Imagination, Social Interactions and the Consumer Decision Process

Felicity Small
BA, B Bus, B Bus (Hons)

“when imagining anything whatsoever, wee seek all the possible effects, that can by it be produced: that is to say, we imagine what wee can do with it when wee have it” (Hobbes, Leviathan, 1651, Part 1 p 10).

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School of Business
Faculty of Business
Charles Sturt University
Bathurst, Australia

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I would first like to thank my supervisors Prof. Mark Morrison and Dr. Jennifer Sappey. Without their support, guidance and inspiration my thesis would not have been completed. I also thank my colleagues in the School of Business and especially the Head of School Associate Prof. Grant O’Neil for his encouragement and understanding. A special thanks to Dr. David Dowell for never failing to share his knowledge and experience. Finally, though never least, a thank-you to my family from who love is constant.
Abstract

The focus of this thesis is the relationship between mental imagery, social interactions and consumer purchasing intentions.

Mental imagery is when the consumers can see in their mind a picture of the things they know, remember and want. Mental imagery is a useful and natural problems solving technique. The consumer can create mental images of anything from products to social relationships. However, the level of Vividness and Control of these images can differ between people. The first aspect of this research is to test the differing levels of Vividness and Control among consumers.

Consumers also engage in social interactions that affect how they behave in the marketplace. From a sociological perspective, there are many different constructs that explain the process of social relationships. For this thesis, the focus is on Social Comparison, Self-image Congruence and Impressions Management. These social interaction variables are concerned with the importance of group relationships, self and products and the ability to control social roles. Therefore, these social interaction variables encompass significant aspects of the way people engage with society.

Because this thesis is concerned with consumer behaviour, the thesis is structured around understanding the factors that affect a consumer’s purchasing intentions. Purchasing intentions are plans of actions that the consumer creates, although they may not fulfil those plans. This research examined the consumer purchasing intentions for two products: camera and holiday.

The constructs of Vividness, Control, Problem Solving, Impressions Management, Social Comparison, Self-image Congruence and Purchase Intentions were conceptualised in the Imaginative Interpretation Processing Model (IIP). The relationships in this conceptual model form the hypotheses that will be examined in this thesis.

The methodology for this research was from a realism perspective, and the data were collected using an online questionnaire. The purpose of this research was to test the hypotheses created in the theoretical model, thus a quantitative approach was adopted. The
sample for the main study was collected from an online research panel. The questionnaire consisted of established measures for each construct. Each scale was accessed for its appropriateness based on reliability (Cronbach Alphas) and content and construct validity. A pilot test was conducted and analysed to ensure the appropriateness of the measures and the analysis technique. The main sample consisted of 515 responses, although the final useable sample was 482.

The data analysis technique for this thesis is structural equation modelling (SEM). SEM is an analysis tool that can map complex relationships between latent constructs and directly model the correlations between constructs. The SEM results indicated that many of the hypotheses should be accepted.

The principal conclusion of this research is that consumers are using their imagery and social interactions to develop *Purchase Intentions*. Many of the hypothesised relationships in the conceptual IIP Model were supported, providing evidence to suggest that consumers’ imagery and social interactions are significant elements that affect *Purchase Intentions* towards cameras and holidays.

This research has practical implications for developing marketing communications strategies. Given the importance of *mental imagery* in influencing both the social interaction variables and *Purchasing Intentions*, marketers can help consumers to create their own mental pictures by creating memorable *Vivid* imagery through their marketing communications. The results also demonstrate that there are links between the social interaction variables, and that these help consumers to process social information for use in matching products to their identity. This implies that marketers can influence purchasing intentions by showing both the social influence of products to consumers, as well as by helping the consumer feel that the product “*is them*”.
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Certificate of Authorship

I ____________________________ hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma at Charles Sturt University or any other educational institution, except where due acknowledgment is made in the thesis. Any contribution made to the research by colleagues with whom I have worked at Charles Sturt University or elsewhere during my candidature is fully acknowledged.

I agree that this thesis be accessible for the purpose of study and research in accordance with the normal conditions established by the Executive Director, Library Services or nominee, for the care, loan and reproduction of theses.

Signature_____________________________ Date__________________
Chapter 1 Introduction

1.1 Background to Research

Understanding the factors that affect consumer decisions and their degree of importance is one of the fundamental challenges in marketing (Levitt, 1986). By better understanding these factors, marketers can more readily create the best solution to satisfy their customers and to create a competitive advantage for the firm. While identifying these factors and their importance has long been a goal in the marketing literature, the identification of a comprehensive model of the factors leading to purchase has remained elusive. The seminal buyer behaviour models contained many internal and external factors, but were unable to fully explain how the consumer process functioned (Farley and Ring, 1974). This suggests that further research is needed to identify other factors that affect consumers and test how these factors influence purchasing intentions.

One area of literature that has a potential influence on consumer Purchase Intentions and that has been relatively understudied is mental imagery and social interactions. Previous research has concluded that imagery (Petrova and Cialdini, 2005) and social interactions (Erasmus, Boshoff, and Rousseau, 2001) individually play an important role in consumer purchasing behaviour, but research has not demonstrated how imagery and social interactions link and how together they influence Purchase Intentions. The goal of this thesis is therefore to examine the relationship between social interaction variables and mental imagery to understand how they impact the consumer’s Purchasing Intentions. Thus, the aim is to unpack the consumer’s complex decision processes and identify the impact of imagery and social interaction variables on purchasing behaviour.

Seminal studies on consumer decision making focused on how consumers develop Purchase Intentions or plans that can help them to decide which product will be right for them (Howard and Sheth, 1969). Later studies have identified that Purchase Intentions are affected by social and personal factors (Nicosia and Mayer, 1976; Percy, Rossiter, and
Elliot, 2001; Lurie, 2004). This suggests that social interaction variables and mental imagery may impact on Purchase Intentions. However, the relationship between social interaction variables and mental imagery and the impact of that relationship on Purchase Intentions still needs further investigation.

From a psychological perspective, mental imagery is an important and widely researched topic (Gordon, 1949; Casey, 1976; Klinger, 1981; Marks, 1999; Kosslyn, Ganis, and Thompson, 2001; Fauconnier and Turner, 2003; d'Astous and Deschenes, 2005). Two significant streams in the study of mental imagery are conceptual blending and ability to Control and create Vivid images. The conceptual blending process helps consumers create mental images by combing information to develop a holistic picture (Kihlstrom et al., 1991). The conceptual blend helps an individual create mental images that consist of information based on their consumer experiences and desires. Ability in mental imagery research has focused on identifying the difference between consumers in terms of their ability to generate or Control over an image (Gordon, 1949) and the Vividness or clarity of an image (Marks, 1999).

Adapting research from psychology, consumer behaviourists have focused on mental imagery with a market perspective (Childers and Houston, 1983; Phillips, Olson, and Baumgartner, 1995; Babin and Burns, 1998; Petrova and Cialdini, 2005). For consumers, imagery enables them to see the product and the effect of product ownership through mental visualisations. Hence, the consumer’s mental images can help them to develop Purchase Intentions towards products. While research has demonstrated the importance of imagery in consumer behaviour, only a few studies have focused on identifying the consumer’s ability in terms of both Vividness and Control over imagery (Petrova and Cialdini, 2005). Thus, this thesis aims to identify a consumer’s command over their mental imagery in terms of their ability to both generate an image (Control) and the clarity of that image (Vividness) to help unpack how this process affects consumer Purchase Intentions.

While mental imagery is one of the internal influences that affect consumers, an important external influence is social interactions. From the sociological literature, social interactions are about an individual’s relationship with self and others (Mead, 1974). For consumers, social interactions affect the way they engage in the market place. That is, consumers are aware of the social implications of product ownership and usage.
(Ackerman, MacInnis, and Folkes, 2000; Auger et al., 2003). Hence, consumers can be motivated to purchase products for social reasons. Also, from a consumer behaviourist perspective, it is important to understand the social implications of product ownership and usage because products become part of their life experiences (Grubb and Grathwohl, 1969; Solomon, 1983). In other words, consumers are influenced by social relationships to buy products. The more socially aware the individual is, the more they will be influenced by these social interactions.

There are many ways individuals interact with each other. For this thesis, the constructs used to analyse social interactions and a consumer’s response to them are Social Comparison, Self-image Congruence and Impressions Management. These social interacting variables focus on the individual’s perception of their place in the group (Moschis, 1976; Manis, Paskewitz, and Cotler, 1986), their match between self and product (Sirgy et al., 1997) and their role adoption (Leary and Kowalski, 1990) respectively. There is a significant body of literature on all of these social interaction variables. However, it is unclear how these variables affect each other and whether or not they singly or jointly influence Purchase Intentions. The goal in using these constructs is to explain interactions between others and how they influence Purchase Intentions.

The final theoretical connection is between mental imagery and the social interaction constructs. As discussed previously, in psychology there is a stream focused on the conceptual blend process: which is the way the individual combines all their experiences and thoughts to create meaningful knowledge (Fauconnier and Turner, 2003). This suggests that a consumer’s mental imagery, social interactions and purchase plans combine in the mind to help make a purchase decisions. The conceptual blending process is continuous as a new experience or desire emerges it changes the other elements that combine to make knowledge. Given the continuous structure and process of conceptual blending, it is difficult to measure. Hence, this thesis will explore mental imagery and social interactions in terms of how these concepts interact with each other and influence consumer Purchase Intentions.

Further research into mental imagery and social interactions is not just important for better theoretical understanding of the variables that influence Purchase Intentions. There are also many practical implications for marketing strategy. For example, marketing
communication strategies often uses imagery and people interacting with each other. However, it is unclear why these images are effective for communicating the marketing message of the company. In this age of clutter, where marketing communications use multiple channels with an almost continuous stream of messages, it is vital to understand why and how these messages can break through the consumer’s perceptual defences (MacInnis and Price, 1987). Moreover, many marketing communications ask consumers to close their eyes and imagine, but without a clear understanding of a consumer’s ability to engage in this activity. This suggests that marketing campaigns may be requiring an activity that consumers may not be able to do in a meaningful way. Other marketing campaigns emphasise social relationships in the message, but consumers may not consider social relationship relevant to their plans to buy products. Hence, this research will examine the process of imagery and social interaction to provide insights and implications for marketing communications.

1.2 Research Question

The background discussed in the Section 1.1 lead to the research question to examine how these social interaction variables relate to each other, to the Control and Vividness of mental imagery and the consumer’s Purchase Intentions. The research question for this thesis is formally stated as:

How does consumers’ mental imagery affect their social interactions and purchase intentions?

To answer this question, a series of hypotheses that address the specific relationships between the constructs were developed. These hypotheses are formally stated at the end of Chapter Two. The hypotheses focus on the relationships between the imagery variables, the social interactions variables and the dependent variable of Purchase Intentions.

The purpose of this research is to examine the way consumers use mental imagery. The use of the imagery will be explored in terms of its affect on three social interaction variables (Impressions Management, Social Comparison and Self-image Congruence) and
ultimately purchase intentions. The research has been given a market context to help provide structure for the participants.

The market focus is on two products: camera and holiday. Previous research in mental imagery found that consumers find it easier to generate Vivid images of products that are more personal. The personal product can be general or specific in its product categories as long as it is meaningful to consumers (Helstrup, Cornoldi, and Debeni, 1997). The two products that were chosen are common and it is likely that consumers will have some personal experience with both of the products. A camera was chosen as it is a popular and common product, but it is not habitually purchased. A camera has functional and symbolic qualities, but it is also very tangible for consumers and a product that most participants would either own or have used. A holiday was chosen because it has similar characteristics to the camera: it is popular, but not necessarily habitual. A holiday is also a service and is more intangible, so consumers must rely more on their conceptual blending process to form a mental image of the product because they cannot hold it in their hand. A holiday can be symbolic and functional too. Both of these product classes have a wide range of brands/destinations, styles and features. Thus, there is wide scope for the participants to engage with their own mental images and social experiences with a product focus that is not overly restrictive.

1.3 Structure of Thesis

The structure of this thesis is five chapters. Chapter One contains an introduction to the topic as well as outlining the structure of the thesis.

The second chapter contains a literature review. The literature review is the theoretical foundation for this thesis and is used to justify the hypotheses. The topic of this thesis has drawn on literature from a variety of disciplines including sociology, psychology, philosophy, and marketing. The literature review begins with a discussion about the seminal information processing models used in marketing to explain how consumers make purchasing decisions and problem solving. These models, however, do not fully explain the internal and external processes that occur for the consumer. The next section is a
review of imagination and mental imagery as an evaluation tool for problem solving and, in terms of the consumer’s ability to Control and generate Vivid imagery. Then the concepts of social interactions are explored. Even though there are numerous ways to consider the social activities of people in society, three were chosen for this research: Social Comparison, Self-image Congruence and Impressions Management. The final section of Chapter Two contains the conceptual model, called the Imaginative Interpretation Processing (IIP) model, the formal research question and the hypotheses.

Chapter Three is a review of the methodology that will be used to gather the data including the measurement scales, the research paradigm and research method for gathering and analysing the fieldwork. The research paradigm used in this project was the realist perspective which accepts that there are scientific truths and a bounded reality. The data collection process is discussed in terms of the strengths and weaknesses of online surveys and sampling processes. Then each measurement scale is analysed and compared against predetermined criteria of acceptability that meet the standard reliability and validity requirements. The final section of Chapter Three is a review of structural equation modelling (SEM) which is the primary analytical tool used in this thesis. SEM is a method of analysis that enables the researcher to examine the relationships between latent variables. SEM has two components: the measurement models and the structural models. Measurement models examine the relationship between the variable and the items (questions) used to measure that variable. The structural model shows the relationship between the latent variables. The structural models determine if there is a significant relationship between the constructs, but it is not necessarily showing a causal pathway.

After the methodology is the results chapter. Chapter Four contains results for both the pilot and main study. The pilot study was conducted to test the measures that were described in Chapter Three. For the main study, the data were collected using an online panel. The data were tested in SPSS for reliability and validity with confirmatory factor analysis before the structural equation models were built. The SEM was developed in two stages. First, the measurement models are developed and tested with goodness-of-fit measures. Then the structural models are built with the relationships based on the hypothesised relationships developed in the literature review in Chapter Two. The structural models are then tested for goodness-of-fit with the goal of creating one final model for each product. Several models were, however, developed and the one with the
The strongest theoretical support and best model fit was chosen. The next section contains a multi-group analysis to determine if the differences that were identified in the models for camera and holiday were statistically significant. The final part of Chapter Four is the hypotheses testing section. Many of the hypothesised relationships were accepted. There is evidence to suggest that there is a positive and significant relationship between \textit{Vividness} and the other constructs including \textit{Control}, \textit{Impressions Management}, \textit{Self-image Congruence} and \textit{Purchase Intentions}. There is also a significant and positive relationship between \textit{Impressions Management}, \textit{Self-image Congruence} and \textit{Purchase Intentions}. \textit{Social comparisons} and \textit{Control} only indirectly had a significant influence on \textit{Purchase Intentions}.

Chapter Five is the final chapter in the thesis. This chapter contains a summary of the thesis, key findings and implications for theory and practice. The final section of Chapter Five contains a discussion about the limitations of the current research and suggestions for future research projects. The limitations of this study can be considered in terms of the data collection and analysis. There are often issues with sampling, particularly in terms of representativeness and the affect this may have on generalisability of the results. The data analysis process of Structural Equation Modelling can be misinterpreted if the decisions are made purely on statistical significance. Thus, care needs to be taken that the sample frame and size is sufficient and that the data is analysed with theoretical dimensions as well as statistical considerations.

The contributions, of this research, are primarily based on adding to the literature of consumer decision making. In particular, the focus is on non-rational processing and evaluation through the use of mental imagery. The contributions to industry are focused on understanding the role of imagery in marketing communications approaches. That is, understanding how consumers use their mental imagery will help marketers attach the right style and tone to the images they use in their communication strategies.  Figure 1.1 is a flow chart showing the structure of the thesis.
Figure 1: Flowchart of the thesis

Chapter 1
Introduction
Context and justification for research
Introduction of key concepts

Chapter 2
Literature review
Consumer decision making
Conceptual blending
Using imagery to evaluate products
Social identity and social processes: Self-image
Congruence, Social Comparison and Impressions Management
Conceptual Mode—Imaginative Interpretation
Processing
Stated hypotheses

Chapter 3
Methodology
Research perspective
Data collection technique
Sampling
Reliability and validity
Measurement scales
Discussion of structural equation modelling

Chapter 4
Data analysis
Pilot testing results
Main sample
Measurement models
Structural models
Multi-group analysis
Hypothesis testing

Chapter 5
Conclusions
Key findings
Contribution to literature
Contribution to practice
Limitations and future research
1.4 Definitions
To be clear about the concepts discussed in this thesis, Table 1.1 contains the principal concepts with their definitions.

