic and detailed level of the IS250. Unlike the BMW 320i outcome that was discussed, the expression of Modern and Sporty was perceived cohesively in both the VAS and pictogram outcomes. Interestingly, the highly comprehended expressions share the common Gestalt principles of Common movement and Similarity. However, compare to the expression Confident, the nature of the terms Simple, Sporty and Distinctive are more descriptive relating to formal aesthetics. This suggests that holistically the consumers in Taiwan visually perceived the IS250 as Confident, but in detail it was contributed the Distinctiveness of the IS250.

Table 5-55. Strongly comprehended expressions on the VAS and Pictogram outcomes from Taiwan consumers.

	Expressions	Gestalt's physical attributes
VAS	1. Simple (60/100)	'The good curve'. Similarity. Common movement.
	2. Sporty (54.5/100)	Common movement. Proximity
	3. Confident (52.7/100)	Similarity. Area. Enclosedness.
Pictogram	1. Simple (x13)	'The good curve'. Similarity. Common movement.
	2. Sporty (x14)	Common movement. Proximity
	3. Distinctive (x10)	Similarity. Area. Proximity

The quality of 'Simple' is the most highly comprehended expression in Taiwan, both in the VAS and pictogram sections as indicated in Figure 5-41 and Table 5-56. Compared to the New Zealand IS250 study, the features indicated by the Taiwan consumers were more coherent, having a greater number of repeated indications. However, this pattern of cohesive visual comprehension from the Taiwan Lexus is weaker under expressive terms than the descriptive keywords. The finding from this analysis and discussion indicates that the internal expression of Lexus has been perceived by Taiwanese consumers as a stronger visual comprehension. Also, the average marks indicated under the expressions are slightly higher than those indicated by the New Zealand consumers.

Table 5-56. Strongly comprehended (1st) visual attributes on VAS/Pictogram and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest VAS and Pictogram attributes	Physical attributes Intended design feature included
1. Simple VAS: (60/100) Pictogram: (x13)	'The good curve'. Similarity. Common movement.
Features	
Side of IS250	-
Belt line	Common movement. 'The good curve'
Twin-barrel headlights	Symmetry. Enclosedness. Proximity.
Spot light	Similarity. Proximity. Area.
Rear design of IS250	Similarity. Proximity.
LED tail light	Enclosedness. Proximity.



Figure 5-40. Features on the IS250 indicated as Simple in Taiwan.

Amongst the many types of features perceived and interpreted as 'Sporty', the model-specific feature of the headlights had the strongest comprehension for consumers in Taiwan, in both the VAS method and pictogram. Referring to Figure 5-42 and Table 5-57, the front of the IS250 consists of visual elements that are designed with the language of the Arrowhead motif, and it is this particular area of the IS250 that has been interpreted as 'Sporty'. This finding indicates that Lexus' design language of the Arrowhead motif is interpreted as expressing 'Sportiness'.

Table 5-57. Strongly comprehended (2nd) visual attributes on VAS/Pictogram and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest VAS and Pictogram attributes	Physical attributes Intended design feature included
2. Sporty VAS: (54.5/100) Pictogram: (x14)	Common movement. Proximity
Features	
Side of IS250	-
Belt line	Common movement. 'The good curve'.
Door mount side mirrors	Experience.
Twin-barrel headlights	Symmetry. Enclosedness. Proximity.
Spot light	<i>Similarity. Proximity. Area.</i>
Frontal area	'The good curve'. Similarity. Symmetry. Proximity.
Rear design of IS250	<i>Similarity. Proximity.</i>
LED tail light	Enclosedness. Proximity.
Wheels	<i>Similarity.</i>



Figure 5-41. Features on the IS250 indicated as Sporty in Taiwan.

Referring to Figure 5-43, the side of the IS250 is the visual feature with strongest consumer perception of the expression 'Confidence' in the VAS method. These stronger perceptions of the side of the IS250 potentially suggest that larger surfaces have a tendency to be interpreted as 'Confident'. Interestingly, the rear upper side of the rear bumper has also been noticed by the Taiwanese consumer. Referring to the BMW Taiwan discussions and the model appreciation of the IS250, this further supports the notion that Taiwanese have the tendency to identify smaller or minor features on cars.

Table 5-58. Strongly comprehended (3rd) visual attributes on VAS and features indicated from the pictogram findings on the IS250 by New Zealand participants.

Strongest VAS attributes	Physical attributes Intended design feature included
3. Confident (52.7/100)	Similarity. Area. Enclosedness.
Features	
Side of IS250	-
Lines along the bonnet	Common movement. 'The good curve'
Greenhouse	Common movement. 'The good curve'
Twin-barrel headlights	Symmetry. Enclosedness. Proximity.
Rear design of IS250	Similarity. Proximity.



Figure 5-42. Features on the IS250 indicated as Confident in Taiwan.

The strongest features indicated as the most expressive are the continuous line along the IS250 and the headlights, as listed in Table 5-59 and 5-60 along with the expressions used to interpret them. The line along the bonnet continuing to the belt line is also a strong feature appreciated with these attributes. This visual flow of the IS250 was also highly comprehended by the New Zealand consumers, as indicated by the same expressions highlighted in red. This suggest that features embodied with Gestalt principles such as 'Common Movement' or 'The good curve' often have strong visual flow. This visual flow on the IS250 is commonly interpreted with expression such as 'Style', 'Simple', and 'Sporty' as intended by Lexus.

Table 5-59. List of expressions comprehended with the continuous line on the IS250 as the strongest feature perceived by Taiwan consumers.

Feature	Gestalt Principles	Appreciated expressions (no. of indications)
Longitudinal line from hood to the beltline:	Common movement, 'The good curve'	Style (x3)
	Strong adoption of any specific principle to create clear gestalt	Simple (x3)
	'The good curve'. Common movement	Sporty (x1)
	Common movement. Proximity. Similarity	Distinctive (x1)
	Similarity. Area. Proximity	
Summary	'Common Movement' is most correlated Gestalt principle between the design features and attribute	

In Taiwan the headlights have been strongly perceived as an expressive visual element, but in New Zealand they were highly perceived based on their physical attributes. However, the strongly perceived/interpreted features on the IS250 are the same between these two markets. Does this outcome suggest that visual elements within a constrained area with grouping of parts have the tendency to express 'Sportiness' or 'Confidence' to Taiwanese consumers? This question will be further examined in the section that compares the markets and the intended and perceived meanings of the IS250.

Table 5-60. List of expressions comprehended with the continuous line on the IS250 as the strongest feature perceived by Taiwan consumers.

Feature	Gestalt Principles	Appreciated expressions (no. of indications)
Twin barrel Headlights	Symmetry. Enclosedness. Proximity. Similarity.	Sporty (x4)
	Similarity. Area. Enclosedness.	Confident (x2)
	'The good curve'. Common movement.	Simple (x1)
	Strong adoption of any specific principle to create clear gestalt	Style (x1)
	Similarity. Area. Proximity.	Distinctive (x1)
	Summary	There are no strong correlation of Gestalt principle between the design features and attribute

Table 5-61. Strongly comprehended (3rd) visual attributes on Pictogram and features indicated from the pictogram findings on the IS250 by New Zealand participants

Strongest Pictogram attributes	Physical attributes Intended design feature included
3. Distinctive (x10)	Similarity. Area. Proximity
Features	
Side of IS250	-
Logo	Experience
Belt line	Common Movement. 'The good curve'
Door mount side mirrors	Experience
Twin-barrel headlights	Symmetry. Enclosedness. Proximity.
Spot light	Similarity. Proximity. Area
Frontal area (including Air dam)	'The good curve'. Similarity. Symmetry. Proximity
Rear lights	Enclosedness. Proximity.

Surprisingly, the strongest expression of Distinctiveness (Figure 5-44) based on the pictogram findings shares similar features to those indicated as 'Sporty' (Figure 5-42) by the same group of consumers. This close correlation between the types of feature indicated could potentially suggest a visual relationship between the expressions. This finding suggests that the visual quality of 'Sporty' has a closer correlation to the expression 'Distinctive'. Referring to the expression definitions in Table 3-2, these two expressions share similar qualities as they are both based on achieving visual outstanding in a 'showy' manner. Again, the specific indication on the lights on the rear bumper of the IS250 indicates that

Taiwanese consumers notice smaller and finer details on automotive design.



Figure 5-43. Features on the IS250 indicated as Distinctive in Taiwan.

5.2 Perceptions between Cars

Based on the analysis and discussion on consumers' perceptions of the 320i and the IS250 relating to the research aim, this section explores on how these two cars and their associated brands are perceived in the same market. The outcome of this section will be patterns or theories that relate to the how the 320i and IS250 have been perceived by consumers. The pattern or trends will allow the researcher to identify whether consumers' appreciation and comprehension of the 320i/IS250 actually contribute to the perceived and associated appeal of these two cars. Do consumers based in the same market perceive features with certain Gestalt principles coherently as a market characteristic? Are certain descriptive attributes or expressions correlated with features of any specific Gestalt principles? Other than answering the research questions, the findings from this section are to establish a base for the discussion in the next section on market-related comparisons of consumer perceptions and interpretations. The discussion is structured in the same order of VPE modes used for the two cars earlier in this research. This structure is to achieve a flow in the comparative discussion between the modes of perception.

5.2.1 BMW and Lexus in New Zealand

This section aims to establish market characteristics relating to how consumers in New Zealand tend to perceive and interpret car designs. The overall responses on the dream car selection between BMW and Lexus participants are listed in Table 5-62. Overall, the main vehicle-type preferences suggest that consumers in New Zealand prefer vehicles with strong characters as both super cars and classical cars have bold and distinctive visual characters. The content in the last column on coincidence between the findings, indicates the similarities and differences between the two findings in New Zealand. This correlates with the types of car indicated, which suggests that New Zealand consumers place strong emphasis on the visual appearances of cars over other factors such as the performance, value, or rarity of the design. The next part of comparison is based on how the 320i/IS250 is initially perceived by consumers and whether these impressions are mostly based on the visual appearance of the cars, referring to consumers' motives for their dream car selection.

Table 5-62. Summary of the main preferences of dream car from New Zealand consumers.

	BMW	Lexus	Correlation
Type of vehicle indicated	Super cars	Classical cars	No
Main motive for preferences	Visual aesthetics	Visual Aesthetics	Visual aesthetics

Referring to Table 5-63 on the findings on brand impressions, the VAS findings on brand distinctiveness of BMW scored higher average marks than Lexus. Also, it is clear from the written responses that the brand impressions on Lexus are largely based on criticisms relating to the visual aesthetics of Lexus models. Therefore, BMW as a brand has stronger consumer impression than Lexus. The finding indicated in the last row suggests that the 320i is rated as the most distinctive car by both groups of participants and the IS250 is not amongst the top rankings. This indicates that the 320i has a stronger model impression than the IS250 amongst the consumers who participated in this study.

Table 5-63. Brand impression between BMW and Lexus findings from New Zealand.

	BMW	Lexus	Correlation
Brand distinctiveness	55.1/100	46.5/100	No.
Main written responses	Brand heritage and innovative design	Criticism on visual appearances	NO: Visual aesthetics
Model distinctiveness compare to other six cars in same market	1. BMW 2. Audi 3. Benz	1. BMW 2. Benz 3. Audi	Yes: Same vehicles

The majority of the consumers perceive BMW cars as carrying the brand identity of BMW. This strong recognition on BMW's brand identity amongst models and the consumer emphasis on visual appearances suggest that BMW is more highly regarded due to its visual appearance that conveys the brand image of BMW. However, the finding listed in the last two rows of

Table 5-64 shows that consumers are equally interested in physically experiencing the 320i and IS250 based on the visual appearance of these cars. BMW was more strongly recognised as a premium brand compared to Lexus and interestingly, Lexus was regarded as a premium car brand because it competes with BMW.

Table 5-64. Brand recognition between BMW and Lexus findings from New Zealand.

	BMW	Lexus	Correlation
Brand identity amongst models of BMW/Lexus	12/15 agreements	7/15 agreements	No
Consumers' interest in driving/owning 320i/IS250	3.3/5	3.2/5	Yes
Main written responses	Visual aesthetics	Visual aesthetics	Yes
Recognitions of BMW/Lexus as premium brands	63.6/100	54.6/100	No.
Main written responses	Brand heritage and visual appearances	Lexus is BMW's competitor	No

Table 5-65. Model appreciation between BMW and Lexus findings from New Zealand.

	BMW	Lexus	Correlation
Model attractiveness amongst six other cars on the same market	1. Benz 2. Audi 3. BMW	1. BMW 2. Benz 3. Audi	Yes: Same cars

Table 5-63 and 5-65 indicates that the same vehicles regarded as highly distinctive by consumers are also perceived as highly appealing. However, referring to Appendix G, the car model by Cadillac has the biggest variation between high model distinctiveness and low model appeal. This implies that the level of a car's distinctiveness perceived by consumers in New Zealand is likely to correlate to its level of appeal; but only in the context that the car exterior is perceived as strongly distinctive, as demonstrated in Table 5-63 and 5-65.

Table 5-66 is a summary of discussions from Section 5.1 indicating the key attributes that were highly perceived in the VAS and pictogram sections of questionnaires, and how the visual features indicated relate to the attributes. The High level of correlation between attribute and features indicates an approximate 80% or higher of matching Gestalt principles and Med level is categorised by the an approximate 50% of matching correlation. Overall, only the visual attribute of 'Simple/Clean' was appreciated by consumers at a holistic level on both the design of the 320i and the IS250. These common perceptions of visual attribute possibly indicate that the visual aesthetics of the 320i and the IS250 both have the same visual quality. However, this research indicates that although the two car designs could be perceived with the same visual quality, this does not indicate that consumers appreciate these two designs at the same

Table 5-66. Model appreciation between BMW and Lexus findings from New Zealand.

level. This is evident in the strongest indicated attributes: one is 'Beautiful/Stunning', and the other is the opposite, 'Ugly/Non-appealing'. Interestingly, features indicated under 'Ugly/Non-appealing' were mostly on the front of the IS250 that were embodied with the Gestalt principle of 'Proximity'. As 'Proximity' relates to the grouping of features and the down road graphics, it is an area on the IS250 that consists of features embodying the Arrowhead motif. This indicates that overall the New Zealand consumer does not appreciate the design language of the Arrowhead motif. The differences between VAS and pictogram results indicated that visual attributes demonstrate differences in consumer perceptions between the holistic and analytical level. The key to this section is to identify how formal aesthetics and expressions related the design of the 320i/IS250 contribute towards consumer acknowledgment of the design quality.

Comparing the coherences in attributes perceived between the holistic and analytical levels, only the 320i has been perceived coherently between these two levels. This coherence could possibly suggest that designs that have been coherently perceived between how people 'think' and how people 'describe' a design create a strong visual product experience for the consumers. However, this will be further discussed in the model comprehension of this comparative discussion.

	BMW	Lexus	Correlation
Perception of cars relating to attributes	Attributes – Level of correlation on Gestalt principles between attribute and feature (None, Med, High)	Attributes – Level of correlation on Gestalt principles between attribute and feature (None, Med, High)	
	strongest feature Indicated (correlation of Gestalt principle between attribute and strongest feature)	strongest feature Indicated (correlation of Gestalt principle between attribute and strongest feature)	
Strongest VAS rankings (holistic perception)	1. Simple/Clean (56.6/100) - HIGH Whole 320i ('The good curve'. Similarity)	1. Simple/Clean (55.5/100) - Med No strongly appreciated feature	Yes: Perceived as 'Simple/Clean'
	2. Harmonious/Flowing (56.3/100) – HIGH flow of line ('The good curve'. Common movement.)	2. Sleek/Elegant (50.1) - HIGH No strongly appreciated feature	
	3. Consistent/Uniform (54.7/100) - HIGH Kidney Grille (X)	3. Balanced/Proportional (48.1/100) - HIGH Air dam (Similarity. Proximity)	
Strongest visual element in pictogram	Kidney Grille including air dam and logo on top - HIGH Distinctive/well-defined (Similarity. Proximity. Enclosedness)	Twin-barrel headlights - NONE Consistent/Uniform. Distinctive/Well-defined (X)	No.
Strongest attributes indicated (analytical perceptions)	1. Distinctive/Well-defined (x14) - Med Kidney Grille (area. Similarity. Proximity)	1. Beautiful/Stunning (x9) – HIGH Rear of IS250 (Enclosedness. Proximity)	
	2. Balanced/Proportional (x13) - Med Whole 320i ('The good curve'. Similarity)	2. Ugly/Non-appealing (x9) - HIGH Whole IS250 (Proximity – grouping and repetition of Arrowhead Motif)	
	3. Harmonious/Flowing (x10) - HIGH flow of line ('The good curve'. Common movement.)	-	

As indicated in Table 5-66 on consumer brand appreciation from the New Zealand outcomes, surprisingly the level of appeal between the 320i and the IS250 is almost the same, despite BMW having a higher brand impression and recognition than Lexus. However, this similarity in the level of appeal is based on different consumer focuses on cars. Some BMW participants preferred other types of vehicle to premium sports sedans and therefore

BMW has been strongly perceived based on its distinctiveness in design language. This higher perception on the presentational side of BMW further indicates that, despite the consumers' existing values or preferences, a well-designed car could still appear attractive to those consumers.

Table 5-67. Brand and model association between BMW and Lexus in New Zealand.

	BMW	Lexus	Correlation
Level of appeal of BMW/Lexus	Average 3/5	Average 3.1/5	Yes
Main written responses	- prefer other vehicle types such as SUV - Commonness of BMW models on roads	- lack of responses - quality and functionality - associate with Japan and Toyota	No
Consumers' brand association	- mixed association - Brand image as an expensive brand	- mixed association - Country of origin and visual appearances	

Table 5-67 indicates the findings relating to consumer recognition of the brands of the cars. The consumer association on BMW and Lexus shows a mix of positive and negative association between both brands. The consumer association of Lexus with its country of origin and mother company, Toyota, indicates that country of origin is a large factor in consumer association towards a brand. Depending on the country, this could be undesirable as people often hold existing impressions or prejudices towards certain countries and the types of products it commonly produces. However, this association on car brands could be overcome firstly by strong visual appearance to gain product distinctiveness/recognition, and secondly in the interior and performance of the car.

Table 5-68. List of visual features indicated as Brand-specific in New Zealand.

	BMW (x12 indication)	Lexus (x4 Indications)
Brand-specific Features Indicated	<ul style="list-style-type: none"> - Kidney Grille including air dam and logo - Frontal area Composition of DRG, Grille, and Headlights. - Wheels - Roundel logo at rear - Rear area (upper middle) * - Overall design of 320i 	<ul style="list-style-type: none"> - Logo - Front grille - DLO -Greenhouse - Rear boot area of IS250

Table 5-68 lists the visual elements that were perceived by New Zealand consumers as brand-specific on the 320i/IS250, for comparison between the two designs. As Lexus does not have a well-established brand-specific design language, based on the visual format analysis section in Chapter Two, it is not surprising that the IS250 only has a total of four indications by consumers on the brand-specific features. The lack of indication on the overall car or the IS250 as brand-specific, plus the model appreciation outcome indicating the IS250 as 'Ugly/Non-appealing', all strongly suggest that the language of the Arrowhead motif could potentially create a visual disturbance, and therefore a weaker overall visual experience. However, features indicated as brand-specific, such as the front of the IS250 also consist of the design language of the Arrowhead motif, which suggest that the Arrowhead motif is perceived more strongly as an individual or small group of features rather than on the overall holistic level.

The 320i was perceived strongly as brand-specific compared to the IS250. It is fascinating to note that the Kidney Grille, as an individual element, was perceived together with the middle air dam of the 320i and the Roundel logo on the bonnet as one visual feature. This strong association of the 320i as a BMW logo reflects higher brand recognition and an appreciation of the formal aesthetics of the design.

The next part of comparative discussion focuses on how the official expressions of the 320i/IS250 have been perceived, and which design has been perceived more strongly, in order to understand whether correlations in Gestalt principles between expression and features will contribute to a stronger consumer comprehension.

Earlier in the model appreciation comparisons, an assumption on close correlations between the holistic and analytical perceptions resulting in stronger visual product experience was discussed. However, this discussion is not valid in the model expression findings as the IS250 is comprehended as weaker than the 320i, despite the strong cohesiveness between VAS and pictogram perceptions. There is a correlation relationship between the Gestalt principles embodied in the expressions and features indicated. This is based on the analysis of the VAS and pictogram outcomes which showed the strongest VAS-based expressions all lacked any correlation between the two, while the pictogram-based

expressions had a correlation pattern. Also under comparison, the 320i has a higher level of consumer comprehension as both the average marks and number of indications on pictogram is higher than for the IS250. This stronger pictogram comprehension on the 320i matches the relationship that the higher the correlation between expression and features, the potentially stronger the visual experience and consumer interpretations. This relates to the description of the expressions; there are words that are highly tangible, which cause certain individual interpretations and hence harder to indicate at an analytical level. Through the background research on the 320i/IS250, it was apparent that expressions proposed by Lexus are more tangible than most of the expressions used on the 320i. Therefore, for an effective comprehension and understanding of the intended design language, the wording of the expressions must be highly articulated.

Table 5-69. Model comprehension between BMW and Lexus findings from New Zealand.

	BMW	Lexus	Correlation
Perception of cars relating to expressions	Expression – Level of correlation on Gestalt principles between attribute and feature (None, Med, High)	Expressions – Level of correlation on Gestalt principles between attribute and feature	
	strongest feature indicated (correlation of Gestalt principle between expression and strongest feature/expression)	strongest feature indicated (correlation of Gestalt principle between expression and strongest feature)	
Strongest VAS rankings (holistic perception)	1. Modern (60.5/100) - None Whole 320i, and side mirrors (X)	1. Simple (53/100) - None Side of IS250, and wheels (X)	Yes: All expressions have low correlations
	2. Comfortable (58.1/100) – None Greenhouse (interior) (X)	2. Luxury (51.4/100) - Med No strong features (X)	
	3. Desirable (55.7/100) - None Headlights, and Kidney Grille (Area. Proximity)	3. Style (47.3/100) - Med No strong feature (X)	
Strongest visual element in pictogram	Kidney Grille including air dam and logo on top - HIGH Desirable, and Brand-specific (Common Movement)	Continuous line along IS250 - NONE Simple, Sporty, Style (X)	
	Whole 320i – Med Dynamic, and Elegant ('The good curve')	-	
Strongest attributes indicated (analytical perceptions)	1. Brand-specific (x12) – N/A Kidney grille including air dam and logo	1. Simple (x7) - None Side of IS250, and wheels (X)	
	2. Elegant (x12) – Med Whole 320i (Similarity)	3. Style (x6) - Med No strong feature (X)	
	3. Dynamic (x10) - Med Whole 320i, and wheels ('The good curve'.)	3. multiple expressions	

5.2.2 BMW and Lexus in Taiwan

Table 5-70. Summary of the main preferences of dream cars from Taiwan consumers.

	BMW	Lexus	Correlation
Type of vehicle indicated	Premium cars	Premium cars	Yes
Main motive for preferences	Visual aesthetics	Performance Visual appearance	Yes

This section presents a comparative analysis based on the discussions of the Taiwan studies on the 320i and IS250 in section 5.1. Table 5-70 indicates the types of vehicles and preference motives identified by the Taiwan consumers. The results of these studies indicate a strong pattern of premium cars as the consumers' dream car selection, based on the visual appearance and performance. It is somewhat surprising that no strong emphasis in the suggestive values was noted in the participant responses as the literature review on market background proposed. This surprising finding suggests that in the interdependent cultural context of the Taiwan market, the visual appearance of cars is still the strongest reason for motor vehicle selections. However, more research on this topic needs to be undertaken before the link between the visual expressiveness or distinctiveness and the level of consumer appreciation/comprehension in car designs is more clearly understood. This opens up two different speculations: one is the geographical context and living standards of Taiwan, and the lower level of knowledge in cars as discussed in section 5.1;

the other is the higher level of social associations on premium cars in a suggestive context. As no conclusions could be made on these speculations without further comparative analysis, this topic will be re-discussed at the end of this section.

Table 5-71. Brand impression between BMW and Lexus findings.

	BMW	Lexus	Correlation
Distinctiveness compare to other car brands	63.4/100	43.3/100	No
Main written responses	Visual appearance	Country of origin (+ve/-ve)	
Model distinctiveness compare to other six cars in same market	1. BMW 2. Lexus 3. Cadillac	1. Cadillac 2. BMW 3. Benz	Yes: Same cars

Table 5-71, showing the findings on consumer appreciation, indicated that similar car models were perceived as highly distinctive. Referring to discussions on the New Zealand outcomes amongst the seven cars in the model appeal question, the model from Cadillac had the largest variation in average marks between model distinctiveness and model appeal. However, these differences in the average marks are smaller in the Taiwan study suggesting that stronger visual distinctiveness has a stronger correlation to a higher level of consumer appreciation in car designs. One unanticipated finding was that the IS250 was perceived as more attractive than the 320i, while the 320i was perceived as more distinctive. However,

on an overall average, the 320i has stronger model attractiveness when averaging the ranking between all participant outcomes from the Taiwan study.

Table 5-72. Brand recognition between BMW and Lexus findings in Taiwan.

	BMW	Lexus	Correlation
Brand identity amongst models of BMW/Lexus	13/15 agreements	6/15 agreements	No
Consumers' interest in driving/owning 320i/IS250	3.9/5	2.8/5	No
Main written responses	Representational Value based	Country of origin Visual appearance	No
Recognitions of BMW/Lexus as premium brands	72.3/100	57.5/100	No.
Main written responses	Price value of BMW models Country of origin	Country of origin Visual appearance	No

As indicated in Table 5-72, BMW has a stronger level of the distinctiveness amongst other automobiles as perceived by consumers. The written responses indicate that Lexus' lower brand impression is based on people's associations with Lexus' country of origin and its mother company, Toyota. In comparison, BMW's visual distinctiveness in its models has been highly perceived by consumers in Taiwan and reflected in the written responses. The 320i is also rated as the highly distinctive by both groups of participants.

The brand BMW has much stronger consumer recognition on the visual qualities of its models, conveying stronger brand identity than Lexus. This strong recognition on visual brand identity of BMW also explains the Taiwan consumers' strong interests in physically experiencing or owning the model 320i over the IS250. Another correlated finding was that this strong level of interest in experiencing the 320i is based on the car's representational values in Taiwan's social context. In contrast, the lower level of interest in experiencing the IS250 is largely due to the associations of the country of origin and simply the lower recognition of the visual aesthetics of the IS250.

Table 5-73. Model appreciation between BMW and Lexus in Taiwan.

	BMW	Lexus	Correlation
Model attractiveness amongst six other cars on the same market	1. Lexus 2. BMW 3. Audi	1. BMW 2. Benz 3. Cadillac	Yes: All indicated BMW

A summary of the analysis and findings from Section 5.1 on consumer perceptions of the 320i/IS250 follows (in the same format as used in Section 5.2.1 on model appreciation in New Zealand). Unlike the New Zealand study outcome, consumers in Taiwan appreciate the design of the 320i and IS250 at a holistic level with the same visual attributes. This suggests that consumers perceived the 320i and IS250 as having certain common visual qualities but the design of the 320i was perceived more strongly with higher average ratings.

The designs of the 320i and the IS250 have been appreciated as 'Harmonious/Flowing', both holistically and analytically. Surprisingly, the design of the IS250 has a higher level of coherence between holistic and analytical perceptions with two matching visual attributes. Despite this coherence between the different modes of perception, the design of the IS250 is still not perceived as strongly as for the 320i. However, this finding can be explained in that the IS250 is perceived with one strong feature while the 320i has two strongly perceived features, with one feature representing the overall design of the 320i. These suggest that the level of coherence between design features, in relation to the primary and secondary form elements, is critical for achieving a strong visual experience for car exteriors. This statement is supported by the strong indications on attributes of 'Balanced/Proportional' and 'Distinctive/Well-defined' at an analytical level of consumer perception on the 320i.

Under close examination between the discussion summary in Table 5-74 and the visual format analysis, the whole 320i design and the C-pillar, indicated as the main features perceived as 'Balanced/Proportional', largely relate to the primary form element of continuous line flow and larger line transitions compared to the IS250. The grille as a visual feature also has the form language that creates a strong Gestalt experience. The grille indicated as the main feature for the attribute 'Distinctive/Well-defined' is a strong secondary form element with a high level of kinship between other

features on the front of the 320i. This finding indicates that a well-refined car design with cohesive form elements is likely to be perceived more strongly than a car that shows a lower level of overall cohesiveness in its form elements.

Contrary to expectations, the comparison between the levels of brand appeal (Table 5-75) did not find a significant difference between BMW and Lexus as a car brand. However, BMW is still rated as more appealing than Lexus in Taiwan. Following from the comments given on Lexus in brand and model impression/recognition, the written responses relating to brand appeal is also largely based on the association on Japan and Toyota. Although this outcome is similar to the New Zealand study, New Zealand consumers' association on Japanese car brands and Toyota are mostly negative. This indicates that Lexus as a Japanese brand has been interpreted more positively in Taiwan than in New Zealand. Following on from consumer perceptions on brand appeal; one interesting finding is that BMW as a premium brand has been perceived a lot more strongly in Taiwan than Lexus, despite the similar levels of perceptions on brand appeal. This stronger association on BMW as a premium brand is largely based on the price value of BMW cars and their country of origin. In contrast, Lexus' lower level of association is mainly based on the country of origin and visual aesthetics of Lexus cars.

Table 5-74. Model appreciation between BMW and Lexus findings from Taiwan.

	BMW	Lexus	Correlation
Perception of cars relating to attributes	Attributes – Level of correlation on Gestalt principles between attribute and feature (None, Med, High)	Attributes – Level of correlation on Gestalt principles between attribute and feature	
	strongest feature indicated (correlation of Gestalt principle between attribute and strongest feature)	strongest feature indicated (correlation of Gestalt principle between attribute and strongest feature)	
Strongest VAS rankings (holistic perception)	1. Simple/Clean (76.1/100) - HIGH Whole 320i ('The good curve'. Common Movement)	1. Harmonious/Flowing (64.5/100) - HIGH The continues line (Common movement)	Yes: Same attributes coherently indicated
	2. Harmonious/Flowing (71.6/100) – Med Whole 320i, and bone line ('The good curve'. Common movement.)	2. Simple/Clean (63.4/100) - None The continues line, and rear area of IS250 (X)	
	3. Sleek/Elegant (71.3/100) - Med Whole 320i, and headlights (Similarity. 'The good curve')	3. Sleek/Elegant (59.3/100) - Med No strongly appreciated feature (X)	
Strongest visual element in pictogram	Kidney Grille including logo - HIGH Distinctive/well-defined (Similarity. Proximity. Enclosedness)	Continues line - HIGH Harmonious/Flowing (Common movement, 'The good curve')	Yes: One attribute coherently indicated
	Whole 320i – Med Sleek/Elegant, Simple/Clean ('The Good curve')	-	
Strongest attributes indicated (analytical perceptions)	1. Harmonious/Flowing (15) – Med Whole 320i, and bone line ('The good curve'. Common movement.)	1. Harmonious/Flowing (x16) - HIGH Continues line (Common movement)	
	2. Balanced/Proportional (x13) - HIGH Whole 320i, and C pillar curve ('the good curve'. Similarity)	2. Simple/Clean (x15) - HIGH The continues line, and rear area of IS250 (X)	
	3. Distinctive/Well-defined (x10) - HIGH Grille including logo (Proximity. Similarity. Enclosedness.)	3. Consistent/Uniform (x10) – Med Lexus logo, and the continues line	

Table 5-75 indicates that the consumers in Taiwan associate the country of origin more strongly, based on the country's image and reputation in the automotive industry. This is similar to current international concern on 'Made in China' products and consumers' negative association with the quality of Chinese-made products. This finding suggests that, in relation to premium car brands, a German brand is still regarded more highly than a Japanese brand.

Table 5-75. Brand/model appreciation between BMW and Lexus in Taiwan.

	BMW	Lexus	Correlation
Level of appeal BMW/Lexus	Average 3.3/5	Average 3.0/5	Yes: Similar marks
Main written responses	- based on visual appearances	- the country of origin	No
Consumers' brand association	- Representational values	- the country of origin	Yes

The consumer's written responses on consumer's association with BMW/Lexus are based on the suggestive values of BMW, and the country of origin with Lexus. These two types of comments are largely based on the suggestive values of the brand relating to group norms rather than individual attitudes and tastes. This finding from Taiwan correlates with the findings from the secondary research, that is, that Taiwan as an Asian country is interdependent.

Table 5-76 indicates the visual features that were perceived as brand-specific on the 320i/IS250. The frontal area of the 320i is the main area of this car that was perceived as brand-specific. One interesting fact is that the Kidney Grille in Taiwan has been perceived as an individual visual element including the logo, but without the air dam below it. On the other hand, the IS250 has only two features indicated as brand specific elements: the Lexus logo without the front grille, and the continuous line from front to the side. As the part of the aim of this research is to understand how visual aesthetics of car exteriors are perceived as carrying brand identity, this outcome for the IS250 indicates that the IS250 as a design has a weaker expression associated with the brand identity than the 320i. Furthermore, the Taiwan consumers are more sensitive to details when perceiving a car's exterior. This is based on the comparison outcome that the Kidney grille has been indicated as an individual feature, and there are more indications on the Lexus logo on the design of IS250.

Table 5-76. Model association on Brand-specific features indicated between BMW and Lexus in Taiwan.

	BMW (x12 indication)	Lexus (x10 Indications)
Brand-specific Features indicated	<ul style="list-style-type: none"> - Kidney Grille - Frontal area of 320i - front and side corner - Air dam - Logo at rear - Shark fin antenna 	<ul style="list-style-type: none"> - Logo - Line along the bonnet

Table 5-77 displays the discussion summaries from Section 5.1 on model comprehension by Taiwanese consumers. In comparison, the IS250 has been perceived more coherently between holistic and analytical perceptions than the 320i. However, the 320i has higher average VAS marks and pictogram indications. This indicates that the 320i has been perceived more strongly with the expressions intended by BMW than the IS250.

The only coherence between the holistic and analytical consumer perceptions on the 320i is the quality of 'Modern', mainly on the design of the 320i as a whole and the headlights. Based on the descriptions on the expression keywords, the expression 'Modern' is highly intangible with large variations on individual interpretations as it often refers to the contemporary style. However, this strong interpretation of the 320i as expressing modernity correlates with the secondary research finding from the Car Design News designer interviews that BMW's new design direction correlates with the current design trends in areas such as architecture, sculpture, and fashion. Therefore, this finding indicates that the holistic design quality of the 320i, consisting of strong and coherent designs in primary and secondary form elements, are being strongly perceived as 'Modern'.

The expressions of 'Simple', and 'Sporty' on the IS250 was coherently perceived with features indicated in the same area on the design. This indicates that the consumers in Taiwan mainly interpret the larger surface areas and continues lines as 'Simple'. On the other hand, the headlights and spot lights consist of the Lexus' Arrowhead motif and are perceived as Sporty.

As discussed in the types of visual features that are strongly perceived in model appreciation, the features indicated on the IS250 were elemental while the 320i was more strongly comprehended as a whole design. As the 320i has been perceived more strongly than the IS250, this finding correlates with the statement that a well-refined car design with cohesive form elements is likely to be more strongly interpreted than a car that shows lower levels of overall cohesiveness in its form elements.

Table 5-77. Model comprehension between BMW and Lexus outcomes in Taiwan.

	BMW	Lexus	Correlation
Perception of cars relating to expressions	Expression – Level of correlation on Gestalt principles between attribute and feature (None, Med, High)	Expressions – Level of correlation on Gestalt principles between attribute and feature	
	strongest feature indicated (correlation of Gestalt principle between expression and strongest feature/expression)	strongest feature indicated (correlation of Gestalt principle between expression and strongest feature)	
Strongest VAS rankings (holistic perception)	1. Comfortable (75.6/100) - None Whole 320i, and DLO (interior) (X)	1. Simple (60/100) - Med Side of IS250, The continues line, and rear of IS250 (X)	Yes: Most expression have moderate formal aesthetic coherences
	2. Modern (74.1/100) – Med Whole 320i, and headlights (Similarity)	2. Sporty (54.5/100) - Med Headlights, and spot lights (Proximity)	
	3. Desirable (71.7/100) – Med Whole 320i, DLO (interior), and Logo (Experience)	3. Confident (52.7/100) - Med Headlights, and side of IS250 (Similarity, Enclosedness)	
Strongest visual element in pictogram	Whole 320i – Med Modern, and Comfort ('The good curve')	Twin-barrel headlights – High Sporty and Confident (Proximity, Enclosedness)	
	-	The continues line – High Style, and Simple (Common movement, 'The good curve')	
Strongest attributes indicated (analytical perceptions)	1. Brand-specific (x14) – N/A Kidney Grille including logo	1. Simple (x13) – None Side of IS250, The continues line, and rear of IS250 (X)	
	2. Modern (x13) – Med Whole 320i, and headlights (Similarity)	3. Sporty (x14) - Med Headlights, and spot lights (Proximity)	
	3. Elegant (x10) – Med Side mirrors, and whole 320i (X)	3. Distinctive (x10) – Med Air dam, and mainly based on front area of IS250 (Similarity, Proximity)	

5.3 Comparison between market characteristics

Based on the discussion outcome in Section 5.2 focusing on similarities and correlations, this section compares these market-based discussions by exploring any market-related pattern of perceptions and interpretations. Any established pattern or characteristic will be discussed under the various modes of perceptions from the VPE framework.

Background

Comparing the main selections of dream car, the New Zealand consumers' main selections were based on cars that rarely appear on roads, have bold formal aesthetic language and create a visual experience that is potentially highly expressive. This result may be explained by the fact that, as a Western country, the New Zealand participant prefers cars that potentially create a bold visual experience due to participants' wish to be viewed distinctively as an autonomous entity with his/her own intellectual character. Taiwanese participants, in contrast, have stronger preferences for premium cars based on their visual quality and performance. As premium cars are more commonly known in the society compared to the super cars, the suggestive messages of the car are more likely to be interpreted by other members of society in Taiwan. It can thus be suggested that Taiwan consumers interpret the design of a car associatively with strong collective values and potentially less on the merit of the visual experience.

VPE mode: Impression

BMW and its model 320i are both more strongly perceived by consumers in New Zealand and Taiwan compared to the Lexus IS250, based on the distinctiveness of their visual quality design. However, both the 320i and IS250 have been perceived more strongly by Taiwan consumers than New Zealand consumers according to the outcomes of both sets of questionnaire. The criticisms on the visual quality of the IS250, with its lower average marks, correlate with the visual format analysis finding in Section 3.1. This implies that the level of coherence in a car's formal aesthetics (primary and secondary form elements) correlates with the level of visual impression in both New Zealand and Taiwan.

VPE mode: Recognition

Both the New Zealand and Taiwan outcomes show that the patterns of car exterior that are rated by consumers as highly distinctive are also likely to be perceived as highly appealing. BMW models have been strongly perceived in both markets with stronger brand identity than Lexus. This suggests that a car brand with stronger brand-specific design language is more strongly recognised as carrying brand identity by consumers in New Zealand and Taiwan. The New Zealand consumers show an almost equal level of interest in physically experiencing the 320i and IS250, while the Taiwan consumers indicated a much higher level interest in the 320i. This potentially suggests that consumers with an independent self-concept, a

New Zealand market characteristic, judge a car by its actual merit, and therefore are more willing to try newer car brands than Taiwanese consumers.

VPE mode: Appreciation

The model 320i has stronger model appreciation than the IS250 both in the holistic and analytical perception modes. Holistically, under VAS outcomes, New Zealand consumers appreciate the 320i and IS250 with the same visual quality of 'Simple/Clean'. On the other hand, the Taiwanese consumers appreciate the 320i and IS250 more cohesively than New Zealanders with the same visual attributes amongst the top three strongest rankings. However, analytically, while the 320i has been perceived with the same visual attributes in New Zealand and Taiwan, the IS250 has been perceived dramatically differently in the New Zealand and Taiwan outcomes. The outcome on the IS250 in New Zealand indicates that the Arrowhead motif is perceived more strongly as an individual or small group of features rather than on the overall holistic level. This indicates that because the 320i has strong primary and secondary form language, both the New Zealand and Taiwan consumers interpreted the design cohesively at an analytical level. The implication for design is that the level of coherence continuity between design features, in relation to the primary and secondary form elements, is critical for achieving a strong visual

experience for car exteriors rather than the individual elements, such as a headlight or a single curve along the side of the car.

Comparing the strongest features on the 320i/IS250 appreciated in New Zealand and Taiwan, the Kidney Grille was strongly perceived in both markets but the 320i as a whole was also perceived strongly in Taiwan. On the other hand, the headlights on the IS250 were perceived as strongly in New Zealand and Taiwan. The New Zealand consumer visually perceived the Kidney Grille on the 320i as following the continuity of lines, while the Taiwan consumers perceived the grille more as an individual feature. Compared to the 320i findings, the headlights on the IS250 were indicated in the same manner in both markets. When analysing these features with the format analysis outcome in Section 3.1, it can therefore be assumed that the New Zealand consumers have a pattern of perceiving features consisting of stronger directional qualities relating to the primary form elements. In contrast, the Taiwan consumer has the tendency to perceive features confined to the outline of the feature.

Comparing the relationships between the embodied Gestalt principle of the attribute and feature indicated in New Zealand and Taiwan, it is evident that there is a strong relationship between the embodied Gestalt principles on visual attributes and the features indicated. The implications for design practice, and research and suggestions are listed below:

- A. Validating Gestalt principles in automotive design as a tool for design language development and validating the designer's decisions relating to the form and ordering aspect.
- B. Potential for further research to develop a 'form library' based on the Gestalt principles patterns discovered in this research.
- C. Visual attributes can be used to describe properties in an automotive design in a contemporary context.

The comparative analysis on consumer comprehension of the 320/IS250 will seek to establish if any pattern in model appreciation exists in this research and establish implications for design and further research.

VPE mode: Association

Consumers in both markets similarly perceived the level of brand appeal between BMW and Lexus. However, BMW has a stronger consumer association on brand as a premium automotive company in both markets. Moreover, Taiwan consumers indicated the strongest association. However, the basis for how these two brands are perceived correlates with the market characteristics shown in the secondary research. The New Zealand outcome is based on the brand heritage and visual appearance of BMW models; the Taiwan outcome is based on price, value of BMW models, and the country of origin. Both of these outcomes further supports

the consumer characteristic discussed in the Background paragraph of this section. Furthermore, in relation to consumer associations on premium car brands in Taiwan, a German brand is still regarded more highly than a Japanese brand due to the tendency of preferring Western goods over Eastern imported goods.

In both markets, the IS250 has weak consumer association on features carrying brand identity, except for the company logo. Comparatively, the Kidney Grille on the 320i has been strongly associated with representing BMW. This finding also correlates with the design analysis of the 320i and IS250 that indicates that BMW's Kidney Grille has been cohesively adopted in all BMW models; in comparison, on Lexus models there is a lack of brand-specific features. This coherent finding between the New Zealand and Taiwan outcomes suggests that the higher the consumers' familiarity with a model's specific design feature as belonging to the same car brand, the stronger the consumer association of that specific feature as brand-specific. Although one could argue that BMW has other brand-specific features that have been incorporated into the model designs, the headlights potentially lack consumer familiarity due their high complexity in elemental composition making them hard for the general public to familiarise. The other feature - the Hofmeister Kink - also lacks visual distinctiveness due to the nature of its form language and the feature's position on the car. It is therefore likely that connections exist

between the visual complexity of features and the level of consumers' familiarity with the feature. As this is outside the limitations of this research, this assumption will not be further explored, but is noted as a potential topic for further research.

VPE mode: Comprehension

Based on the level of comprehension on expressions relating to the two models, the design of the 320i has been more strongly perceived than the IS250. Although there are no relations between the holistically and analytically comprehended expressions, the expression describing the design of the 320i has been interpreted cohesively by New Zealand and Taiwan consumers both holistically and analytically. Conversely, the IS250 has a higher cohesiveness between the expressions that were comprehended holistically and analytically; but the correlations between consumers in the different markets are poor. As identified in the model appreciation discussions, this cohesive pattern in design interpretation between markets for the 320i is also apparent. The IS250 is also shown to be highly inconsistent in consumer appreciation between markets. This consistency between consumer comprehensions in different markets supports the design implication regarding the importance of primary and secondary form elements that was discussed in the model appreciation paragraph. This implies that a well-refined car design with cohesive form elements is likely to be interpreted more strongly than a car that shows

lower levels of overall cohesiveness in its form elements, in both New Zealand and Taiwan markets.

The strongest feature perceived on the 320i as expressive in New Zealand is the Kidney Grille, which was also perceived as the feature with the strongest visual attributes in model appreciation section. The Taiwan outcome indicates that although both the grille and the 320i as a whole are the most strongly perceived visual attributes, only the overall 320i has been strongly comprehended in Taiwan. Comparatively, the IS250 outcome between model appreciation and model comprehension in New Zealand shows consistency; however, the Taiwan outcome shows variations similar to how the 320i was perceived, as mentioned above. When analysing these findings, it is somewhat surprising to note that the Taiwan consumer indicated the continuous line along the IS250 as expressive, contradicting the consumer patterns stated in model appreciation. This suggests that in the context of expression-related model perceptions, the New Zealand consumers perceived features that are visually outstanding as expressive. In contrast, the Taiwan consumers have a pattern of perceiving features that relate the primary visual elements of a car as expressive.

Comparing on the relationships between the embodied Gestalt principle of the official expressions and features indicated in New Zealand and Taiwan, it is evident that the relationship between the embodied Gestalt principles

on visual attributes and features are weaker in model expression. However, these outcomes are not surprising as these official expressive terms are more tangible than the descriptive attributes and hence have a less correlative pattern and there is still a moderate level of correlation of this pattern. Therefore, as discussed in the model comprehension section on the New Zealand market, effective comprehension and understanding of the intended design language are crucially affected by on the wording of the expressions; thus, the wording of expressions to describe a car design is crucial, and it must be highly articulated.

Overall

The overall outcome between New Zealand and Taiwan indicates that the 320i and its associated brand have been more strongly perceived in both markets compared to the Lexus IS250. However, the New Zealand research shows lower average marks and rankings as a general trend (in the range between 50 and 60 out of 100), compared to the Taiwan consumers (average marks and rankings ranged between 60 and 75 out of 100) based on the comparison outcome. This suggests that the Taiwan consumer perceived the 320i and IS250 more strongly than the New Zealand consumer. It is difficult to explain this result, but it might be related to interdependent values in Taiwanese culture, whereby luxury brands are perceived more strongly. This also provides an explanation for the New

Zealand outcome: due to independent self-concept and the less distinctive visual aesthetics of the 320i and IS250 in term of consumers' dream car preferences, the participants in New Zealand were less attracted to the 320i or IS250.

5.4 Internal and External

This section compares the intended and the external design perceptions of the 320i and IS250. As identified in the previous discussion sections, both BMW and Lexus have been perceived as premium brands, but BMW and the 320i were more strongly perceived by consumers in both markets. This comparative discussion seeks to understand which visual features were perceived as intended by BMW and Lexus, and discuss why one feature was more successfully perceived than another. Furthermore, the analysis seeks to examine if any coherent form ordering principles contribute to a stronger visual comprehension from the viewer. Through understanding the relationships of how meanings are comprehended or associated with certain types of formal aesthetic attributes, tools for the design process could potentially be established to:

- A. Validate the relationship between formal aesthetics and perceptions through academic research.
- B. Create a library of expressive terms with recommended formal aesthetic attributes for design processes.
- C. Provide an external reference for designers to justify their design decisions on brand-specific and model-specific features.

5.4.1 BMW

This section identifies the similarities and differences in consumer recognition, association, and comprehension of BMW and the 320i.

VPE: Recognition

In both markets, there is strong consumer recognition of BMW cars as carrying a correlated visual brand identity across the car models. Comparing written responses from New Zealand and Taiwan, it is fascinating to find that consumers in Taiwan gave precise descriptions about why they perceived BMW models as brand-specific. This correlates with discussion in the cross market comparison that Taiwanese are more sensitive to details than New Zealand consumers.

The consumers' interests in physically experiencing the 320i are moderately high in both markets with the Taiwan outcome indicating stronger interest than New Zealand. The written comments for the level of interest indicate different motives: the New Zealand consumers focused on the aesthetics of the 320i, while the Taiwan consumers focused on how the car would enhance their personal image externally. The focus on visual aesthetics amongst New Zealand consumers explains the lower average mark of 3.3/5, as the 320i has a plainer and less distinctive visual appearance compared to the design of the consumers' dream cars.

Table 5-78. External perceptions on the BMW 320i between New Zealand and Taiwan.

BMW 320i	New Zealand	Taiwan
Brand identity amongst models of BMW	12/15 agreements	13/15 agreements
Written responses	Comfort levels and visual appearances	Formal aesthetics and highly level of recognition of the Grille and front of car as brand-specific
Consumers' interest in driving/owning 320i	3.3/5	3.9/5
Written responses	Visual aesthetics	Representational Value based

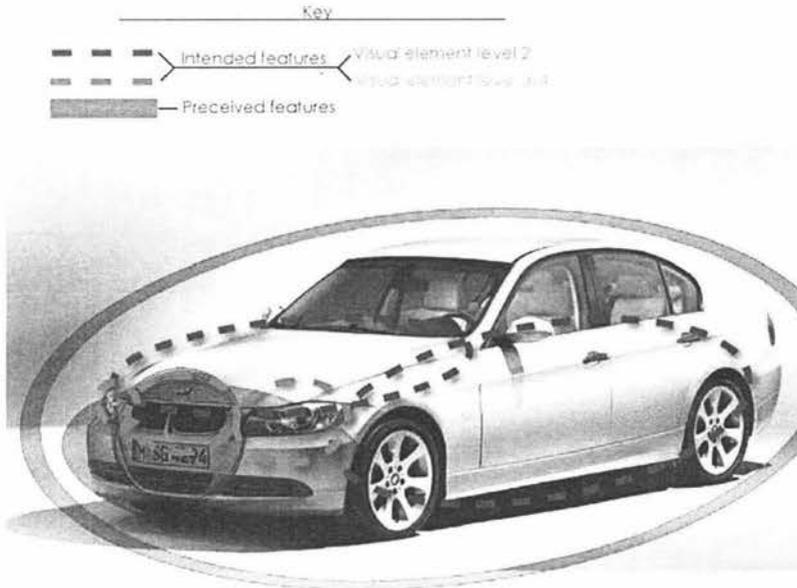
VPE mode: Association

Table 5-59 compares consumers' brand-specific associations in different markets. The internal and external perceptions map moderately, as not all of the intended brand-specific signifiers were perceived by consumers. The feature that was not specifically indicated in both markets is the Hofmeister Kink. In contrast, the strongest associated feature is the Kidney Grille on the 320i, as referred to in the discussion in Section 5.1, and consisting of a strong and coherent adoption of multiple Gestalt principles. This indicates that consumers in both markets are more familiar with the grille as a BMW-specific feature. However, the grille was perceived differently between the markets. The New Zealand consumers indicated the grille as a composition including the air dam, while the Taiwan outcomes indicate the grille and logo only. As discussed in Section 5.3, the

Taiwan consumers perceived a design with more focus on the details than the overall design at a holistic level. It is apparent from Table 5.58 that the strongest visual elements share similar formal aesthetic principles. These principles relate to the repetition of similar elements and primary/secondary form elements relating to the gesture of continuing lines.

Table 5-79. Indication of intended feature types on visual elements with the findings.

Strongest Pictogram Expressions in New Zealand	Feature types:		Strongest Pictogram Expressions in Taiwan
	Brand-specific / Model-specific / None	Brand-specific / Model-specific / None	
Brand-specific (x12 indications)		Brand-specific (x14 indications)	
Features			
Kidney Grille including air dam and logo	Brand-specific Model-specific	Brand-specific Model-specific	Kidney Grille including logo
Frontal area	Model-specific	Model-specific	Frontal area
Wheels	Model-specific	Model-specific	Air Dam
Roundel logo at rear	Brand-specific	Brand-specific	Headlight including the corner of front wheel arch and hood
Rear area (upper middle)	Model-specific	Brand-specific	Roundel logo at rear
Overall design of 320i (Flame surfacing, aerodynamic design)	Brand-specific Model-specific	Model-specific	Shark Fin antenna
Moderate Gestalt principle correlation: Similarity. (and primary form elements)		Moderate Gestalt principle correlations: primary form elements on the lines	



Aerodynamic design - Stream line design of 320i



Figure 5-44. Feature associated as brand-specific in New Zealand.



Aerodynamic design - Stream line design of 320i



Figure 5-45. Features associated as brand-specific in Taiwan.

VPE mode: Comprehension

As indicated on Table 3.1 in Section 2.3 showing the design intents of BMW, the expressions used generally described the holistic visual appearance of the 320i. This lack of linkage of the expressive terms to any specific feature suggests a lower level of understanding between features and expressions, which this research seeks to explore. Due to this lack of linkage to details, this comparative analysis will only be conducted on expressions with correlated visual features. Comparing the indicated features perceived as 'Sporty' in New Zealand and Taiwan, the rear of the 320i was not perceived as BMW intended. However, the front portion of the 320i, consisting of a large number of features, was highly comprehended as intended by consumers in both markets. Furthermore, the Taiwan consumers more strongly comprehended the front of the 320i as 'Sporty' than the New Zealanders.

Comparing the number of features indicated in New Zealand and Taiwan, the Taiwanese consumers indicated more features. Furthermore, more types of features were indicated, including some smaller details such as the rear corner of the 320i. This reflects the assumption that Taiwanese are more sensitive to details. Interestingly, consumers from both markets perceived the Shark Fin Antenna as 'Sporty'! Although this feature was not described as 'Sporty', the researcher believes that the form of antenna serves an iconic, associative visual feature to the consumers.

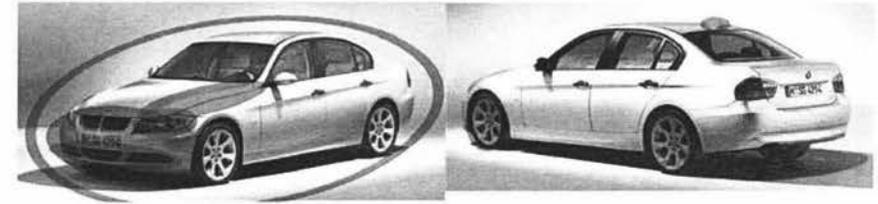


Figure 5-46. Indications on the expression 'Sporty' on the 320i in New Zealand.



Figure 5-47. Indications on the expression 'Sporty' on the 320i in Taiwan.

Table 5-80. List of intended expressions on the 320i and any related design features.

	Term	Descriptor	Features
BMW expressions	Dynamic	Well-defined	Whole design.
	Versatile	Innovative	N/A
	Elegant	Sleek/Lightness	Whole design
	Modern	High-tech/Stylish	N/A
	Desirable	Confident/Focused	N/A
	Sporty	Powerful/Athletic	Whole design (long wheel base and hood). DLO. Rear end.
	Comfortable	Luxuries/Enjoyable	N/A

Overall, the discussions in this section indicate that as receivers of the 320i design, consumers in Taiwan perceived the signs more strongly than the New Zealand consumers. That the Taiwanese consumers perceived the signs more successfully is based on their attention to details and familiarity with BMW and its brand-specific features. The familiarity of the brand image has strongly suggestive meanings to consumers in Taiwan as a form of external representation of one's self image.

5.4.2 Lexus

This section identifies the similarities and differences in consumer recognition, association and comprehension of Lexus and the IS250.

VPE: Recognition

Table 5-81 compares consumer recognition of the IS250 between the markets. These outcomes indicate that the design of the IS250 has been poorly recognised as conveying brand identity. Furthermore, although there was a lack of written responses in this area, the comments made are mostly related to the visual appearance of the IS250. This finding supports the assumption that the IS250 is perceived weakly because the Visual Format Analysis outcome of this car is weaker than for the 320i.

Consumers in Taiwan indicated a lack of interest in physically experiencing the IS250, with an average mark considerably lower than in the New Zealand study. As discussed in section 5.2, this lower level of interest is possibly contributed to by Taiwan's cultural emphasis on the representational values. Furthermore, the higher level of interest in the 320i in Taiwan also supports the assumption that BMW as a brand is more commonly recognised and associated with in Taiwan due to its well-established brand image.

Table 5-81. External perceptions on the Lexus IS250 between New Zealand and Taiwan.