Table 1.1: Definitions of principal concepts used in thesis

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptual Blend</td>
<td>Conceptual blending combines fantasy, perceptions and memories to create an interactive and interpretative imagination (Fauconnier and Turner, 2003).</td>
</tr>
<tr>
<td>Mental Imagery</td>
<td>Mental imagery is a complex process; it can be described as an <em>inner world</em> (Neisser, 1976)</td>
</tr>
<tr>
<td>Vividness</td>
<td>To create a vivid mental image, the picture must be clear and engaging (Marks, 1999)</td>
</tr>
<tr>
<td>Control</td>
<td>Imagery creation is the individual’s ability to generate and manipulate mental images (Lequerica <em>et al.</em>, 2002)</td>
</tr>
<tr>
<td>Consumers Social</td>
<td>Explores the importance of the other people in the creation of social identity through product choice</td>
</tr>
<tr>
<td>Interactions</td>
<td></td>
</tr>
<tr>
<td>Impressions Management</td>
<td>Impressions management is the ability of the individual to control and display appropriate social roles (Lennox and Wolfe, 1984)</td>
</tr>
<tr>
<td>Social Comparison</td>
<td>Self-awareness through evaluation of other people and the impact of others’ evaluation on the individual (Festinger, 1954)</td>
</tr>
<tr>
<td>Self-image Congruence</td>
<td>Product congruence is the match between self and the product in order to communicate something about the consumer (Sirgy and Danes, 1982)</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>Are <em>uncompleted plans</em> to buy products (Juster, 1966)</td>
</tr>
</tbody>
</table>
1.5 Conclusions

In conclusion, the purpose of Chapter One was to introduce the research topic, provide background and justification for the research and finally to provide a review of the structure of the thesis. The next chapter contains a review of the literature that forms the theoretical foundation of this thesis.

In summary, the purpose of this research is to examine the internal and external factors that affect consumers purchase intentions for a camera and a holiday. Identifying the effect of these factors can help to understand consumers and has practical implications for marketing strategy.
Chapter 2 Literature Review and Hypotheses Development

2.1 Introduction

The literature review presented in this chapter provides the foundation and structure for this doctoral research. The intention of the literature review is to examine the constructs of the proposed conceptual model created by this research called the Imaginative Interpretation Processing Model (IIP see page 83) and identify the hypotheses that will be tested to validate the model. The IIP model is an information processing model in which consumers create meaning about themselves and products by interpreting information.

A seminal information processing model, upon which the IIP model is based, by Newell, Shaw and Simon (1958) has roots in psychology and was adapted to consumer behaviour by Bettman (1971). In its basic incarnation, the Newell et al. (1958) model suggested that consumers proceed with decisions by using existing knowledge or by creating new knowledge, based on the situation. However, the way consumers determine when to use new information or use existing information is not clearly explained. In Sections 2.2.1 and 2.2.2 of this review, the concept of information processing is discussed. In Section 2.2.3, the process of imaginative interpretation is introduced as an alternative to the seminal models as a way of explaining consumer information processing.

Imaginative interpretation involves processing information using a combination of perceptions, memories and fantasy to create meaning. This process is referred to as conceptual blending (Hume, 1957; Fauconnier and Turner, 2003). In Section 2.2.3 the process of conceptual blending is explained, demonstrating the relationship between perceptual stimuli, past experiences, and intangible thinking in order to create knowledge. Because conceptual blending draws on internal and external information, the consumer can use this process to create meaning about anything, including products and his/her consumer social identity.

Creating meaning is just the first step in processing information. Once the consumer has processed the product information to create meaning, they need to develop that meaning.
This doctoral research proposes that meaning is developed through the creation of images. Section 2.3.2 contains a review of mental images including how consumers use images as an evaluation tool that enables the consumer to see and assess products prior to purchase. Because it is difficult to measure the conceptual blend process as the consumer creates imaginative interpretations, this doctoral research will measure the outcome of the conceptual blend: mental imagery. Mental imagery can be measured in terms of *Vividness* and *Control* (Lequerica *et al.*, 2002). From this we can determine the consumer’s ability to generate clear images that can be used in the evaluation process. The ability of the consumer to generate a mental image can explain how effectively the consumer can use mental imagery to evaluate products.

Mental imagery involves the representation of a concept, person or object in the consumer’s mind (Neisser, 1976; Kosslyn *et al.*, 2001). The information used in the creation of mental imagery is developed from a combination of the consumer’s current experience, intangible thinking and memories. For example, a mental image of a birthday party can be a mixture of previous parties and the individual’s concept of an ideal party. The consumer can use the mental imagery as a picture in their mind of what a party is like, even if there is no party at that particular moment.

Because mental imagery can be based on external information, this doctoral research will also examine the influence of social interaction on consumer information processing. In particular, this research will examine social identity. Social identity is the individual’s concept of self in social situations. In this thesis, it is defined as the self in the social context (Mead, 1974). In other words, social identity is how the individual sees his/her self in relation to other people. The concept of social identity is developed in Section 2.4.1 of this review. For the consumer, social identity is important in terms of product ownership. This is because products can be an outward and visible symbol of self. Thus, consumers purchase products that demonstrate who they are in the social context.

Consumers use products to communicate meaning and identity to others. In terms of social identity, this communication is known as *Impressions Management* (Jones and Pittman, 1982; Goffman, 1990). This is the process of putting self on display. For this thesis, it is the consumer social identity in action and consumers can vary in terms of their ability to control their self-presentation. *Impressions Management* involves communicating the
consumer social identity as the consumers purchase products that represent them. Section 2.4.2 contains a discussion of Impressions Management. The consumer is able to use products as part of their Impressions Management because of the symbolic and social meaning of those products.

The product’s symbolic and social meaning is important for consumers, but in order to develop Purchase Intentions the product needs to match their self-image too. Choosing products that are congruent with the consumer’s self-image can help to explain the consumer’s social identity (Grubb and Grathwohl, 1969; Solomon, 1983; Sirgy et al., 1997) because the consumer believes that the product can communicate their self-identity to others. In this way, the symbolic and social meaning of the product is used by the consumer to place themselves in the social context. For example, Rolls Royce automobiles have a symbolic meaning that can communicate an image for the owners of a Rolls Royce. For self-image congruence the product has meaning for the individual as well as its social meaning. Hence, consumers can use product congruence to match product with self and express their identity to others.

Consumers can also develop their understanding of their consumer social identity through social comparisons. This is a process of evaluation; of determining self in relation to others (Festinger, 1954; Ogden and Venkat, 2001). Social comparisons can be made by observing the consumption habits of others. That is, consumers compare themselves to others by looking at the products they own matched against the products that other people own. Thus, as the consumer evaluates products on a symbolic level, they are also evaluating the products by comparing their ownership of products on a social level. In other words, individuals evaluate products by drawing inferences about product ownership thereby giving products symbolic and social meaning. The more important the social context is for the consumer, the more they will rely on social comparisons to help make purchasing decisions. The premise of this doctoral research is that the consumer conducts much of this social comparison process through mental imagery.

In summary, imaginative interpretation creates meaning. This product meaning is evaluated using imagery that develops symbolic meaning and enables social comparison of products. This evaluation leads to the consumer presenting his/her consumer social identity through Purchase Intentions. Therefore, the purpose of this doctoral research is to
conceptualise the way consumers use imaginative interpretations to process product information to create, develop and communicate their consumer social identity in the IIP model.

2.2 Creating Meaning

2.2.1 Information Processing

Consumers create meaning by processing information. Information processing can be defined as the way individuals collect and use information (Tybout, Calder, and Sternthal, 1981; Bettman, Luce, and Payne, 1998). That is, information processing is concerned with the integration and combination of stimuli in order to create meaning. This thesis proposes that consumers use imagination to process information. Holistically, imagination is a construct that consists of perceptions, fantasies and memories. Consumers engage with these constructs as part of their information processing strategies. In this way, consumers make sense of product information so that they can make purchasing decisions.

Psychologists have studied information processing in an attempt to understand how individuals make decisions. A seminal work in psychology on information processing by Newell, Shaw and Simon (1958) was used by Bettman (1971) as a foundation for information processing in buyer behaviour. The focus of this section is to explain the key elements in the Newell et al. (1958) model and why it is important to this study. The model developed by Newell et al. (1958) is useful for this doctoral thesis because it conceptualised two vital aspects for the consumer decision making process: (a) the individual’s ability and (b) the demands of the situation and task. The Newell et al. model suggested that humans have a flexible approach to problem solving because circumstances are dynamic. In the Newell et al. (1958) model, the consumer’s ability to process information is considered in terms of a mechanistic element (what consumers already know) and an interpretative element (new information to be understood) and is dependent on language to provide associations and responses in order to create meaning. In other words, information processing is about what the individual already knows and what they need to know in order to make a decision. If the decision is based on what they know then
it is considered a simple problem. In this situation, the individual does not have to spend a long time processing in order to make a decision. On the other hand, complex situations have to be interpreted because they often contain new information. This increases the amount of time the consumer spends processing the information in order to make a decision. In summary, the Newell et al. (1958) model suggests that information processing is reliant on the individual’s ability and the situation.

How easily the consumer processes information can depend on the type of information presented to them. Newell et al. (1958) argued that information can exist on more than one structural level. That is, some information is literal (concrete) and some information is symbolic (abstract). Concrete and abstract information affect the way products can be understood (Newell and Simon, 1972) because concrete information can be processed mechanically (something they already know), whereas, abstract information which is symbolic requires more interpretation. A concrete concept can be defined as an idea that directly explains the product in an unambiguous way (Johnson and Fornell, 1987). For example, a concrete concept is a table because regardless of its design a table is explained by its function. Jones (1999) argued that abstract concepts, on the other hand, have multiple pieces of information that must be processed in order to understand the product. An abstract concept may include ideas such as fashionable. Fashionable is an abstract concept because it can be interpreted in more than one way. Fashionable may be interpreted as being in style or modern or popular or all three simultaneously. This distinction between types of information is important for this doctoral research because it can indicate the amount of time the consumer needs to spend processing information in order to make a decision.

In conclusion, the information processing model presented by Newell, Simon and Shaw (1958) argued that the way individuals solve problems is determined by the situation, the individual and the structure of the information. The information the consumer already knows is processed mechanically without thinking. New information can require deeper processing and is part of the consumer’s interpretation. The implication of the Newell et al. (1958) model for this doctoral research is that the interpretation of products on symbolic and social levels is dependent on the consumer’s ability to understand. The next section is a review of buyer behaviour theory of information processing. In particular, the
next section demonstrates the evolution of Newell et al.’s (1958) psychological theory within marketing theory.

2.2.2 Buyer Behaviour Information Processing Models

Buyer behaviour theorists have attempted to understand the consumer process of information processing by modelling the influences on decision making. Four models are seminal to buyer behaviour and outline the fundamentals of the consumer decision making process: Nicosia (1966), Howard and Sheth (1969), Bettman (1971) and Engel, Kollat and Blackwell (1973). These models attempt to encompass as many aspects of the consumer decision process as possible. Overall, these models have two central themes, namely information processing and evaluation (Markin, 1980). Information processing is concerned with creating understanding. Once the consumer understands the products they can then evaluate the product with alternative products. Consumer evaluations can be based on which products have meaning for them. While the seminal models differ in how the individual assesses information and evaluates products, they all attempt to map the consumer’s process of creating and developing meaning in order to make purchasing decisions.

The Nicosia (1966) model focused on the relationship between the organisation and the consumer. The model consists of a four field flow chart: organisational marketing, consumer’s predispositions, purchase, and feedback. Each field represents part of the process that explains the relationship between the consumer and the organisation. In summary, the relationship between the consumer and the organisation depends on the marketing message and the individual consumer needs. Therefore, Nicosia (1966) placed emphasis on the message, including the way a firm frames the message and how the consumer perceives the message. The message from the company depends on the media type, the context and the content. For example, the Nicosia model recognised a difference between advertising on radio, in the middle of a drama with a comedy advertisement and placing a message on a billboard. This distinction highlights the importance of the marketing efforts of the organisation on the decision making process. This model implies that information processing is developed through communication and relationship building.
Academic interpretation of Nicosia’s model indicates that the model has three main aspects. First, Bettman and Jones (1982) argued that the Nicosia (1966) model attempted to measure a dynamic consumer decision process. In other words, the model was concerned with the interaction of the consumer and the organisation and how that interaction changed over time. Second, Mason (2001) argued that the Nicosia (1966) model highlighted motivation, attitudes and experience as important influences on the decision making process. This indicates that internal processes are a vital aspect of decision making for the consumer. Finally, in contrast to other large decision making models, Nicosia emphasises the process of decision making, not purchase and repurchase (Lunn, 1974). This suggests that the ultimate goal of the Nicosia model was not to predict purchase, but to explain how the consumer goes through the stages leading up to the purchase. This implies that understanding how the consumer gets to the final point (purchase) is more important to the consumer than the purchase itself.

Unlike the Nicosia model with its emphasis on the relationship between the organisation and the consumer, the Howard and Sheth (1969) model of decision making attempts to explain the influence of external factors on two internal constructs: learning and perception.

The first construct, learning, is the process by which the consumer evaluates products based on past experiences. Howard and Sheth (1969) argued that these learning experiences consist of brand comprehension, choice criteria, satisfaction, confidence, motives, intentions and attitudes. For example, a consumer learns about a product and makes the decision to purchase it again if they have been satisfied with the performance of the product. This information processing style suggests that the consumer will use what they have learnt from past experiences with a product in the decision process.
The second construct of perceptions in the Howard and Sheth (1969) model includes the elements of attention, bias, stimulus ambiguity and search (looking for information). That is, the consumer can distort information which will influence which products are chosen based on their perceptions. For example, a consumer who is interested in cars will seek out information about cars and adapt new information to conform to their understanding of cars. This implies that the consumer’s perception process controls the information that the consumer acquires about the product.

The Howard and Sheth (1969) model suggests that learning and perception work in tandem to control the process of decision making because the consumer perceives and learns product information before they make product choices. However, Howard and Sheth (1969) argued that both the perception and learning constructs can be affected by external factors such as social class. Thus, as the consumer perceives and learns new information about the product they also process information that they learn from other people.

Robertson’s (1974) critique of the Howard and Sheth (1969) model indicated that it is comprehensive; that the model has covered many of the variables that affect consumer decision making. However, in practice it has proven difficult to model these elements and show how they interact with each in order for the consumer to make a decision. Early attempts to test the model have found it to be difficult to model statistically and the constructs lacked reliability (Farley and Ring, 1974).

A third seminal decision making process model is that of Engel, Kollat and Blackwell (1973). This model highlighted information processing through a central processing system called the *central control unit*. Within this unit are fundamental thinking processes including memory, evaluation criteria, attitudes and personality. This unit also has a filter system that can help to control the flow of information by stopping irrelevant information. The filtering process occurs before the consumer evaluates the product information, thus reducing the number of products the consumer has to consider. The central control unit in the Engel *et al.* model suggests that these cognitive processes create meaning for the consumer so that they can proceed with the decision making process. This is very similar to the concept of the conceptual blend. Another implication of the central control unit is that the consumer has already formed meaning about his/her product choices prior to the
recognition of need. That is, the consumer has processed the information regarding the brands before he/she knew that they needed or wanted the product.

A key component of the Engel et al. (1973) model of decision making is the procedural stages of problem recognition, information search, evaluation of alternatives, purchase and outcomes. The Engel et al.’s (1973) model stages have been accepted as a general template for the consumer decision making process by many researchers because of its simplicity and longevity (Fletcher, 1987; Percy et al., 2001). Some of the stages of the decision making model can be skipped depending on the level of purchase involvement (Sheth and Raju, 1974). For instance, for high involvement decisions the consumer will proceed through every stage. For low involvement or habitual decisions consumers can skip or limit the stages of information search, evaluation and post-purchase because the consumer is more familiar with the product. Even though there is flexibility with the Engel et al. (1973) model, it is still presented as a linear process for the consumer to follow in terms of making a consistent and rational decision. However, consumers do not always act in a rational or consistent manner (Holbrook and Hirschman, 1982). This suggests that there is a need for other information processing models such as the Imaginative Interpretation Processing Model (IIP) presented in this doctoral research.

The seminal models are not without their weaknesses. In summary, the criticisms of the larger decision models of Nicosia (1966), Howard and Sheth (1969) and Engel et al. (1973) include their unwielding nature that makes them difficult to validate (Kassarjian, 1982; Ekstrom, 2003) and their reliance on rational thinking (Erasmus et al., 2001). In addition, the larger decision models are too heterogeneous and generalised to easily and conclusively measure the consumer decision making process (Bettman and Jones, 1972; Kassarjian, 1982; Simonson et al., 2001). Olshavsky and Granbois (1979) and Hansen (2005) argued that models such as Engel et al. (1973) and the Howard and Sheth (1969) can only explain certain types of consumer processes. This implies that despite the seminal models’ holistic nature, the models still do not completely explain the decision making process. Ultimately, the criticisms of the early models suggest that while they are comprehensive and identify the influences on consumers they do not provide complete explanations of consumer processes.
The larger decision making models were not the only early attempts to model consumer processes. The general decision and choice model created by Bettman (1971) integrated Newell, Shaw and Simon’s (1958) psychological theory of human problem solving, as previously discussed, into the marketing discipline. Bettman (1971) argued that consumers process information using two elements: consistency cues, which is similar to past experiences, and congruity which is similarity to self, to make decisions as simple as possible. In other words, the consumer looks for things they have experienced before and that match his/her idea of self in order to process the information. For example, if a consumer is planning to buy a new shirt they will consider the shirt type in relation to other shirts they have owned and if the shirt suits their style. In this way, they process information about the shirt from their experiences and self-identity. The Bettman (1971) model represented the decision making process as a combination of experiences and consumer construction and has been adopted by many researchers (Bettman and Zins, 1977; Beach, 1993; Hoffman, Kumar, and Novak, 2003). Consequently, constructed information processing is contextually driven rather than linear as seen in the Engel et al. (1973) model. That is, as consumers approach purchasing problems they engage with multiple ideas simultaneously rather than step by step. This suggests that the consumer could be considering the problem holistically as they evaluate the alternatives and search for new information rather than using the linear model of recognising a need, searching out options, evaluating the options and then purchasing.