Lexus IS250	New Zealand	Taiwan
Brand identity amongst models of BMW	7/15 agreements	6/15 agreements
Written responses	Equal split of opinions relating to visual aesthetics and performance	Visual appearances
Consumers' interest in driving/owning 320i	3.2/5	2.8/5
Written responses	Visual aesthetics	Country of origin Visual appearance

VPE mode: Association

Reflecting on the low levels of brand-specific recognition of the Lexus models in both markets, Table 5-82 indicates that the brand-specific association of features on the IS250 is poor in both markets. The Arrowhead motif of L-Finesse has been perceived as Lexus-specific in the New Zealand market but the Taiwan outcomes indicate no evidence of association with the Arrowhead motif. The New Zealand consumers' association with the Arrowhead Motif over an area on the IS250 supports the previous discussion on the 320i, that New Zealand consumers perceive car design at a more holistic level. Furthermore from the Taiwan study, the large number of indications of the Lexus logo on the IS250 supports the assumption that Taiwan consumers are more sensitive to the details of a design. However, the intended brand-specific features were poorly

associated by consumers in Taiwan as there is only one indicated feature that is non-iconic.

Table 5-82. Indication of intended feature types on visual elements with the findings.

Strongest Pictogram Expressions in New Zealand	Feature types: Brand-specific / model-specific / None	Strongest Pictogram Expressions in Taiwan
Brand-specific (x4 indications)	Brand-specific (x10 indications)	
Features	Features	
Logo	Brand-specific	Logo
Grille	Model-specific	Line along bonnet
DLO	Brand-specific	-
Rear portions of the car	Brand-specific	-
Low level of Gestalt correlation of 'Enclosedness', and 'Proximity'.		No level of Gestalt correlation.

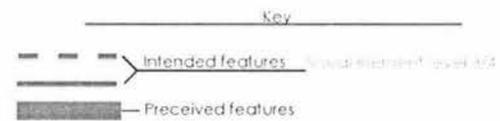
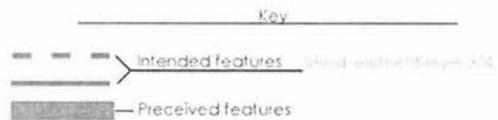


Figure 5-48. Features perceived as brand-specific in NZ.

Figure 5-49. Features perceived as brand-specific in Taiwan.

VPE mode: Comprehension

The feature-specific expression, 'Distinctive', has a poor level of analytical perception amongst consumers in New Zealand, with only three features indicated (Figure 5-49). Compared to this, although the Taiwan consumers perceived a wider range of features as 'Distinctive', (see Figure 5-50), only one indication at the rear of the IS250 was intended to be 'Distinctive'. Although all the intended features were not perceived by consumers, the features commonly perceived as 'Distinctive' in both markets were the front grille and the headlights. This common indication, suggests a correlation between the form language of these visual elements and the expression 'Distinctiveness'. Referring to Section 5.1.4 analysing the Gestalt principles and the expressions, the headlight, grille and the rear spot light all share the common Gestalt principle of 'Proximity'! It can be assumed therefore that features with a strong 'Proximity' principle correlation are likely to be perceived as 'Distinctive'.



Figure 5-50. Indications on the expression 'Distinctive' on the IS250 in New Zealand.



Figure 5-51. Indications on the expression 'Distinctive' on the IS250 in New Zealand.

Table 5-83. Expressions intended by Lexus and any correlated features.

	Term	Descriptor	Feature
Lexus Expression	Luxury	High quality/Exclusive	N/A
	Sporty	State of motion/aggressive	Overall.
	Distinctive	Unique/Refined	Rear end,
	Confident	Bold	N/A
	Simple	Seamless/Flowing	(Panel alignment)
	Style	Elegance/Visually arresting	N/A
	Evocative	Exquisitely beautiful	N/A

Chapter 6. CONCLUSION

The aim of this research is to examine and evaluate the relationship between visual perception and interpretations of car designs. The research questions have been answered through investigations on a holistic and detailed level between consumer perceptions of the 320i and IS250. The theoretical context of this research is based on the Visual Product Experience framework by Warell [2007] conceptualised in the literature review, and a primary research study. By reviewing the current body of knowledge on design and perception, the content of the VPE framework was validated as the most comprehensive framework to use in the context of this research. It also established a formal aesthetic theory on the Gestalt theory for the primary research design and analysis.

Furthermore, the secondary research identifies a gap in the existing body of knowledge comprising a lack of comparative case studies on consumer perceptions of car exteriors between markets. This primary research extends the findings of the secondary research on the backgrounds of the 320i/IS250 and their associated brands, and provides an understanding of their intended design concept and expressions. As validated through the literature review findings on the lack of research on inter-market consumer perceptions, the last section of the secondary research examines the

market backgrounds to understand the social and cultural context for the comparative study. The secondary research has provided a comprehensive base for the design and analysis of the primary research.

This research process, through adoption of the VPE framework, has been highly beneficial in gaining an in-depth understanding of the various levels of visual experience of the 320i and IS250. This project demonstrated that the structure in the VPE framework can be adopted for various analyses that consider both on the presentation and representational side of product perception and interpretation. The Gestalt theory of form ordering principles has proven to be an effective tool under the VPE modes to understand the relationship between the ordering principles of formal aesthetics and consumers' visual experiences on the exterior of the 320i/IS250.

This thesis has investigated relationship between perception and meaning through comparative discussions of the 320i and IS250 in different markets. The following conclusions (listed under each research question) can be drawn from the current study.

How are the two cars perceived and interpreted in the markets?

The 320i and its associated brand BMW are both strongly perceived by consumers in both markets. Further, Taiwan consumers perceived BMW/320i more strongly than New Zealand consumers with an interdependent cultural influence. To clarify this, the key findings are listed below:

New Zealand

- The brand impression and recognition of BMW is based on consumers' independent values, judging the brand base on its heritage and design aesthetics.
- Lexus was largely judged with strong existing opinions and prejudice towards its country of origin and mother company, Toyota.
- The independent culture of New Zealand has influenced the consumers' considerably high level of willingness to physically experience the IS250 despite the lower level of model impression and recognition.
- The model 320i was perceived based on the visual aesthetics, based on the coherence between primary and secondary form elements.
- The model IS250 was perceived weakly, based on the lack of overall coherence between the forms. This is partially contributed to by the brand-specific design language of the Arrowhead motif as it

emphasises sharp line transitions and does not contribute to the overall visual coherence.

Taiwan

- T The brand impression and recognition of BMW is based on consumers' interdependent values in judging the brand, based on its suggestive meanings in society as a premium brand.
- Lexus was largely judged with both criticism and compliments towards Japan as the country of origin.
- Taiwan consumers are less willing to physically experience the IS250 based on the lower level of model recognition.
- The model 320i was perceived on a visual aesthetics base, based on the coherence between primary and secondary form elements.
- The model IS250 was perceived more weakly than the 320i, based on the lack of overall coherence and harmonious form language.

What visual elements are perceived as characteristic for 320i and IS250?

The outcome of the research is shown in Table 6-1, which shows only the strongest visual features indicated by consumers, and the main visual attribute under which it was appreciated. Overall, the grille on the 320i in New Zealand and Taiwan were consistently appreciated as 'Distinctive/Well-defined'. Also, consumers from both markets perceived the twin-barrel headlights on the IS250 as the strongest visual element. This shows that the IS250 is perceived differently in the two markets, which is largely contributed to by the weaker form and ordering design of the IS250. The level of coherence in a car's formal aesthetics (primary and secondary form elements) correlates with the level of visual impression; that is, the design of the 320i has been perceived more strongly than the IS250 in New Zealand.

Table 6-1. List of features strongly perceived as characteristic for the 320i/IS250 in both markets.

New Zealand	320i	IS250
Strongest feature	Kidney Grille	Twin-barrel Headlights
Visual attributes	Distinctive/well-defined	Consistent/Uniform. Distinctive/Well-defined
Taiwan		
Strongest feature	1. Kidney Grille 2. Overall 320i	Continuous line along IS250
Visual attributes	1. Distinctive/well-defined 2. Balanced/Proportional, Simple/Clean	Harmonious/Flowing

What visual elements are perceived as signifiers and what meanings are conveyed by those visual elements?

In both markets, the 320i was strongly perceived as visually conveying the brand identity of BMW. In both markets there is a pattern on model comprehension for the 320i. This indicates that the strongest visual features appreciated by consumers were also perceived as highly expressive. In contrast, the continuous line along the IS250 is perceived by consumers from both markets as strongly expressive.

As indicated in Figure 6-2, the frontal area of the 320i has been strongly associated as brand-specific in both markets, based on the consumers' familiarity of the design language. In contrast, the brand identity of the IS250 was poorly perceived except for the association between the logo and the brand.

Table 6-2. List of features strongly interpreted as expressive for the 320i/IS250 in both markets.

NZ	320i	IS250
Strongest feature	1. Kidney Grille 2. Overall 320i	Continuous line along IS250
Expression	1. Desirable. Brand-specific 2. Dynamic. Elegant	Simple, Sporty, Style
Taiwan		
Strongest feature	Overall 320i	1. Twin-barrel headlights 2. Continues line along IS250
Expression	Modern. Comfortable	1. Sporty. and Confident 2. Style, and Simple



Figure 6-1. Features perceived as BMW-specific between the markets (Left:New Zealand. Right:Taiwan).



Figure 6-2 Features perceived as brand-specific between the markets (left: New Zealand. Right: Taiwan).

Are there any differences in perception and meaning in the different markets? What are the differences?

The major difference in consumer perception and interpretation in New Zealand and Taiwan is that the New Zealand consumers largely perceived the 320i/IS250 based on their independent personal values, with emphasis on their visual distinctiveness or uniqueness. In contrast, the Taiwan consumers perceived these two cars based on their representational collective values. The New Zealand market characteristic is that consumers with an independent self-concept judge a car by its actual merit, and therefore are more willing to try newer car brands than Taiwanese consumers.

Based on the written responses and the pictogram outcomes from the Taiwan study, the Taiwanese consumers perceive more details on a design than New Zealand consumers. This finding supports the secondary research reporting on the relationship between complexity in the language format and sensitivity to details. This assumption also relates to the design focus of Lexus and the consumer perception outcomes on the IS250. The L-Finesse design language of the Arrowhead motif has been poorly perceived at a holistic level, but more commonly perceived as a feature detail or a small composition by consumers in both markets. This possibly reflects that, as an Asian company, Lexus' design focuses on the individual details.

Regarding how the formal aesthetic attributes are perceived without meanings, the New Zealand consumers have a pattern of perceiving features such as the bone line and DLO. These features consist of strong directional qualities relating to the primary form elements. In comparison, the Taiwan consumers have the tendency to perceive the design as a whole entity.

How is the design intent been perceived and interpreted?

The 320i has been more strongly perceived as BMW intended, based on the harmonious yet distinctively balanced visual aesthetics. As the main visual feature intended by BMW, the Kidney Grille has been successfully perceived by consumers as representing BMW. BMW's brand-specific design language of using flame surfacing for expressing a state of motion and elegance is also strongly perceived by consumers in both markets.

The outcome has shown that, due to a lack of coherence and refinement in the primary and secondary visual form elements in the design of the IS250, this car model was poorly perceived by consumers in both markets. This phenomenon was more evident in the New Zealand market due to the market character that a design is often judged independently without suggestive association of the brand image. The Arrowhead motif proposed by Lexus' L-Finesse has been perceived at an elemental level

with one clear brand-specific association and not the overall design gesture intended by Lexus.

What are the implications for design?

The most obvious finding emerging from this study is that a car design with stronger formal aesthetics is perceived more successfully than a weaker design. This effect is the same for the different markets with different social-cultural values and characteristics, as shown in this study.

As mentioned in the secondary research, the higher the level of consumer familiarities for a specific visual feature to a car brand, the stronger the consumer association that that specific feature is brand-specific. Therefore, to achieve brand identity through visual aesthetics, it is essential for companies to establish a range of brand-specific design vocabularies and incorporate them into their models. Visual elements that consist of highly complex compositions and weaker directional ordering of elements are harder to familiarise. This is evident in this research outcome comparing the brand-specific features of the 320i. In this case, the Quad headlights are not perceived strongly as a brand-specific feature when compared to the 320i Kidney Grille. There is therefore a connection between the visual complexity of features and the level of consumers' familiarity with the feature.

The implication for design is that the level of coherence continuity between design features in relation to the primary and secondary form element is critical for achieving a strong visual experience for car exteriors, but not the individual elements

The result indicates a strong relationship between the embodied Gestalt principles on visual attributes and features indicated. However, this relationship between the embodied Gestalt principles on visual attributes and features indicated is weaker in model expression. The implication for design is that the visual attributes can be used to describe formal aesthetic properties in automotive design in a contemporary context. This research outcome, identifying the relationship between the Gestalt principles perceived and interpretations, offers a source for validation of the designer's decisions relating to the form and ordering aspects.

6.1 Evaluation

The secondary aspect of this research focuses on four key aspects: the theoretical background, the design, the market background, and the field research tools, such as the VAS indication method. Overall, a wide range of sources has been drawn upon, ranging from foreign literatures focusing on the market characteristic of Taiwan, to materials from private organizations such as BMW and Lexus. These mixed areas of literature and background research have served to gain different perspectives on how and why consumers from different market backgrounds visually perceive the same designs, giving authority to the primary research analysis and discussion.

The primary research was designed based on the research tools and official design intentions of the 320i/IS250 to ensure validity in the research outcomes for comparison between BMW and Lexus. The consumer groups in this exploration are comparable because the venues for the field research were chosen to target car enthusiasts from amongst the general public group.

To gain a range of perspectives, outcomes from the field research was first analysed individually and then categorised under the VPE modes. Based on these categorisations, comparative discussions were drawn between the markets and the two car designs. Lastly, comparison were drawn

between the design intentions and the external perceptions, aiming to examine what and why specific visual features were interpreted as brand-specific.

6.2 Area for further research

As identified in the literature review, the field of visual design perception and interpretation is a newly established research field requiring further research. The outcome of this research study identifies areas and topics for further investigation within this field, as listed below:

Table 6-3. List of potential further research topics.

Type of topic	Potential research outlook	Purpose of the research outlook
VPE framework [Warell, 2007]	Exploring each mode in the VPE framework to gain further understanding.	Build up the theory to gain understanding on the visual product experience as research for design.
Visual appreciation	Relationship between language complexity and sensitivity to details on design.	Understanding of perception characteristics between different ethnic groups.
		Further research to establish a method of mental training for designer or design education.
Formal aesthetic appreciation and comprehension	Further provide the validity of Gestalt principles in automotive design.	Validate the designer's decisions relating to the form and ordering aspect.
		Develop a 'form library' based on the patterns discovered in this research and based on the Gestalt principles.
Visual product association and comprehension	Research into culturally related perceptions with more case studies.	Establish a set of geographical based guidelines or references for designing products targeting multi-cultural markets.

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What do YOU think about this car?

Perception and meaning of automotive design in New Zealand and Taiwan

Wen-Chun Diana Wang

A thesis submitted for the degree of Master of Design at
College of Creative Arts, Massey University, Wellington, New Zealand

February 2008

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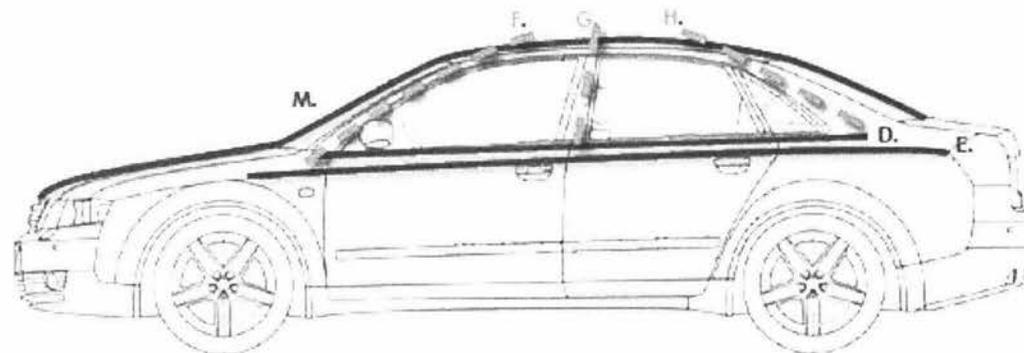
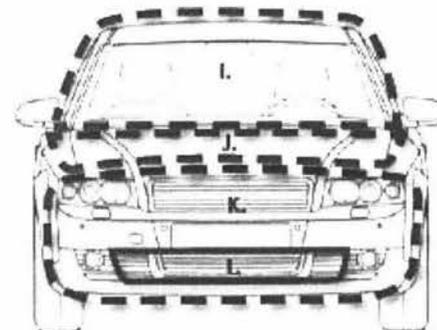
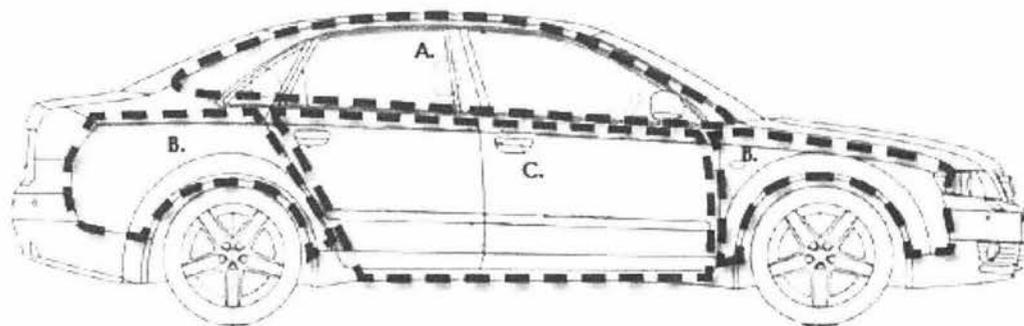
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Appendix A

Glossary - terms and definitions



KEY

- A. Daylight Opening (DLO)
- curve of the side window designed to be a visual feature
- B. Wheelarch
- C. Body section
- D. Bellline
- E. Bone line
- F. A-Pillar
- G. B-Pillar
- H. C-Pillar
- I. Greenhouse (*Padiglione*)
- Windows of the passenger cabin including the DLO
- J. Hood
- K. Down Road Graphic (DRG)
- L. Airdam
- M. Cab-forward*

Note

* Position of the Greenhouse in relation to the whole design. Pushing the Greenhouse forward is a significant way of expressing dynamism. In the opposite, a Cab-backward expresses a relaxed appearance.

Figure A-1. Glossary – terms and definitions..

Appendix B

Review of BMW's new design aesthetics by artists/designers in the USA by Lynn Cox (European Car Magazine).

Table B-1. Summary of designers and artists opinion on the looks of the new BMW designs [Cox, n.d].

Artists/Designers	Questions asked during the interview			
	1. General comments on the look of new BMWs	2. Are BMW's design trends paralleling trends in design and architecture?	3. Anything significant that will add a new way of looking at BMW designs?	Other comments
Tom Matano	-	-	BMW needs visual brand identity development like the Mercedes-Benz and Audi.	-
Lewis de Soto	Problematic because the design is overly conceptual and do not elicit desire (do not harmonise as a whole).	-	This is a new design direction for BMW and not an evolution.	Visual design cues use across models is inappropriate for its large models such as the 7 series due to the lack of detail.
Larry Eisenbach	Do not like the front. The headlights and the carved lower hemispheres. The emotional expression of the frontal portion is 'sheepish' and not a BMW characteristic.	Yes, in architecture but questions this desire to make the flamboyant impression as it could be something less than timeless.	Brand image and its associated meanings are important for products. Simplicity and honesty is the further the trend of formal aesthetic design language, BMW should be careful.	Z4 lack BMW's visual identity
Michael Hui	Great new design direction from the BMW and each model has its own visual uniqueness.	Interior and exterior of BMW car designs reflects the design of Gehry's MoMA in Bilbao.	-	-
James Tong	Too much surface details that it is losing its visually holistic quality. New design trends far too extreme.	-	-	-
Bill Barranco	Teutonic, bold, aggressive, self confident, and distinctive.	Yes, the glass architecture, tattoo designs, and street clothing.	-	Innovative design languages from BMW.
Teresa Spafford	Likes the design details as it is bold and darling.	-	-	In general, European designs appreciate the new design direction of the BMW more than the American designers.
Jason Alread	New design from the BMW is incredibly beautiful and expressive.	Direct minimalist intentions on the interior of BMW models.	-	-
Truman Pollard	Too complex in details and is exploiting shocking values of humanity.	-	-	-
Ken Saward	Evolutionary design that is appropriate for its targeting markets.	-	-	-

Appendix C

Car brand backgrounds: culture and history of BMW/Lexus

BMW

History and company culture

This section aims to introduce the history and company culture of BMW automotive for this comparative study. Originating in Germany in the early 1910s within the aviation manufacturing industry, *Bayerische Motoren Werke AG* (BMW) based its Roundel logo on the rotating motion of an aircraft propeller in the blue sky. Referring to the BMW logo in section 2.2.1, the colours of blue and white symbolise the Bavarian flag and express the brand's cultural heritage [BMW International, 2007]. The automotive sector of BMW was established in the mid 20th century and the model 2002 revolutionised the American market, as the world's biggest auto market. Model 2002 filled the market gap by combining sports car and muscle car qualities into a premium *sports sedan*. Ever since then, the 3 series models have been regarded as the benchmark within the company and promoted as "*uncompromised, authentic, and exhilarating to drive*" [BMW USA, 2007]

In the history of BMW cars, there is a constant focus on consumer's experience and reflecting market needs through innovative designs. When examining the culture of BMW as a car maker, the company has a long history of involvement in motor sports suggesting a high level of performance amongst BMW cars. More recently, BMW has expanded its commitment in social development into cultural and arts related activities

such as BMW Car Art [BMW New Zealand, 2007]. Furthermore, the general impression of Germany's engineering standard enhances BMW as a premium car maker with original designs and high mechanical performances.

Lexus

History and company culture

This section will focus on introducing the history of Lexus as a luxury automotive brand with a company culture that is deeply influenced by Japanese culture. Lexus is a brand name conceived over almost two decades ago by the Japanese company Toyota Motor as its luxury car division and later developed its overall aim as "*the pursuit of perfection*". Originated as military truck manufacturer, Toyota moved into the commercial automotive market after the Second World War period focusing on economic motor car production and soon become one of Japan's largest automotive companies. Lexus was originally designed to target the American market and was first introduced in 1989. It was aimed at the luxury segment of the automotive market its product emphasis on technology and performance, and with a competitive price that was slightly lower than its competitors. Today, Lexus is a widely recognised premium car brand in most parts of the world and has beaten its competitors in terms of the sales record in the USA market [Lexus, 2007b].

The culture and propriety of the company lies within its technological and engineering innovations. This is evident from past company advertisements where the focus was on technological advancement

amongst its competitors to provide a luxurious driving and riding experience [Lexus, 2006-2008, & 2007b].

Although the history and culture of Lexus is relatively short, it is one of the best known Asian car companies in the luxury market sector. Lexus has gained international success and recognition over its relatively short history; which could influence the consumer's brand impression as to what they associate Lexus with. With Japan as its country of origin, Lexus offers an interesting case for the comparison of brand perception and the association of a brand's country of origin, such as the electronic brand Sony. Compared to the design history of Lexus amongst other luxury car brands, Lexus is a young brand with less heritage and is less establishment in New Zealand or Taiwan compared to its sales in the US market. However, this lack of company heritage creates opportunity for a fresh approach in the culture of Lexus.

Appendix D

Market backgrounds: Culture and history of Taiwan

Culture and history of Taiwan

Politically, the current government originated from China's National party promoting democracy. In contrast, the current Chinese culture in China is considerably different from Taiwan due to the communist government and the historical influences of the Cultural Revolution.

Historically, Taiwan has been ruled by both a Western and an Eastern country; and later on was further influenced by the American system for political reasons. In the early days, unstable political situations caused the local government to place high level of control on the freedom of speech. During the period that the island was ruled by the Japanese, the whole country was enslaved to produce raw materials for Japan. This resulted in a loss of cultural identity and a strong emphasis on capitalist values. These unstable political backgrounds jeopardised the development of arts and aesthetic culture in Taiwan. Due to this political background, the people were forced into developing capitalist values to achieve financial stability and a sense of security. Although the country has developed dramatically in many ways, this value issue is still evident in the educational planning and emphasis today. Students were discouraged from participating in art and craft subjects and these subjects are commonly regarded as no more than an extra-curricular activity. Amongst the subjects in school, music and art classes were often squeezed out by the "main subjects" to allow more

study or teaching time for examination preparation. It is only during the last decade that values in arts and design are starting to gain public and tertiary recognition. According to Zhang (2005), it is hard for art departments to gain enough recognition or attention amongst the departments within Universities for substantial funding. However, although certain universities did not have an arts department in the early days an arts departments are being opened following line with the trend of educational emphasis from the government. Today, the value of arts, design, and local culture are starting to gain positive momentum amongst both the government and the people in Taiwan. This could possibly relate to a better level of education in the country today.

The Confucius philosophy is originates from ancient China and was the fundamental to the education system in the Chinese history. Until now, a considerable amount of the teachings are still deeply rooted in the culture in East Asia today. Since the Taiwanese did not go through the Cultural Revolution that took place in mainland China, the value of Confucius philosophy is more widely recognised in the society. Wong and Ahuvia (1998) identified five aspects in this philosophy which greatly influences Taiwanese culture and consumption trends:

Interdependent Self-Concepts: this is based on a relatively high degree of collective values in individuals that stem from relationships between people.

Depending on one's family, education and values, the majority of Asians have a strong tendency towards "a configuration of roles expressed in self-other expectations." [Chu, 1985: 252]

Individual and Group Needs: While Western culture values personal pleasure in life and *nonconformity*, the Eastern culture often values conformity over certain self-opinions to minimize conflicts in social relations. This is evident in the Confucius teachings that proposed "*in order to be a man or a sage, it is necessary to perform one's duties first, not to claim one's rights*" [Lau & Kuan, 1988:50–51]

The Legitimacy of Group Affiliations: When an individual perceives group values and opinions together with the individuals within the group, they naturally personally accept judgments and comments made by the group. These groups could be within the family, workforce departments, or regionally oriented. Again this is almost the opposite case in Western society as in most cases people are judged as an individual based on its character and integrity [Wong and Ahuvia, 1998:427].

Hierarchy: In Asia today, strong social orders are still prominent [Markus & Kitayama, 1991: 236; Triandis, McCusker, & Hui, 1990], this correlates to the five cardinal relations in Confucius philosophy emphasizing the value of class and order. Although this is apparent in Western cultures, the value of

individual achievement are often weighted over the group that this person belongs to (Hofstede & Bond, 1988; Wheeler et al., 1989).

The Value of Humility: This particular aspect of Asian culture is diminishing because of the introduction of modern capitalism in Asia and contributes to the large wealth differential amongst the population [Max Weber, 1963]. With new modern ideas being introduced in Asian countries, the value of a large portion of the younger generation has changed radically into expressing one as an individual through exaggeration in style and consumption of luxury goods.

The analysis on Confucius philosophy in this section provides an overview of the Taiwanese/Chinese culture that contributes to the nation's consumption behaviour. The next section will further explore the consumption pattern and market nature in Taiwan.

Appendix E

Design analyses: Visual attributes and expression analysis

Table E-01. Definition and relation to physical attribute principles of the 9 categories on physical description.

Terms on categories of physical attribute	Definition	Relation to Gestalt Principles
A. Distinctive/Well-defined	Characteristic/Outline clearly Difference between one and another in an outlined and clear manner	Proximity. Similarity. Area. Enclosedness
B. Consistent/Uniform	Compatible or in harmony/Unvarying Conforming to a compatible standard or appearance	Similarity. Common Movement.
C. Harmonious/Flowing	Forming a pleasing or consistent whole/smooth continuous A holistic appearance that is smooth or in a continuous flow	'the good curve'. Common Movement.
D. Beautiful/Stunning	Pleasing to the eye/extremely attractive or impressive A form or feature that is visually attractive	Multiple principles.
E. Interesting/Fascinating	Causing curiosity/Capture the interest of; attract Something that attracts attention through causing curiosity by adopting an unprecedented shape/feature or gestures for emotional attachment	Experience.
F. Ugly/Non-appealing	Unpleasant to the eye/not be of interest Something that is visually unpleasant or disturbing which resulted in unattractiveness	'The good curve'. Common Movement.
G. Balanced/Proportional	Even distribution of weight or amount/comparative ratio Distribution of proportion/shape in a comparative ratio that are visually pleasing	Proximity. Similarity. 'the good curve'
H. Sleek/Elegant	Smooth and glossy/refined Aesthetic appearance that are consists of physical qualities of smooth and glossy in a refined manner	'The good curve'. Similarity. Common Movement.
I. Simple/Clean	Not compound or complex/complete, clear-cut Aesthetic appearance that are complete and not complex	Area. Enclosedness.