Punj and Stewart’s (1983) review of decision making literature developed the argument that there needs to be an interactive framework to explain consumer information processing. The framework suggested by Punj and Stewart (1983) describes the individual and the task as a relationship network, acknowledging that decision making is a combination of task and individual not just determined by the characteristics of the individual or the characteristics of the situation. Punj and Stewart (1983) removed the distinction between the constructed and existing heuristic concepts, making the process more personal and flexible. In other words, all consumer decisions are based on both the situation and their own knowledge rather than one or the other. This implies that information processing is based around the interaction between the consumer’s understanding and the situation. To create meaning the consumer has to interpret and combine all the information. This further suggests that information processing is continuous as the consumer engages in his/her environment. However, Punj and Stewart
(1983) did not fully explain how the consumer interprets all this information other than noting that the process is flexible. This suggests there is a gap in literature regarding the process of combining existing and new information. In terms of this doctoral thesis, it is proposed that the consumer engages their imagination to interpret information in an interactive and flexible way. This interpretation process aids in the decision making process because it draws on multiple sources of knowledge in the consumer’s mind. In this way, the imagination helps the consumer to process new information.

In summary, the seminal models have the same purpose: to explain the process of product choice. The models are holistic and comprehensive because they incorporate the external and internal influences on decision making, such as the social context. In this way, the seminal models aim to dynamically model the purchasing environment (Bettman and Jones, 1972). The models highlight that consumer decision making does not occur in a void, but is subject to internal and external influences. The models also suggest that consumers filter information before processing and evaluating products. Each of the decision models attempts to encompass the human capacity to incorporate information. Finally, the models demonstrate the procedural nature of decision making implying that consumers follow strategies and patterns when making product choices.

For this doctoral research, the interactive and flexible combination of existing and constructed information is important because this process has to be controlled by some mechanism within the individual’s mind. However, the literature has not clearly explained that mechanism. This suggests there is a gap in the theoretical explanation of information processing. To fill this gap this doctoral thesis proposes that it is through the conceptual blend in the imagination that new and old information are combined. The thesis further proposes that consumers use this combined information in order to create mental images to evaluate the suitability of products in order to make a purchasing decision.

The next section will focus on information processing from the perspective of imagination; that is, the way imagination helps the consumer to create meaning from product information. It was argued above that information processing is a series of interpretations and experiences. The next section discusses how the imagination interprets information from the external world to create meaning. Imaginative interpretation as an information processing style is the focus of the thesis.
2.2.3 Imagination in information processing—The imaginative interpretation

Imagination is an important element in multiple fields including art, literature (Stevenson, 2003), psychology (Kosslyn et al., 2001) and philosophy (Hobbes, 1957; Sartre, 1972; Kant, 1978). This thesis is proposing that consumers can use imagination in their purchasing decisions just as they can use it in their creative endeavours to create product meaning. The process of imagination that will be discussed in the following section is an interpretative blend of perceptions, memory and fantasy.

Imagination can be defined on several dimensions. First, imagination can be conceived as thinking of objects that exist, have existed in the past or may come to exist. Second, imagination can involve thinking of completely fictitious concepts, objects or events. Third, imagination can be used to create mental images and artistic products. Finally, the imagination can be used to understand the symbolic meanings of concepts, objects and events (Stevenson, 2003). In other words, imagination interacts with the real world and also constructs images to help create meaning for the individual. These dimensions of imagination intertwine to explain the concept of imagination and also the way individuals use imagination. In Section 2.2.2, this doctoral research has argued that traditional models of consumer behaviour do not fully explain the decisions making process. Moreover, the proposal of this doctoral research is that imaginative interpretation is an information processing tool that consumers can use to understand products.

Various psychologists have proposed that imagination is a primary internal process. Casey (1976) argued that imagination is essential to the mind and to identity. The individual understands who they are because of their imagination. Similarly, Fauconnier and Turner (2003) argued that imagination is the foundation for all actions in the mind. Imagination enables all mental activities to operate. Therefore, imagination has a strong position in mental processes that connect the individual to the world. This implies that it is difficult for the individual to separate imaginative processes from other mental activities. As individuals process product information they are engaging with their imagination.
Consumer behaviour research has investigated the way imagination influences projection, behaviour and understanding. Hirschman’s (1983) qualitative study examined the role of projection which engaged the consumer’s fantasy and perceptions. Hirschman (1983) argued that consumers can adopt behaviour and engage with products that suit their imagined roles. A more recent qualitative study by Martin (2004) also argued that through imagination consumers create strategies to develop meaning. That is, the consumer can use imagination to develop and infer knowledge. Martin (2004) suggested that the consumer can then use mental imagery to interact with products prior to purchase. Imagination also influences the consumer’s evaluation process for products (Zhao, Hoeffler, and Dahl, 2009). Zhao et al. (2009) found that using imagination helped consumers to evaluate products more than just using memory based visualisation. This suggests that the imagination process is more than just memory and mental images. These studies explored the usefulness of imagination in the consumer decision process. Imagination enables the consumer to create scenarios through a combination of perception and fantasy. Individuals can imagine solutions for their consumer problems. Furthermore, imagination enables the consumers to put in product details to make the imagined scenario realistic.

Imagination can also be used by the consumer to develop consumer identity. For example, Schau (2000) conceptualised the relationship between the use of the imagination and product congruency in order to express identity. In other words, consumers can use their imagination to create an image of self and match up the products that would help project that identity. For instance, the consumer can imagine they want to be fashionable and then imagine the style of clothes they would need to wear in order to be seen as fashionable. Schau’s (2000) conceptual paper provides a theoretical connection between the individual imagination and consumer identity through purchasing. However, it does not focus on the social implications of product choices.

Because social interaction is important in the process of identity creation, it is necessary to explore how consumers use imagination to place themselves in the social context. Research has reviewed variables such as wishing and reflection in comparison to others (Ogden and Venkat, 2001). In this way, the individual uses his/her imagination to compare themselves to others to develop their understanding of the social perspective. This implies, as seen in the IIP model, that the social context interacts with the individual’s imagination to create knowledge.
Finally, the individual’s understanding of themselves and the world can be developed through imagination (Martin and Sugarman, 2001). Moreover, Woodward (2003, p. 393) argued that “dreaming and fantasising are important for it is in the imagined domain that people come to define and build up their notion of the ideal”. Thus, the imaginative interpretative process enables comparisons and ideals to be created. For instance, the individual uses fantasy and social interactions to understand his/her friends. The individual compares their appearance and talents and then uses this comparison to position themselves in their social group. Their imagination helps them to make inferences about other people as part of this comparison process.

In conclusion, imagination helps the individual to understand the world through interpretation. In consumer behaviour terms, imagination helps the individual to develop an understanding of the implications of product purchases on consumer social identity. Previous studies in this area have attempted to conceptualise the role of imagination in consumer decision making processes. Early researchers have also developed theoretical underpinnings through qualitative research. However, previous research has not fully developed the relationship between the consumer’s use of imagery— which is developed through imaginative interpretations— and Purchase Intentions. Thus, this doctoral research is an attempt to empirically determine the relationship between imagery and purchase.

The next section introduces the concept of conceptual blending as an explanation of the process of imagination. The premise of this doctoral research is that conceptual blending enables the consumer to combine information and create knowledge.

**Conceptual blending creates meaning in imaginative interpretation**

Imagination creates meaning through the integration of ideas. That is, by combining existing ideas together the imagination can create new ideas. Philosophers have created various theories of this creative action of the imagination. Hobbes (1957, p6) defined imagination in terms of a combination of perception and memory called *compounded imagination*. The essence of this concept is that imagination is capable of mixing together experiences to create things that do not exist in a communal reality. Sartre (1972) extended
Hobbes’ concept of this combination process of the imagination through his belief that individuals have the ability to perform *imagined synthesis* (Sartre 1972, p31). In other words, we can project mental images onto actual perceptions to create new concepts. This is more than just mixing the ideas together because it influences interactions with the world. Finally, Fauconnier and Turner (2003) created a similar theory called *conceptual blending*. Conceptual blending involves cognitive thought – it enables an individual to conceive of things that do not exist and things that do and to merge these ideas together to form new meaning. Conceptual blending combines, fantasy, perceptions and memories to create an interactive and interpretative imagination. This implies that the imagination can use this combination to create meaning.

In psychology, the school of *associative interpretation* is founded on the creative concept, a process that requires the combination of associative elements to form new and useful ideas (Mednick, 1962). In other words, just like the philosophical perspective, it is the combination of information that can form new knowledge. This can be achieved through *serendipity* (happy chance), *similarity* (finding patterns) and *mediation* (reflective negotiation).

The conceptual blending process is an extension of seminal buyer behaviour theory on information processing. As argued in Section 2.2.2, Bettman’s (1971) model suggested that consumers determine if they can make a decision based on the use of new or existing information. However, he argued that consumers use one or the other process. In contrast, conceptual blend proponents argue that the conceptual blend operates to connect existing information and new information together. This integration process still needs further empirical research in order to explain how the information process becomes holistic (Hall and Porter, 2004). Thus, the consumer is processing information by combining what they experience, what they remember and what they fantasise about. In this way, the consumer is using new and old information in tandem rather than one or the other. This is the foundation of the Imaginative Interpretation Processing Model (IIP).

The following sections explore the fundamental concepts of conceptual blending that were identified by the previously discussed literature: *perception, fantasy* and *memory*. The proposition of this doctoral research is that the three constructs work in tandem in the conceptual blend process thereby creating meaning for the consumer.
Perceptions in the imaginative interpretation process

Perceptions can be defined as a series of sequential impressions of external stimuli (Hume, 1957). Individuals see the world as a procession of images through our physical senses: touch, sight, hearing, taste, and smell. Similarly, psychologists such as Kosslyn, Ganis and Thompson (2001) defined perception as a direct interaction between senses and the world. Perception is the process of gathering information from the outside world.

These definitions of perception imply that without perception individuals could not experience the world. But is perception the process of gathering information and creating meaning or does imagination create meaning by interpreting the information received from the senses? Hume (1957) argued that imagination helps to interpret and maintain consistency. For example, imagination enables the individual to believe the tree which he/she saw yesterday is the same tree which they perceive again the next day. Hume maintained that the imagination facilitates the mental process that categorises information. Without imagination the perceptions would not be processed and stored in the memory. This suggests that imagination is a link between the process of perception and memory.

Kant (1978) shared a similar view to Hume when he argued that imagination is the interpretation of perceptions. The imagination takes the perceptual information and creates meaning for the individual by connecting new perceptions with older ideas. For example, ice-cream is sweet in comparison to other tastes the consumer has experienced. To create meaning from new information the imagination acts as a conduit between the physical sensation of taste and the mind. This implies that imagination enables the consumer to categorise their experiences.

More contemporary philosophy scholars also support the Hume and Kantian views that imagination is a force that operates between the individual’s mind and the real world. For example, Klinger (1981) recognised that perceptions are meaningless without central brain processes like imagination. Pendlebury (1996) supported this contention and argued that the perception would not function properly without connection to the imagination. That is, the senses would still gather information, but it would not be turned into knowledge or
have meaning without the information being processed through imagination. The perception of a tree only makes sense when the imagination creates a mental image of the tree and identifies it, in the mind, as a tree.

In addition to this philosophical theorising, there are empirical psychological studies. For instance, psychologists Kosslyn, Ganis and Thompson (2001) provided empirical evidence using brain imaging technology that suggested imagery and perception shared the same neurological mechanisms. They found that the same areas of the brain were activated when the individuals were asked to look at the object as when they were asked to create a mental image of the object. This implied that these two cognitive processes are linked in the brain.

A contrary view is offered by phenomenologists who argued that there is no force between the individual and his/her perception of reality (Warnock, 1976). Warnock conjectured that perceptions are used to gather and interpret meaning without any other mental processes. Further, phenomenologists have argued that the imagination’s ability to replicate reality and create images did not imply that it interpreted reality (Sartre 1972). For instance, Sartre (1972) contended that images created in the imagination are not explaining reality; the perceptions have already interpreted the objects. The imagination merely recreates what the mind already understands. This implies that imagination does not interpret product information at all. Its role is to recreate images that already have meaning in the mind.

In consumer research, perceptions have been examined in terms of their ability to determine Purchase Intentions based on perceptual focus. Recent studies have found that perceptual shifts can help the consumer make more intuitive decisions; by relying on their imagination they just seem to know the answer to their consumer problem (Hamilton, Jiewen, and Chernov, 2007; Hoegg and Alba, 2007). This suggests that consumers are able to incorporate more information processing about the product by just sensing the products more holistically. For instance, Hoegg and Alba (2007) focused on the perceptual information supplied by taste as a way to make product choices. The consumer’s taste perceptions worked to overcome the more common perceptual beliefs that were formed based on packaging and brand names. Thus, perceptions for consumers helps them to interact with the products using more than one sense, this in turn gives them a better understanding of the product.
Following this logic it can be assumed that perception should be relatively similar for everyone if the perception is recording and interpreting stimuli from the physical senses. However, this argument fails to explain different perceptions of single stimuli or the failure of perceptions when encountering perceptual illusion when the real images are present, but misinterpreted (Block and Yuker, 1989). Perceptual illusions occur when there is insufficient perceptual information and the mind interprets the situation. In this way, perception, by itself, cannot explain clearly what the individual is experiencing. Gregory Cialdini and Carpenter (1982) argued that at the point of illusion the imagination can create alternative interpretations of perceptual images. This implies that imagination can create a mental explanation of the perception by offering interpretations of the phenomena.

To conclude, the central argument in this doctoral research is that perceptions function as a conduit between the real world and the consumer’s mind. Perceptions are pathways between the senses and the creation of meaning. However, perceptions are not sufficient to create meaning. To this end, perceptions form one aspect of the imaginative interpretation process, but do not give a complete picture. The next section introduces the second aspect of the imaginative interpretation process that is integral to the IIP model — fantasy.

*Engagement with Fantasy in the imaginative interpretation process*

The fantasy construct in imagination empowers people “to imaginatively play with alternatives of the real world” (Person, 2006, p. 665). In other words, fantasy constitutes things that do not yet exist. Fantasy can also be defined as the link between perceptions and creation (Zabriskie, 2004); to make previously unknown intangible things real. Fantasy engages in information processing by enabling the individual to fill gaps in knowledge.

Fantasy is also important in the imagination process because it enables the creation of images that have not been developed from perceptions. This is, as Sartre (1972) argued, fantasy gives the individual unique freedom. Fantasy frees the individual from their time and place. Fantasy is escapism. For example, it is through fantasy that individuals can
indulge desires such as *what if I won the lottery*. Winning the lottery is the fantasy; the purchase of products is perceptually real.

However, because of the influence of perception in imagination it has been argued that perceptions limit fantasy. Phenomenologist suggest that imagination cannot create new ideas; it can only manipulate impressions it has received from the external world (Warnock, 1976). Images that are based on perceptions will generally be restricted by initial impressions. For example, to imagine a cow the individual must see a cow. Then, that mental image can be altered in terms of size and colour and even shape, but if the image is changed too radically, it ceases to be a cow. The perceptual image of the cow restricts all fantasy of what a cow should be and if the image is distorted it ceases to be a cow.

Fantasy can be used in problem solving. The process of mental trial and error allows the mind to develop an understanding of the situation and alternative responses (Miller, Galanter, and Pribram, 1960; Hoch and Kunreuther, 2001). The imagination uses the perceived information to set a situation and then engages in fantasy to fill in the gaps and finish the concept. For example, an individual can imagine his/her self at a party using perceptual information such as who might attend and then engage in fantasy to create the conversations. In this way, fantasy can help the individual solve the problems of interacting with others.

From a marketing perspective, fantasy helps to clarify relationships between the consumer and a product. Fantasy helps the individual to understand how they feel about a product. For example, Levy (1985) argued that dreaming makes it possible for the consumer to engage in a personal and creative response to a product. Furthermore, Levy (1985) has suggested that different products are evoked differently in fantasy. To illustrate, Levy (1985) suggested that chocolate dreams often revolve around quantity; whereas wine dreams are more sophisticated and elegant with the wine used as a catalyst for other actions such as relationship development. Similarly, Holbrook and Hirschman (1982) argued that fantasy can be used by the consumers to engage in product evaluations because it enables the consumer to enjoy the evaluation process. In other words, people can have fun with the products using fantasy. The consumer develops a relationship with the product that is fun, thereby increasing the likelihood that the consumer will feel positive.
emotions towards the product. This implies that consumers use fantasy to understand how they feel about the product even without purchase because fantasy enables them to have a virtual relationship.

To summarise, fantasy is an element of imagination that allows the consumer freedom to interact with products with or without personal knowledge. However, this freedom can be restricted by perceptual information. Fantasy can provide more information than the original perceptions by creating mental solutions and situations. Consumers can use fantasy to explore their relationship with products. In this way, fantasy helps the imagination function as an interpretative tool; processing and evaluating information as part of the decision making process. Ultimately, fantasy enables the consumer to interact with the products even without personal experience. But not everything in a consumer’s mind is based on fantasy. The next section is focused on the third aspect of the imaginative interpretation process— memory.

Memory in the imaginative interpretation process

Memory is defined as a system that can retrieve, store and manipulate information (Wickelgren, 1981; Nurius, 1993). That is, memory is a process of maintaining information in the mind for the consumer’s use. In this way, memory is a connector between perceptions and fantasy because it preserves the information needed for the perception and fantasy to continue to function.

A principal architect of memory theory was Bartlett (1932) who argued that memory was attributed to the amount of effort that was required to recall information. Bartlett was best known for his adoption of the idea of mental schema. The schema is a way of reconstructing a situation which provides enough familiar information for the individual to remember (Markus and Sentis, 1982). In other words, the schema is a blueprint of knowledge that the individual could use to assist in remembering new information. The individual will use his/her mental schema to create connections between ideas in order to remember things. For example, an individual can connect the familiar concept of skiing to the new concept of snowboarding in order to remember the idea of snowboarding using their schema. The concept of schema has been widely studied in psychology (Markus,
These studies have suggested that the role of the schema is to connect and maintain information in the mind for the individual, and have argued that each schema is unique because it contains memories that are significant to the individual.

A structural component of memory is the division of short term (working) and long term memory (Parkin and Hunkin, 2001). This suggests that some information is retained in the active area of the memory and other information is stored for use later. Short term memory, also known as a working memory, involves information that is active in the consumer’s mind. This process occurs when the individual is performing an action in his/her mind (Leahy and Sweller, 2004). That is, memory is acting as the central arena combining perceptions and fantasy and previous experiences in order to perform a task in the mind. This implies that memory must be active for the conceptual blend to occur otherwise the individual cannot remember how to perform the action. For instance, working memory is active during mental rehearsal or imaginative practise because the consumer needs to remember details to make this process realistic.

Another component of memory is the long term process. Researchers suggest that the long term memory process has two parts: (a) autobiographical (declarative) memory which is ‘knowing about’ and (b) procedural memory which is ‘knowing how’ (Nurius, 1993; Person, 2006). The first component of the long term memory is autobiographical. Autobiographical memory maintains information about self (Person 2006). It is through autobiographical (declarative) memory that the consumer can maintain a consistent self-identity, relationships and personalised history. This information is stored in the long term memory and can be retrieved in order for the individual to present a stable identity. Autobiographical memories can also connect products to emotions for the individual (Baumgartner, Sujan, and Bettman, 1992). This connection enables consumers to evaluate products on a personal level thereby making the products more significant. This suggests that emotions have an influence on the way the long term memory stores information.

The second component of the long term memory is procedural. Unlike autobiographical memory which is about self, procedural memory is often described metaphorically in terms of body memory (Person 2006). That is, the individual’s body simply remembers how to do something. In this way, procedural memory is at times unconscious knowledge (Nurius
This implies that procedural actions cannot always be explained because the individual merely acts the way they always act without thinking. In terms of purchases, this implies that consumers simply remember the products they want without having to think or make a choice.

Even though memory can provide stability and unconsciously provide reasons for actions, memory can also be problematic. For instance, memory can fail, be biased (Schacter, 2001; Percy, 2003) and can change over time with the introduction of new information (Arbuthnott, 2005; Lyle and Johnson, 2006; Person, 2006). Moreover, memory can maintain false ideas. The creation of false memories can be the result of a process called imagination inflation (Loftus, 1997; Lampinen, O'Degard, and Bullington, 2003; Stark and Perfect, 2006). Imagination inflation occurs when a fake event is confused with a real event in the memory structure. When this happens the individual is unable to identify the source of information and thus believes the fake memory to be real. The creation of false memories suggests a close connection between memory and fantasy as elements of imagination because in the individual’s mind they become indistinguishable. An empirical attempt using memory questionnaires to identify false and real memories met with limited support (Ost et al., 2002). The reported event the Ost et al. (2002) study referred to was the actual death of Diana, Princess of Wales. The Ost et al. (2002) study found that individuals when asked if they remembered certain details of the events, reported with confidence that they did. However, those details were faked by the researchers. This implies that individuals are unable to always reflect on their memory and retrieve true memories. This further provides evidence of the conceptual blend, as consumers’ responses indicated that they had mixed together information they remembered, their perceptions of the news story from the researchers and information that did not exist.

The conceptual blend of the constructs of perception, fantasy and memory operate together to help the consumer interpret and process information. In terms of this thesis, memory maintains and creates a structure for information and connects the perceptions and fantasy. Perceptions are able to help individuals realise the difference between false and real memories. Fantasy is able to help the consumer to make simple connections in the mind by filling in the gaps in information.
In summary, the theoretical foundations presented in Section 2.2.3 have several implications for this doctoral research. First, this thesis has presented the argument that consumers process information holistically in the conceptual blend. In this way, the conceptual blend creates knowledge. This suggests that consumers interpret information through more than just perceptions, as suggested by the seminal information processing models of Nicosia (1966), Howard and Sheth (1969) and Engel et al. (1973). In the Imaginative Interpretation Processing Model (IIP) created for this doctoral research, the perceptions are only one source of information.

Second, Bettman’s (1971) processing model contains both the concepts of constructed and existing heuristics, suggesting that consumers use one or the other to process information. Even though Punj and Stewart (1983) attempted to make the process more interactive and flexible it is still unclear how the consumer combines new and existing information to create knowledge in order to make a decision. In this doctoral research, the concept of conceptual blending is proposed as a method for connecting constructed and existing heuristics together. In this way, the consumer can use current experiences, past experiences and their intangible fantasies to help them process information. This conceptual blend enables the consumer to use multiple sources of information to create a holistic imaginative interpretation of the situation.

The next section focuses on the way consumer develop meaning as part of processing information.

### 2.3 Developing Meaning

After the consumer has created meaning about products, the next step is to develop meaning through evaluations. The focus of this research is to explore how the consumer uses imagery as an evaluation tool. This next section contains a review of the process of evaluation in order to develop meaning.

#### 2.3.1 Evaluation strategies in buyer behaviour
The evaluation of alternatives is highlighted in the seminal information processing models because the evaluation will determine whether the consumer continues on with the decision making process (Bettman, 1971; Engel et al., 1973; Dhar and Nowlis, 2004). Consumers’ evaluation of products can result in purchase or non purchase. Therefore, understanding how consumers evaluate products is essential to the decision process.

Evaluation of an alternative can be defined as a judgment of the goodness or badness of the alternative (Bettman et al. 1998). This definition implies that the value of the product is in its general qualities. For instance, the criterion for evaluation could include its appearance, structure, features and usefulness. Evaluation can also be based on the congruity between the consumer’s self-identity and the product (Sirgy, 1984). In other words, consumers evaluate products based on comparisons between the product and themselves. Products that match the consumer’s self-identity are evaluated favourably. This means that the evaluation is not just based on the features of the product. The product expresses something about the consumer. Thus, consumers evaluate products by considering which products are right for their overall needs. This suggests that evaluating products can be a complex process for consumers as they have to determine if the product has symbolic meaning that can enhance their identity or if the product’s functional aspects are most important in assessing its value.

Because evaluation can be a difficult process, consumers develop techniques to help reduce the complexity. For instance, consumers may choose to only evaluate the products and brands they know. The products the consumer knows are stored as consideration or evoked sets. These consideration sets are the products that the consumer likes and has retained in his/her memory (Howard and Sheth, 1969; Crowley and Williams, 1991). The consumer uses these sets whilst making decisions in order to reduce the amount of time spent on the purchase decision. For example, a consumer will store several brands of soft drink in his/her consideration set such as Coca Cola, Schweppes and Kirks. The consumer will then pick a brand from this set when they need to purchase a soft drink. The consideration set is therefore considered a pre-requisite for evaluation (Fletcher, 1987; Paulssen and Bagozzi, 2005) because a consumer cannot evaluate a product that they do not know about.
Once the consumer knows about the product they still have to determine how involved they need to be in order to make a purchase. Research into purchase involvement has suggested there is a continuum ranging from virtually no involvement, to low or habitual purchases, to high involvement or extended decision making (Howard and Sheth, 1969; Olshavsky and Granbois, 1979). Habitual purchases are routine and can be made quickly where the consumer has a preferred brand for products such as milk and bread. On the other hand, extended decision making can take a longer time and usually involves multiple acts of evaluation and post evaluation because the consumer is less familiar with the product or brand choices. Therefore, purchase involvement can affect the amount of time the consumer spends evaluating products.

Another approach consumers use to reduce the complexity of decision making is to implement decision rules. Common decision rules that consumers use include conjunctive, disjunctive, elimination-by-aspects, lexicographic and compensatory rules (Bettman et al., 1998). These decision rules are outlined in Table 2.1 Each rule is designed to help reduce the number of alternatives that the consumer must choose between. This helps to make the decision making process faster for the consumer.
Table 2.1: Common Decision Rules

<table>
<thead>
<tr>
<th>Decision Rule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conjunctive</td>
<td>A minimum standard is set and products below that standard are rejected.</td>
</tr>
<tr>
<td>Disjunctive</td>
<td>A satisfactory standard is set and products that are above the standard are considered.</td>
</tr>
<tr>
<td>Elimination-by-aspects</td>
<td>Rank evaluation criteria in order of importance and then set a satisfactory standard. This excludes all products that fall below on any criterion by eliminating each product if its features fall below the criterion</td>
</tr>
<tr>
<td>Lexicographic</td>
<td>Rank evaluation criteria and then choose the product with the highest score for the most important criterion.</td>
</tr>
<tr>
<td>Compensatory</td>
<td>The sum of the importance weight of each of the product’s features times quality given the features found in the product. The product with the highest overall score is selected.</td>
</tr>
</tbody>
</table>


Consumers will select a decision rule that best suits the problem they are trying to solve. Wahlers’s (1982) research on various decision rules found that for more complicated product evaluations more complex decision rules were applied. These decision rules are closely associated with the level of purchase involvement. That is, choosing a low involvement product may not require as complex a decision rule compared to when the consumer is choosing a high involvement product. For example, a consumer may use a
A disjunctive decision rule when purchasing a T-shirt, and the compensatory decision rule when purchasing a car.

In summary, consumers create evaluation strategies to help move through the decision process. Evaluating the alternatives can be a complex process for the consumer depending on the level of involvement in the product choice and the information processing pattern. Decision rules provide a consistent and rational approach to evaluation that consumers can use to reduce the amount of time spent considering products. However, the decision rules are merely one way of evaluating alternatives. The decisions rules are one way consumers evaluate products- however this is a rational approach and does not explicitly encompass the process of mental imagery. The theoretical premise of the conceptual model for this research is that consumers use their imagery to evaluate products. The summary of the rational approach to decision making helps to demonstrate the gap between traditional models of evaluation and the use of imagery.

As argued in Section 2.2.3 of this doctoral research, consumers interpret product information through the conceptual blend. The process of conceptual blending leads to the creation of mental images. The consumer can then use these mental images to evaluate products. Evaluation using mental imagery enables the consumers to engage with the decision rules using visualisations, which explains how the decision rules are processed in the consumer’s mind.

The following section contains a discussion of the concept of mental imagery and how the consumer can use mental imagery to develop meaning to evaluate products.

### 2.3.2 Images and Imagery to develop meaning

The main tenet of this doctoral research is that imagery is a tool used by the consumer to evaluate products. Furthermore, the thesis is that the images consumers create help them evaluate products by developing product symbolism and seeing themselves in relation to others. This section contains a review of imagery creation and its importance in the consumer decision making process. This section begins with a series of definitions that outline the various debates within imagery creation in the study of mental imagery.
Mental images, from a psychological perspective, can be defined as:

“the mental invention or re-creation of an experience that in at least some respects resembles the experiences of actually perceiving an object or an event, either in conjunction with or in the absence of direct sensory stimulation” (Finke, 1989, p. 2).

Finke’s (1989) definition implies that imagery relies on perceptions of actual events, but the individual can continue to create an image after the object is no longer present. It also suggests that the re-creation does not need to be an exact replication of the external object. Thus, imagery can involve the use of perceptual stimuli, but can also continue to maintain a mental picture in the absence of the external stimuli, thereby allowing the consumer to continue to evaluate a product even when they can no longer see the product before them. This means that imagery helps consumers to keep the idea of the product in their mind. This is an important aspect of mental imagery for this doctoral research because it demonstrates the versatility and capabilities of imagery in the evaluation process.

Mental imagery is a complex process; it is connected to perceptions and memory, creating what can be described as an inner world rather than merely static pictures (Neisser, 1976; Strosahl and Ascough, 1981). For instance, the inner world of mental imagery is like a 'choose your own adventure' movie rather than a photograph. This suggests that mental imagery is active and engages the consumer’s mind. Neisser (1976) argued that the inner world is developed from the combination of what the consumer has been exposed to and what they remember; but in contrast to Finke (1989) the mental image is not just a recreation, rather it is a process of representation. That is, the mental image is the consumer’s interpretation of an object or event. In this way, the mental image is an output of the conceptual blend of information as discussed in Section 2.2.3. The inner world contains meaning that the individual uses to explain his/her experiences in the external world. This suggests that the meaning from the inner world can be used by the individual as he/she interacts with others and makes product decisions.

Other cognitive psychology researchers have been explicit about the connection between the generation of images and conceptual blending using imaginative interpretation. Kosslyn et al. (2001, p.635) argued that mental images are formed when “perceptual
information is accessed from memory giving rise to the experience of seeing with the mind’s eye...they can also be created by combining and modifying stored perceptual information in novel ways”. In other words, past experiences help the individual to create a mental representation of an event, person or product. This representation is based on perceptions and memory, but can contain fantasy elements. For example, in order to create a mental image of their perfect car, the consumer blends together their experiences with cars and the mental creations of what the ideal car would be like. Thus, as the individual processes information, they generate a meaningful mental representation of the concept. To this end, the individual has used mental images to develop meaning.

Conversely, other researchers have argued that mental images are based on perceptual information to re-create and maintain the original stimuli in an identical format (Warnock, 1976; Nishizaka, 2003) as a form of categorisation. This argument implies that mental imagery is used to create images that are like the original perception and not interpretations created by the individual. Moreover, faithful re-creation of the object implies that the consumer did not engage in fantasy. Similarly, Pylyshyn (2002) argued that individuals can only create mental images from having knowledge of that image. In other words, without prior knowledge of an object, the individual cannot create a mental image of it. This suggests that mental imagery can be restricted to perceptual based knowledge which does not include fantasy. However, Neisser’s (1976) clinical tests on recall demonstrated that mental imagery is the combination of perceptions, fantasy and memories because the respondents described objects that had been seen as well as ones they had not seen. The experiment produced statistically significant results showing the complexity of imagery creation. Moreover, because technological and cultural advancement have changed the world through inventions, it seems logical to assume that people can create a mental image without having seen an original object to base the image on. For instance, the inventors of the microchip were not developing their ideas from perceptual inputs because there was no external equivalent prior to the object’s invention. This suggests that although perceptions are an integral component of mental images, they do not necessarily restrict the elements of memory and fantasy.
Using mental imagery to develop meaning and problem solving

Consumers can use a process of mental rehearsal to evaluate products and solve their consumer problems. Mental rehearsal enables the consumer to engage with a product even without the product being present and to create a purchasing plan without physical activity (Gregory et al., 1982; Marks, 1999; Sharps and Nunes, 2002; Escalas, 2004). Empirical qualitative results have suggested that mental rehearsal facilitates recall and performance in musicians (Holmes, 2005). That is, the musicians can hear the music in their head before they play the instrument, thus enabling them to know what it will sound like prior to performing. This implies that mental rehearsal of product ownership can make the process of evaluation more meaningful for consumers. Because they have practised owning or consuming the product, consumers know how it will feel. Thus, it is easier for the consumer to make choices.