Table E-02. Expression terms from BMW with description and relation to the Gestalt theory.

Expression terms	Descriptor	Definition	Definition of descriptor/s	Relation to Gestalt form ordering principles	
		(Definition in the context of automotive design)			
BMW 320i	A. Dynamic	Well-defined	<i>Of motive force.</i>	<i>Outline clearly</i>	'the good curve'. Common Movement.
			force in actual physical attributes that are clearly outlined		
	B. Versatile	Innovative	<i>Having many uses.</i>	<i>Bring in new methods, ideas, etc</i>	Relation indefinable
			New ways of achieving multiple functions		
	C. Elegant	Sleek/Lightness	<i>Refined.</i>	<i>Smooth and Glossy/Cleanness</i>	Similarity. 'the good curve'. Common Movement
			Overall composition, surface that are refined a smooth and simple manner		
	D. Modern	High-tech/Stylish	<i>In current fashion.</i>	<i>Mechanical arts/fashionable, elegant</i>	Similarity. Symmetry. Experience.
Visual appearance that are refined in the Modern (contemporary) aesthetics and of high precision and engineering					
E. Desirable	Confident/Focused	<i>Worth having or doing.</i>	<i>Bold/state of clear definition</i>	Common Movement Any ordering principle that are strongly adopted.	
		The boldness and clarity in physical attributes that makes the product 'worth having'			
F. Sporty	Powerful/Athletic	<i>Rakish, showy.</i>	<i>Vigour, energy/physically strong or agile</i>	Proximity. Similarity. Area. Enclosedness	
		Feature that appears strong and dashing with expressiveness			
G. Comfortable	Luxuries/Enjoyable	State of physical well-being	<i>Extremely comfortable/pleasant, experience</i>	'the good curve'. Common Movement. Experience.	
		High level of physical comfort such as curve or softness that creates a pleasant experience			

Table E-03. Expression terms from Lexus with description and relation to the Gestalt theory.

Expression terms	Descriptor	Definition (Definition in the context of automotive design)	Definition of descriptor/s	Relation to Gestalt principles	
Lexus IS250	A. Luxury	High quality/Exclusive	A material object conducive to sumptuous living	High grade of excellence/Limited to object or people designated	'The good curve'. Experience
	B. Sporty	State of motion/aggressive	Flashy/Showy	Gesture of movement/forcefulness	Common Movement. Proximity. Similarity
			Gesture of exterior or features that expresses momentum force and power		
	C. Distinctive	Unique/Refined	Having a special noticeable quality	Incomparable/very subtle, precise, or exact	Similarity. Area. Proximity
			Noticeable quality of incomparable subtle/precision on design		
	D. Confident	Bold	Full assurance	Striking or conspicuous to the eye	Similarity. Area. Enclosedness
			Boldness in exterior design that are visually conspicuous		
E. Simple	Seamless/Flowing	Not compound or complex	Combined in an inconspicuous way/smooth continuous	'The good curve'. Common Movement	
		Compositions of car exterior and features that are combined through the use of smooth continuous line or surface			
F. Style	Elegance/Visually arresting	Characteristic	Refined/capable of attracting visual attention	Strong adoption of any specific principle to create clear gestalt	
		Characteristics of exterior design that are design to attract visual attention			
G. Evocative	Exquisitely beautiful	To produce or suggest through artistry and imagination a vivid impression of reality	Extraordinary characters that give great pleasure	Strong adoption of any specific principle to create clear gestalt	
		Suggestive meaning of visual pleasure through exterior design			

Appendix F

Research design: questionnaire* on the 320i/IS250

* Original size in full A4 pages

Visual imagery for both questionnaires on 320i and IS250

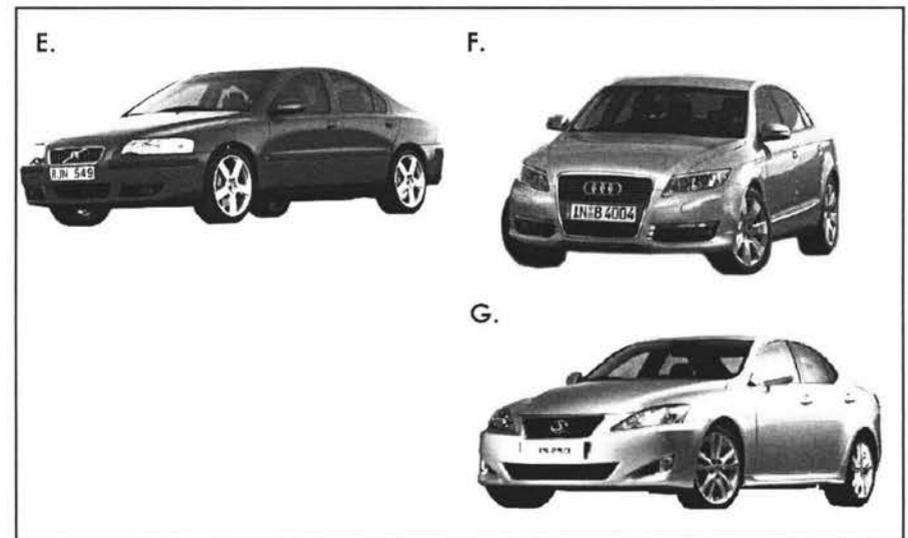
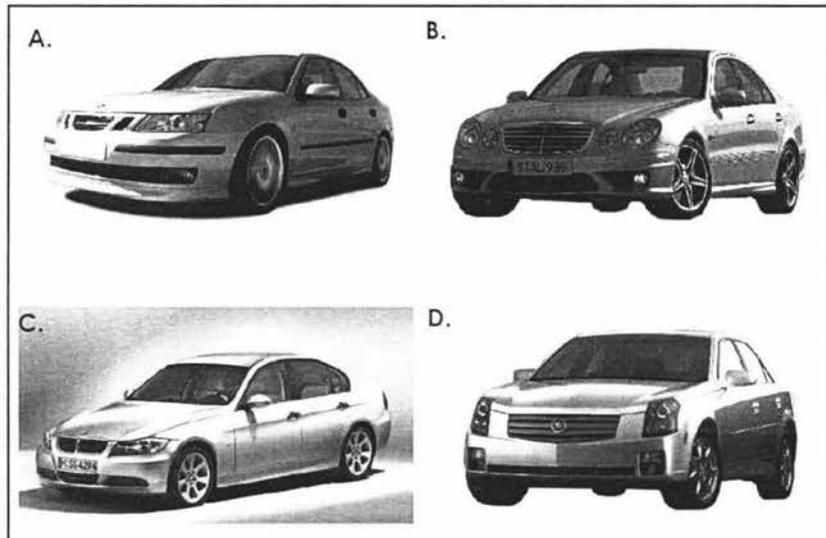


Figure F-1. Common imagery used in both the 320i and IS250 questionnaires aiming for the questions regarding the model distinctiveness and attractiveness (Left: page 1, right: page 2).

BMW 320i in English (for the New Zealand research study)



Figure F-2. Visual imagery of the 320i for the semi-structured interview.

Part 01: Participant details

Please tick in the boxes to indicate your answer.

1. Do you consider your self a car enthusiast?
 1 Not at all 2 3 average 4 5 Absolutely

2. How much do you know about cars?
 1 Nothing 2 3 average 4 5 Everything

3. What is your age group?
 under 20 20-29 30-39 40-49 50-59 above 60 years

4. Which ethnic group do you belong to?
 Asian European Maori Pacific Islander
 Fakeha Other _____

5. How long have you been living in New Zealand?
 Less than 1 year 1-3 5 years or more

6. What is the brand and model of your dream car?
 Acura Alfa Romeo Aston Martin Audi Bentley
 BMW Cadillac Chrysler Daewoo Dainatsu
 Ferrari Fiat Ford GMC Honda
 Hyundai Isuzu Jaguar Jeep Kia
 Lamborghini Land Rover Lexus Lincoln
 Lotus Maserati Maybach Mazda Mini
 Mercedes-Benz Mitsubishi Nissan Peugeot
 Porsche Renault Rolls-Royce Saab Subaru
 Suzuki Toyota Volkswagen Volvo
 Other _____

Please write down the model name _____

7. On what basis do you choose the brand above as your dream car?

Figure F-3. Page 1, section 1 of the BMW 320i questionnaire.

Part 02: Brand Impression

8. Please write a word/sentence that you would associate with BMW:

9. How appealing do you think BMW is?
 1 Not at all 2 3 average 4 5 very appealing

9a. Why? _____

10. Do you consider BMW a premium/luxury car brand?
 not at all top of the class

10a. Why? _____

11. How distinctive is BMW compared to other car brands?
 not at all very out standing

11a. Why? _____

12. Do you think cars manufactured by BMW share certain qualities that makes them belonging to the same "family"?
 Yes No

12a. If yes, what kind of quality is it? _____

13. Have you ever experienced cars made by BMW before?
 (including driving/sitting in the car)
 Yes No

Figure F-4. Page 2, section 2 of the BMW 320i questionnaire.

Part 3: Let's focus on the model 320i now



14. Referring to the picture above, do you think this model is typical for BMW?
 Yes No

14a. Why? _____

15. On the bar below and referring to the images provided, please indicate how ATTRACTIVE and DISTINCTIVE you think each car is. (see example below)

not at all | very attractive

Car A

1. Attractiveness not at all | very appealing

2. Distinctiveness not at all | stands out

Car B

1. Attractiveness not at all | very appealing

2. Distinctiveness not at all | stands out

Figure F-5. Page 3, section 3 of the BMW 320i questionnaire.

Car C

1. Attractiveness not at all | very appealing

2. Distinctiveness not at all | stands out

Car D

1. Attractiveness not at all | very appealing

2. Distinctiveness not at all | stands out

Car E

1. Attractiveness not at all | very appealing

2. Distinctiveness not at all | stands out

Car F

1. Attractiveness not at all | very appealing

2. Distinctiveness not at all | stands out

Car G

1. Attractiveness not at all | very appealing

2. Distinctiveness not at all | stands out

16. How strongly would you like to drive/own this BMW?

1 2 3 4 5
 Not at all neutral very much

16a. Why? _____

Figure F-6. Page 4, section 3 of the BMW 320i questionnaire.

Part 04: Model appreciation

17. Referring to the photos provided, please mark (!) on the bar below to indicate what you think about BMW 320i's appearance.

A. Distinctive/Well-defined not at all to a great extent

B. Consistent/Uniform not at all to a great extent

C. Harmonious/Flowing not at all to a great extent

D. Beautiful/Stunning not at all to a great extent

E. Interesting/Fascinating not at all to a great extent

F. Ugly/Non-appealing not at all to a great extent

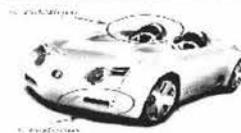
G. Balanced/Proportional not at all to a great extent

H. Sleek/Elegant not at all to a great extent

I. Simple/Clean not at all to a great extent

Figure F-7. Page 5, section 4 of the BMW 320i questionnaire.

18. Referring to the photo below, please mark on the picture below to indicate the features of the car that appeals to you. Please further identify the marking with the key words below. (see example below)



- A. Distinctive/Well-defined
- B. Consistent/Uniform
- C. Harmonious/Flowing
- D. Beautiful/Stunning
- E. Interesting/Fascinating
- F. Ugly/Non-appealing
- G. Balanced/Proportional
- H. Sleek/Elegant
- I. Simple/Clean

18a.



18b.



Figure F-8. Page 6, section 4 of the BMW 320i questionnaire.

Part 05: Model expressions

19. Referring to the photo next page, please mark (I) on the bar below to indicate how you think BMW 320i is.

A. Dynamic Well defined not at all to a great extent

B. Versatile Innovative not at all to a great extent

C. Elegant Sleek Lightness not at all to a great extent

D. Modern High-tech Stylish not at all to a great extent

E. Desirable Confident Focused not at all to a great extent

F. Sporty Powerful Athletic not at all to a great extent

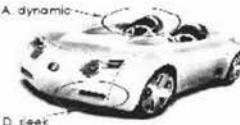
G. Comfortable Luxurious Enjoyable not at all to a great extent

Figure F-9. Page 7, section 5 of the BMW 320i questionnaire.

20. Referring to the photo below, please mark on the picture below to indicate the features of the car that appeals to you. Please further identify the marking with the key words below. (see example below)

A. dynamic
B. Versatile
C. Elegant
D. Sleek
E. Desirable
F. Sporty
G. Comfortable
H. Any visual features that characterizes BMW

A. dynamic



D. sleek

20a.



20b.



Figure F-10. Page 8, section 5 of the BMW 320i questionnaire.

BMW 320i in English and Mandarin (for the Taiwan research study)



Figure F-11. Visual imagery of the 320i for the semi-structured interview.

Part 01: 個人資料 Participant details

請在框內打勾來回答各項問題。 Please tick in the boxes to indicate your answer.

1. 你是一位汽車愛好者嗎? Do you consider your self a car enthusiast?
 1 2 3 4 5
 完全不 Not at all 中等 average 非常 Absolutely

2. 你對汽車懂得多嗎? How much do you know about cars?
 1 2 3 4 5
 完全不懂 Noting 中等 average 非常 Everything

3. 你的年齡層是? What is your age group?
 20 以下 20-29 30-39 40-49 50-59 60 歲以上

4. 請問你的亞洲人嗎? Does your ethnic group belong to Asian?
 是 不是

5. 你長期居住於台灣嗎? Do you permanently live in Taiwan?
 是 不是

6. 你心目中最高級的車廠是哪一家? What is the brand and model of your dream car?
 Acura Alfa Romeo Aston Martin Audi Bentley
 BMW Cadillac Chrysler Daewoo Daihatsu
 Ferrari Fiat Ford GMC Honda
 Hyundai Isuzu Jaguar Jeep Kia
 Lamborghini Land Rover Lexus Lincoln
 Lotus Maserati Maybach Mazda Mini
 Mercedes-Benz Mitsubishi Nissan Peugeot
 Porsche Renault Rolls-Royce Saab Subaru
 Suzuki Toyota Volkswagen Volvo
 Other _____

Please write down the model name _____

7. 基於什麼理由你選擇你最高級的車廠?
 On what basis do you choose the brand above as your dream car?

Figure F-12. Page 1, section 1 of the BMW 320i questionnaire.

Part 02: 品牌形象 Brand Impression

8. 請用一行字來形容你對BMW的看法?
 Please write a word/sentence that you would associate with BMW:

9. 個人來說你覺得BMW多具有吸引力? How appealing do you think BMW is?
 1 2 3 4 5
 完全不 Not at all 中等 average 非常 Absolutely

9a. 為什麼? why?

10. 你覺得BMW是一個高級汽車的品牌嗎? Do you consider BMW a premium/luxury car brand?
 完全沒有 not at all 頂級的 top of the class

10a. 為什麼? why?

11. 在跟其他汽車品牌相較之下你認為BMW有多與眾不同?
 How distinctive is BMW compared to other car brands?
 完全沒有 not at all 非常特別 very outstanding

11a. 為什麼? why?

12. 你覺得BMW所生產的車子具有他們共同的特點嗎?
 Do you think cars manufactured by BMW share certain qualities that makes them belonging to the same "family"?
 有 沒有

12a. 如果有, 那這共同的特點是那種特點? If yes, what kind of quality is it?

13. 你有體驗過BMW的車子嗎? (包括乘坐及開車)
 Have you ever experienced cars made by BMW before? (including driving/sitting in the car)
 有 沒有

Figure F-13. Page 2, section 2 of the BMW 320i questionnaire.

Part 3: Let's focus on the model 320i now.



14. 你觉得上面的一台车那代表BMW一摺的车形设计吗?
referring to the picture above, do you think this model is typical for BMW?

是 不是

14a. 為什麼? why? _____

15. 根據圖片A-G請指出每一台车的吸引力和特殊度(如下圖一樣)
On the bar below and referring to the images provided, please indicate how ATTRACTIVE and DISTINCTIVE you think each car is. (see example below)

完全不吸引人 not at all | 非常吸引人 very attractive

Car A

1. 吸引力 Attractiveness: 毫無吸引力 not at all | 非常吸引人 very attractive

2. 特殊度 Distinctiveness: 完全不特殊 not at all | 非常特殊 very distinctive

Car B

1. 吸引力 Attractiveness: 毫無吸引力 not at all | 非常吸引人 very attractive

2. 特殊度 Distinctiveness: 完全不特殊 not at all | 非常特殊 very distinctive

Figure F-14. Page 3, section 3 of the BMW 320i questionnaire.

Car C

1. 吸引力 Attractiveness: 毫無吸引力 not at all | 非常吸引人 very attractive

2. 特殊度 Distinctiveness: 完全不特殊 not at all | 非常特殊 very distinctive

Car D

1. 吸引力 Attractiveness: 毫無吸引力 not at all | 非常吸引人 very attractive

2. 特殊度 Distinctiveness: 完全不特殊 not at all | 非常特殊 very distinctive

Car E

1. 吸引力 Attractiveness: 毫無吸引力 not at all | 非常吸引人 very attractive

2. 特殊度 Distinctiveness: 完全不特殊 not at all | 非常特殊 very distinctive

Car F

1. 吸引力 Attractiveness: 毫無吸引力 not at all | 非常吸引人 very attractive

2. 特殊度 Distinctiveness: 完全不特殊 not at all | 非常特殊 very distinctive

Car G

1. 吸引力 Attractiveness: 毫無吸引力 not at all | 非常吸引人 very attractive

2. 特殊度 Distinctiveness: 完全不特殊 not at all | 非常特殊 very distinctive

16. 排除掉其他的考量, 你有多想去嘗試或購買這一台車?
How strongly would you like to drive/own this BMW?

1 2 3 4 5

完全不 not at all | 中等 average | 非常 Absolutely

16a. 為什麼? why? _____

Figure F-15. Page 4, section 3 of the BMW 320i questionnaire.

Part 04: 車款鑑賞 Model appreciation

17. 依據提供的圖片和下列的關鍵字, 請指出你對320i外觀的感受
Referring to the photos provided, please mark () on the bar below to indicate what you think about BMW 320i's appearance.

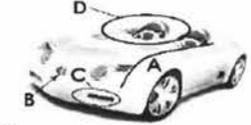
A. 特殊感/獨樹一幟 Distinctive/Well-defined	完全不認為 not at all	非常贊同 to a great extent
B. 有連貫性/相同的 Consistent/Uniform	完全不認為 not at all	非常贊同 to a great extent
C. 整體協調感/流暢感 Harmonious/Flowing	完全不認為 not at all	非常贊同 to a great extent
D. 出色的/極漂亮的 Beautiful/Stunning	完全不認為 not at all	非常贊同 to a great extent
E. 有趣的/引人關注的 Interesting/Fascinating	完全不認為 not at all	非常贊同 to a great extent
F. 醜陋的/毫無吸引力 Ugly/Non-appealing	完全不認為 not at all	非常贊同 to a great extent
G. 比例均衡/大小勻稱 Balanced/Proportional	完全不認為 not at all	非常贊同 to a great extent
H. 優雅感/精緻感 Sleek/Elegant	完全不認為 not at all	非常贊同 to a great extent
I. 簡潔感/乾淨俐落感 Simple/Clean	完全不認為 not at all	非常贊同 to a great extent

Figure F-16. Page 5, section 4 of the BMW 320i questionnaire.

18. 請標註在圖上畫出你認為本車有特色的部位, 然後更進一步的用下列的關鍵字去區分個別特色
Referring to the photo below, please mark on the picture below to indicate the features of the car that appeals to you. Please further identify the marking with the key words below. (see example below)

A. 特殊感/獨樹一幟 Distinctive/Well-defined
B. 有連貫性/相同的 Consistent/Uniform
C. 整體協調感/流暢感 Harmonious/Flowing
D. 出色的/極漂亮的 Beautiful/Stunning
E. 有趣的/引人關注的 Interesting/Fascinating
F. 醜陋的/毫無吸引力 Ugly/Non-appealing
G. 比例均衡/大小勻稱 Balanced/Proportional
H. 優雅感/精緻感 Sleek/Elegant
I. 簡潔大方感/乾淨俐落感 Simple/Clean

18a.



18b.



Figure F-17. Page 6, section 4 of the BMW 320i questionnaire.

BMW 320i in English and Mandarin (for the Taiwan research study)



Figure F-11. Visual imagery of the 320i for the semi-structured interview.

Lexus IS250 in English (for the New Zealand research study)

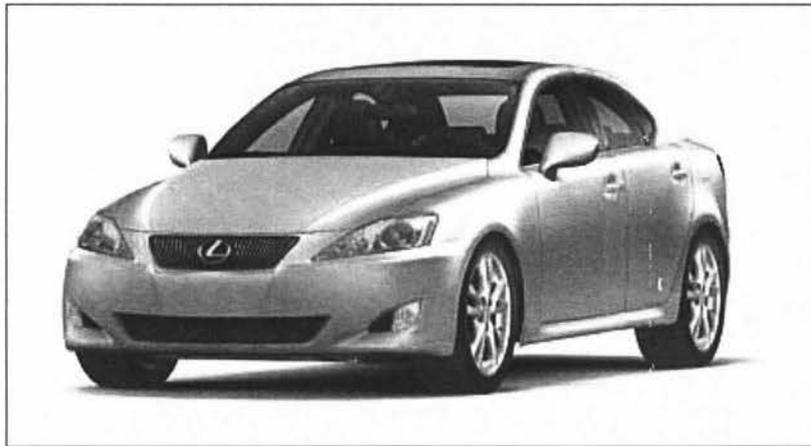


Figure F-20. Visual imagery of the IS250 for the semi-structured interview.

Part 01: Participant details

Please tick in the boxes to indicate your answer.

1. Do you consider yourself a car enthusiast?
 1 Not at all 2 3 average 4 5 Absolutely

2. How much do you know about cars?
 1 Nothing 2 3 average 4 5 Everything

3. What is your age group?
 under 20 20-29 30-39 40-49 50-59 above 60 years

4. Which ethnic group do you belong to?
 Asian European Maori Pacific Islander
 Pakeha Other _____

5. How long have you been living in New Zealand?
 Less than 1 year 1-3 5 years or more

6. What is the brand and model of your dream car?

<input type="checkbox"/> Acura	<input type="checkbox"/> Alfa Romeo	<input type="checkbox"/> Aston Martin	<input type="checkbox"/> Audi	<input type="checkbox"/> Bentley
<input type="checkbox"/> BMW	<input type="checkbox"/> Cadillac	<input type="checkbox"/> Chrysler	<input type="checkbox"/> Daewoo	<input type="checkbox"/> Daihatsu
<input type="checkbox"/> Ferrari	<input type="checkbox"/> Fiat	<input type="checkbox"/> Ford	<input type="checkbox"/> GMC	<input type="checkbox"/> Honda
<input type="checkbox"/> Hyundai	<input type="checkbox"/> Isuzu	<input type="checkbox"/> Jaguar	<input type="checkbox"/> Jeep	<input type="checkbox"/> Kia
<input type="checkbox"/> Lamborghini		<input type="checkbox"/> Land Rover	<input type="checkbox"/> Lexus	<input type="checkbox"/> Lincoln
<input type="checkbox"/> Lotus	<input type="checkbox"/> Maserati	<input type="checkbox"/> Maybach	<input type="checkbox"/> Mazda	<input type="checkbox"/> Mini
<input type="checkbox"/> Mercedes-Benz		<input type="checkbox"/> Mitsubishi	<input type="checkbox"/> Nissan	<input type="checkbox"/> Peugeot
<input type="checkbox"/> Porsche	<input type="checkbox"/> Renault	<input type="checkbox"/> Rolls-Royce	<input type="checkbox"/> Saab	<input type="checkbox"/> Subaru
<input type="checkbox"/> Suzuki	<input type="checkbox"/> Toyota	<input type="checkbox"/> Volkswagen	<input type="checkbox"/> Volvo	
<input type="checkbox"/> Other _____				

Please write down the model name _____

7. On what basis do you choose the brand above as your dream car?

Figure F-21. Page 1, section 1 of the Lexus IS250 questionnaire.

Part 02: Brand Impression

8. Please write a word/sentence that you would associate with LEXUS:

9. How appealing do you think LEXUS is?
 1 Not at all 2 3 average 4 5 very appealing

9a. Why? _____

10. Do you consider LEXUS a premium/luxury car brand?

 not at all top of the class

10a. Why? _____

11. How distinctive is LEXUS compared to other car brands?

 not at all very out standing

11a. Why? _____

12. Do you think cars manufactured by LEXUS share certain qualities that makes them belonging to the same "family"?
 Yes No

12a. If yes, what kind of quality is it? _____

13. Have you ever experienced cars made by LEXUS before?
 (including driving/sitting in the car)
 Yes No

Figure F-22. Page 2, section 2 of the Lexus IS250 questionnaire.

Part 3: Let's focus on the model IS250 now.



14. Referring to the picture above, do you think this model is typical for LEXUS?
 Yes No

14a. Why? _____

15. On the bar below and referring to the images provided, please indicate how ATTRACTIVE and DISTINCTIVE you think each car is. (see example below)

not at all | very attractive

Car A

1. Attractiveness not at all | very appealing

2. Distinctiveness not at all | stands out

Car B

1. Attractiveness not at all | very appealing

2. Distinctiveness not at all | stands out

Figure F-23. Page 3, section 3 of the Lexus IS250 questionnaire.

Car C

1. Attractiveness not at all | very appealing

2. Distinctiveness not at all | stands out

Car D

1. Attractiveness not at all | very appealing

2. Distinctiveness not at all | stands out

Car E

1. Attractiveness not at all | very appealing

2. Distinctiveness not at all | stands out

Car F

1. Attractiveness not at all | very appealing

2. Distinctiveness not at all | stands out

Car G

1. Attractiveness not at all | very appealing

2. Distinctiveness not at all | stands out

16. How strongly would you like to drive/own this LEXUS?

1 2 3 4 5
 Not at all neutral very much

16a. Why? _____

Figure F-24. Page 4, section 3 of the Lexus IS250 questionnaire.

Part 04: Model appreciation

17. Referring to the photos provided, please mark (I) on the bar below to indicate what you think about LEXUS IS250's appearance.

A. Distinctive/Well-defined not at all to a great extent

B. Consistent/Uniform not at all to a great extent

C. Harmonious/Flowing not at all to a great extent

D. Beautiful/Stunning not at all to a great extent

E. Interesting/Fascinating not at all to a great extent

F. Ugly/Non-appealing not at all to a great extent

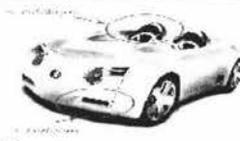
G. Balanced/Proportional not at all to a great extent

H. Sleek/Elegant not at all to a great extent

I. Simple/Clean not at all to a great extent

Figure F-25. Page 5, section 4 of the Lexus IS250 questionnaire.

18. Referring to the photo below, please mark on the picture below to indicate the features of the car that appeals to you. Please further identify the marking with the key words below. (see example below)



A. Distinctive/Well-defined
 B. Consistent/Uniform
 C. Harmonious/Flowing
 D. Beautiful/Stunning
 E. Interesting/Fascinating
 F. Ugly/Non-appealing
 G. Balanced/Proportional
 H. Sleek/Elegant
 I. Simple/Clean

18a.



18b.



Figure F-26. Page 6, section 4 of the Lexus IS250 questionnaire.

Part 05: Model expressions

19. Referring to the photo next page, please mark (I) on the bar below to indicate how you think LEXUS IS250 is.

A. Luxury	High quality Exclusive	_____
	not at all	to a great extent
B. Sporty	State of motion Aggressive	_____
	not at all	to a great extent
C. Distinctive	Unique Refined	_____
	not at all	to a great extent
D. Confident	Bold	_____
	not at all	to a great extent
E. Simple	Seamless Flowing	_____
	not at all	to a great extent
F. Style	Elegance Visually amazing	_____
	not at all	to a great extent
G. Evocative	Equisitely beautiful	_____
	not at all	to a great extent

Figure F-27. Page 7, section 5 of the Lexus IS250 questionnaire.