In the consumer behaviour literature, the concept of mental rehearsal is called visualisation (Walker and Olson, 1994; Escalas, 2004). The visualisations of product, purchase and usage occur as consumption visions. That is, as discussed previously, the mental image is in the form of a movie rather than a photograph. Thus, the consumers can mentally rehearse the entire purchase and ownership scenario. Empirical studies of consumption visions by Unnava and Baunkrant (1991) and Phillips (1996) found that consumption visions of island holidays were enhanced by verbal and visual stimuli from advertisements and that this was significantly related to the intention to visit the island. Similarly, Escalas’s (2004) study supported the idea that imagery in these consumption visions can be so strong that consumers get lost in the story. In this way, the imagery becomes a persuasive and positive response to the product motivating them to purchase. These studies support the argument that consumers can use mental imagery to create mental plans relating to purchasing behaviour. Thus, as the consumer engages in consumption visions he/she is able to determine if they want to purchase the product. Moreover, as the consumer engages in imagery he/she may be overcome with the sensations that they already possesses the product which makes it easier for them to make the purchase decision when they come into physical contact with the product.
Consumer behaviourists have studied imagery in relation to imagery processing and advertising. MacInnis and Price (1987) found that imagery processing can make abstract concepts more concrete by creating a scenario that is specific to a product. For example, a consumer can be stimulated by an advertisement for fashion shoes to generate a mental image of themselves wearing new shoes. Imagery enables the consumer to understand the concept of the fashion shoes and see (visualise) if the shoes are suitable for them. Similarly, Bone and Ellen (1990) conducted a study on advertising and imagery in which they argued that imagery is related to behavioural intentions. In the study, consumers were stimulated by advertisements to create mental images. Bone and Ellen (1990) found that these images influenced the purchasing behaviour towards the products in the advertisement. For instance, when a consumer visualises themselves wearing the shoes then their intention to purchase the fashion shoes increased. Thompson and Hamilton (2005) have further developed the connection between advertisements and imagery. Their research suggested that imagery helps the consumer to evaluate comparative advertising because they can clearly see the two products in their mind. This implies that imagery is at the core of evaluation because the consumer can generate images of multiple products in order to choose between them. In this way, the consumer can create an image of an island holiday and a skiing holiday and decide which holiday would suit them. In summary, these studies have shown that consumers are stimulated by imagery in advertising to engage their own imagery to understand the meaning of the product and that this meaning can lead to purchase if the consumer feels a product suits their overall needs. These studies are important for this doctoral research because they have demonstrated that consumers are able to use imagery to evaluate a product and that imagery stimulated by advertising can influence the decision to purchase the product. This has implications for marketers as they create promotional plans.

Mental images can also help the individual to remember details of the whole situation based on his/her interpretation because individuals process the information in a way that is relevant to them. For instance, Gregory et al.’s (1982) study on self relevant scenarios argued that mental images stay in the mind and are more likely to be used as a reference for the future because the consumer can easily recall the image if anyone asks them about the product. The memory based mental image will contain details that have relevance to the individual. This is important to this thesis as it further suggests that when consumers create their own mental image of products they are deliberately attempting to increase the
likelihood that they will remember the product. This suggests the beginnings of a relationship between the consumer and the product.

Social interactions can also affect consumer’s mental evaluation of an object. Moscovici and Personnaz (1991) found that people will be influenced by others when evaluating pictures. In their study, they found that the individual’s mental images— particularly in terms of colours— could be altered by the evaluations of others. For instance, the individual will compare their mental images to the comments of the majority of other respondents. This suggests that consumers may be looking to validate their mental images by comparing how they see the product with how others see the product.

In summary, mental images are the results of the individual’s process of developing meaning by creating a representation. This suggests that imagery can be used to evaluate products. Consumers can use this evaluation to develop brand relationships with the product. This supports the argument proposed in this doctoral research that imagery can be used by the consumer to evaluate products and his/her relationships with other people. The next part of this section focuses on the difference between individuals’ ability to develop mental imagery and how individuals can use imagery as an evaluation tool.

Generating controlled and vivid mental imagery

Individuals’ ability to create mental images may differ. An individual’s mental imagery ability can vary according to their level of cognitive activity including image generation, control of the image, and the vividness of the image (Richardson, 1977; Lequerica et al., 2002). In other words, imagery creation varies in terms of the individual’s ability to generate and manipulate clear mental representations. For instance, an individual may easily generate a mental image of their home, seeing the furniture and being able to move the furniture in his/her mind. On the other hand, another individual may not be able to see (visualise) the layout of the room at all. It is possible that mental imagery is used differently by different consumers because of the varying ability of individuals to create an active mental image. This, therefore, opens the argument that consumers can be classified by their mental imagery ability and usage.
Generating a mental image involves a level of control. For instance, Morris and Hampson (1983) argued that mental images can be intentionally or passively generated. In other words, images can be deliberately produced in order to explore an object or concept in the mind or an image can just seem to pop into the consumer’s thoughts. This suggests that some consumers can generate images on demand and then can use these images to evaluate products. In addition to different levels of control, Richardson (1977) argued that the consumer’s ability to control images is relatively stable over time. This suggests that consumers are aware of their ability to generate a mental image and that their ability does not change. In summary, Control over imagery is relatively stable and different for different consumers. This implies that consumers are conscious of his/her ability to generate and Control the use of imagery to evaluate products.

Control over imagery can affect the consumer’s response to the product he/she is evaluating. For example, an empirical study by Petrova and Cialdini (2005) argued that consumers who have limited Control over their mental imagery are more likely to form a negative impression of advertisements that try to induce imagery processing. That is, when the advertisement says imagine this and the consumer cannot generate an image, then the consumer does not relate well to the product. This suggests that consumers who cannot Control their imagery are less likely to rely on it when they are processing information. This is important to this thesis because it implies that the consumer’s use of imagery as a processing tool will depend on his/her ability to Control the creation and activity of the image.

Mental images can also be measured in terms of Vividness. Vividness is defined as “a combination of clarity and liveliness” (Marks 1999, p. 570). In other words, for a consumer to create a Vivid mental image, the picture must be clear and engaging. For instance, a mental image of a friend’s face can be measured for Vividness on how clearly the individual can see the features of the face (e.g., the eye colour, shape of nose and mouth). This image can then be activated (e.g., the lips part into a smile and turn upwards and the eyes sparkle). Therefore, the more the individual can create a clear and active mental image, the more Vivid their mental imagery. Vivid imagery enables the consumer to rely on the details of the image which further enhances its usefulness as an evaluative tool. In a study on the impact of Vivid images on the consumer’s ability to generate a positive mental image, Petrova and Cialdini (2005) found that if consumers were provided with detailed
information they could construct a *Vivid* image. However, the *Vividness* of the image was influenced by the level of *Control* the consumer had over generating the image in the first place. In other words, if the consumer could *Control* their image generation, then they could create *Vivid* images when given explicit information. This suggests that *Control* and *Vividness* are connected and that consumers who have greater *Control* over imagery can also create more *Vivid* images.

In summary, the power of mental images to influence buyer behaviour depends on the individual’s ability to simulate reality. Consumers act out in their mind a purchasing scenario that can help them make decisions in the purchasing environment. The re-creation of the world through imagery enables the consumer to develop consumer goals and consumption visions (Phillips *et al.*, 1995; Walters, Sparks, and Herington, 2007). The goals provide motivation for purchase because the consumer can see what having the product would do for them.

Mental imagery that consumers use to evaluate products is developed from the imaginative interpretation as discussed in Section 2.2.3. That is, a mental image is created through the conceptual blending of information from perceptions, memories and fantasy (Kosslyn *et al*. 2001). Given this, the mental image that consumers create is their own understanding of the world, including their experiences and wishes. These images are then used by the consumer to evaluate products by cognitively experiencing product ownership prior to purchase. Thus, the consumer can rehearse owning a product before he/she buys it. In terms of evaluation, this implies that consumers can make purchasing decisions based on the idea that the product will solve their consumer problems because they have already imaginatively experienced ownership. In this way, mental rehearsal, through consumption visions, enables the consumer to evaluate the social and personal implications of buying the product.

Because mental imagery can differ in terms of *Vividness* and *Control* (Richardson, 1977; Marks, 1999; Petrova and Cialdini, 2005), it is logical to assume that mental rehearsal process is different for different people. This implies that consumer who can *Control* and create clear and *Vivid* mental images will be able to use imagery when evaluating products. Furthermore, this implies that the ability of the consumer to create and *Control* mental images will influence how much they rely on their mental images as a tool for evaluation.
Section 2.3.2 has focused on the individual’s ability to create mental images to evaluate products. The next sections of this review focuses on the broader social context and the influence of social interactions on the consumer’s decision making process. In particular, the constructs of product symbolism and social comparison and their role in developing meaning for the consumer’s social identity are reviewed.

2.4 Communicating Meaning

2.4.1 Processing social interactions to develop meaning and communicate a social identity

Consumer information processing does not occur in a void. The consumer’s decision-making process is affected by external factors such as social interactions. In terms of the Imaginative Information Processing Model (IIP), these social influences include Impression Management, Social Comparisons and Self-image Congruence. The tenet of this thesis is that the consumer will use their mental images of other people and the symbolic meaning of products to develop meaning in order to make a product decision.

Social interactions affect consumption as they create a shared social meaning for products (Richins, 1994). That is, people recognise a common value for the product and when these products are publicly consumed (eg consumed in a shared public space such as a restaurant) the common meaning is extended to the individual. In this way, the consumer’s information processing includes the subsequent social value of products. Many products have a social value that is recognised as part of the consumption process. For example, denim jeans commonly imply a casual dress code. Therefore, individuals who are dressed in denim jeans are publicly acknowledging they are in a casual mode.

The social value of products only has social meaning through public consumption because the product usage is viewed by others. This public consumption enables others to make public distinctions based on the individual’s product choice (Hogg and Michell, 1997; Mason, 2001; Ratner and Kahn, 2002). The consumer’s product decisions will be influenced by the distinctions that other people make about the product’s meaning. For
instance, if the individual is seeking social recognition, they will choose products that have a social meaning over products that do not have a social meaning. Thus, social implications of product choice are relevant when processing information.

In summary, consumers are aware that their publicly consumed products project a social meaning. This implies that the consumer’s decision making process is influenced by the social meaning attributed to products. The consumer will purchase products that will enhance their consumer social identity when they know others will witness their consumer behaviour.

**Social identity- self and social interactions to develop identity**

The first issue in defining social identity is understanding the debate relating to how identity is created. Does an individual create his/her social identity, or do interactions with society create a social identity? The issue of how the social identity is created is critical because if it is the self creating social identity then the influence of other people is limited. On the other hand, if social interactions are fundamental to the creation of social identity then self is affected by the views of others. For example, sociologists such as Charon (1995) and Reed (2004) argued that identity is developed in the individual’s mind, not through social interactions. However, this doctoral research is focusing on the influence of the social interactions on consumer purchasing intentions. Hence, in this section, the different ways social interactions affect self and social identity will be reviewed.

George Mead (1974), one of the seminal authors in sociology, argued that social self, which is the identity of the individual as a member of society, is developed through social experiences. That is, social identity is primarily created by society rather than from self as argued by Charon (1995) or Reed (2004). Thus, it is a social process created by external sources and self. Mead’s argument developed from his beliefs as a symbolic interactionist. Under this philosophy, understanding of self cannot be developed apart from social interactions. From Mead’s perspective, social interactions are so much a part of human existence that self has no meaning without social interactions. Therefore, Mead argued that social identity is primarily created by society rather than self. The consumer is fully aware that his/her social identity is based on his/her social interactions including purchasing decisions. Thus, the consumer will make product decisions based on the social implications of ownership.
Many contemporary theorists have also argued that both the individual and society create social identity (Sirgy and Danes, 1982; Ellemers, Spears, and Doosje, 2002; Wong, 2002). Tajfel and Turner (1986) explored the relationship of the individual and society. They argued that self and social identity exists on a continuum varying according to the strength of an individual’s values and the extent of group interactions. That is, the relative importance of self and society in influencing social identity depends on both an individual’s values and group interactions.

Rather than a continuum, Hogg and Abrams’ (1988) argued that individuals have a personal identity and then a social identity. To this end, social identity refers to broad social experiences such as those that the individual has in social groups. Personal identity refers to the development of self in restricted social experiences such as family and close relationships. Once the individual has developed a sense of identity they can then use this identity to classify and describe themselves and join social groups. For example, as shown in Figure 2.4, self creates a social image that is classified as teacher. This classification is then endowed with all the culture descriptions of a teacher such as nurturing and wise. The individual will then behave in a nurturing and wise manner in order to meet the social expectations of being a teacher. For the personal identity the individual may call themselves a friend who can be characterised as being generous and sympathetic.

Hogg and Abrams’ (1988) also argued that that self exists first, but that social identity may become salient given the needs of the social group. That is, when the group is important to the individual their behaviour will be directed by their social identity. Under the Hogg and Abrams (1988) model, the individual will exhibit the same social behaviour given the same social group and situation. In terms of the consumer decision making process, this implies that consumers make purchases that match the needs of the group in order to fulfil their social identity. For example, the individual will behave in the same way as other members of the social group at a concert or at a restaurant. However, consumers may be inconsistent in their purchasing behaviour depending on whether the purchases are for their personal identity or for their social identity. That is, if the individual is not in the social group they may make different purchases. For example, an individual may purchase cheap wine to consume at home (without the social group) and expensive wine when
consuming the product with the social group. This indicates the impact of the social interactions on the development of identity.

Consumer behaviourists have also adopted the symbolic interactionist’s philosophies developed by Mead (1974) to explore and explain the importance of the other people in the creation of social identity through product choice (Grubb and Grathwohl, 1969; Solomon, 1983). In particular, the Brand Choice model proposed by Lee (1990, p. 391) combines symbolic interaction processes with consumer purchasing. Lee’s (1990) model suggested that as a consumer recognises his/her self in the consumption situation they are motivated to choose brands that will enhance their social interaction needs. The brands are chosen for their symbolic meaning. Through this process, the consumer can communicate his/her self identity through purchases. Integral to this process of consumption is the concept of the self found in the self schema. As discussed in Section 2.2.3, consumers store knowledge about the world in his/her schema and then connect new information to that stored knowledge. For example, a consumer knows that enjoying playing tennis is a part of their self-identity. Lee’s model shows the connections between the situation and self, and the importance of use and risk in the consumer’s decision process. Overall, the intention of Lee’s (1990) Brand Choice model is to suggest how consumers make decisions based on the interaction between the individual and society.

Lee’s (1990) Brand Choice Model, however, does not fully explain how the consumer processes this information in their mind. It is the contention of this doctoral research, as argued in Section 2.3.2, that the consumer uses mental imagery to process their product’s symbolic and social implications. Thus, once the product’s meaning has been assessed in the consumer’s mind they can then proceed with the purchase. The purpose of the purchase is not merely to gain the functional services of the product, but to communicate a consumer social identity.

Unlike the social interactionist theories discussed above other concepts of identity have developed that highlight the importance of the situation. For example, Schenk and Holman (1980) place the situation central to identity. Schenk and Holman (1980) argued that self is situational. In other words, self does not develop a social identity because of group values, he/she merely adapts to the social situation. This situational self concept attempts to provide an explanation for the inconsistencies in self exhibited in different behaviour
based on the circumstances. That is, the person seems to be a different person because the situation has changed. For instance, a person may behave differently when going out to dinner with friends than if they were going out for a business dinner. This difference is not caused because of a separation between self and social self as argued by Hogg and Abrams (1988), but because the situation is different.

Similarly, the concept of the working self enables the self to develop and function in society simultaneously but moderated by the circumstances (Markus and Wurf, 1987). That is, the working self suggests that the individual can interact with other people by creating an image depending on the situation. In other words, self responds to social interactions, but again as with Schnek and Holman’s (1980) concept, self does not create a separate social identity. In contrast to Schnek and Holman (1980), Markus and Wurf’s (1987) concept enables self to maintain stability with core aspects and still interact with the environment through tentative self aspects. Core aspects are traits that are important to self and do not change, such as being open to experience, and tentative self aspects respond to the situation, such as friendliness. The working self concept suggests that self is fluid and reacts to social interactions, but does not change the fundamental self. Hence, the working self can focus on the situation and still can maintain a separate sense of self. The theories of Schnek and Holman (1980) and Markus and Wurf (1987) recognise the influence of the situation on self and hence the importance of social interactions, but maintain that self is separate from society. Thus, the individual carries his/her identity into social situations and then is affected by the social interactions.

A model, from the consumer behaviour perspective, developed by Kleine and Kleine (2000) addresses the development of social identity through social interaction and consumption. The Kleine and Kleine (2000) model suggests that social identity is created over a lifecycle; that is, identity is discovered, constructed, maintained or becomes latent and finally identity can be disposed. For instance, as an individual joins a group they discover the group’s identity through the group’s norms, and then the individual constructs social identity by adopting the group’s behaviour. In particular, a consumer’s identity is influenced by the group members and what they are buying. Kleine and Kleine’s (2000) model shows the development of identity. As the diagram depicts, this cyclical development of identity enables the individual to create and recreate an identity and to discard an identity. This freedom suggests that identity is fluid and reactive. In summary,
the Kleine and Kleine (2000) model implies that identity creation is dynamic and open to influence from the situation and other people as well as through product choice.

In summary, the social identity concept has two implications for consumer decision making. First, if social identity is context driven then the situation will affect the consumer decision process. This suggests that as consumers engage in different purchase situations they will be influenced by their social relationships as well as the environment.

Second, the consumer can also use social interactions to help make product evaluations. Thus, the evaluation may be based on information provided by others in the social group. Alternately, the social norms surrounding socially acceptable products may be used as an evaluation strategy (Burnkrant and Cousineau, 1975). Hence, the consumer uses social interactions to ensure they have chosen a product that solves their consumer problem.