20. Referring to the photo below, please mark on the picture below to indicate the features of the car that appeals to you. Please further identify the marking with the key words below. (see example below)

A. dynamic



D. sleek

- A. Luxury
- B. State of motion
- C. Distinctive
- D. Confident
- E. Simplicity
- F. Style
- G. Evocative
- H. Any visual features that characteris LEXUS

20a.



20b.



Figure F-28. Page 8, section 5 of the Lexus IS250 questionnaire.

Lexus IS250 in English and Mandarin (for the Taiwan research study)



Figure F-29. Visual imagery of the IS250 for the semi-structured interview.

Part 01: 個人資料 Participant details

請在框內打勾來回答各項問題。 Please tick in the boxes to indicate your answer.

1. 你是一位汽車愛好者嗎? Do you consider yourself a car enthusiast?
 1 完全不懂 Not at all 2 3 中等 average 4 5 非常 Absolutely

2. 你對汽車懂得多嗎? How much do you know about cars?
 1 完全不懂 Not at all 2 3 中等 average 4 5 非常 Everything

3. 你的年齡層是? What is your age group?
 20以下 20-29 30-39 40-49 50-59 60歲以上

4. 請問你的亞細人嗎? Does your ethnic group belong to Asian?
 是 不是

5. 你長期居住於台灣嗎? Do you permanently live in Taiwan?
 是 不是

6. 你心目中最高級的車廠是哪一家? What is the brand and model of your dream car?
 Acura Alfa Romeo Aston Martin Audi Bentley
 BMW Cadillac Chrysler Daewoo Daihatsu
 Ferrari Fiat Ford GMC Honda
 Hyundai Isuzu Jaguar Jeep Kia
 Lamborghini Land Rover Lexus Lincoln
 Lotus Maserati Maybach Mazda Mini
 Mercedes-Benz Mitsubishi Nissan Peugeot
 Porsche Renault Rolls-Royce Saab Subaru
 Suzuki Toyota Volkswagen Volvo
 Other _____

Please write down the model name _____

7. 基於什麼理由你選擇你最高級的車廠?
 On what basis do you choose the brand above as your dream car?

Figure F-30. Page 1, section 1 of the Lexus IS250 questionnaire.

Part 02: 品牌印象 Brand Impression

8. 請用一行字來形容你對LEXUS的看法?
 Please write a word/sentence that you would associate with LEXUS.

9. 個人來說你覺得LEXUS多具有吸引力? How appealing do you think LEXUS is?
 1 完全不懂 Not at all 2 3 中等 average 4 5 非常 Absolutely

9a. 為什麼? Why?

10. 你覺得LEXUS是一個高級汽車的品牌嗎? Do you consider LEXUS a premium/luxury car brand?
 完全沒有 Not at all 頂級的 top of the class

10a. 為什麼? Why?

11. 在跟其他汽車品牌相較之下你認為LEXUS有多與眾不同?
 How distinctive is LEXUS compared to other car brands?
 完全沒有 Not at all 非常特別 Very outstanding

11a. 為什麼? Why?

12. 你覺得LEXUS所生產的車子具有他們共同的特點嗎?
 Do you think cars manufactured by LEXUS share certain qualities that makes them belonging to the same "family"?
 有 沒有

12a. 如果有, 那這共同的特點是那種特點? If yes, what kind of quality is it?

13. 你有體驗過LEXUS的車子嗎? (包括乘坐或開車)
 Have you ever experienced cars made by LEXUS before? (including driving/sitting in the car)
 有 沒有

Figure F-31. Page 2, section 2 of the Lexus IS250 questionnaire.

Part 3: Let's focus on the model IS250 now.



14. 你覺得上圖的這一台車形代表Lexus一儔的車形設計嗎?
Referring to the picture above, do you think this model is typical for LEXUS?
 是 不是

14a. 為什麼? why? _____

15. 依據圖F-A-D請指出每一台車的吸引度和特殊度 (在下圖一格)
On the bar below and referring to the images provided, please indicate how ATTRACTIVE and DISTINCTIVE you think each car is. (see example below)

完全不吸引人 not at all 非常吸引人 very attractive

Car A

1. 吸引度 Attractiveness 毫無吸引力 not at all 非常吸引人 very attractive

2. 特殊度 Distinctiveness 完全不特殊 not at all 非常特殊 very distinctive

Car B

1. 吸引度 Attractiveness 毫無吸引力 not at all 非常吸引人 very attractive

2. 特殊度 Distinctiveness 完全不特殊 not at all 非常特殊 very distinctive

Figure F-32. Page 3, section 3 of the Lexus IS250 questionnaire.

Car C

1. 吸引度 Attractiveness 毫無吸引力 not at all 非常吸引人 very attractive

2. 特殊度 Distinctiveness 完全不特殊 not at all 非常特殊 very distinctive

Car D

1. 吸引度 Attractiveness 毫無吸引力 not at all 非常吸引人 very attractive

2. 特殊度 Distinctiveness 完全不特殊 not at all 非常特殊 very distinctive

Car E

1. 吸引度 Attractiveness 毫無吸引力 not at all 非常吸引人 very attractive

2. 特殊度 Distinctiveness 完全不特殊 not at all 非常特殊 very distinctive

Car F

1. 吸引度 Attractiveness 毫無吸引力 not at all 非常吸引人 very attractive

2. 特殊度 Distinctiveness 完全不特殊 not at all 非常特殊 very distinctive

Car G

1. 吸引度 Attractiveness 毫無吸引力 not at all 非常吸引人 very attractive

2. 特殊度 Distinctiveness 完全不特殊 not at all 非常特殊 very distinctive

16. 排除經濟上的考量, 你有多想去嘗試或購買這一台車?
How strongly would you like to drive/own this LEXUS?
 1 2 3 4 5
完全不 (not at all) 中等 (average) 非常 (Absolute)

16a. 為什麼? why? _____

Figure F-33. Page 4, section 3 of the Lexus IS250 questionnaire.

Part 04: 車款鑑賞 Model appreciation

17. 依據提供的圖片和下列的關連字, 請指出你對LEXUS IS250外觀的感想
 Referring to the photos provided, please mark () on the bar below to indicate what you think about LEXUS IS250's appearance.

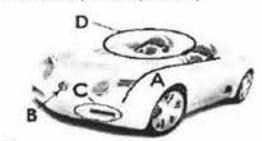
A. 特殊感/獨樹一幟 Distinctive/Well-defined	完全不認為 not at all	非常贊同 to a great extent
B. 有連貫性/相同的 Consistent/Uniform	完全不認為 not at all	非常贊同 to a great extent
C. 整體協調感/流暢感 Harmonious/Flowing	完全不認為 not at all	非常贊同 to a great extent
D. 出色的/極漂亮的 Beautiful/Stunning	完全不認為 not at all	非常贊同 to a great extent
E. 有趣的/引人關注的 Interesting/Fascinating	完全不認為 not at all	非常贊同 to a great extent
F. 醜陋的/毫無吸引力 Ugly/Non-appealing	完全不認為 not at all	非常贊同 to a great extent
G. 比例均衡/大小勻稱 Balanced/Proportional	完全不認為 not at all	非常贊同 to a great extent
H. 優雅感/精緻感 Sleek/Elegant	完全不認為 not at all	非常贊同 to a great extent
I. 簡單大方感/乾淨俐落感 Simple/Clean	完全不認為 not at all	非常贊同 to a great extent

Figure F-34. Page 5, section 4 of the Lexus IS250 questionnaire.

18. 請詳細在圖上畫出你認為本車有特色的部位, 然後更進一步的用下列的關連字去區分個別特色
 Referring to the photo below, please mark on the picture below to indicate the features of the car that appeals to you.
 Please further identify the marking with the key words below. (see example below)

A. 特殊感/獨樹一幟 Distinctive/Well-defined	B. 有連貫性/相同的 Consistent/Uniform
C. 整體協調感/流暢感 Harmonious/Flowing	D. 出色的/極漂亮的 Beautiful/Stunning
E. 有趣的/引人關注的 Interesting/Fascinating	F. 醜陋的/毫無吸引力 Ugly/Non-appealing
G. 比例均衡/大小勻稱 Balanced/Proportional	H. 優雅感/精緻感 Sleek/Elegant
I. 簡單大方感/乾淨俐落感 Simple/Clean	

18a.



18b.



Figure F-35. Page 6, section 4 of the Lexus IS250 questionnaire.

Part 05: 車款表現力 Model expressions

19. 依據提供的圖片和下列的關鍵字, 請指出你對IS250外觀的感受
referring to the photo next page, please mark (!) on the bar below to indicate how you think LEXUS IS250 is.

A. 豪華的 高品質 / 高級的
Luxury high quality / Exclusive 完全不認為 not at all 非常贊同 to a great extent

B. 活力大膽的 動感 / 奔放的
Sporty state of motion / Assertive 完全不認為 not at all 非常贊同 to a great extent

C. 特殊的 獨特的 / 精緻的
Distinctive unique / Refined 完全不認為 not at all 非常贊同 to a great extent

D. 自信滿滿的 大膽的
Confident bold 完全不認為 not at all 非常贊同 to a great extent

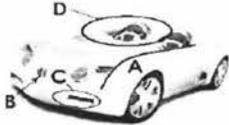
E. 簡潔或 無縫的 / 流暢的
Simple seamless / flowing 完全不認為 not at all 非常贊同 to a great extent

F. 有風格的 精緻感 / 時尚的
Style Elegance / Visually appealing 完全不認為 not at all 非常贊同 to a great extent

G. 喚起的 精緻又美的
Evocative Exquisitely beautiful 完全不認為 not at all 非常贊同 to a great extent

Figure F-36. Page 7, section 5 of the Lexus IS250 questionnaire.

20. 請標註在圖上畫出你認為本車有特色的部位, 然後更進一步的將下列的關鍵字去區分個別特色
referring to the photo below, please mark on the picture below to indicate the features of the car that appeals to you.
Please further identify the marking with the key words below. (see example below)



A. 豪華的 Luxury
B. 活力大膽的 Sporty
C. 特殊的 Distinctive
D. 自信滿滿的 Confident
E. 簡潔或 Simple
F. 有風格 Style
G. 喚起的 Evocative
H. 代表LEXUS的特色 visual features that characterizes LEXUS

20a. 

20b. 

Figure F-37. Page 8, section 5 of the Lexus IS250 questionnaire.

Appendix G

Findings: Full field research findings

Appendix G

BMW 320i New Zealand outcome

Table G-1. Questionnaire outcome of the BMW 320i from the New Zealand study.

Questions in the BMW 320i questionnaire	B1	B2	B3	B4	B5
Q1. Do you consider yourself a car enthusiast?	2	2	3	2	3
Q2. How much do you know about cars?	2	3	3	4	2
Q3. What is your age group?	40-50	40-50	60+	20-30	20+
Q4. Which ethnic group do you belong to?	Other-Scottish	European	European	Other-Scottish	European
Q5. How long have you been living in NZ?	5+	5+	1-	5+	5+
Q6. What is the brand and model of your dream car?	Mercedes-Benz Compressor	Mercedes-Benz	Saab 911	Mitsubishi 72' Colt	Jeep Wrangler
Q7. On what basis do you choose the brand above as your dream car?	appearance	Looks	look and status symbol	Used to own one	Because it looks cool
Q8. Please write a word/sentence that you would associate with BMW	Owner's social status	Class (social class)			
Q9. How appealing do you think BMW is?	3	3	3	3	3
Q9a. Why?	because there are other cars I would rather have	too many old ones on the road		price range	because I'd much rather have a Jeep
Q10. Do you consider BMW a premium/luxury car brand?	66	51	43	85	38
Q10a. Why?	There are better brands out there	too many old ones on the road			they do look pretty good
Q11. How distinctive is BMW compared to other car brands?	96	50	22	100	41
Q11a. Why?	because of branding (ads)	Not unusual enough		Wheels and badge	
Q12. Do you think car manufactured by BMW share certain qualities that makes them belong to a certain class?	yes	yes	no	no	no
Q12a. Why?	aesthetics	comfort			
Q13. Have you ever experienced cars made by BMW before?	yes	yes	no	yes	yes
Q14. Do you think model 320i is typical for BMW?	No	yes	yes	no	yes
Q14a. Why?	Not as square	BMW 'Looks like other BMW cars)	Using same style of contours as Holden moving away from straight		most of the cars have a similar body
Q15. A1: Attractiveness	46	35	37	73	38
Q15. A2: Distinctiveness	10	32	37	32	41
Q15. B1: Attractiveness	98	42	39	24	34
Q15. B2: Distinctiveness	99	43	41	74	39
Q15. C1: Attractiveness	63	45	46	78	52
Q15. C2: Distinctiveness	62	47	46	77	56
Q15. D1: Attractiveness	25	48	50	4	44
Q15. D2: Distinctiveness	26	47	50	93	45
Q15. E1: Attractiveness	0	58	54	46	42
Q15. E2: Distinctiveness	48	58	54	43	45
Q15. F1: Attractiveness	78	65	27	0	47
Q15. F2: Distinctiveness	79	64	26	92	42
Q15. G1: Attractiveness	75	60	56	1	50
Q15. G2: Distinctiveness	63	59	56	86	47
Q17. How strongly would you like to drive/own this BMW?	3	4	3	3	3
Q17a. Why?	Not my first choice of car	Nice car, and it is a new model			I prefer a Jeep
Q18a. Disinctive/Well-defined	78	52	35	69	45
Q18b. Consistent/Uniform	75	46	43	56	62
Q18c. Harmonious/Flowing	78	43	38	46	58
Q18d. Beautiful/Stunning	44	49	41	29	55
Q18e. Interesting/Fascinating	44	36	50	63	61
Q18f. Ugly/Non-appealing	4	16	50	43	35
Q18g. Balanced/Proportional	82	34	42	37	49
Q18h. Sleek/Elegant	79	37	50	35	57
Q18l. Simple/Clean	43	39	45	48	73
Q20a. Dynamic	49	42	44	55	47
Q20b. Versatile	46	42	46	58	56
Q20c. Elegant	68	45	52	46	48
Q20d. Modern	71	51	60	63	61
Q20e. Desirable	43	61	52	73	52
Q20f. Sporty	71	53	40	60	37
Q20g. Comfortable	72	46	52	64	68

Appendix G

B6	B7	B8	B9	B10	B11	B12	B13
3	5	5	5	1	2	5	4
4	4	4	3	2	4	4	4
40-50	50-60	40-50	40-50	30-40	20-30	20-30	20-30
European	European	Pakeha	European	Pakeha	Asian	Asian	European
5+	5+	5+	5+	5+	5+	5+	1-3 years
Aston Martin	Ford new XR8	Chrysler Hemii/Cuda	Chrysler	Ferrari	Aston Martin DB9	Porsche	Ferrari
likes the look of the car	I like them	Long time favourite brand	the looks	Colour	appearance	Performance	1. power 2. safety 3. shape
expensive parts		Prolific	not for me	Price	a car for men	stable	stable
5	2	1	2	1	4	4	4
Just looks good	not a fan of BMW car	boring appearance	all models looks the same (not distinctive)	too many wheels	because it's BMW	too much like a 40 year old car	not er
93	38	26	44	72	87	85	95
	high price	seems like everyone has one (too ordinary)	because BMW think they are	too many wheels	from real life experience, "comfort"	it performance with long company history	price range and the long history of the brand
76	80	40	5	15	79	78	83
because of the shape of the grill		the grill is easy to identify	city regulations have made all cars very similar	bland	and BMW is different in it's symbolic image of being "expensive" (relative to other brands)	performance with long company history	the design of the car
yes	no	no	yes	no	yes	yes	no
known for finished workmanship			the badge (logo)		performance, comfortability	kinda nice shape	
yes	yes	yes	no	no	yes	yes	yes
yes	yes	yes	yes	yes	no	yes	yes
because it looks like one (the grille) from looks the same				the grill	looks like a Holden	shape	traditional design
59	5	6	3	9	9	25	47
23	3	4	4	10	9	54	48
71	38	5	38	31	56	42	65
71	42	4	35	31	63	43	65
70	76	8	4	32	58	68	76
69	78	7	3	33	58	60	75
82	23	6	37	6	4	62	51
80	24	6	35	5	46	53	48
44	21	7	2	28	38	64	39
21	21	6	2	29	32	50	45
80	71	8	36	49	61	43	54
78	71	6	36	49	58	42	55
80	42	7	6	6	74	48	52
52	42	7	5	4	67	48	52
5	4	1	1	3	4	3	5
because I like their car		too plain	I don't like the brand		because it's BMW (brand loyalty)	nothing appear to be too different	enjoy (driving the car)
67	53	25	17	15	51	65	72
79	62	17	18	66	25	58	62
83	62	18	17	66	36	60	76
86	46	1	9	48	31	56	69
84	37	1	17	15	30	56	61
8	51	92	82	48	47	50	65
12	56	16	10	70	46	70	64
85	57	6	11	59	54	44	63
85	77	19	12	22	53	70	79
85	50	3	10	46	31	62	73
82	53	14	8	46	28	51	54
94	51	2	9	36	38	52	71
94	69	90	9	68	46	68	67
95	68	3	11	60	38	65	59
95	70	4	11	70	33	35	75
94	69	20	12	50	48	75	51

Appendix G

B14	B15	MEAN	
4	3	3.3	Q1. Do you consider your self a car enthusiast?
3	3	3.3	Q2. How much do you know about cars?
20-30	40-50		Q3. What is your age group?
European	European		Q4. Which ethnic group do you belong to?
less than 1yr	5+		Q5. How long have you been living in NZ?
Maserati	Volvo		Q6. What is the brand and model of your dream car?
look/design, speed, interior design	appearance		Q7. On what basis do you choose the brand above as your dream car?
german, reliability	strong Germany car		Q8. Please write a word/sentence that you would associate with BMW
3	4	3.0	Q9. How appealing do you think BMW is?
rough curves in exterior design, seats not very comfortable of the car being very solid			Q9a. Why?
62	69	63.6	Q10. Do you consider BMW a premium/luxury car brand?
less comfort, classic design	long lasting design		Q10a. Why?
16	78	57.3	Q11. How distinctive is BMW compared to other car brands?
classic design and colours	unique and consistent designs		Q11a. Why?
yes	yes		Q12. Do you think car manufactured by BMW share certain qualities that makes them belonging to the
reliability, easy and safe driving	unique and consistent designs		Q12a. Why?
yes	yes		Q13. Have you ever experienced cars made by BMW before?
yes	yes		Q14. Do you think model 320i is typical for BMW?
design and curves very typical, size of the car	the front grille		Q14a. Why?
25	41	30.5	Q15. A1: Attractiveness
39	28	24.9	Q15. A2: Distinctiveness
98	57	49.2	Q15. B1: Attractiveness
98	78	55.1	Q15. B2: Distinctiveness
58	78	54.1	Q15. C1: Attractiveness
65	85	54.7	Q15. C2: Distinctiveness
91	6	35.9	Q15. D1: Attractiveness
91	67	47.7	Q15. D2: Distinctiveness
4	92	35.9	Q15. E1: Attractiveness
11	61	35.1	Q15. E2: Distinctiveness
59	81	50.6	Q15. F1: Attractiveness
66	61	55.0	Q15. F2: Distinctiveness
70	31	43.9	Q15. G1: Attractiveness
44	31	44.2	Q15. G2: Distinctiveness
3	5	3.3	Q17. How strongly would you like to drive/own this BMW?
special appealing to it, definitely looks like a man's elegant design that doesnt date			Q17a. Why?
38	86	51.2	Q18a. Distinctive/Well-defined
69	83	54.7	Q18b. Consistent/Uniform
69	95	56.3	Q18c. Harmonious/Flowing
48	98	47.3	Q18d. Beautiful/Stunning
48	45	43.2	Q18e. Interesting/Fascinating
1	0	39.5	Q18f. Ugly/Non-appealing
81	85	50.3	Q18g. Balanced/Proportional
55	100	52.8	Q18h. Sleek/Elegant
92	92	56.6	Q18i. Simple/Clean
55	83	49.0	Q20a. Dynamic
29	57	44.7	Q20b. Versatile
56	97	51.0	Q20c. Elegant
26	64	60.5	Q20d. Modern
57	99	55.7	Q20e. Desirable
80	68	53.5	Q20f. Sporty
56	94	58.1	Q20g. Comfortable

NEW ZEALAND CAR-RELATED event
Summary for Q.19 in Model Appreciation

A. Distinctive/Well-defined



NEW ZEALAND CAR-RELATED event
Summary for Q.19 in Model Appreciation

B. Consistent/Uniform



Figure G-1. Features appreciated by New Zealand consumers as distinctive/well-defined (left).

Figure G-2. Features appreciated by New Zealand consumers as consistent/uniform (right).

NEW ZEALAND CAR-RELATED event!
Summary for Q.19 in Model Appreciation

C. Harmonious/Flowing



NEW ZEALAND CAR-RELATED event!
Summary for Q.19 in Model Appreciation

D. Beautiful/Stunning



Figure G-3. Features appreciated by New Zealand consumers as harmonious/flowing (left).

Figure G-4. Features appreciated by New Zealand consumers as beautiful/stunning (right).

NEW ZEALAND CAR-RELATED event
Summary for Q.19 in Model Appreciation

E. Interesting/Fascinating



NEW ZEALAND CAR-RELATED event
Summary for Q.19 in Model Appreciation

F. Ugly/Non-appealing



Figure G-5. Features appreciated by New Zealand consumers as interesting/fascinating (left).

Figure G-6. Features appreciated by New Zealand consumers as ugly/non-appealing (right).

What do YOU think about this car?

Perception and meaning of automotive design in New Zealand and Taiwan

Wen-Chun Diana Wang

A thesis submitted for the degree of Master of Design at
College of Creative Arts, Massey University, Wellington, New Zealand

February 2008

Visual imagery for both questionnaires on 320i and IS250

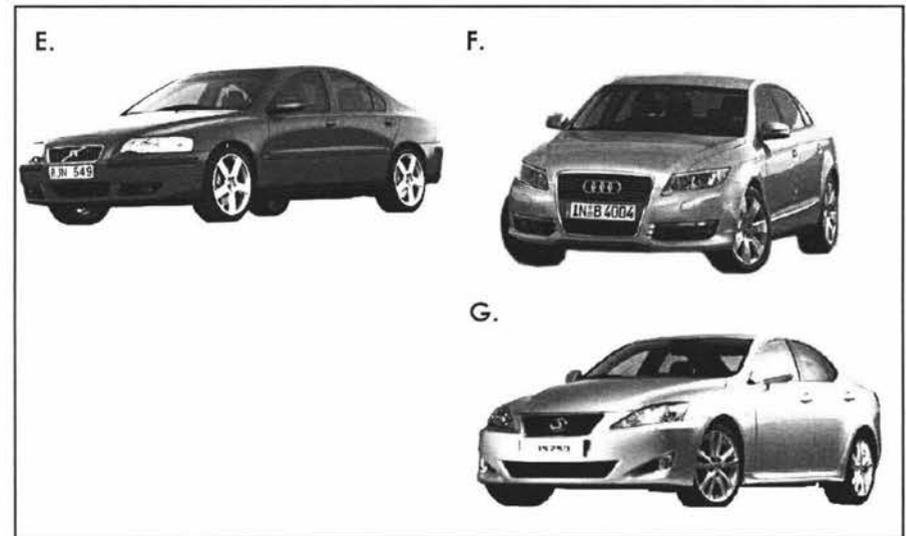
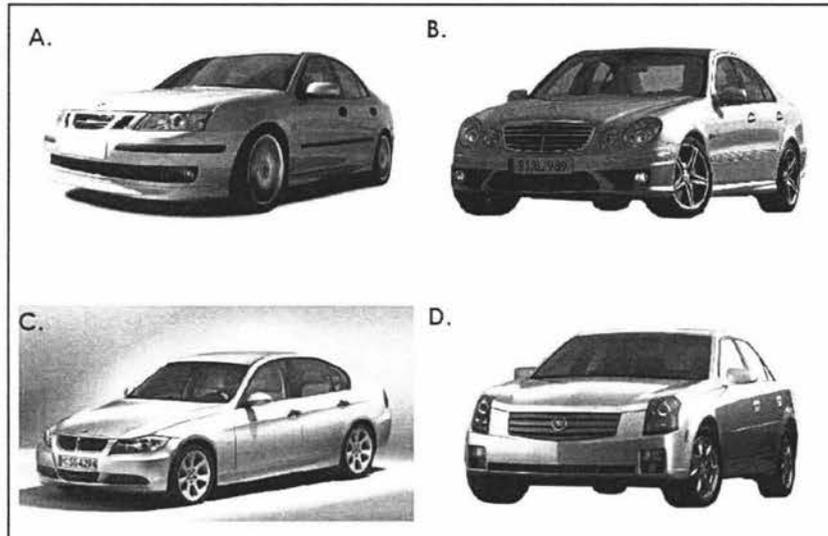


Figure F-1. Common imagery used in both the 320i and IS250 questionnaires aiming for the questions regarding the model distinctiveness and attractiveness (Left: page 1, right: page 2).

NEW ZEALAND CAR-RELATED event
Summary for Q.21 in Model Expression

A. Dynamic



NEW ZEALAND CAR-RELATED event
Summary for Q.21 in Model Expression

B. Versatile



Figure G-10. Features comprehended by New Zealand consumers as Dynamic (left).
Figure G-11. Features comprehended by New Zealand consumers as Versatile (right).

NEW ZEALAND CAR-RELATED event
Summary for Q.21 in Model Expression

C. Elegant



NEW ZEALAND CAR-RELATED event
Summary for Q.21 in Model Expression

D. Modern



Figure G-12. Features comprehended by New Zealand consumers as Elegant (left).

Figure G-13. Features comprehended by New Zealand consumers as Modern (right).

NEW ZEALAND CAR-RELATED event
Summary for Q.21 in Model Expression

E. Desirable



NEW ZEALAND CAR-RELATED event
Summary for Q.21 in Model Expression

F. Sporty



Figure G-14. Features comprehended by New Zealand consumers as Desirable (left).

Figure G-15. Features comprehended by New Zealand consumers as Sporty (right).

NEW ZEALAND CAR-RELATED event
Summary for Q.21 in Model Expression

G. Comfortable



NEW ZEALAND CAR-RELATED event
Summary for Q.21 in Model Expression

H. Brand specific



Figure G-16. Features comprehended by New Zealand consumers as Comfortable (left).

Figure G-17. Features associated by New Zealand consumers as Brand-specific (right).

BMW 320i Taiwan outcome

Table G-2. Questionnaire outcome of the BMW 320i from the Taiwan study.