In conclusion, a synthesis of the literature suggests three key aspects of social identity. First, identity is multi-layered with interactions between individuals and social influences. This makes individuals complex and enables different behaviours in different situations. Second, identities are constructed. Thus, the individual with or without social interference can make their own identity. Third, identities can be fluid. Hence, identity can develop over time resulting in changes in attitudes and actions. The tangible expression of social identity is behaviour. In the context of the Imaginative Interpretation Processing Model in this thesis, the social behaviour is part of the evaluation process when consumers are making product decisions.

The next section focuses on the consumer’s ability to create and control a social identity. This process is known in sociology and psychology as Impressions Management.

### 2.4.2 Impressions Management—consumer social identity on display

*Impressions Management* is the individual’s deliberate presentation of his/her social identity. This behaviour is intentional and controlled, and develops after the individual has evaluated his/her place in society. In essence, *Impressions Management* is used to control
the expression of social identity because the individual uses social knowledge to interact with society. *Impressions Management* helps the individual engage with society by displaying an appropriate public face.

Psychologists have defined *Impressions Management* as “the features of behaviour affected by power augmentation motives designed to elicit or shape others’ attributions of the actor’s dispositions” (Jones and Pittman, 1982, p. 233). This definition means that individuals deliberately behave in ways to demonstrate an identity that will make others respond in the way in which the individual wants them to respond. For instance, an individual’s use of jargon is intended to make others believe that he/she understands the topic and to demonstrate that they are a scholar. Leary and Kowalski (1990) extended the definition of *Impressions Management* in their conceptual paper arguing that it contains two components: (a) impressions motivation which deals with goals and (b) impressions construction, which deals with roles and self identity. Leary and Kowalski’s (1990) deeper analysis of *Impressions Management* suggests that it is concerned with understanding the motivations behind social roles as well as choosing which roles to adopt and display.

Following from this definition, *Impressions Management* can be conceived as a process of role-playing and performance. Sociologists like Goffman (1990) argued that there is a drama approach to human behaviour called self-presentation. That is, people are acting out a role for society. The human drama results from the interactions of other players and the audience. The individual engages in personal relationships and has a role in society in general. The drama aspect is how the individual interacts with his/her personal relationships and society. For instance, a friendship is experienced by individuals who are friends and other members of society who witness the friendship in public.

Once the roles have been acknowledged, the consumer has to meet the expectations associated with the specific role. In this way, roles help to define social identity as the individual adopts role expectations (Hogg and Michell, 1997; Stets and Burke, 2000). Meeting the role expectations enables the consumer to exhibit his/her social identity. Furthermore, Goffman (1967) argued that role playing is the way individuals interact with society. That is, role playing is their expression of their social identity in the social situation. For instance, taking on the role of *athlete* enables the individual to be identified
by others as concerned about their health and their body. Thus, the role explains their social identity which is expressed by the individual adopting the appropriate behaviour.

The drama is not completely random; people are taught their role. For example, Markus and Wurf (1987) suggested that there is a connection between the individual knowing the correct script or production rules to use and subsequent behaviour. A script consists of acceptable and specific pre-planned actions (Schlenker, 1985). This means that the individual already understands what behaviour is expected in the situation because they have been taught how to behave. Individuals use this expected behaviour as a guide for actual behaviour. For example, friends learn to be quiet and listen when the other speaks; so conversations have the convention of taking turns.

Individuals adopt roles that they enjoy. For example, McKillop, Berzonsky and Schlenker’s (1992) study into the effect of role presentation on self found that because individuals define themselves by their role they feel good when they fulfil that role. In this way, the consumer enjoys performing their social role. Consequently, individuals learn and maintain the rules of their social role in order to successfully perform in the specific social situation. In consumer behaviour terms, this implies that they enjoy purchasing products that help them to meet their social role.

Not only do individuals enjoy their roles, but they can also set objectives or goals to ensure that their desired roles are fulfilled. For instance, Miller et al. (1960) and Schlenker (1985) argued that goals are fundamental to self presentation roles because they provide a purpose. This use of goals is most important when the individual is in a new situation and does not know the appropriate script (Schlenker, 1985). For example, an individual can use the goal of being friendly in a new social situation where they do not know anyone. In this way, the individual can overcome the problem of not understanding the social dynamics of a group of strangers.

Therefore, an individual can use knowledge in the form of social scripts or goals in order to interact in social situations. However, the use of scripts and goals in social interaction leads to a critical issue in Impressions Management. That is, whether or not the projected identity is a true image of the individual or it is manufactured to fit social norms.
Furthermore, it is not always possible for others to know whether or not the projected identity is manufactured. There are two factors that affect an individual’s ability to perceive the truthfulness of another person’s action. First, individuals can only know the social identity that is demonstrated (Kurzban and Leary, 2001). Individuals use the demonstrated behaviour as a guide to understand the truthfulness of the other person. These behaviours may be insufficient for the individual to see the true nature of the people. Second, most impressions of others are created in public places which can limit our ability to really see the other person (Riggio and Friedman, 1986). The public space can restrict challenges or in-depth interpretation of the individual’s true character. For example, in nightclubs people are taken at face value because the environment is often not conducive to conversation. Thus socially, individuals are limited to accept the social identity that is displayed even though it may be false.

Nonetheless, public displays should follow normative social rules concerning truthful behaviour. Interacting in society by following social norms therefore helps the individual to express an expected social identity. For instance, normative and subjective aspects of social behaviour can be a controlling influence on the individual (Leary and Kowalski, 1990; Costalat-Founeau, 1999). How the individual ought to behave can influence how he/she does behave. Furthermore, a normative influence affects the way others respond to the individual. That is, when everyone does what they ought to do then social situations flourish. A considerable amount of Goffman’s (1990) self-presentation theory was concerned with the actor portraying the correct part; to do it and to be seen to do it. The individual will maintain their social relationship by behaving in a socially desirable way. For example, eating healthy foods has become part of social behaviour – people will choose the salad rather than the potato chips because society says they ought to choose the healthy food option. Therefore, if it is important to the social group to eat healthy foods, then the individual controls his/her behaviour through Impressions Management to maintain their social identity and present the right image.

The use of Impressions Management can vary depending on the individual. Dabbs, Evens, Hopper and Purvis (1980) identified two kinds of Impressions Management strategies: high self monitors who assess the needs of the situation and low self monitors who are concerned with his/her own reaction. In other words, high self monitors are focused on the situation and how he/she can adapt to circumstances. The low self monitors are less aware
of the situation and the other people. The low self monitors focus on how they feel rather than the needs of others given the circumstances. Dabbs et al. (1980) found that high self monitoring individuals talk faster, are glib and tend to set an example for low self monitoring people. This suggests that high self monitors aim to be in control of the situation and are influenced by social interactions. Thus, the high self monitors are more likely to modify their behaviour to match the social situation and to project a specific social identity. Thus, an important element for high self-monitors is the public consumption of the product. In a study on fashion, self-monitoring, involvement and materialism, O’Cass (2001) found that because high self monitors are interested in the situation they will use products as props to maintain a positive social situation. In addition, Graeff (1996) found a significant, positive relationship between high self-monitors and their evaluations of publicly consumed products. For instance, a consumer will match a brand of Levi–Strauss jeans to their self-image. The high self-monitors will then use that product match to control the social situation as part of their public self-presentation. This implies that consumers may use products as a visible and efficient way of maintaining a social identity. That is, products are used to project the social identity rather than the individual having to verbally express their social identity.

Hogg, Cox and Keeling (2000) also developed a conceptual model about the levels of self-presentation behaviour. They argued that a consumer’s ability to self-monitor enables the individual to understand their social identity. The high self-monitors engage in intrinsic and extrinsic congruence with products in order to present the desired image for both their public and private self. The consumer uses their self-monitoring skills to develop their public impressions. However, unlike O’Cass (2002), Hogg et al. (2000) argued that the consumer Impressions Management process leads to the development of self-image and then congruence with products. For instance, consumers who are higher self-monitors (able to control the situation) will engage in self-image product congruence in order to maintain that situation. Thus, as Impressions Management increases, it will have a positive effect on Self-image Congruence. For example, high self-monitors will seek out the products that will best suit the image they want to project. The implication for this is that consumers are matching products not only to their self-image, but this matching process will be affected by their ability to control their Impressions Management. For the IIP model, this suggests that consumers are aware of the symbolic and social meaning behind their product choice and are using this meaning to present an identity. Moreover, as a
consumer’s ability to control their *Impressions management* increases they are more like to engage with products that can help to project that image.

When in a public situation, the creation of the correct consumer social identity can have various advantages for individuals. Controlling impressions can increase social acceptance because the individual is liked by the group and can maintain his/her position because they have the ability to be remain a member (Jones and Pittman, 1982; 2001). Similarly, Leary and Kowalski (1990) argued that management of impressions enables the individual to achieve three things: (a) get what they want, (b) increase self-esteem, and (c) project a desired identity. Consumer identity management thus enables the consumer to project a desired image and receive the social benefits of that identity. For instance, wearing fashionable brand name jeans helps the consumer project the image they want and makes them feel good about themselves.

However, following social behaviours and rules can have implications for social identity. That is, *Impressions Management* can lead to the use of simple responses in the social context. For example, the individual can copy or mimic others in the social situation. Mimicry is responding with similar gestures during a social interaction (Cheng and Chartrand, 2003). In other words, the individual merely copies others. Cheng and Chartrand’s (2003) study found that mimicry was often unconscious and acted as social glue. This suggests that consumers simply purchase the same brands their friends do, unaware they are copying their friends in order to maintain the social connection. For this doctoral research this implies that consumers are being unconsciously influenced by their social interactions.

Mimicry can have negative connotations and can be seen as conformity (Jones and Pittman, 1982; Ramanathan and McGill, 2007). That is, the individual simply does what everyone else does. Conforming leads to the common purpose of mimicry which is ingratiation – a reactive stance in a social situation that can increase acceptability and hence liking (Cheng and Chartrand 2003). Rind and Benjamin (1994) found that the individual’s *Impressions Management* was complemented by their compliance. That is, the individuals in the Rind and Benjamin (1994) study did what they were told in order to present appropriate impressions. This suggests that individuals are willing to copy or follow commands from others in order to have the correct social identity. Hence, mimicry
and conformity can lead to the individual creating false impressions just to be liked and accepted. In terms of purchasing this implies that consumers may buy products just because they are socially acceptable and would express the desired social impression.

Another negative side to *Impressions Management* is that it can lead to manipulating others’ opinions of self (Rind and Benjamin, 1994). That is, people will respond to the individual the way in which he/she wants them to respond. For example, an actor attempts to arouse emotions in his/her audience. In the same way, an individual can attempt to control other people’s emotions by deliberately presenting an identity that triggers certain reactions. For instance, presenting the identity of helplessness often encourages others to think that person is helpless and therefore to respond by helping them. The problem with attempting to control other people’s opinions through *Impressions Management* is the ability of the individual to only show certain points of reality (Bourdieu, 1990). This implies that the identity is only a portion of the individual’s true identity – although the individual may appear helpless, they are not. Therefore, through *Impressions Management* the individual can stage-manage a social reaction and create a misleading social identity. For this doctoral research, this suggests that consumers purchase products for their social meaning. In this way, the social meaning of the product is important to the consumer because it helps to maintain a social illusion.

In conclusion, *Impressions Management* is about creating and controlling a public identity. This is self that society sees and influences. Hence, it is known as the social identity. Controlling *Impressions Management* can help the individual to be a group member. The displayed identity is often accepted by other people whether it is true or not because of the normative rules of the social drama.

Once the consumer understands his/her social identity they can start to evaluate products that suit them. Through product purchases, the consumer develops his/her consumer social identity. The next section of this review examines the role of *self-image congruence* and *social comparison* in the development of meaning for the consumer. The meaning is developed as the consumer engages with both the products and other people.
2.4.3 Self-image Congruence—Symbolic product evaluation

This doctoral research is focusing on how consumers’ mental imagery affects their social interaction process and how that then influences Purchase Intentions. This section contains a review of symbolic products in relation to congruence with self identity from the consumer behaviourist perspective. Understanding product symbolism is important to this doctoral research because consumers can evaluate products based on their symbolic meaning. This section begins with a discussion of the theory of symbolic products and symbolic interactions.

Product symbolism develops when the product has a value beyond its functions (Woods, 1960; Quester, Karunaratna, and Goh, 2000). That is, the product means more than just what it does. Similarly, Allen (2002, p 246) defined product symbolism as “the image of the product, encompassing abstract ideas and associations with the product as well as beliefs about the kind of people who use the product”. In other words, product symbolism has two functions: (a) it conveys the meaning behind the product and (b) and it characterises the people who buy it. A functional product can be explained by its purpose; for instance, a DVD recorder’s function is to record and play DVDs. A symbolic product, however, has more value to the consumer than just its functions. The value is often intangible. Thus, owning a DVD recorder is more than just the ability to record and play DVDs. It can symbolise the success or innovativeness of the owner.

Even though symbols can be personally derived, symbolic products need to have social meaning (Levy, 1959; Grubb and Grathwohl, 1969; Hirschman, 1986; McCracken, 1988; Charon, 1995). A social meaning implies that many people recognise the same symbolic meaning in the product. Without the shared social understanding of the symbol it cannot be used to communicate meaning. For instance, a sports car has shared social meanings such as prestige. As Solomon (1983) argued, the social meaning of the product helps individuals identify with each other through the process of symbolic interaction. This implies that symbolism of the product for the consumer is increased with shared social meaning.

The definition of product symbolism shows the complexity of this concept. As Levy (1959, 1982) argued understanding symbolic meaning can be complex because the individuals who create the symbols are multilayered. In other words, the symbolic
meaning can encompass all the contradictions and interpretations of the individual. This suggests that as a consumer develops a symbolic interpretation of a product, they are influenced by everything that makes them a unique human being as well as being influenced by the product’s functions and other people’s points of view.

The importance of product symbolism is well established in the buyer behaviour literature (Levy, 1959; Grubb and Grathwohl, 1969; Sirgy and Danes, 1982; Allen, 2002), but it is not clear how consumers develop symbolic product knowledge. Solomon and Douglas (1987) argued that the consumer will develop and maintain an understanding of the symbolic meaning of products from a diverse range of sources including the media and their own experiences and interest in a situation. That is, the consumer learns about the symbolic meaning of products from their interest and familiarity with the actual product.

Once the consumer understands the social meaning of the symbol, they can use the product to interact with others. Symbolic products have been researched in buyer behaviour through self and product congruence. Product congruence is the match between self and the product in order to communicate something about the consumer (Bettman, 1971; Sirgy, 1984; Zinkhan and Hong, 1991; Allen, 2002). To be congruent, the consumer must have a strong and positive reaction to the product. Conversely, consumers also avoid the products that do not match their self identity (Bosnjak and Rudolph, 2008). In this way, consumers use the social symbolic meaning of products to say something about themselves. The product becomes a visible token for others in order to make social comparisons. Various types of products have been used to determine symbolic meaning— Table 2.2 shows the various products that have been studied. The variety of products indicates how prevalent symbolism is in consumer choices.
Table 2.2: List of products and studies for Self–Image and Product Congruence

<table>
<thead>
<tr>
<th>Products</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cars</td>
<td>Birdwell (1968); Green Maheshwari and Rao (1969); Grubb and Hupp (1968); Belk, Bahn and Mayer (1982); Sirgy and Danes (1982); Sirgy (1985); Heath and Scott (1998); Allen (2001)</td>
</tr>
<tr>
<td>Magazines</td>
<td>Ross (1971); Sirgy and Danes (1982); Sirgy (1985)</td>
</tr>
<tr>
<td>Clothing, Jewellery and grooming products</td>
<td>Quester, Karunaratna, and Goh (2000); Jamal and Goode (2001); Allen 2002; Sirgy et al. (1997); Graeff (1996)</td>
</tr>
<tr>
<td>Food and Beverages</td>
<td>Dolich (1969); Landon (1974); Allen (2001); Morrison and Eastburn (2006)</td>
</tr>
<tr>
<td>Electronic equipment</td>
<td>Quester et al. (2000); Swaminathan, Page and GaoRhan-Canli (2007)</td>
</tr>
<tr>
<td>Retail Store Environment</td>
<td>Sirgy, Grewal and Mangleburg (2000); O’Cass and Grace (2008)</td>
</tr>
</tbody>
</table>

Adapted from Belk, Bahn and Mayer (1982, p 5)

The goal of these congruence studies has been to determine both theoretically and empirically if consumers use product symbolism to represent his/her self. A seminal study such as Birdwell (1968) found significant congruence between product ownership and self identity. Other earlier researchers have attempted to extend the congruence and product symbolism theory by suggesting that product preferences were related to an ideal self identity and conspicuous consumption situations (Dolich, 1969; Ross, 1971; Landon, 1974; Sirgy and Danes, 1982). This previous research provides a foundation for this doctoral research; namely that symbolic products may be used by the consumer to express consumer social identity by measuring the way in which the individual interacts with others and products in the purchase process. The IIP model presented in this doctoral research clarifies this process and suggests that consumers create a mental image of products which they then use to evaluate the match of products to their identity.
More contemporary studies have provided further depth to the study of self and product congruence. For instance, Ericksen (1996) found that consumers will use both actual and idealised self-image congruity to help develop Purchase Intentions. In this way, consumers are matching products to more than one self-image; this research provided further support for Sirgy and Danes’ (1982) research on the multiple self-images. Jamal and Goode (2001) studied the relationship between congruence, self identity and satisfaction. The results indicated that a significant relationship exists between self identity and congruence and between congruence and satisfaction with brand preference. That is, consumers feel satisfied with products that match their self identity. This suggests that they will prefer the brands that are congruent with their self identity and provide satisfaction.