Questions in the BMW 320i questionnaire	B1	B2
Q1. Do you consider yourself a car enthusiast?	3.0	2.0
Q2. How much do you know about cars?	2.0	2.0
Q3. What is your age group?	20-29	under 20
Q4. Are you Asian?	yes	yes
Q5. Do you permanently live in Taiwan?	yes	yes
Q6. What is the brand and model of your dream car?	BMW	Mercedes-Benz
Q7. On what basis do you choose the brand above as your dream car?	exterior design and comfort level	high safety standard, good looking exterior
Q8. Please write a word/sentence that you would associate with BMW	high fashion, social and financial status	strong brand impression
Q9. How appealing do you think BMW is?	3.0	4.0
Q9a. Why?	if indirectly represents my social status and my wealth	n/a
Q10. Do you consider BMW a premium/luxury car brand?	63.0	78.0
Q10a. Why?	Nice car with a high price tag	n/a
Q11. How distinctive is BMW compared to other car brands?	92.0	72.0
Q11a. Why?	quality and materiality	n/a
Q12. Do you think car manufactured by BMW share certain qualities that makes them belonging to the same 'family'?	yes	no
Q12a. Why?	n/a	n/a
Q13. Have you ever experienced cars made by BMW before?	no	yes
Q14. Do you think model 320i is typical for BMW?	no	yes
Q14a. Why?	n/a	n/a
Q15. A1: Attractiveness	35.0	65.0
Q15. A2: Distinctiveness	34.0	66.0
Q15. B1: Attractiveness	48.0	86.0
Q15. B2: Distinctiveness	62.0	86.0
Q15. C1: Attractiveness	72.0	77.0
Q15. C2: Distinctiveness	66.0	77.0
Q15. D1: Attractiveness	19.0	43.0
Q15. D2: Distinctiveness	18.0	37.0
Q15. E1: Attractiveness	8.0	56.0
Q15. E2: Distinctiveness	31.0	52.0
Q15. F1: Attractiveness	55.0	34.0
Q15. F2: Distinctiveness	27.0	35.0
Q15. G1: Attractiveness	12.0	50.0
Q15. G2: Distinctiveness	10.0	49.0
Q17. How strongly would you like to drive/own this BMW?	4.0	2.0
Q17a. Why?	exterior design looks modern	n/a
Q18a. Discinctive/Well-defined	76.0	79.0
Q18b. Consistent/Uniform	29.0	79.0
Q18c. Harmonious/Flowing	91.0	78.0
Q18d. Beautiful/Stunning	91.0	77.0
Q18e. Interesting/Fascinating	91.0	75.0
Q18f. Ugly/Non-appealing	0.0	24.0
Q18g. Balanced/Proportional	92.0	69.0
Q18h. Sleek/Elegant	94.0	68.0
Q18i. Simple/Clean	100.0	66.0
Q20a. Dynamic	59.0	70.0
Q20b. Versatile	62.0	61.0
Q20c. Elegant	100.0	65.0
Q20d. Modern	100.0	77.0
Q20e. Desirable	96.0	77.0
Q20f. Sporty	50.0	70.0
Q20g. Comfortable	99.0	71.0

Appendix G

B3	B4
3.0	4.0
2.0	3.0
under 20	30-39
yes	yes
yes	yes
Jeep, Mini	BMW
Jeep is good in rural areas. Mini's design is unique and it's size is easy to park	styling, performance, brand
a well-known brand, it's cars with good handling	representing style
4.0	5.0
a very safe car, representing the owner's social and financial status	n/a
70.0	74.0
n/a	the price
45.0	75.0
n/a	the exterior
yes	yes
the front all looks similar	something that other car brands do not have, but I do not know what it is
no	yes
yes	yes
the lines	trend
29.0	20.0
51.0	5.0
54.0	24.0
55.0	23.0
79.0	64.0
57.0	65.0
92.0	0.0
94.0	38.0
34.0	0.0
23.0	0.0
38.0	25.0
38.0	28.0
78.0	84.0
83.0	76.0
4.0	5.0
good car for racing, cruise, and looks cool	just want to own one
49.0	55.0
69.0	54.0
79.0	51.0
77.0	51.0
75.0	52.0
12.0	32.0
75.0	49.0
75.0	63.0
83.0	62.0
74.0	79.0
36.0	50.0
62.0	67.0
50.0	73.0
74.0	75.0
78.0	72.0
84.0	74.0

Appendix G

B5	B6	B7
3.0	4.0	3.0
1.0	3.0	2.0
20-25	30-37	20-25
yes	yes	yes
yes	yes	yes
BMW, Lexus, Benz	Saab	Volkswagen
looks bold, safe, excellent performance	quality, safety, technology	likes their exterior design and it's got a good reputation
luxury and fashion	new technology, high quality, good safety standard	solid and cold
5.0	3.0	2.0
because its in the market segment that I currently can not afford	too common on the road	do not like the styling
87.0	78.0	78.0
I trust in German made cars and their safety, bold looking, and feels luxury	n/a	very high pricing
46.0	73.0	75.0
cars are all similar as they provide transportation, the difference is in detail and material used. BMW is better than a lot of the car brands.	n/a	the styling is missing aerodynamic flow of lines
no	yes	no
n/a	n/a	n/a
yes	yes	yes
yes	yes	yes
the exterior	n/a	looks like the BMW cars on the road
26.0	63.0	14.0
13.0	64.0	44.0
9.0	60.0	69.0
10.0	60.0	33.0
79.0	80.0	26.0
79.0	80.0	23.0
2.0	57.0	27.0
3.0	57.0	51.0
3.0	53.0	20.0
3.0	53.0	21.0
22.0	72.0	25.0
5.0	72.0	24.0
94.0	51.0	75.0
92.0	46.0	67.0
3.0	5.0	3.0
BMW's brand is too well-known and I believe I don't suit this car	love the car, high safety standard	the look is too cold, but could consider this car due to its safety standard
85.0	66.0	43.0
84.0	65.0	60.0
95.0	78.0	64.0
95.0	79.0	51.0
55.0	79.0	32.0
8.0	0.0	25.0
81.0	65.0	64.0
97.0	64.0	55.0
95.0	86.0	63.0
86.0	90.0	80.0
47.0	90.0	44.0
91.0	88.0	64.0
95.0	91.0	64.0
92.0	90.0	42.0
74.0	92.0	35.0
88.0	93.0	60.0

Appendix G

B8	B9	B10	B11
2.0	2.0	4.0	5.0
2.0	3.0	3.0	4.0
50-59	50-59	20-29	20-29
yes	yes	yes	yes
yes	yes	no	yes
Benz	Benz	BMW, Alpha Romeo, Mini, Peugeot	BMW, Ferrari 360, Aston Martin, Audi, Mazda, Bentley, Mini
premium	representing social status and how rich u r	design/form and function, material, glazing	exterior design and interior's craftsmanship. Its brand identity
has its own style	cars that's driven by gangsters	formal business car, professional look	fine craft of automobile
3.0	3.0	4.0	5.0
not bad	the styling looks smart	detail of the design	branding and good craftsmanship
95.0	96.0	55.0	75.0
the exterior appearance	pickup speed fast and looks cool	it's nice	expensive
76.0	95.0	44.0	81.0
the engine is powerful	pickup speed fast and the car is solid. The exterior is aerodynamic	in comparison Hyundai could also be similar to some of it's design	it has its own brand identity and it symbolises richness
yes	yes	yes	yes
the exterior appearance	good engine with big noise (turbo)	grille	lung grille
yes	yes	yes	yes
yes	no	yes	yes
can not tell what the difference is between the older models	the front and the back of the car looks different	front portion of the car	carries the identity of BMW as a whole
28.0	29.0	25.0	26.0
19.0	34.0	37.0	51.0
44.0	94.0	31.0	30.0
34.0	46.0	57.0	55.0
94.0	70.0	46.0	77.0
77.0	82.0	55.0	78.0
19.0	15.0	44.0	86.0
21.0	18.0	70.0	64.0
38.0	79.0	8.0	56.0
40.0	78.0	9.0	68.0
50.0	75.0	43.0	91.0
79.0	75.0	44.0	91.0
70.0	69.0	43.0	91.0
71.0	69.0	19.0	89.0
4.0	4.0	5.0	5.0
representing social and financial status	representing social status and how rich u r	BMW equals money and power status	I like it styling and fine craftsmanship
66.0	52.0	43.0	75.0
66.0	87.0	63.0	96.0
65.0	81.0	61.0	92.0
65.0	80.0	41.0	94.0
66.0	83.0	19.0	81.0
19.0	10.0	20.0	7.0
64.0	79.0	39.0	92.0
58.0	82.0	46.0	94.0
57.0	86.0	59.0	96.0
58.0	84.0	47.0	90.0
57.0	53.0	34.0	90.0
56.0	87.0	61.0	91.0
60.0	93.0	60.0	89.0
59.0	91.0	61.0	90.0
19.0	93.0	29.0	91.0
64.0	59.0	95.0	88.0

Appendix G

B12	B13	B14	B15	MEAN	
4.0	4.0	3.0	3.0	3.3	Q1. Do you consider you self a car enthusiast?
3.0	3.0	2.0	3.0	2.5	Q2. How much do you know about cars?
30-39	30-39	20-29	20-29		Q3. What is your age group?
yes	yes	yes	yes		Q4. Which ethnic group do you belong to?
yes	yes	yes	no		Q5. How long have you been living in NZ?
Lexus GS300 or GS350	Land Rover Range Rover Sport	Subaru	BMW		Q6. What is the brand and model of your dream car?
If's pursuit for perfection	1. quality 2. durability 3. technology	Subaru is a very sporty car	looks good		Q7. On what basis do you choose the brand above as your dream car?
young and power	technology comes from human creation	cool	stylish design		Q8. Please write a word/sentence that you would associate with BMW
3.0	3.0	4.0	3.0	3.6	Q9. How appealing do you think BMW is?
is style looks young	n/a	looks solid and healthy	n/a		Q9a. Why?
41.0	50.0	79.0	76.0	72.3	Q10. Do you consider BMW a premium/luxury car brand?
personal comment	too common	BMW is a European car	n/a		Q10a. Why?
0.0	49.0	73.0	76.0	64.3	Q11. How distinctive is BMW compared to other car brands?
n/a	n/a	looks skinny	n/a		Q11a. Why?
yes	yes	yes	yes	12 out of 15	Q12. Do you think car manufactured by BMW share certain qualities that makes them belonging to the same "family"?
long light	grille	head light	shape, colour		Q12a. Why?
no	yes	yes	yes		Q13. Have you ever experienced cars made by BMW before?
yes	yes	yes	yes		Q14. Do you think model 320i is typical for BMW?
traditional BMW design	n/a	traditional BMW design	front part of the car		Q14a. Why?
16.0	33.0	25.0	62.0	33.1	Q15. A1: Attractiveness
0.0	41.0	10.0	55.0	34.9	Q15. A2: Distinctiveness
0.0	48.0	57.0	71.0	48.3	Q15. B1: Attractiveness
0.0	48.0	61.0	72.0	46.8	Q15. B2: Distinctiveness
25.0	55.0	59.0	92.0	65.8	Q15. C1: Attractiveness
27.0	54.0	61.0	92.0	64.9	Q15. C2: Distinctiveness
23.0	74.0	75.0	53.0	41.9	Q15. D1: Attractiveness
100.0	92.0	79.0	54.0	53.1	Q15. D2: Distinctiveness
5.0	14.0	35.0	54.0	30.9	Q15. E1: Attractiveness
6.0	13.0	10.0	54.0	30.7	Q15. E2: Distinctiveness
17.0	42.0	83.0	78.0	52.0	Q15. F1: Attractiveness
21.0	42.0	82.0	78.0	49.4	Q15. F2: Distinctiveness
71.0	73.0	73.0	84.0	67.9	Q15. G1: Attractiveness
36.0	72.0	78.0	83.0	62.7	Q15. G2: Distinctiveness
3.0	3.0	3.0	5.0	3.9	Q17. How strongly would you like to drive/own this BMW?
n/a	the practicality is not as good as imagined	not the type of car that I like	looks nice, drives comfortably		Q17a. Why?
32.0	31.0	56.0	77.0	59.0	Q18a. Disantive/Well-defined
34.0	49.0	28.0	70.0	62.2	Q18b. Consistent/Uniform
33.0	67.0	46.0	93.0	71.6	Q18c. Harmonious/Flowing
33.0	54.0	73.0	92.0	70.2	Q18d. Beautiful/Stunning
34.0	45.0	65.0	90.0	62.8	Q18e. Interesting/Fascinating
24.0	31.0	12.0	4.0	15.2	Q18f. Ugly/Non-appealing
40.0	72.0	24.0	92.0	65.8	Q18g. Balanced/Proportional
38.0	54.0	69.0	92.0	71.3	Q18h. Sleek/Elegant
38.0	90.0	69.0	91.0	76.1	Q18i. Simple/Clear
35.0	68.0	51.0	87.0	70.5	Q20a. Dynamic
32.0	21.0	66.0	57.0	53.3	Q20b. Verstaile
29.0	59.0	66.0	57.0	69.5	Q20c. Elegant
28.0	81.0	60.0	91.0	74.1	Q20d. Modern
29.0	52.0	66.0	90.0	71.7	Q20e. Desirable
19.0	27.0	58.0	64.0	58.1	Q20f. Sporty
21.0	89.0	78.0	91.0	75.6	Q20g. Comfortable

TAIWAN Car-related event
Summary for question in Model Appreciation

A. Distinctive/Well-defined



TAIWAN Car-related event
Summary for question in Model Appreciation

B. Consistent/Uniform



Figure G-18. Features appreciated by Taiwan consumers as distinctive/well-defined (left).

Figure G-19. Features appreciated by Taiwan consumers as consistent/uniform (right).

TAIWAN Car-related event
Summary for question in Model Appreciation

C. Harmonious/Flowing



Figure G-20. Features appreciated by Taiwan consumers as harmonious/flowing (left).
Figure G-21. Features appreciated by Taiwan consumers as beautiful/stunning (right).

TAIWAN Car-related event
Summary for question in Model Appreciation

D. Beautiful/Stunning



TAIWAN Car-related event
Summary for question in Model Appreciation

E. Interesting/Fascinating



TAIWAN Car-related event
Summary for question in Model Appreciation

F. Ugly/Non-appealing



Figure G-22. Features appreciated by Taiwan consumers as interesting/fascinating (left).

Figure G-23. Features appreciated by Taiwan consumers as ugly/non-appealing (right).

TAIWAN Car-related event
Summary for question in Model Appreciation

G. Balanced/Proportional



TAIWAN Car-related event
Summary for question in Model Appreciation

H. Sleek/Elegant



Figure G-24. Features appreciated by Taiwan consumers as balanced/proportional (left).

Figure G-25. Features appreciated by Taiwan consumers as sleek/elegant (right).

TAIWAN Car-related event

Summary for question in Model Appreciation

I. Simple/Clean



Figure G-26. Features appreciated by Taiwan consumers as distinctive/well-defined (left).

TAIWAN Car-related Event
Summary for question in Model Expression

A. Dynamic



TAIWAN Car-related Event
Summary for question in Model Expression

B. Versatile



Figure G-27. Features comprehended by Taiwan consumers as Dynamic (left).

Figure G-28. Features comprehended by Taiwan consumers as Versatile (right).

TAIWAN Car-related Event
Summary for question in Model Expression

C. Elegant



TAIWAN Car-related Event
Summary for question in Model Expression

D. Modern



Figure G-29. Features comprehended by Taiwan consumers as Elegant (left).

Figure G-30. Features comprehended by Taiwan consumers as Modern (right).

TAIWAN Car-related Event
Summary for question in Model Expression

E. Desirable



TAIWAN Car-related Event
Summary for question in Model Expression

F. Sporty



Figure G-31. Features comprehended by Taiwan consumers as Desirable (left).

Figure G-32. Features comprehended by Taiwan consumers as Sporty (right).

TAIWAN Car-related Event
Summary for question in Model Expression

G. Comfortable



TAIWAN Car-related Event
Summary for question in Model Expression

H. Brand Specific



Figure G-33. Features comprehended by Taiwan consumers as Comfortable (left).

Figure G-34. Features associated by Taiwan consumers as Brand-specific (right).

Lexus IS250 New Zealand outcome

Table G-3. Questionnaire outcome of the Lexus IS250 from the New Zealand study.

Questions in the Lexus IS250 questionnaire	L1	L2	L3	L4	L5	L6
Q1. Do you consider yourself a car enthusiast?	2	3	2	2	4	5
Q2. How much do you know about cars?	2	3	3	3	3	3
Q3. What is your age group?	40-50	20-30	20-30	40-50	under 20	under 20
Q4. Which ethnic group do you belong to?	Other-Scottish	other-Scottish	European	European	European	European
Q5. How long have you been living in NZ?	5+	5+	5+	5+	5+	5+
Q6. What is the brand and model of your dream car?	Mercedes-Benz C-Compressor	Lexus IS300	Chrysler Vantage	Mercedes-Benz	Chrysler	Chrysler Impala
Q7. On what basis do you choose the brand above as your dream car?	appearance	Because I like them	look and style	Class (status)	It's style	because there a nice big car and look good
Q8. Please write a word/sentence that you would associate with BMW	new	flash	Toyota - cheap version of real American lexus	Seek	flash	expensive
Q9. How appealing do you think LEXUS is?	5	5	2	3	4	2
Q9a. Why?	n/a	n/a	Japanese Crap	n/a	can't not explain	not my type of car
Q10. Do you consider LEXUS a premium/luxury car brand?	50	54	11	52	90	46
Q10a. Why?	not established enough	n/a	not strongly made	n/a	n/a	just an everyday car
Q11. How distinctive is LEXUS compared to other car brands?	70	47	14	62	65	43
Q11a. Why?	n/a	n/a	Same as other boy races	n/a	n/a	not really original
Q12. Do you think car manufactured by LEXUS share certain qualities that makes them belonging to the same 'family'?	no, participant not informed enough about this brand	yes	yes	no	no	yes
Q12a. Why?	n/a	Similar features	Toyota's appearance	n/a	n/a	they all look the same
Q13. Have you ever experienced cars made by LEXUS before?	no	yes	yes	yes	n/a	no
Q14. Do you think model IS250 is typical for LEXUS?	yes	yes	yes	no	yes	yes
Q14a. Why?	this is the only exposure to LEXUS	Shape	Shape of the front	n/a	n/a	very modern
Q15. A1: Attractiveness	46	64	20	62	54	13
Q15. A2: Distinctiveness	29	44	20	70	55	10
Q15. B1: Attractiveness	89	55	33	38	70	64
Q15. B2: Distinctiveness	98	54	34	36	52	66
Q15. C1: Attractiveness	73	54	67	47	42	71
Q15. C2: Distinctiveness	84	54	66	44	41	68
Q15. D1: Attractiveness	25	20	35	62	41	41
Q15. D2: Distinctiveness	66	19	34	56	40	44
Q15. E1: Attractiveness	49	21	31	57	71	10
Q15. E2: Distinctiveness	50	17	53	58	43	12
Q15. F1: Attractiveness	44	42	32	67	25	65
Q15. F2: Distinctiveness	58	46	32	68	34	66
Q15. G1: Attractiveness	50	61	28	72	56	36
Q15. G2: Distinctiveness	50	61	27	75	58	33
Q17. How strongly would you like to drive/own this LEXUS?	4	5	2	5	3	2
Q17a. Why?	very attractive and appealing	I love lexus	not interested	beautiful	n/a	don't really like them
Q18a. Distinctive/Well-defined	83	50	23	61	38	46
Q18b. Consistent/Uniform	80	48	24	56	34	47
Q18c. Harmonious/Flowing	80	41	22	64	26	52
Q18d. beautiful/stunning	52	63	21	90	54	48
Q18e. interesting/fascinating	47	64	21	70	53	50
Q18f. Ugly/Non-appealing	1	3	77	8	9	65
Q18g. Balanced/Proportional	54	62	16	43	50	47
Q18h. Sleek/Elegant	80	60	18	69	43	46
Q18i. Simple/Clean	44	55	19	78	84	47
Q20a. Luxury	68	55	26	50	79	45
Q20b. Sporty	43	52	18	78	42	68
Q20c. Distinctive	71	54	19	79	43	47
Q20d. Confident	74	50	16	77	22	46
Q20e. Simple	72	47	16	80	58	50
Q20f. Style	74	49	20	79	46	54
Q20g. Evocative	53	48	11	84	58	65

Appendix G

L7	L8	L9	L10	L11	L12	L13
5	5	5	3	2	4	4
4	3	5	2	2	4	3
40-50	40-50	40-50	20-30	20-30	30-40	20-30
Pakeha	European	European	Asian	Asian	Pacific Islander	Asian
5+	5+	5+	5+	1-3 yrs	5+	5+
Chrysler Hemi/Cuda	Chrysler	Chrysler 300C	BMW and Lexus	Audi IT	Bentley	Aston Martin
Long time favourite brand	looks	styling and presence	Design/engineering	looks	car looks big and classical	cars by the brand and are really sporty and with high performance
Japanese	crap	upper market	luxury, good quality Japanese car	prestiges	Japanese brand premium car	Expensive Japanese car
1	1	4	3	4	3	3
not interested	n/a	quality	superior quality	functionality	just like any other Japanese car	I don't really believe their knowledge and quality
74	2	32	72	72	68	59
media image	its crap	length of time in the market place	competitor of BMW	competitor of BMW	the engineering and price	n/a
6	1	23	58	65	46	73
Plain, like most new cars, doesn't stand out	they all look the same	not as prominent in advertising	humanised design and user friendly	Luxury Japanese car	not that stunning	eyecatching (the very shiny lights) but no depth
no	no	yes	yes	yes	no	yes
n/a	n/a	n/a	very good quality	n/a	n/a	more familiar with cars now
yes	no	yes	no	yes	no	yes
yes	no	yes	no	yes	yes	yes
looks like everything else	n/a	front grille	different from what I have seen	the logo at the front	n/a	n/a
11	2	50	33	42	59	59
9	3	50	42	52	22	72
14	37	54	14	38	67	71
10	36	54	32	39	93	54
9	4	30	94	55	59	75
13	2	30	95	61	67	75
9	36	35	8	62	14	59
20	35	35	69	62	85	55
14	2	43	43	34	75	53
17	1	43	44	35	81	45
15	35	46	63	57	68	81
3	33	46	50	60	64	80
18	4	43	32	65	56	66
17	3	43	22	64	40	66
1	1	4	3	3	3	4
too plain	I don't like LEXUS	looks like it will go well	I love BMW	the representation of the prestiges image	the look is not that special	n/a
9	8	32	20	65	50	56
41	5	34	31	65	63	66
43	6	36	49	66	35	79
2	5	40	22	65	45	65
1	7	42	24	64	27	70
97	70	44	78	34	33	63
42	4	37	43	64	75	57
13	10	56	19	70	83	49
67	11	47	67	69	66	57
69	16	40	9	60	56	66
3	14	39	21	21	52	74
1	16	50	9	65	46	62
13	17	45	3	67	64	54
37	16	27	44	68	79	53
1	18	42	14	69	58	51
1	3	34	15	70	43	57

Appendix G

L14	L15	MEAN	
4	4	3.6	Q1. Do you consider your self a car enthusiast?
3	3	3.1	Q2. How much do you know about cars?
40-50	30-39		Q3. What is your age group?
Pakeha	European		Q4. Which ethnic group do you belong to?
5+	5+		Q5. How long have you been living in NZ?
Porsche Carrera	Maserati		Q6. What is the brand and model of your dream car?
performance and appearance	the look		Q7. On what basis do you choose the brand above as your dream car?
very high quality	Japanese car		Q8. Please write a word/sentence that you would associate with BMW.
4	3	3.1	Q9. How appealing do you think LEXUS is?
n/a	looks good but still looks like any Japanese car		Q9a. Why?
94	44	54.7	Q10. Do you consider LEXUS a premium/luxury car brand?
based on my reading about them	it's by Toyota		Q10a. Why?
75	49	46.5	Q11. How distinctive is LEXUS compared to other car brands?
subtle but unique appearance	n/a		Q11a. Why?
yes	no		Q12. Do you think car manufactured by LEXUS share certain qualities that makes them belonging to the same 'family'?
build quality and style	n/a		Q12a. Why?
yes	no		Q13. Have you ever experienced cars made by LEXUS before?
yes	no		Q14. Do you think model IS250 is typical for LEXUS?
style signature	n/a		Q14a. Why?
56	34	39.7	Q15. A1: Attractiveness
61	64	40.2	Q15. A2: Distinctiveness
63	79	52.4	Q15. B1: Attractiveness
71	87	54.4	Q15. B2: Distinctiveness
53	74	53.8	Q15. C1: Attractiveness
63	83	56.4	Q15. C2: Distinctiveness
40	39	35.1	Q15. D1: Attractiveness
78	46	49.7	Q15. D2: Distinctiveness
11	49	37.5	Q15. E1: Attractiveness
11	53	37.5	Q15. E2: Distinctiveness
48	64	50.1	Q15. F1: Attractiveness
57	56	50.2	Q15. F2: Distinctiveness
63	40	46.0	Q15. G1: Attractiveness
67	36	44.1	Q15. G2: Distinctiveness
5	3	3.2	Q17. How strongly would you like to drive/own this LEXUS?
like styling - expect performance to be very good	n/a		Q17a. Why?
70	29	42.7	Q18a. Distinctive/Well-defined
70	51	47.7	Q18b. Consistent/Uniform
78	36	47.5	Q18c. Harmonious/Flowing
78	39	45.9	Q18d. Beautiful/Stunning
72	35	43.1	Q18e. Interesting/Fascinating
3	69	43.6	Q18f. Ugly/Non-appealing
78	48	48.1	Q18g. Balanced/Proportional
83	53	50.1	Q18h. Sleek/Elegant
66	53	55.5	Q18i. Simple/Clean
93	39	51.4	Q20a. Luxury
94	45	38.6	Q20b. Sporty
74	49	45.7	Q20c. Distinctive
84	51	45.5	Q20d. Confident
92	56	53.0	Q20e. Simple
85	50	47.3	Q20f. Style
67	34	42.9	Q20g. Evocative

NEW ZEALAND CAR-RELATED event
Summary for question in Model Appreciation

A. Disinctive/Well-defined



NEW ZEALAND CAR-RELATED event
Summary for question in Model Appreciation

B. Consistent/Uniform



Figure G-35. Features appreciated by New Zealand consumers as distinctive/well-defined (left).

Figure G-36. Features appreciated by New Zealand consumers as consistent/uniform (right).

NEW ZEALAND CAR-RELATED event
Summary for question in Model Appreciation

C. Harmonious/Flowing



NEW ZEALAND CAR-RELATED event
Summary for question in Model Appreciation

D. Beautiful/Stunning



Figure G-37. Features appreciated by New Zealand consumers as harmonious/flowing (left).

Figure G-38. Features appreciated by New Zealand consumers as beautiful/stunning (right).

NEW ZEALAND CAR-RELATED event
Summary for question in Model Appreciation

E. Interesting/Fascinating



NEW ZEALAND CAR-RELATED event
Summary for question in Model Appreciation

F. Ugly/Non-appealing



Figure G-39. Features appreciated by New Zealand consumers as interesting/fascinating (left).

Figure G-40. Features appreciated by New Zealand consumers as ugly/non-appealing (right).

NEW ZEALAND CAR-RELATED event
Summary for question in Model Appreciation

G. Balanced/Proportional



NEW ZEALAND CAR-RELATED event
Summary for question in Model Appreciation

H. Sleek/Elegant



Figure G-41. Features appreciated by New Zealand consumers as balanced/proportional (left).

Figure G-42. Features appreciated by New Zealand consumers as sleek/elegant (right).

NEW ZEALAND CAR-RELATED event
Summary for question in Model Appreciation

I. Simple/Clean



Figure G-43. Features appreciated by New Zealand consumers as simple/clean (left).

NEW ZEALAND CAR-RELATED event
Summary for question in Model Expression

A. Luxury



NEW ZEALAND CAR-RELATED event
Summary for question in Model Expression

B. Sporty



Figure G-44. Features comprehended by New Zealand consumers as Luxury (left).

Figure G-45. Features comprehended by New Zealand consumers as Sporty (right).

NEW ZEALAND CAR-RELATED event
Summary for question in Model Expression

C. Distinctive



NEW ZEALAND CAR-RELATED event
Summary for question in Model Expression

D. Confident



Figure G-46. Features comprehended by New Zealand consumers as Distinctive (left).

Figure G-47. Features comprehended by New Zealand consumers as Confident (right).

NEW ZEALAND CAR-RELATED event
Summary for question in Model Expression

E. Simple



NEW ZEALAND CAR-RELATED event
Summary for question in Model Expression

F. Style



Figure G-48. Features comprehended by New Zealand consumers as Simple (left).

Figure G-49. Features comprehended by New Zealand consumers as Style (right).

NEW ZEALAND CAR-RELATED event
Summary for question in Model Expression

G. Evocative



NEW ZEALAND CAR-RELATED event
Summary for question in Model Expression

H. Brand Specific



Figure G-50. Features comprehended by New Zealand consumers as Evocative (left).

Figure G-51. Features associated by New Zealand consumers as Brand-specific (right).

Lexus IS250 Taiwan outcome

Table G-4. Questionnaire outcome of the Lexus IS250 from the Taiwan study.

Questions in the Lexus IS250 questionnaire	I1	I2
Q1. Do you consider yourself a car enthusiast?	4.0	5.0
Q2. How much do you know about cars?	3.0	5.0
Q3. What is your age group?	40-49	30-39
Q4. Which ethnic group do you belong to?	yes	yes
Q5. How long have you been living in NZ?	yes	yes
Q6. What is the brand and model of your dream car?	Bentley	Porsche
Q7. On what basis do you choose the brand above as your dream car?	exterior and performance	brand name and history, performance, competitively reasonable price
Q8. Please write a word/sentence that you would associate with LEXUS	the first 5 years is excellent but after that there are lots of small problems	good quality
Q9. How appealing do you think LEXUS is?	2.0	3.0
Q9a. Why?	not durable	Japanese car, like Toyota
Q10. Do you consider LEXUS a premium/luxury car brand?	51.0	75.0
Q10a. Why?	because it's a Toyota	low end luxury car
Q11. How distinctive is LEXUS compared to other car brands?	49.0	13.0
Q11a. Why?	very similar to Camary	look like normal Japanese car
Q12. Do you think car manufactured by LEXUS share certain qualities that makes them belonging to the same 'family'?	no	yes
Q12a. Why?	n/a	try to have luxury Japanese car feeling
Q13. Have you ever experienced cars made by LEXUS before?	yes	yes
Q14. Do you think model G250 is typical for LEXUS?	no	yes
Q14a. Why?	n/a	small grille
Q15. A1: Attractiveness	53.0	48.0
Q15. A2: Distinctiveness	80.0	75.0
Q15. B1: Attractiveness	66.0	58.0
Q15. B2: Distinctiveness	51.0	92.0
Q15. C1: Attractiveness	63.0	44.0
Q15. C2: Distinctiveness	73.0	80.0
Q15. D1: Attractiveness	54.0	19.0
Q15. D2: Distinctiveness	63.0	98.0
Q15. E1: Attractiveness	60.0	24.0
Q15. E2: Distinctiveness	75.0	49.0
Q15. F1: Attractiveness	55.0	48.0
Q15. F2: Distinctiveness	64.0	4.0
Q15. G1: Attractiveness	46.0	27.0
Q15. G2: Distinctiveness	47.0	29.0
Q17. How strongly would you like to drive/own this LEXUS?	1.0	2.0
Q17a. Why?	n/a	looks normal
Q18a. Discrete/Well-defined	46.0	18.0
Q18b. Consistent/Uniform	53.0	65.0
Q18c. Harmonious/Flowing	58.0	67.0
Q18d. Beautiful/Stunning	38.0	21.0
Q18e. Interesting/Fascinating	44.0	11.0
Q18f. Ugly/Non-appealing	56.0	74.0
Q18g. Balanced/Proportional	55.0	47.0
Q18h. Sleek/Elegant	57.0	72.0
Q18i. Simple/Clear	57.0	58.0
Q20a. Luxury	32.0	6.0
Q20b. Sporty	30.0	73.0
Q20c. Distinctive	32.0	12.0
Q20d. Confident	35.0	32.0
Q20e. Simple	34.0	56.0
Q20f. Style	36.0	11.0
Q20g. Evocative	32.0	51.0

Appendix G

13	14	15	16	17
3.0	5.0	3.0	3.0	4.0
3.0	3.0	2.0	2.0	3.0
20-29	20-29	30-39	40-49	20-29
yes	yes	yes	yes	yes
yes	yes	yes	yes	no
Porsche 911	BMW	Toyota Previa	Jaguar	Aston Martin, Bentley, Land Rover, Subaru, Viper
driver and car becomes one, performance, exterior design	1, quality 2, speed	quality	style of the car	performance, exterior styling, speed
an expensive Japanese car	n/a	good quality luxury car	average	top Japanese car
3.0	3.0	4.0	3.0	2.0
still thinks that European cars are better	n/a	excellent quality and service	style of the car looks simple and elegant	personally I do not like Japanese cars
55.0	46.0	100.0	76.0	56.0
have not experienced car by Lexus and therefore do not think it's a luxury car	n/a	combines quality, safety, and technology	style of the car looks simple and elegant	good mechanical and stereo system
56.0	46.0	46.0	72.0	66.0
looks normal, just like any Japanese cars on the road	n/a	not that special looking	visually pleasing, simple and elegant	n/a
no	no	yes	do not know enough	yes
n/a	n/a	comfortable, quiet, and stable appearance	n/a	aerodynamic exterior
no	yes	yes	no	no
no	no	yes	no	yes
n/a	n/a	the front is similar to the last serie	appears more active and sporty compare to the older models	aerodynamic exterior
47.0	61.0	52.0	35.0	7.0
46.0	48.0	47.0	35.0	8.0
82.0	31.0	51.0	73.0	57.0
82.0	30.0	47.0	73.0	76.0
80.0	54.0	62.0	77.0	95.0
85.0	46.0	91.0	77.0	77.0
46.0	86.0	96.0	95.0	23.0
88.0	86.0	97.0	95.0	83.0
49.0	44.0	30.0	65.0	55.0
55.0	44.0	28.0	64.0	39.0
48.0	10.0	39.0	87.0	25.0
51.0	9.0	28.0	88.0	31.0
42.0	48.0	74.0	96.0	59.0
54.0	47.0	63.0	96.0	33.0
3.0	2.0	2.0	5.0	3.0
if's ads and car exterior does not attract me	n/a	space too small	I like the model	among this category of cars, I would consider a European brand
54.0	43.0	69.0	71.0	64.0
60.0	60.0	67.0	36.0	81.0
73.0	37.0	65.0	95.0	94.0
60.0	40.0	67.0	87.0	78.0
50.0	29.0	65.0	84.0	83.0
19.0	50.0	19.0	17.0	9.0
50.0	32.0	42.0	95.0	91.0
60.0	33.0	64.0	96.0	49.0
62.0	33.0	66.0	96.0	68.0
48.0	23.0	70.0	71.0	78.0
50.0	21.0	69.0	91.0	60.0
57.0	20.0	57.0	73.0	45.0
51.0	25.0	60.0	87.0	81.0
75.0	15.0	61.0	87.0	86.0
51.0	37.0	69.0	89.0	62.0
50.0	30.0	57.0	89.0	58.0

Appendix G

I8	I9	I10	I11	I12	I13
4.0	3.0	4.0	4.0	3.0	3.0
4.0	2.0	3.0	2.0	4.0	3.0
20-29	20-29	20-29	20-29	30-39	40-49
yes	yes	yes	yes	yes	yes
no	yes	no	yes	yes	yes
Lamborghini	Lamborghini	Lamborghini, Lotus, Jeep	Ferrari, Audi A4	Toyota	BMW, Benz
exterior form, price, reputation	exterior	speed	styling is more noticeable (distinctive)	good quality for its price	Quality and brand
a comfortable car	classic	better than Mini	comfortable, smooth lines	too expensive	High class Japanese car
-3.0	4.0	3.0	5.0	3.0	2.0
exterior is quite good	seats are wide and very comfortable, looks luxuries	I don't like it	top Japanese car	Japanese car, not European	still not as good as BMW or Benz
61.0	75.0	20.0	45.0	65.0	35.0
exterior, comfort level	the exterior is pretty	BMW is better	compare to european cars Lexus is still not there yet	Japanese car	Japanese car doesn't look as unique
50.0	43.0	0.0	52.0	49.0	29.0
average, nothing particularly special	looks simple but not characteristic	normal car	interior is good	concept of the design is still within the Japanese concept	Japanese car doesn't look as unique
no	yes	no	no	yes	no
n/a	low profile but high class	n/a	n/a	looks similar	n/c
yes	yes	yes	yes	no	yes
yes	yes	yes	no	yes	no
similar to models such as IS200	simple and elegant	looks like other Lexus model	n/a	feeling	n/c
54.0	26.0	88.0	67.0	24.0	28.0
48.0	28.0	70.0	30.0	25.0	30.0
46.0	40.0	100.0	44.0	20.0	96.0
46.0	32.0	83.0	44.0	54.0	95.0
60.0	33.0	93.0	69.0	82.0	96.0
54.0	34.0	78.0	35.0	55.0	90.0
64.0	29.0	45.0	33.0	52.0	71.0
58.0	30.0	45.0	34.0	84.0	88.0
36.0	37.0	7.0	33.0	18.0	55.0
67.0	40.0	6.0	33.0	18.0	55.0
63.0	61.0	78.0	71.0	74.0	34.0
61.0	46.0	77.0	70.0	54.0	24.0
61.0	60.0	75.0	52.0	53.0	35.0
60.0	51.0	60.0	52.0	52.0	35.0
4.0	5.0	3.0	3.0	3.0	2.0
because there are other brands that I would prefer	I like Lexus a lot	I like 4x4 (Jeep)	similar to other cars on roads	because it's Japanese car	I prefer European cars
55.0	43.0	59.0	48.0	52.0	39.0
59.0	32.0	58.0	67.0	83.0	49.0
61.0	54.0	72.0	68.0	81.0	56.0
55.0	62.0	44.0	68.0	47.0	30.0
50.0	64.0	47.0	68.0	47.0	35.0
29.0	20.0	31.0	23.0	16.0	46.0
61.0	59.0	62.0	67.0	76.0	50.0
62.0	65.0	63.0	68.0	75.0	46.0
60.0	64.0	71.0	68.0	79.0	55.0
60.0	61.0	47.0	75.0	71.0	36.0
48.0	45.0	69.0	75.0	43.0	56.0
48.0	55.0	46.0	46.0	45.0	34.0
61.0	64.0	49.0	48.0	62.0	45.0
60.0	59.0	65.0	74.0	79.0	65.0
62.0	63.0	76.0	43.0	52.0	49.0
62.0	59.0	54.0	46.0	52.0	42.0

Appendix G

L14	L15	MEAN	Questions in the Lexus LS250 questionnaire
4.0	4.0	3.7	Q1. Do you consider yourself a car enthusiast?
3.0	3.0	3.0	Q2. How much do you know about cars?
50-59	50-59		Q3. What is your age group?
yes	yes		Q4. Which ethnic group do you belong to?
yes	yes		Q5. How long have you been living in NZ?
Ford, Audi, Saab	BMW, Benz, Bentley		Q6. What is the brand and model of your dream car?
practical, durable, low breakdown rate, save petrol	performance, brand		Q7. On what basis do you choose the brand above as your dream car?
ordinary car	Top class Toyota		Q8. Please write a word/sentence that you would associate with LEXUS
2.0	3.0	3.0	Q9. How appealing do you think LEXUS is?
n/a	have not tried their car before		Q9a. Why?
51.0	52.0	57.5	Q10. Do you consider LEXUS a premium/luxury car brand?
n/a	n/a		Q10a. Why?
57.0	22.0	43.3	Q11. How distinctive is LEXUS compared to other car brands?
Japanese cars are designed to be user friendly	exterior looks very ordinary		Q11a. Why?
yes	no		Q12. Do you think car manufactured by LEXUS share certain qualities that makes them belonging to the same 'family'?
n/a	n/a		Q12a. Why?
yes	no		Q13. Have you ever experienced cars made by LEXUS before?
yes	no		Q14. Do you think model LS250 is typical for LEXUS?
commonly seen on roads	n/c		Q14a. Why?
43.0	44.0	45.1	Q15. A1: Attractiveness
46.0	50.0	44.4	Q15. A2: Distinctiveness
77.0	98.0	62.6	Q15. B1: Attractiveness
47.0	98.0	63.3	Q15. B2: Distinctiveness
59.0	88.0	70.3	Q15. C1: Attractiveness
45.0	94.0	67.6	Q15. C2: Distinctiveness
51.0	95.0	57.3	Q15. D1: Attractiveness
53.0	98.0	73.3	Q15. D2: Distinctiveness
53.0	64.0	42.0	Q15. E1: Attractiveness
66.0	56.0	46.3	Q15. E2: Distinctiveness
55.0	38.0	52.4	Q15. F1: Attractiveness
72.0	39.0	47.9	Q15. F2: Distinctiveness
53.0	40.0	54.7	Q15. G1: Attractiveness
53.0	41.0	51.5	Q15. G2: Distinctiveness
2.0	2.0	2.8	Q17. How strongly would you like to drive/own this LEXUS?
I am used to my own car	exterior design is not unique/distinctive enough		Q17a. Why?
60.0	20.0	49.4	Q18a. Disinctive/Well-defined
52.0	30.0	56.8	Q18b. Consistent/Uniform
55.0	24.0	64.0	Q18c. Harmonious/Flowing
41.0	27.0	51.0	Q18d. beautiful/Stunning
51.0	29.0	50.5	Q18e. Interesting/Fascinating
48.0	47.0	33.6	Q18f. Ugly/Non-appealing
54.0	46.0	59.1	Q18g. Balanced/Proportional
43.0	37.0	59.3	Q18h. Sleek/Elegant
57.0	57.0	63.4	Q18l. Simple/Clear
46.0	26.0	50.0	Q20a. Luxury
57.0	30.0	54.5	Q20b. Sporty
45.0	27.0	42.8	Q20c. Distinctive
61.0	29.0	52.7	Q20d. Confident
48.0	36.0	60.0	Q20e. Simple
48.0	32.0	52.0	Q20f. Style
49.0	45.0	51.1	Q20g. Evocative

TAIWAN CAR-RELATED event

Summary for question in Model Appreciation

A. Discintive/Well-defined



TAIWAN CAR-RELATED event

Summary for question in Model Appreciation

B. Consistent/Uniform



Figure G-52. Features appreciated by Taiwan consumers as distinctive/well-defined (left).

Figure G-53. Features appreciated by Taiwan consumers as consistent/uniform (right).

TAIWAN CAR-RELATED event
Summary for question in Model Appreciation

C. Harmonious/Flowing



TAIWAN CAR-RELATED event
Summary for question in Model Appreciation

D. Beautiful/Stunning



Figure G-54. Features appreciated by Taiwan consumers as harmonious/flowing (left).

Figure G-55. Features appreciated by Taiwan consumers as beautiful/stunning (right).

TAIWAN CAR-RELATED event
Summary for question in Model Appreciation

E. Interesting/Fascinating



TAIWAN CAR-RELATED event
Summary for question in Model Appreciation

F. Ugly/Non-appealing



Figure G-56. Features appreciated by Taiwan consumers as interesting/fascinating (left).

Figure G-57. Features appreciated by Taiwan consumers as ugly/non-appealing (right).

TAIWAN CAR-RELATED event
Summary for question in Model Appreciation

G. Balanced/Proportional



TAIWAN CAR-RELATED event
Summary for question in Model Appreciation

H. Sleek/Elegant



Figure G-58. Features appreciated by Taiwan consumers as balanced/proportional (left).

Figure G-59. Features appreciated by Taiwan consumers as sleek/elegant (right).

TAIWAN CAR-RELATED event

Summary for question in Model Appreciation

I. Simple/Clean



Figure G-60. Features appreciated by Taiwan consumers as simple/clean (left).

TAIWAN CAR-RELATED event
Summary for question in Model Expression

A. Luxury



TAIWAN CAR-RELATED event
Summary for question in Model Expression

B. Sporty



Figure G-61. Features comprehended by Taiwan consumers as Luxury (left).

Figure G-62. Features comprehended by Taiwan consumers as Sporty (right).

TAIWAN CAR-RELATED event
Summary for question in Model Expression

C. Distinctive



TAIWAN CAR-RELATED event
Summary for question in Model Expression

D. Confident



Figure G-63. Features comprehended by Taiwan consumers as Distinctive (left).

Figure G-64. Features comprehended by Taiwan consumers as Confident (right).

TAIWAN CAR-RELATED event
Summary for question in Model Expression



TAIWAN CAR-RELATED event
Summary for question in Model Expression

F. Style



Figure G-65. Features comprehended by Taiwan consumers as Simple (left).

Figure G-66. Features comprehended by Taiwan consumers as Style (right).

TAIWAN CAR-RELATED event
Summary for question in Model Expression

G. Evocative



TAIWAN CAR-RELATED event
Summary for question in Model Expression

H. Brand Specific



Figure G-67. Features comprehended by Taiwan consumers as Evocative (left).
Figure G-68. Features associated by Taiwan consumers as Brand-specific (right).

Appendix H

Findings: Summary

Finding on the 320i in New Zealand:

Table H-01. Summary of findings of Section 1 on the participant backgrounds of BMW 320i in New Zealand market.

	No.	Question Focus	Finding Summary
Section 1: Participant Background	1	Level of interest in cars	■ above average enthusiasm in cars (3.3 out of 5)
	2	Level of knowledge in cars	■ above average interest in cars (3.3 out of 5)
	3	Age	■ from under 20 to 60+
	4	Ethnic Group	■ majority of the participants are European (11 out of 15)
	5	Time living in New Zealand	■ most has been in New Zealand for 5 years or more (12 out of 15)
	6	Dream Car	■ Super cars has been most commonly identified (6 out of 15)
	7	Reason for dream car selection	■ 11/15 responses relates to visual appearance of the cars

Table H-02. Summary of findings of Section 2 on the brand preception of BMW 320i in New Zealand market.

	No.	Question Focus	VPE mode	Finding Summary
Section 2: Brand Impression	8	Association with the brand BMW	Association	<ul style="list-style-type: none"> ■ Mix of positive and negative comments. Mostly regarding the premium brand rather than performance ■ 2 social-related associations ■ 2 perceptions influenced by the country of origin
	9	Brand appeal	Association	■ 3 out of 5 (in the scale that 1 is the strongly disagree and 5 is strongly agree)
		9a. Written responses		<ul style="list-style-type: none"> ■ Few prefer other types of vehicles ■ Commented as BMW cars are too common the road
	10	Perception on brand image	Association	■ 63.6 out of 100
		10a. Written response		■ There are comments relates to brand heritage and aesthetics
	11	Brand distinctiveness	Impression	■ 57.3 out of 100
		11a. Written response		■ Comments relates to aesthetic features of BMW cars and some commented as been highly consistent between models
	12	Brand-specific cues	Recognition	■ 12 out of 15 participants agrees BMW cars share brand-specific cues
		12a. Written response		<ul style="list-style-type: none"> ■ Lack of written responses ■ Written responses commented on comfort levels and aesthetic features or appearances
	13	Experience cars by BMW	-	■ 12 out of 15 participants have physically experienced BMW cars

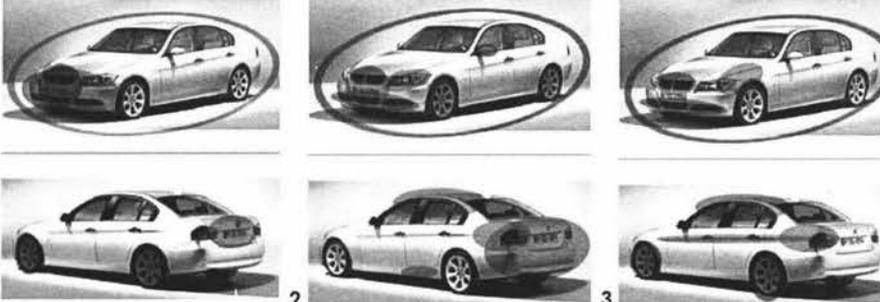
Table H-03. Summary of findings of Section 3 on the model impression of BMW 320i in New Zealand market.

No.	Question Focus	VPE mode	Finding Summary
14	Brand-related model recognition	Recognition	■ 12 out of 15 respondents agrees on 320i as a typical BMW model
	14a. Written responses		■ Comments based on the familiarity of aesthetic features across BMW models
	15	-	
	Rating between 7 vehicles on:		
	A: Attractiveness (Displaying the top three results only)	Appreciation	   1. BMW (54.1/100) 2. Audi (50.6/100) 3. Mercedes-Benz (49.2/100)
	B: Distinctiveness (Displaying the top three results only)	Impression	   1. Mercedes-Benz (55.1/100) 2. Audi (55/100) 3. BMW (54.7/100)
16	Level of interest in 320i	Recognition	■ 3.3 out of 5
	16a. Written responses		■ Comments on brand and aesthetic-related preferences

Table H-04. Summary of findings of Section 4 on the model appreciation of BMW 320i in New Zealand market.

No.	Question Aim	VPE mode	Finding Summary
Section 4: Model Appreciation	17 Model Appreciation (Displaying the top three results only)	Appreciation	<ul style="list-style-type: none"> ■ 1. Simple/Clean (56.6/100) ■ 2. Harmonious/Flowing (56.3/100) ■ 3. Consistent/Uniform (54.7/100)
	Features indicated in pictogram		
Section 4: Model Appreciation	18 Pictogram on model appreciation (terms appreciated with the strongest feature)	Appreciation	<ul style="list-style-type: none"> ■ Kidney Grille that was associated with the following keywords: 1. Distinctive/Well-defined 2. Consistent/Uniform 3. Harmonious/Flowing 4. Sleek/Elegant
	Highly appreciated terms and visual elements appreciated with (Displaying the top three results only)		 <ul style="list-style-type: none"> ■ 1. Distinctive/Well-defined (14 indications) ■ 2. Balanced/Proportional (13 indications) ■ 3. Harmonious/Flowing (10 indications)

Table H-05. Summary of findings of Section 5 on the model expression of BMW 320i in New Zealand market.

No.	Question Aim	VPE mode	Finding Summary
Section 5: Model Expression	19 Model Expression (Displaying the top three results only)	Comprehension	<ul style="list-style-type: none"> ■ 1. Modern (60.5/100) ■ 2. Comfortable (58.1/100) ■ 3. Desirable (55.7/100)
	Features identified		
Section 5: Model Expression	20 Pictogram on model expression (Strongest features)	Comprehension Association	<ul style="list-style-type: none"> ■ Kidney grille including the air dam area (total: 10 indications) <ul style="list-style-type: none"> 1. Brand-specific (x5) 2. Desirable (x3) 3. Dynamic/Elegant (x1 each) ■ Whole vehicle (total: 10 indications) <ul style="list-style-type: none"> 1. Dynamic/Elegant (x2) 2. Versatile/Modern/Desirable/Sporty/Comfortable/Brand-specific (x1 each)
	High comprehended expressions in the pictogram question (Displaying the top three results only)		 <ul style="list-style-type: none"> 1. 1. Brand-specific (12 indications) 2. 2. Elegant (12 indications) 3. 3. Dynamic (10 indications)

Finding on the 320i in Taiwan:

Table H-06. Summary of findings of Section 1 on the participant backgrounds of BMW 320i in Taiwan market.

	No.	Question topic	Finding Summary
Section 1: Participant Background	1	Level of interest in cars	<ul style="list-style-type: none"> above average enthusiasm in cars (3.3 out of 5)
	2	Level of knowledge in cars	<ul style="list-style-type: none"> average interest in cars (2.5 out of 5)
	3	Age	<ul style="list-style-type: none"> from under 20 to 59
	4	Ethnic Group	<ul style="list-style-type: none"> all participants are Asian
	5	Permanently living in Taiwan	<ul style="list-style-type: none"> majority of participants lives in Taiwan (13 out of 15)
	6	Dream Car	<ul style="list-style-type: none"> mostly on premium car brands (12 out of 15)
	7	Reason for dream car selection	<ul style="list-style-type: none"> 9/15 relates to visual appearances 2/15 relates to social and cultural value

Table H-07. Summary of findings of Section 2 on the brand perceptions of BMW 320i in Taiwan market.

	No.	Question topic	VPE mode	Finding Summary
Section 2: Brand Impression	8	Association with the brand BMW	Association	<ul style="list-style-type: none"> 14 out of 15 responses are positive 6/15 responses relates to social and cultural values 2/15 are based on visual appearances
	9	Brand appeal	Association	<ul style="list-style-type: none"> 3.6 out of 5
		9a. Written responses		<ul style="list-style-type: none"> 5/15 are visual-related appreciation 3/15 relates to social and cultural values 1 commented on that BMW cars are too common the road
	10	Perception on brand image	Association	<ul style="list-style-type: none"> 72.3 out of 100
		10a. Written response		<ul style="list-style-type: none"> 5/15 positively relate the high price, which reflects BMW as a premium brand 3/15 associate BMW as a premium brand based on its country origin. 1 associated with the country of origin
	11	Visual brand distinctiveness	Impression	<ul style="list-style-type: none"> 64.3 out of 100
		11a. Written response		<ul style="list-style-type: none"> A mix of positive and negative 5 comments about visual appearances
	12	Brand-specific design cues	Recognition	<ul style="list-style-type: none"> 12 out of 15 participants thinks BMW cars share brand-specific design cues
12a. Written response		<ul style="list-style-type: none"> Moderate number of written responses Formal aesthetics and highly level of recognition of the Grille and front of car as brand-specific 		
13	Experience cars by BMW	-	<ul style="list-style-type: none"> 12 out of 15 participants have physically experienced BMW cars 	

Table H-08. Summary of findings of Section 3 on the model impression of BMW 320i in Taiwan market.

No.	Question topic	VPE mode	Finding Summary
Section 3: Model Impression	14	Recognition	<ul style="list-style-type: none"> 13 out of 15 respondents agrees on 320i as a typical BMW model 12 out of 15 who responded with written comments are based on the familiarity of aesthetic features across BMW models
	14a. Written responses		
	15	-	
	A: Attractiveness (Displaying the top three results only)	Appreciation	   <p>1. Lexus (67.9/100) 2. BMW (65.8/100) 3. Audi (52.0/100)</p>
	B: Distinctiveness (Displaying the top three results only)	Impression	   <p>1. BMW (64.9/100) 2. Lexus (62.7/100) 3. Cadillac (53.1/100)</p>
	16	Recognition	<ul style="list-style-type: none"> 3.9 out of 5 5 comments are based on the aesthetic quality 4 based on the representational image of BMW
16a. Written responses			

Table H-09. Summary of findings of Section 4 on the model appreciation of BMW 320i in Taiwan market.

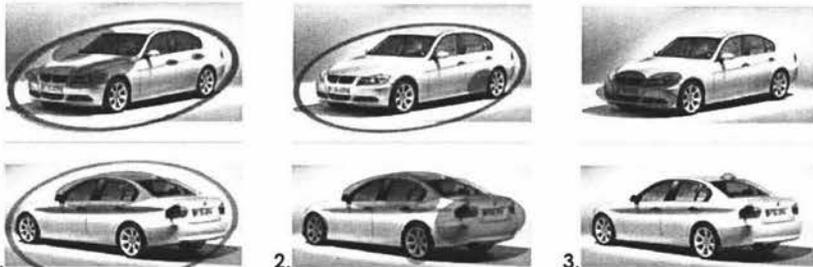
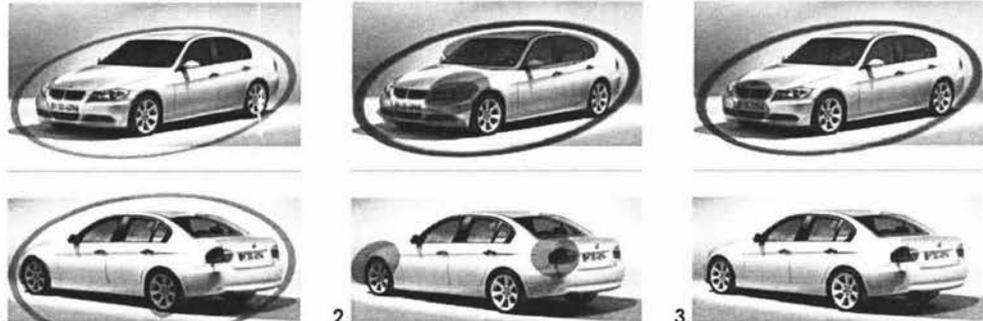
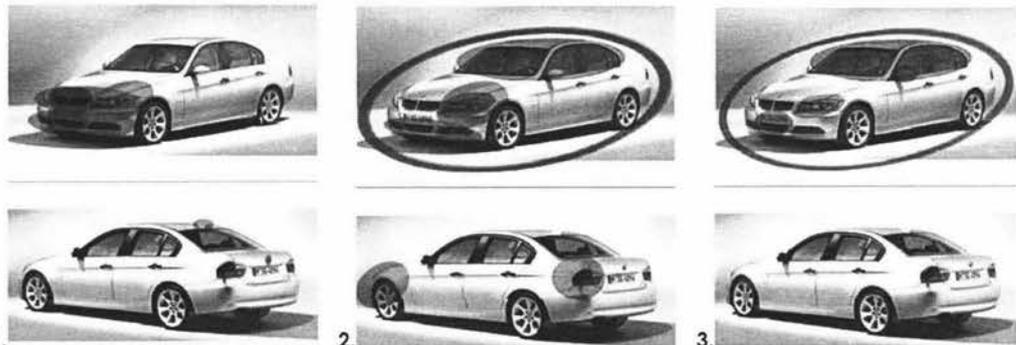
No.	Question topic	VPE mode	Finding Summary
17	Model Appreciation	Appreciation	<ul style="list-style-type: none"> ■ 1. Simple/Clean (76.1/100) ■ 2. Harmonious/Flowing (71.6/100) ■ 3. Sleek/Elegant (71.3/100)
	Features indicated from pictogram		
18	Pictogram on model appreciation (Strongest appreciated features)	Appreciation	<ul style="list-style-type: none"> ■ Kidney Grille that was associated with the following keywords (total:8 indications): 1. Distinctive/Well-defined (x4) 2. Consistent/Uniform (x3) 3. Interesting/Fascinating (x1) ■ Whole vehicle (total: 16 indications): 1. Sleek/Elegant (x4) 2. Simple/Clean (x4) 3. Harmonious/Flowing (x3) 4. Balanced/Proportional (x2) 5. Consistent/Uniform (x2) 6. Beautiful/Stunning (x1)
	Highly appreciated terms with visual elements indicated (Displaying the top three results only)		 <ul style="list-style-type: none"> ■ 1. Harmonious/Flowing (15 indications) ■ 2. Balanced/Proportional (13 indications) ■ 3. Distinctive/Well-defined (10 indications)

Table H-10. Summary of findings of Section 5 on the model expression of BMW 320i in Taiwan market.