Allen’s (2002) research on product congruence and an individual’s values also demonstrated the importance of congruence on consumer evaluation of products. The congruence in Allen’s (2002) study focused on individual’s values rather than the self identity. Allen (2002) argued that products represent certain values. Consumers then choose the products that represent the values that are relevant and important to them. The implication of this study is that an individual’s values can be expressed through symbolic products. For example, if an individual values success and success is symbolised by expensive products then the consumer can demonstrate success to themselves and to other people by buying an expensive brand. However, Allen (2002) does not explain how the consumer develops this congruence in their mind.

Finally, Swaminathan, Page and Gurhan-Canli (2007) conducted a study on Self-image Congruence and brand information. They found that a strong connection between the product and the consumer’s identity can reduce the impact of negative product information. That is, because the consumer feels that the brand has traits that match their own identity they are more likely to maintain their positive brand relationship. The implication for this research is that Self-image Congruence is a very important factor to consumers. It further suggests that there are many influences that affect the consumer matching process between their identity and the product as they develop Purchase Intentions. The IIP model of this doctoral research suggests that product congruence can be developed through the consumer’s mental imagery. Moreover, the consumer’s mental rehearsal as discussed in Section 2.3.2, can be Vivid and controlled enough to focus on
particular products that are significant for the consumer and that will lead to *Purchase Intentions*. Given the range of products that have been used in past research, this thesis will focus on two different types of products to test if the symbolism of the product is important. One product will be a holiday which can be very symbolic. The other product will be a camera which is more functional in nature.

In summary, product symbolism is the intangible value placed on products by consumers. Previous consumer behaviour research has demonstrated that the symbolic meaning of product in two ways: (a) through congruence or match of products with the consumer’s self identity and (b) through social interactions. Consumers recognise the personal and social importance of the symbols because symbols are representatives of intangible ideas. It is through the consumer’s interaction with symbolic products that the consumer communicates his/her consumer social identity.

The congruency studies reviewed in this section have focused on dimensions of self identity, products and situations. Previous research has placed the role of imagery for product symbolism only in relation to the individual’s concept of self. A central tenet of this doctoral research is that the mental images generated by the consumers can focus on a specific product. Thus, the symbolic evaluation is specific to that product. This suggests that the consumer’s imagery can lead them towards a relationship to a particular product that they have mentally *seen* (visualised) themselves owning.

This section has argued that consumers use product symbolism to communicate aspects of their identity and that mental imagery using symbolic products is commonly related to particular products. The next section discusses the individual in terms of the social context.

### 2.4.4. Social Comparison— evaluations using other people and possessions

*Social Comparison* can be defined as a way the individual evaluates self and other people based on social interactions (Festinger, 1954; Ogden and Venkat, 2001). This definition
has two aspects: first, self-awareness through the evaluation of other people and second, the impact of others’ evaluations on the individual. Thus, Social Comparison explains self, and self in relation to others. An illustration of this concept is the way a fashion model evaluates his/her physical beauty in comparison to other people and the reaction of other people to their beauty. That is, the model thinks he/she is beautiful and people tell them they are beautiful so they continue to think they are beautiful.

Social Comparison provides individuals with guidelines for behaviour. For example, sociologists Spencer, Fein and Lomore (2001) contended that the primary purpose of social comparison is to enable individuals to function within defined parameters of the social relationship. That is, the individual understands that there are codes of behaviour which they learn by comparing themselves to the people they know. Thus, Social Comparisons help individuals to interact with each other. To continue the illustration of the fashion model, his/her behaviour is guided by how attractive he/she believes they are and how other people treat them because of their attractiveness. For example, a model may believe it is acceptable to have an unruly emotional outburst because people allow beautiful models to behave badly.

An understanding of the rules of society is important in personal relationships as well as broader social situations. Mead (1934) argued for the existence of the generalised other, which is the social community to which an individual belongs. The generalised other encompasses the aspects of social interaction outside the individual. For instance, the social norms that exist in the group are an aspect of the generalised other. Therefore, as Mead (1934) described, generalised others is a form of social control that helps to set and maintain the rules of the social group. Hence, Social Comparison is used as a foundation for broad social norms. For example, strangers waiting for a bus will automatically line up to board the bus because it is acceptable social behaviour to take turns. In addition, people who try to break into a queue will be vilified by people who are following the social norms.

Social Comparison also helps to develop social identity. Sociologists such as Cooley (1922) argued that self is looking for similarities and differences with others in order to find his/her social place. In other words, the individual seeks Social Comparison to explain self in the social context. The, individual then joins a group based on their evaluation of
the similarities and differences of themselves in comparison to those around them. Thus, social comparisons facilitate the social identity process because comparisons are the foundation of social interactions. Therefore, as argued previously in Section 2.4.1, without Social Comparisons the individual cannot identify who is the same and who is different from his/herself and therefore cannot join appropriate social groups.

Following Cooley’s logic, the individual must understand self before they can compare themselves to others. Therefore, the process of reflective appraisal allows the individual to have a sense of self within a society. This is the basis of the social identity— that is, the individual in the social situation. From a philosophical position, Sartre (1972) argued that an independent individual has a reflective view of his/her self. Moreover, the reflection is the essence of the identity (Sartre 1972, p 1). Thus, self is found through a process of evaluation despite social influences. In other words, self-reflection enables the individual to see his/herself without thinking about what others think. From the psychological perspective, Pyszczynski, Greenberg, Solomon, Arndt, and Schimel (2004) also contended that evaluation of self was fundamental to the individual because it created identity that is separate from the others. Thus, this evaluation enables the individual to operate within the social sphere because it makes the individual aware of themselves and others.

Self reflection is an internal process that develops understanding through the beliefs and values of the individual. For instance, Giddens (1991) maintained that the reflective self is derived from the individual’s internal control. Hence, it is not socially manipulated. Moreover, the internal control enables the individual to do what he/she wants. In addition, Solomon (1983) argued that self reflection enables individuals to use their own values and thoughts as a basis for understanding how society functions. Therefore, the individual does not need to think what makes others act the way they do. The individual merely needs to understand why he/she would act in such a way. For example, self reflection enables writers to examine their work and critique it based on what they wanted to achieve. Thus, as concluded in Section 2.4.1, the self is an active part of the creation of the social identity.

However, internal appraisal relies on a realistic appraisal of the social situation. There are several issues that can impede the individual’s ability to accurately understand their place in the social context. For example, the individual reflects on self and then evaluates what others would think based on that reflection (Bearden and Rose, 1990). This implies that as
individuals assess themselves; their thoughts about self are mixed with imagining what other people think about them. So, it is difficult to distinguish between what the individual thinks about his/herself and what the individual believes society thinks about his/herself. Additionally, the desire to remain in a social group may interfere with the evaluation process (Burris and Rempel, 2004). That is, the reflection of self is interrupted by trying to guess what the social group wants. Hence, the individual wants to understand how others have evaluated them to ensure they can maintain their social position. For instance, a dancer will evaluate his/her dancing in relation to his/her abilities and the opinion of the group in order to stay part of the group. Finally, self-reflection as a process is often socially conceived and practised. For example, self-reflection can become habitual (Costalat-Founeau, 1999). In other words, the way in which an individual reflects about themselves may be only surface reflection that does not impact on the real issues. Hence, these reflections may be inaccurate. This habitual reflection may be a product of modern society that is fast paced. Therefore, despite the importance of self appraisal it is a complex process and is not always an effective guide for the individual.

After some level of reflective thinking the individual places his/her self in the social context. The individual can feel equal, superior or inferior to others around them. However, this cognitive positioning may cause social problems. For example, superiority is a complex issue in Social Comparison theories because individuals do not want to demonstrate superior or inferior abilities for fear of being excluded from their chosen social group (Mead, 1974; Pieters et al., 1998) or negatively affect their self-esteem (Simon and Hatedt, 1999; Crocker and Park, 2004). Thus, as part of the Social Comparison process the individual wants to join groups where they feel equal and can maintain self-worth. In addition, Spenser, Fein and Lomore (2001) argued that individuals who have high self esteem tend to make upward comparisons— that is, the individual see his/herself as a positive member of the group. In others words, individuals who feel good about themselves believe they are a valuable member of the social group and that the social group is important in the broad social context. In order to maintain their positive social feelings, the individual will reject social groups that threaten the self identity and maintain groups that heighten self-identity.

A principal way for consumers to develop their understanding of their social interactions is to place people in stereotypical groups. Sociologists view stereotyping as a way to
categorise observed behaviour (Goffman, 1990; Prentice and Miller, 2002), form judgments (Manis et al., 1986; Cooksey, 1996) and join groups (Turner, 1982). This suggests that as consumers interact with others, they use stereotyping as a mechanism to place people in those groups and then to decide whether or not they want to join that group. From a psychological perspective, Kunda and Spencer (2003) argued that the application of stereotypes aids comprehension and enables individuals to justify their social choices. In terms of consumer behaviour, this suggests that consumers will group others based on their observations of consumption (Belk, Bahn, and Mayer, 1982; Meyers-Levy and Tybout, 1989). For example, an individual who purchases a gym membership will be stereotyped by themselves and others as being interested in health and fitness. This is significant for this doctoral research because consumers use this stereotyping mechanism to evaluate and compare their own consumption habits with those of other people.

In consumer behaviour research, Social Comparison has been linked to possessions. For instance, Belk (1988) argued that possessions become part of an extended concept of self. Indeed, the products are self. Hence, the products can be used to project a social identity in the social context. In developing this idea, Ackerman, MacInnis and Folkes (2000) contended that consumers use their possessions to evaluate themselves against relevant others. Ackerman et al.’s (2000) argued that possessions can produce feelings of satisfaction and superiority when consumers make Social Comparisons. They also implied that consumers make repeat purchases of products because they are satisfied with the outcomes of the Social Comparison and ownership of the product. Thus, consumers interact in social relationships and appraise their own worth through their possessions.

There are two implications from previous research for this doctoral thesis in terms of the decision making process and social interaction. First, as consumers reflect on their social position they use a combination of both internal and external information sources. This suggests that the consumer is engaging in conceptual blending, as argued in Section 2.3.3, to mix together this information to form his/her own interpretation. Second, consumers use the purchase of symbolic products as discussed in Section 2.3.3 as forms of evaluation to express both social identity and to make judgment about other people. Thus, the product itself is significant part of the development of social identity because the consumer assumes that he/she will be evaluated on the basis of ownership.
In conclusion, *Social Comparisons* are formed in the social context through stereotyping and group membership. These comparisons help to form social identity. Product purchasing and ownership are visible signs of social identity that individuals use to define themselves and others. Thus, the products consumers choose and the purchasing environment are both important in the development of *Social Comparisons*. Hence, as the consumer moves through the decision making process he/she develops their social identity by comparing themselves with others through the purchase of products. The IIP model of this doctoral research shows *Social Comparison* being evaluated through mental imagery. This suggests that consumers use mental imagery to develop meaning for *Social Comparisons* in their mind. This implies that mental imagery enables the consumer to see (visualise) self and the reactions of others prior to purchase of the product. Thus, mental imagery evaluation enables the consumer to assume how the others in their social context will react to his/her product choices.

### 2.4.5 Purchase Intentions— probability of buying the product

This section is a review of the dependent variable in the IIP model— *Purchase Intentions*. Howard and Sheth (1969) argued that *Purchase Intentions* are *uncompleted plans*. In other words, the consumer has not finished making a purchase decision, but they may have a want or need for the product. The purchase plan is often related to the consumer’s goals (Read, 1987). For example, a consumer can have the intention to purchase a product for social goals (in order to join a group) as well as functional goals (to quench thirst).

From a psychological perspective, intentions have been studied in terms of attitude affecting behaviour (Armitage and Conner, 2001). Fishbein and Ajzen’s (1972) Theory of Planned Behaviour and later The Theory of Reasoned Action argued that intentions are connected to attitudes that the individual holds. These models of intention contain social and cognitive influences. For example, if the consumer feels normative social pressure to behave in a certain way, this can affect their intentions and behaviours. This suggest that the situation can have a significant affect on the consumer in terms of developing *Purchase Intentions* because they are influenced by the opinions and attitudes of others.
In addition, in consumer behaviour theory, the source of information about products has a significant impact on Purchase Intentions (Mitra, Reiss, and Capella, 1999; Martin and Bush, 2000). For instance, family, friends and celebrity sources help consumers to develop the intention to buy a specific product. Hence, social relationships provide information that the consumer may rely on to develop Purchase Intentions. Moreover, the more important the social relationship is to the consumer, the more they may rely on the opinions of others.

Purchase Intentions are a widely researched area that has produced empirical support for a relationship between intention to buy and actual purchase (Warshaw, 1980; Chandon, Morwitz, and Reinartz, 2005). For example, intentions to purchase products can increase a consumer’s deliberate actions towards finding out more information such as paying more attention to advertisements about products (Smith, 1965). This increased information search helps the consumer to understand the product. A more contemporary study found that Purchase Intentions have a higher correlation with actual behaviour when the product is known, durable, brand specific and short time horizons are set (Morwitz, Steckel, and Gupta, 2007). This suggests that Purchase Intentions can be used to determine the consumer’s actual buying behaviour for certain products.

To help determine the relationship between intentions and behaviour various measures of Purchase Intentions have been developed. Juster (1966), in his seminal work, argued that consumers’ Purchase Intentions are measured more accurately as probabilities rather than dichotomous responses of intent. He argued that subjective purchase probabilities provide a better explanation of consumers’ future activities. This is because the individuals’ anticipation of purchase is rarely definitive and it is more likely to be on the balance of probabilities taking into consideration attitudinal and financial variables. For instance, a consumer may not understand or have specific intentions or plan to purchase a product, but they may have a desire or goal towards that product. In this instance, the consumer’s response to a definitive purchase intention scale (buy /not buy) may not fully reflect their likelihood of future purchase. On the other hand, Juster (1966) argued that a consumer can more easily consider the probability of their purchase goals from no possibility through to certainty of purchase.
Developing Juster’s perspective, other researchers have argued that *Purchase Intentions* can also be considered in terms of the consumer’s likelihood to purchase a product (Baker and Churchill Jr, 1977; Warshaw, 1980). When the consumer begins a *plan* to purchase a product, they will increase their consumer activity and become more involved in the decision process. Consumer activity can consist of actions such as seeking information to get to know the brands, as well as developing an attitude and being confident in their product choice (Howard, Shay, and Green, 1988). In this way, the consumer increases the chance that they will buy the product because they will have compiled sufficient product knowledge to make a decision.

In summary, *Purchase Intentions* are the consumer’s unfinished plan. It can be measured in terms of the consumer’s likelihood of purchase. *Purchase Intentions* are also affected by the consumer’s social interactions as other people can be used as a source of information about the product. When a consumer develops *Purchase Intentions* it suggests they are engaging with the product, increasing their evaluation both in terms of mental imagery and social meaning. Thus, the consumer’s *Purchase Intentions* will be affected by their mental imagery and the social context as the consumer tries to decide if a product will meet their social and self-congruence needs. For this doctoral research, this implies that the consumer’s ability to control and create *Vivid* images as well as engage in social interaction processes will help them to develop *Purchase Intentions*.

The next section of this review contains the Imaginative Interpretative Processing (IIP) Model, combining all the elements that have been discussed in the preceding sections.

### 2.5 Research Question and Conceptual Model

The central argument of this thesis is that the consumers’ capacity to control vivid mental imagery can help them to evaluate products. The previous research which is the foundation of this thesis has focused specifically on the affect of imagery are Bone and Ellen (1990), Walters *et al.* (2007) and Petrova and Cialdini (2005). These studies argue that imagery is related to purchase intentions and can be measured through the relationships between control and vividness. MacInnis and Price (1987) found that imagery processing can make abstract concepts more concrete by creating a scenario that
is specific to a product. In this way, consumers use imagery to solve problems. This process often is seen through the development of consumption visions (Phillips, 1996). These studies suggest that imagery is a useful tool that can lead the consumer to developing purchase intentions because the consumer sees the solution to their problems through their mental images. Moscovici and Personnaz (1991) argued that social interactions can also affect purchase intentions and these interactions can be evaluated by consumers through their mental imagery. This argument suggested a link between social variables and imagery in the consumer evaluation process. The three social variables for this research are impressions management, social comparisons and self-image congruence. The principal theorist for Impressions Management include Dabbs et al. (1980) who argued that impressions managers range from high to low which affects their behaviour and Hogg et al. (2000) who argued that impressions management can affect the development of Self-image congruence and purchase intentions. The Social comparison connection was founded on the work of Belk (1988) and Ackerman et al. (2000) who argued that possessions are visible props for consumers to evaluate themselves against others and that positive social comparison can lead self-image congruence and purchase intentions. The position of Self-image congruence in the conceptual model was developed from research by Sirgy (1984) and Ericksen (1996) who suggested that matching product to self-image can lead to purchase intentions.