Section 5: Model Expression	No.	Question topic	VPE models	Finding Summary
	19	Model Expression	Comprehension	<ul style="list-style-type: none"> ■ 1. Comfortable (75.6/100) ■ 2. Modern (74.1/100) ■ 3. Desirable (71.7/100)
	Features identified			
	20	Model expression on pictogram (Strongest expressions)	Comprehension Association	<ul style="list-style-type: none"> ■ Whole vehicle: 1. Modern (x5) 2. Elegant (x3) 3. Desirable (x3) 4. Comfortable (x5) 5. Dynamic (x1)
	Highly comprehended expressions (Displaying the top three results only)		 <ul style="list-style-type: none"> 1. Brand-specific (14 indications) 2. Modern (13 indications) 3. Elegant (10 indications) 	

Finding on the IS250 in NZ:

Table H-11. Summary of findings of Section 1 on participant background of Lexus IS250 in New Zealand market.

Section 1: Participant Background	No.	Question topic	Finding Summary
	1	Level of interest in cars	■ above average enthusiasm in cars (3.6 out of 5)
	2	Level of knowledge in cars	■ above average interest in cars (3.1 out of 5)
	3	Age	■ from under 20 to 59
	4	Ethnic Group	■ largely European
	5	Time living in New Zealand	■ Mostly 5 years or more (14 out of 15)
	6	Dream Car	■ mostly on premium car brands (mostly Chrysler)
	7	Reason for dream car selection	■ 12/15 relates to visual appearances ■ 2/15 relates to social and cultural value

Table H-12. Summary of findings of Section 2 on the brand perceptions of Lexus IS250 in New Zealand market.

Section 2: Brand Impression	No.	Question topic	VPE mode	Finding Summary
	8	Association with the brand Lexus	Association	<ul style="list-style-type: none"> ■ 13 out of 15 responses are positive ■ 5/15 responses relates to the country of origin ■ 4/15 are based on visual appearances
	9	Brand appeal	Association	■ 3.1 out of 5
		9a. Written responses		<ul style="list-style-type: none"> ■ 3/15 commented positively on quality and functionality ■ 3/15 relates to country of origin/Toyota ■ Lack of written response (5 empty)
	10	Perception on brand image	Association	■ 54.6 out of 100
		10a. Written response		<ul style="list-style-type: none"> ■ 5/15 relates branding image of Lexus and 2 highly recognised it as being a competitor of BMW ■ 1 commented on perceiving this brand as Toyota and not Lexus ■ 3 perceived the brand based on low safety-related quality
	11	Brand distinctiveness	Impression	■ 46.5 out of 100
		11a. Written response		■ A mix of positive and negative 4 comments about visual appearances
	12	Brand-specific cues	Recognition	■ 7 out of 15 participants thinks Lexus cars share brand-specific cues
		12a. Written response		<ul style="list-style-type: none"> ■ 3 comments based aesthetic features, and 3 on quality and performance ■ Lack of written responses (9 empty)
13	Physically experience cars by Lexus	-	■ 8 out of 15 participants have physically experienced Lexus cars	

Table H-13. Summary of findings of Section 3 on the model impression of Lexus IS250i in New Zealand market.

No.	Question topic	VPE mode	Finding Summary	
Section 3: Model Impression	14	Brand-related model recognition	<ul style="list-style-type: none"> ■ 11 out of 15 respondents agrees that IS250 is a typical Lexus model ■ 9 out of 15 who responded with written comments, mainly relating to visual-appearances including the shape of the car 	
	14a. Written responses	Recognition		
	15	Rating between 7 vehicles on:	-	
	A: Attractiveness (Displaying the top three results only)	Appreciation	  	
			1. BMW (53.8/100) 2. Mercedes Benz (52.4/100) 3. Audi (50.1/100)	
	B: Distinctiveness (Displaying the top three results only)	Impression	  	
		1. BMW (56.4/100) 2. Mercedes Benz (54.4/100) 3. Audi (50.2/100)		
16	Level of interest in 320i	Recognition	<ul style="list-style-type: none"> ■ 3.2 out of 5 ■ 4 comments are based on the aesthetic quality ■ 1 based on the representational image of Lexus 	
16a. Written responses				

Finding on the IS250 in Taiwan:

Table H-16. Summary of findings of Section 1 on participant background of Lexus IS250 in Taiwan market.

	No.	Question topic	Finding Summary
Section 1: Participant Background	1	Level of interest in cars	■ above average enthusiasm in cars (3.7 out of 5)
	2	Level of knowledge in cars	■ above average interest in cars (3.0 out of 5)
	3	Age	■ between 20 and 59
	4	Ethnic Group	■ all participants are Asian
	5	Permanently living in Taiwan	■ majority of participants lives in Taiwan (13 out of 15)
	6	Dream Car	■ mostly on premium car brands (9 out of 15) ■ 4 on super car brands
	7	Reason for dream car selection	■ 5/15 relates to visual appearance ■ 8/15 relates to engineering performance

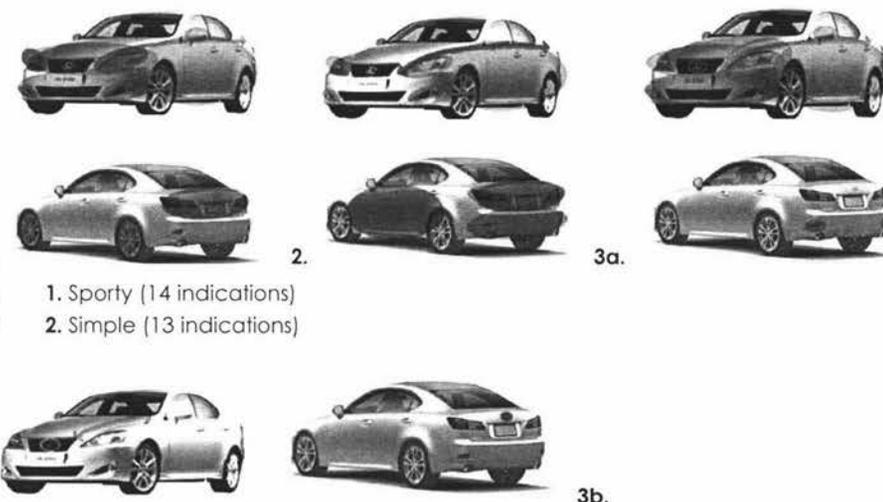
Table H-17. Summary of findings of Section 2 on the brand perceptions of Lexus IS250 in New Zealand market.

	No.	Question topic	VPE models	Finding Summary
Section 2: Brand Impression	8	Association with the brand Lexus	Association	<ul style="list-style-type: none"> ■ 12 out of 15 responses are positive ■ 4/15 are based on the country and company of origin
	9	Brand appeal	Association	<ul style="list-style-type: none"> ■ 3.0 out of 5
		9a. Written responses		<ul style="list-style-type: none"> ■ 2/15 are visual-related appreciations ■ 6/15 relates to the country of origin ■ 10/15 positive comments
	10	Perception on brand image	Association	<ul style="list-style-type: none"> ■ 57.5 out of 100
		10a. Written response		<ul style="list-style-type: none"> ■ 6 out of 12 responses are positive comments ■ 3/15 associated the car with the country of origin ■ 4/15 perceptions are based on the visual appearances
	11	Brand distinctiveness	Impression	<ul style="list-style-type: none"> ■ 43.3 out of 100
		11a. Written response		<ul style="list-style-type: none"> ■ 5 negative comments ■ 6 comments relating to the country of origin
12	Brand-specific cues	Recognition	<ul style="list-style-type: none"> ■ 6 out of 15 participants think Lexus cars share brand-specific cues ■ 1 participant do not have enough knowledge on the brand to provide an opinion 	
	12a. Written response		<ul style="list-style-type: none"> ■ 5 written comments and 3 are aesthetic-related appearances ■ 1 association with the country of origin 	
13	Physical experience cars by Lexus	-	<ul style="list-style-type: none"> ■ 10 out of 15 participants have physically experienced Lexus cars 	

Table H-18. Summary of findings of Section 3 on the model impression of Lexus IS250i in New Zealand market.

No.	Question topic	VPE mode	Finding Summary
14	Brand-related model recognition	Recognition	■ 8 out of 15 respondents agrees on IS250 as a typical Lexus model
	14a. Written responses		■ 7 out of 9 who responded with written comments are based on the familiarity of aesthetic features across Lexus models
	15	Rating between 7 vehicles on:	-
	A: Attractiveness (Displaying the top three results only)	Appreciation	 1. BMW (70.3/100) 2. Mercedes Benz (62.6/100) 3. Cadillac (57.3/100)
B: Distinctiveness (Displaying the top three results only)	Impression	 1. Cadillac (73.3/100) 2. BMW (67.6/100) 3. Mercedes Benz (63.3/100)	
16	Level of interest in 320i	Recognition	■ 2.8 out of 5
	16a. Written responses		■ 3 comments are based personal association with the country of origin ■ 3 comments based on the aesthetic appearance of IS250

Table H-20. Summary of findings of Section 5 on the model expression of Lexus IS250 in New Zealand market.

No.	Question topic	VPE mode	Finding Summary
19	Model Expression	Comprehension	<ul style="list-style-type: none"> ■ 1. Simple (60/100) 2. Sporty (54.5/100) 3. Confident (52.7/100)
	Indicated Features (Displaying the top three results only)		
20	Pictogram on model expression (Strongest features)	Comprehension Association	<ul style="list-style-type: none"> ■ Longitudinal line from hood to the beltline (8 indications): 1. Style, Simple (x3 each) 2. Sporty, Distinctive (x1 each) ■ Headlights: 1. Sporty (x4) 2. Confident (x2) 3. Simple, Style, Distinctive (x1)
	Highly comprehended keywords (Displaying the top three results only)		 <ul style="list-style-type: none"> ■ 1. Sporty (14 indications) ■ 2. Simple (13 indications) ■ 3a. Distinctive, and 3b. Brand-specific (10 indications each)

Appendix I

Analysis and discussion

BMW in New Zealand - VPE: Impression

To achieve recognition and affective experience from consumers, a car exterior will firstly need to be differentiated from the consumers. This could relate to both the consumers' perception of the car brand or impression on the model it self. The questionnaire findings indicate that participants in New Zealand do not regard the brand BMW as highly distinctive. Although the average mark is only 57.3 out of 100 in brand distinctiveness, the comments are mostly positive and relates to BMW's brand heritage and innovative aesthetics. The written feedbacks suggest that NZ car enthusiasts have focuses particularly on the visual appearance of a car, and the history and culture of a brand. This participant focus on visual aesthetic impression and brand heritage matches with the finding from literature review on market characteristics; that culture of NZ is independent as there are minimal amount of comments relating to the representational meanings in BMW such as "BMW is a rich man's car".

Table I-1. Top three most distinctive cars based on selections of seven cars targeting same market segment.

Visual stimuli of cars provided as part of the questionnaire			
Order of ranking			
	1. Mercedes-Benz (avg mark: 55.1/100)	2. Audi (avg mark: 55/100)	3. BMW (avg mark: 54.7/100)

The NZ participants found the three cars displayed in Table xx to be the most distinctive amongst the seven premium car images provided. The close range of these average marks suggested that these three cars were perceived fairly equally by the New Zealand participants. This finding also reflects the focus on car exterior impression in NZ on visual aesthetics and brand heritage as all three brands have strong emphasis in exterior design with brand-specific features, and an established history as a premium car maker. Interestingly, all of the cars are European and all have been identified both as the most distinctive and most appealing exterior design. This raised the question that if stronger impression equals stronger visual recognition?

VPE: Recognition

When asked "Do you think cars manufactured by BMW share certain qualities that make them belonging to the same "family"? 12 out of 15 participants agreed that BMW cars share similarities between its models. The main open-ended responses following this question indicated that consumers comprehended the visual aesthetics of BMW cars and the comfort level of the interiors and visual features. Amongst the visual features, the front grille is the only visual element that was identified and other comments are based on general features such as the 'look', 'shape',

and 'front of the car'.

Shown on Table xx, the three most highly attractive car designs from the seven car images provided were also strongly perceived as distinctive. This except a difference in the order and the mark span is also larger than model distinctiveness findings amongst the seven cars. Although rated as the most distinctive from other brands when the responses was indicated under the VAS method (without any visual comparison between cars). BMW's 320i was still rated as the most distinctive when this question was asked again with visual stimuli. This suggests that the level of differentiation on the design of car exterior does not directly reflect the level of positive perceptions that the car is appealing. For example, a car exterior could look very different from its competitors' but with respect to the visual style and coherence; this 'different-looking' car could be less attractive to consumers. The key of this research is to examine this relationship between the visual presentation of cars and how exterior designs are perceived.

Table I-2. Top three most attractiveness cars based on selections of seven cars targeting same market segment.

Visual stimuli of cars provided as part of the questionnaire			
Order of ranking			
	1. BMW (avg mark: 54.1/100)	2. Audi (avg mark: 50.6/100)	3. Mercedes-Benz (avg mark: 49.2/100)

When asked to provide an open-ended comment for the marks given relating to how appealing BMW is as a brand; a large number of participants simply have stronger preferences in other types of vehicles such as SUV or Sports cars (rather than BMW). This preference for certain types of cars is likely to be subject to personal factors such as personality, values, and social influence. Relating to the written comments, one other major reason for the medium level perception on the brand BMW is its vehicles are too commonly seen the roads.

VPE: Association

Based on the open-ended question on what consumers associate the brand BMW with, there is a mix of positive and negative written comments, and surprisingly there are a large number of associations connected with BMW on a particular premium brand rather than associated with the performance or visual aesthetics of the cars themselves. However, as expected, there are only two comments given each relating to the social value of the brand and the other on the country of origin of BMW respectively. This contradicts with the market characteristic research findings and the brand impression outcome discussions that the association of BMW is based on its brand class image and not related to individualistic or self-enjoyment associations.

Based on the VAS outcome on question "Do you consider BMW a premium car brand?", the perception on BMW as a premium car brand is to highly recognised by the consumers, with 63.6/100 positively referring back to BMW's brand heritage and the visual appearance. Moreover, based on the open-ended responses, the association with BMW as a premium brand was greater than other aspects such as in luxury comfort, performance, or design identity. In comparison across all the written comments, there are a small number of associations to the country of origin. There are also only a small number of society-related associations such as BMW as a brand representing financial wealth. This outcome supports the finding from market-related literature review that the unique culture and value in Western countries tend to value individuality and personal achievement more than family association of wealth.

This higher level of brand value association is further supported by an above average level of interests in physically experiencing the model 320i that is 3.3/5. This model-related preference is mainly based on the exterior design of 320i. Which based on the background research is a well considered design with attention to details. Although both brand and model recognition are largely based on visual appearance; the recognition on BMW is also based on the history and reputation of the brand. This means that the interpretation of BMW is likely to be reflected in questions relating to physical design features and will be discussed in later section.

BMW in Taiwan - VPE: Impression

The model distinctiveness of 320i was asked twice in the questionnaire with different visual stimuli in VAS method. One question was based only on the perception of the photos of 320i and comparing to other cars on the market with comments mainly associated with the visual aesthetic quality. The second one was conducted together with a total of seven images of cars including 320i and IS250 that are in the same market for a comparison against the other six cars. The outcome of these questions, in average marks of VAS, was almost the same with one being 64.3/200 and the other is 64.9/100. Surprisingly, Lexus has been perceived as highly distinctive by Taiwanese participants next to 320i. With the model impression analysed and discussed, the next paragraph discusses how 320i/BMW are been interpreted.

Table I-3. Top three most distinctiveness cars based on selections of seven cars targeting same market segment.

Visual stimuli of cars provided as part of the questionnaire			
Order of ranking			
	1. BMW (avg mark: 64.9/100)	2. Lexus (avg mark: 62.7/100)	3. Cadillac (avg mark: 53.1/100)

VPE: Recognition

Overall, the model 320i has been perceived by 13 Taiwanese consumers as a model that carries the visual identity of BMW. This strong recognition of 320i as a BMW model indicates that the brand-specific features on 320i have possibly been positively perceived by consumers. This recognition on brand-specific visual elements will be investigated in model association discussion on the indicated visual features that are interpreted as brand-specific.

When asked about "how strongly would you like to drive/own this BMW?" through multi choice and open-ended methods, Taiwanese participants show a high level of interest in model 320i with an average mark of 3.9/5, where a mark of five represents 'strongly interested'. However, the numbers of comments given by consumers related to the representational images of BMW cars car are more than the open-ended commented discussed in VPE: Impressions. Furthermore, there are strong recognitions in the aesthetic qualities of 320i as a motivation for the consumers wanting to drive/own this car. Referring to the literature review on market backgrounds between characteristics of Western and Eastern culture, Taiwan as an Eastern country is suspected as being highly inter-dependent. This increase in representative comments relating to 320i indicates how the general cultural and social value in Taiwan influences people's perception

of a car. The model 320i are increasingly been recognised as a car suggesting social and wealth status.

On consumer's perceptions of BMW cars that were instantly required as a BMW product, the outcome from Taiwan's BMW questionnaire shows that 12 out of 15 participants recognises cars by BMW based on the visual appearance of the car. Majority of the comments given are based on the formal aesthetic qualities of cars, for example, the shape and grille of the car. Interestingly, are participant commented that the design of BMW cars as a whole signifies the car as a BMW model. Similar to the New Zealand BMW outcome, this visually-related recognition on BMW models were also highly perceived by Taiwanese participants.

Based on the high level of brand-related recognition as analysed above, it is not surprising that the iconic BMW series 320i is recognised instantly as a BMW car. Despite the mixed comments from the designers/artists' reviews conducted by Auto and Design reporters, the new 320i designed under the new BMW design direction has successfully been perceived by consumers. This recognition of 320i as a BMW car will be further examined VPE: Association with visual elements that was indicated as 'brand-specific'.

VPE: Association

It is evident from the open-ended responses in question 'Please write a word/sentence that you would associate with BMW', that BMW as a brand has been highly regarded by Taiwanese consumers with 14 out of 15 positive comments. Out of these 14 positive comments, a large percentage associated BMW with the brand's representational values, i.e. promoting the owner/driver's success and wealth status. Unlike the New Zealand study outcome on brand association, only two written responses on the question above related to the quality of visual appearances of BMW cars. This strong focus on the brand's presentational values suggests that Taiwan as an inter-dependent oriented culture perceiving brands mainly based their perceive social and wealth status. The lack of confidence in aesthetic opinions could also contribute to this pattern of association representational values; this is because people that are less confident in aesthetic judgement are likely to think that the big and expensive brands must have an 'attractive' design.

When the participants were asked if they perceive BMW as a premium brand, the outcome indicates a high level agreement of 72.3/100 that BMW is a high end automotive brand. This strongly association with the brand image is largely based on the high retail price of its models. As the last paragraph indicates that consumers in Taiwan perceived BMW mainly based on its suggestive meanings, this further finding suggests that the

suggestive meanings associated are based on the price of BMW cars; which in turn suggests the owner's wealth and therefore success. This correlates with the literature review on the two markets, Westerner's independent culture and Easterner's inter-dependent culture; which will be analysed specifically in the comparative discussion section between these two markets.

BMW's brand appealingness rating in Taiwan is 3.3/5, where the number 'five' indicates strongly appealing. Surprisingly, the written comments supporting the indicated marks suggest that participants regard BMW as averagely appealing mainly based on the visual appearances of the models from BMW. However, three participants indicated their marks based on the suggestive social values of BMW. This mix of higher percentage of visual-aesthetics contradicts the finding discussed on the last paragraph. Table xx below lists the features that has been associated as BMW-specific by the participants for the next part of analysis and discussion.

Lexus in New Zealand - VPE mode: Impression

The level of perception in the brand distinctiveness of Lexus is relatively low in New Zealand with an average of 46.5 out of 100, compare to the BMW outcome of 57.3/100. Four participants criticised the visual appearances of Lexus models in the open-ended comments. Referring to the study on continuity in the use of brand-specific features, across Lexus models, the front grille and headlights have inconsistent design languages between the car models. This criticism on the visual aesthetics of Lexus suggests that Lexus models have a weaker design in its formal aesthetics; and less coherent approach to its design language. In the outcome for the question on model distinctiveness, the same cars were perceived strongly visually distinctive amongst the participants. These suggest that the New Zealand participants in both BMW and Lexus studies have the same visual preferences as consumers in the same market.

Table I-4. Top three most distinctiveness cars based on selections of seven cars targeting same market segment.

Visual stimuli of cars provided as part of the questionnaire			
Order of ranking			
	1. BMW (avg mark: 56.4/100)	2. Mercedes Benz (avg mark: 54.4/100)	3. Audi (avg mark: 50.2/100)

VPE mode: Recognition

While only seven out of 15 consumers agree that Lexus cars share brand-specific cues; there were eleven participants agree that IS250 is a typical Lexus model with nine comments based on visually-related appearances of this Lexus model. Interestingly, only half of the comments relates to Lexus' adoption of brand-specific features with the formal aesthetic features, and the other half of the comments provided were based on their performance. This low level of brand-identity in Lexus model with higher level of recognition for the IS250 as a Lexus model contradicts with each other, as how could one identify IS250 as a Lexus model when one think that Lexus cars lack brand identity? This might be explained as Lexus being a relatively new Japanese premium brand has a design language that are less developed and refined. Which could possibly suggest that people do not know what is a 'Lexus-looking car' as they all look the same and because the models all look the same, more participants think that IS250 is a Lexus model.

As identified in the last section that the brand distinctiveness of Lexus is weaker than BMW, this lower level of impression explains the weak recognition of Lexus as a premium car brand. One third of the written comments supporting this lower average mark of 54.6/100 (on brand image recognition) relates to Lexus as a competitors of BMW and recognises the brand as an individual one. There is also a recognition that is based on the

country of origin of Lexus and its image of economical car maker. Furthermore, three commented on that they interpret Lexus as a brand with models that are less safe. As the comments demonstrate, New Zealand participants perceive Lexus as a premium brand because the company placed it self with BMW and not as an individual premium brand. The following paragraphs aims to identify if IS250 has been perceived weakly based on this low brand recognition.

When asked about how strongly they would like to own IS250, the average mark is 3.2/5 where five representing the strongest interest in owning this car. Surprisingly, this mark of 3.2 is supported by four comments that are based on the visual aesthetics of IS250 and one based on the representative values of IS250 as a premium car. This outcome suggests that although the brand image was not perceived strongly, the model image is still based on the visual recognition of consumers. To further understand how IS250 is perceived in New Zealand, the next section discusses how IS250 has been assessed based on the set of descriptive attributes relating to the visual perceptions on this car.

VPE mode: Association

When asked on the opinion on how appealing they perceived Lexus is, consumers indicated an average mark of 3.1/5 with a lack of written responses supporting the marks given. This lack of written responses and average marks in brand appealingness indicates that Lexus are not perceived strongly; also the lack of written opinion suggests that consumers have a lack of brand association on Lexus in its appealingness. Furthermore, the written opinions also lack a coherent area of opinion. The only two types of correlated opinions are on premium quality and functionality of Lexus models, and the other relates to the association of Japan with its economic car manufacturing industry.

Although not highly rated as an appealing brand, when asked about how they associate with the brand Lexus; the consumer outcome are mostly pleasant with only two responses that relates to unpleasant associations with Lexus. While five written opinions relate to the country of origin, only four responses are relate to the visual appearance qualities of Lexus. This high level of brand association with the country of origin indicates that consumers hold pre-existing opinions or prejudice on the country that is associated with a car brand. Furthermore, the lower level of consumer association with visual appearances suggests that the visual appearances of Lexus models are not as strong as the company claims to be.

Lexus in Taiwan - VPE mode: Impression

When asked to rate how distinctive they think Lexus is compare to all other cars on the market through a VAS question, the outcome of brand distinctiveness rating is low with an average of only 43.3/100. This low average is a result of the negative impressions with the brand, which consists of one third of the total written responses. Amongst the written responses, a total of six participants commented on the country of origin with Lexus and out of these comments; some regarded Japanese products highly and some associated with the economic car producer Toyota as Lexus' mother company. This written response indicates that Taiwanese consumers based their perceptions of a brand on the association with its country of origin. This is more prominent especially when the cars are imported from Western countries.

Based on the model distinctiveness questions (VAS rankings) on the design of seven cars targeting the same market segment as Lexus IS250 indicated in Table xx; it reflects the low level of brand impression. This also reflects the weaker visual aesthetics based on the visual format analysis. The next part of discussion focuses on how Lexus/IS250 has been recognised by consumers in Taiwan and if IS250 is perceived as carrying the brand identity of Lexus.

Table I-5. Top three most distinctive cars based on selections of seven cars targeting same market segment.

Visual stimuli of cars provided as part of the questionnaire			
Order of ranking			
	1. Cadillac (avg mark: 73.3/100)	2. BMW (avg mark: 67.6/100)	3. Mercedes Benz (avg mark: 63.3/100)

VPE mode: Recognition

Although consumer indicated that as a brand, Lexus is weaker in its distinctiveness, but it is regarded slightly higher in brand recognition as a premium brand with an average ranking of 57.5/100. However, compare to the BMW outcome in Taiwan, Lexus still less recognised as a premium brand with only six positively-related supporting comments from the participants. This recognition is mainly based on the association with the country of origin, and their visual aesthetics. Essentially, this outcome indicates that Lexus is not regarded highly in Taiwan and it is possibly due to its country of origin and weaker visual aesthetics.

When asked about their opinions if Lexus models look 'similar' and belong to one 'family', the outcome indicates that just under half of the participants perceive Lexus cars as sharing brand-specific qualities.

However there was a lack of written responses, only three of these recognitions are based on visual appearances. This lack of written comments is prominent in both Lexus studies, and it is suspected that this pattern is due to the weaker brand image and visual aesthetics in the design of IS250.

Similar to the Lexus outcome from New Zealand, Lexus models are perceived with less degree of brand-specific qualities in Taiwan but the model IS250 is perceived by eight participants as a 'typical' Lexus car. The majority of the written comments identified that participants based their opinion on IS250 being a Lexus 'looking' car, due to their familiarity of aesthetic features across Lexus model. It is suspected that this contradictory outcome in opinions, between the brand-identity in Lexus models and the recognition of IS250 relating to its brand, is based on the same discussion in the "Lexus New Zealand VPE mode: Recognition" earlier section. Reflecting on the weaker outcomes in brand and model recognition, the results were expected, where the consumers indicated a very low level of interests in owning or driving IS250, with an average of 2.8/5. Again amongst the limited written responses, the low level of interest in IS250 is based on the consumers' association with the country of origin, and the aesthetic appearances of the Lexus model. This further supports the statement that the design of IS250 is weaker and less refined comparing to 320i in this research.

VPE mode - Association

In the outcome from the question on how appealing IS250 is in the eyes of consumers in Taiwan, the outcome is 3/5 indicating that Lexus are not regarded as especially appealing. Supported with the fact that one third of the written responses are associated with negative-based meanings, just under half of the written feedbacks associate Lexus with its country of origin. However, these lower levels of perception of appeal on Lexus still have more visual features perceived with the descriptive attributes amongst consumers in Taiwan.

Despite the low recognitions on Lexus, majority of consumer associate this brand with positive comments, which four of them is based on the association on the country of origin. As discussed before in literature review, Taiwan has the culture of moderating its opinions on conformity bases. This culture of moderating opinions could possibly contribute to this outcome on the low brand impression and recognition, but comparatively large numbers of positive-related brand association.