The principal gap in existing research is that the affect of the consumers’ capacity to control vivid imagery has not been specifically tested on these three important social variables. It is the intention of this research to examine the impact of the direct and indirect relationships of imagery on the social variables leading to purchase intentions. The preceding literature review is a foundation for answering the research question, and developing hypotheses for testing the conceptual model.

The research problem can be stated as:

How does consumers’ mental imagery affect their social interactions and purchase intentions?

The Imaginative Interpretative Processing Model (IIP), created for this doctoral research, suggests that the consumer creates knowledge through a conceptual blend. The conceptual
blend is a combination of fantasy, perception and memory that interprets all of the consumer’s experiences. The conceptual blend is a continuous and iterative process because every experience has the potential to change the consumer. In the conceptual model (Figure 2.8) all the social interactions link back to the individual’s conceptual blend because these are the consumer’s experiences in the world (shown by the dashed orange lines). The imaginative interpretation in the conceptual blend turns all this information into knowledge. The consumer can then use this knowledge to generate a mental image. The mental image becomes an evaluation tool for the consumer in order to assess the usefulness of the social information for developing *Purchase Intentions*. Because of the complexity of the conceptual blend process the focus of this research is on testing the direct and indirect relationship between *Vividness* and *Control* of the mental image and social interactions to determine if these interactions lead to *Purchase Intentions*. The conceptual model and the hypothesised relationships are shown in Figure 2.8.

In the appendix the alternative SEMs that incorporate feedback and bi-directional relationships were also tested and the findings were analysed and reported (please see pp 262-265).
In the IIP model, the consumer’s mental image is measured based on the Vividness, Control and usage of their images. In Hypothesis 1, the consumer uses mental imagery to develop positive Purchase Intentions directly. Hypothesis 2 states that the consumer also uses Vivid images to positively affect Purchase Intentions directly. For H3 the hypothesis is that the consumer’s Vividness of the consumer’s mental image will have a positive affect on Impressions Management. For H4 the consumer will positively use Problem Solving to affect their Impressions Management. Hypothesis 5 suggests that the consumer’s Control over their images will have positive influence on their Impressions Management. The next hypothesis (H6) is that there is a direct, positive relationship between Vivid imagery and Self-image Congruence. That is, the Vivid and controlled mental image helps the consumer
to match their self-image with the products prior to purchase. Hypotheses 7 and 8 specify a positive effect of Problem Solving (H7) and Controlled (H8) images on Social Comparison.

The next set of hypotheses focus on the social interaction variables and Purchase Intentions. Hypotheses 9, 10 and 11 focus on the affect of Impressions Management on the other social interaction variables. It is hypothesised that Impressions Management positively affects Social Comparison (H9). It is also hypothesised that Impressions Management has a positive influence on Self-image Congruence because the consumer is acting out a role to match themselves with products (H10). Hypothesis 11 states that the consumer’s Impressions Management will have a positive effect on Purchase Intentions. The consumer’s Social Comparison also has a positive relationship with Self-Image Congruence, as seen in H12. That is, consumers use social interactions to help them match the product to their self-image. Hypothesis 13 states that the consumer’s Social Comparison has a positive influence on Purchase Intentions. Finally, Hypothesis 14 is that Self-image Congruence has a positive affect on consumers Purchase Intentions.

In summary, the IIP model contends that the outcome of the consumer’s imaginative interpretation can be measured by the Vividness and Control of their mental images. These mental images can affect the development of the consumer’s social interactions and have both a direct and indirect affect on Purchasing Intentions. The model also shows a series of feedback loops to demonstrate that the process is not static as the consumer interacts with their mental imagery and social interactions their conceptual blending process can change. However, the feedback loops will not be tested in this research project.

The hypotheses can be formally stated as the following:

H1:  Problem Solving is positively related to Purchase Intentions
H2:  Vividness of mental images is positively related to Purchase Intentions
H3:  Vivid mental imagery is positively related to Impressions Management
H4:  Problem Solving is positively related to Impressions Management
H5:  Control over mental images is positively related to Impressions Management
H6: Vivid over mental images is positively related to Self-image Congruence
H7: Problem Solving mental images is positively related to Social Comparison
H8: Control over mental images will positively affect Social Comparison
H9: Impressions Management is positively related to Self-image Congruence
H10: Impressions Management is positively related to Social Comparison
H11: Impressions Management is positively related to Purchase Intentions towards specific products
H12: Social Comparison is positively related to Self-image Congruence
H13: Social Comparison is positively related to Purchase Intentions towards specific products
H14: Self-image Congruence is positively related to Purchase Intentions

The next section contains the conclusions for this literature review. The conclusions draw out the implications of the research in relation to previous research into consumer information processing.

2.6 Conclusions

Classic research into the consumer decision-making process has focused on information processing. This research has argued for the importance of understanding how the consumer creates knowledge of products. In Section 2.2.2, the seminal decision theories in buyer behaviour were reviewed. These early theories modelled the decision-making process by incorporating all internal and external forces that affect the decision process. The seminal models demonstrated that the decision process is dynamic and contextual. Ultimately, the models argued that consumers process and evaluate product information in a rational manner in order to make a purchase decision. The Bettman (1971) General Decision and Choice Model was chosen as a foundational model for this thesis because it highlighted the importance of the individual and the purchasing situation.
Bettman’s (1971) model focused on the division of the creation of knowledge into two paths: constructed and heuristics. That is, the consumer creates knowledge using information obtained in a new situation and by using existing knowledge. A study by Punj and Stewart (1983) removed the distinction between these two constructs, but did not provide a clear explanation of how the consumer combines information in order to make a decision. This has created a theoretical gap in explaining how consumers process information.

The premise of this doctoral research is that consumers create meaning through the conceptual blend of information in the imagination. The conceptual blend combines information from the consumer’s perceptions, memories and fantasy. In this way, the consumer creates knowledge. For instance, when a consumer is going through the process of building a house they will combine information from perceptions (seeing other houses), memories (the memory of other houses they have seen or lived in) and fantasy (elements they would like, but have not seen). It is through this combination that the consumer can understand what they are looking for in a house in order to determine what kind of house to build. The imagination mixes this information together in an interpretative process that creates meaning. This concept is the foundation for the Imaginative Interpretation Processing (IIP) Model developed for this research.

Because imaginative interpretations are internal to the consumer and complex they are difficult to capture. However, the level of conscious imaginative interpretation can be measured through the consumer’s reported use of imagery. Namely, with how much Control and how clearly the consumer can see (visualise) the product in their mind. As argued in Section 2.3.2, mental imagery is more like a movie than a photograph. This suggests that the consumer uses the mental imagery to rehearse owning the product. In this way, the consumer can see how it would be if they purchased the product. The rehearsal enables the consumer to determine if the product has symbolic and social meaning for them. This suggests that mental imagery offers the consumer an evaluative tool that enables them to experience the symbolic and social implications of owning a product without social risk. It also enables the consumer to consider more than just the functional features of the product which can be evaluated without imagery.
The literature has established that after the consumer has created his/her mental images of the products and evaluated them on their symbolic and social meanings, they proceed with the purchase. The purchase (or non purchase) is a reflection of how the consumer wishes to be viewed by others. This is the consumer social identity. This identity has been developed through the imaginative interpretation of product information. In this way, the consumer has imagined his/her life in relation to brands and other people. The purchase of the products is a visible demonstration of how that consumer sees his/her self.

In order to communicate their consumer social identity, the individual must follow the rules of the drama. These rules are taught to individuals and are often related to the consumers’ overall goals. For instance, in order to be seen as a health conscious consumer he/she ought to purchase food that is nutritious and avoid foods that have little nutritional value. Hence, the consumer is following the socially prescribed rules to achieve a certain identity. Moreover, the products become props for the consumer in order to reach his/her social goals. A consumer’s ability to present a certain image is called Impressions Management. Previous studies into Impressions Management have shown that some consumers have a greater ability and desire to control the presentation of their image and others response to them. In this way, higher impressions managers know the image they want others to see and will use specific products in order to present that image. For this thesis, it is argued that the consumer’s consumption goals are evaluated through mental imagery. That is, the consumer has seen (visualised) the act of purchase and the potential social response to purchase in a mental image prior to buying the product. Thus, they can present the appropriate Impressions Management because they already have assumed the prescribed social response in his/her mental imagery evaluation.

Symbolic products have been primarily researched in terms of product and Self-image Congruence. The previous research has focused on identifying the products that consumers choose in relation to self-identity. However, the research has not focused on imagery rehearsal. In other words, previous research has determined that consumers match symbolic products with self-identity, but has not explored the various elements of imagery creation and the influence this has on the consumer’s ability to determine the symbolic meaning of products. It is possible that a consumer’s ability to create a mental image may affect his/her ability to evaluate product and Self-image Congruence. Therefore, this thesis is proposing to measure the consumer’s ability to generate images and to explore the
relationships between these images and the symbolic meaning of products for consumers. In particular, this thesis will examine products in terms of the consumer’s *Vividness* and *Control* over mental images in relationship to developing *Self-image Congruence*.

Another argument of this thesis is that consumers create mental images to help develop *Social Comparison*. To this end, consumers use products as a form of *Social Comparison* which enables the consumer to draw inferences about the owners by looking at the products they purchase. In other words, individuals recognise the meaning of a product and understand that social implications may be connected with ownership. For example, consumers recognise the symbolic meaning of owning a large home and make stereotypical assumptions about the owner of the house. In terms of this doctoral research, it is argued that the consumer uses mental imagery to *see* (visualise) this *Social Comparison* in their mind prior to purchase. Thus, the mental image rehearsal enables the consumer to evaluate the product based on its social meaning. This enables the individual to think about their purchases in relation to his/her consumer social identity as the social way others perceive them. For instance, an individual can express a consumer social identity that is concerned with controlling their weight by purchasing *diet* products. This is because the diet product has a symbolic meaning and social connotations. Moreover, the consumer expects other people to draw conclusions when they purchase a product that is labelled *diet*.

In conclusion, the central tenet of this doctoral research is that consumers interpret information through an imaginative conceptual blend. That information is used to form mental images which are used to evaluate products based on the brand’s symbolic and social meaning to the consumer and other people. The consumer then uses this evaluation to communicate a consumer social identity through *Purchasing Intentions*.

The next section of this thesis outlines the methodology used to explore the Imaginative Interpretation Processing Model.
Chapter 3 Methodology

3.1 Introduction

The purpose of Chapter 3 is to present and examine the methodology for this research. The first aspect to be examined is the design process, including identifying the research perspective, sampling and the data collection tool. Second, is the evaluation of the different measurement scales that will be used to measure the variables discussed in the Imaginative Interpretation Processing (IIP) model presented in Chapter Two. Finally, this chapter contains a review of the data analysis technique of Structural Equation Modelling.

The Imaginative Interpretation Processing Model (IIP) that was introduced in Chapter 2 is the diagrammatic representation of the constructs that will be examined. The focus of Chapter 3 is to present a methodological approach that will answer the research question and test the hypotheses of the conceptual model. A quantitative method was chosen because it suited the research question in terms of the examining the consumer experience with social interactions and mental imagery. The purpose of the research was to test the hypothesis and develop a summary of how the IIP model operates in the consumer environment. This research is not exploratory so the more qualitative research design methods were not appropriate.

Chapter 3 begins with a discussion of the ontological and epistemological position of the research. It is essential to define the philosophical underpinning of the research because it explains the perspective of the researcher and can provide insights into the appropriateness of the research design. This research is being approached from a realism perspective that allows for individual interpretation within defined boundaries of reality.

Following the discussion of philosophical paradigms is an exploration of the design of the research itself, including sampling and the data collection method. The data collection tool chosen for this research is an online self reported quantitative questionnaire. The next section describes the criteria used for choosing between the scales available in the literature that could be used to test the conceptual model. It is important to adopt the
right scales in order to answer the research question. To achieve this goal, the nature and development of each scale itself is first examined to ensure the scale is appropriate for the research question. Second, the reliability and validity of the scale is assessed. In this section, the common ways to assess reliability and validity are described. Reliability and validity are essential elements in the research design because otherwise the measures are unlikely to be robust and may not capture the full domain of the construct, and may produce inaccurate inferences.

A review of the available measurement scales is then presented and the choice of the scales is justified using the criteria of suitability, validity and reliability. Each scale is presented with a brief description of the items and a review of other research that has used the scale.

The final section contains a discussion on the main data analysis technique. The nature of this research suggests that structural equation modelling would be an appropriate data analysis technique as the research problem is focused on the relationship between latent constructs. Structural equation modelling (SEM) is an analytical tool that enables the researcher to determine the nature of the factors and the relationship between them. In this way, SEM provides a modelling technique that can provide structure for abstract concepts and thus enable the data to be interpreted and the research problem to be answered. In this section, the single congenric measurement models and the structural models are presented.

### 3.2 Philosophical Paradigms

Paradigms explain “the proper domain of science, the research question it should ask, and the rules to follow in the interpretation of the results” (Arndt, 1985, p. 11). This means that the researcher’s paradigm directs all aspects of the research project, from the formation of the question to the way in which the data are analysed and understood. The topic of philosophical paradigms has been debated amongst marketing academics (Peter and Olson, 1983; Hunt, 1990; Easton, 2002) as they struggle to understand the concept of marketing itself and the best way to understand the marketing phenomenon. The debate has focused on the nature of reality and the way researchers interact with their research participants.
Ontology and epistemology are the philosophical underpinnings of the researcher’s relationship with the world. Ontology can be defined as the researcher’s beliefs about the nature of reality and epistemology is defined as the way the researcher comes to understand that reality (Guba and Lincoln, 1998). The issues involving ontology and epistemology have to be addressed when choosing a research design because the methodology can be dependent on the perspective of the researcher (Anderson, 1983; Deshpande, 1983; Easton, 2002). Moreover, the researcher needs to understand his/her own perspective of reality before he/she can draw inferences from his/her research subjects’ perspective.

Table 3.1 is a summary of the three principal research paradigms in terms of epistemology, ontology and methodology. As identified in Table 3.1, the philosophical paradigms can be divided into three broad groups: positivism, realism, and constructivism. Each perspective approaches the world a different way resulting in a different methodological emphasis. Positivists believe that the world consists of absolute truths and that these truths can be observed and recorded impartially (Anderson, 1983). In contrast, constructivists believe that individuals create their own truth about the world and that to measure a phenomenon the researcher must be an active participant because there is no absolute truth (Morgan, 1980; Muncy and Fisk, 1987). A third approach is that of the realists who accept that reality is imperfectly apprehensible and individuals perceive the world differently because of their own experiences (Healy and Perry, 2000). The following scenario describes the approaches adopted by the different paradigms to understand the different perspectives of a referee and the foundations of his/her refereeing decision made during the course of a football match. From the positivist perspective, the decision can be based on the observations of the situation. That is, the proximity of the referee to the incident and his/her physical line of sight. From the realism perspective, the referee’s decision is founded on his/her physical position as well as their previous experiences. From the constructivist perspective, the decision can be based on how the referee interpreted the situation given their own values. Thus, the perspective of the referee is essential to understanding the decision that was made in the football game. In the same way, the perspective of the researcher is important to the way he/she conducts their research projects.
<table>
<thead>
<tr>
<th>Paradigm</th>
<th>Ontological perspective</th>
<th>Epistemology</th>
<th>Methodology</th>
<th>Evaluation</th>
<th>Criticism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positivism/empirical log</td>
<td>There are absolute truths that can be observed to solve problems, measures are objective, measures do not influence the phenomena</td>
<td>The truth can be observed through direct experiences such as questionnaires</td>
<td>Quantitative surveys</td>
<td>Validity and reliability</td>
<td>Inductive research cannot be conducted easily. One negative incident may falsify a whole theory</td>
</tr>
<tr>
<td>Realism</td>
<td>The world is independent of individuals, knowledge is fallible and theory laden and the world must be measured critically in order to evaluate it</td>
<td>The world can be observed, but the researcher is also influenced by past experiences and personal interviewing</td>
<td>Quantitative survey, qualitative approaches such as focus groups and personal interviewing</td>
<td>Validity and Reliability</td>
<td>Inability to fully identify the effect of human interaction within the phenomena</td>
</tr>
<tr>
<td>Constructivism/ critical relativism</td>
<td>There are multiple realities, it is a social process, truth is subjective and not necessarily rational and by studying the phenomena it is changed</td>
<td>Experiences are interpreted based on the situation/context</td>
<td>Dialogue, narrative analysis ethnographic studies</td>
<td>Dependability and consistency</td>
<td>Unobserved variables are difficult to measure and one is unable to make generalisations regarding phenomenon. The results are often seen as a pure interpretation rather than reporting actual situations</td>
</tr>
</tbody>
</table>

Sources: Adapted from Anderson, (1983); Easton, (2002); Peter and Olson, (1983); Healy and Perry, (2000)
Looking and Thinking from the Realism Perspective

The philosophical underpinnings of this study are from the realism position as described in Table 3.1. Primarily, this position was adopted as it suits the nature of the research problem. The world is defined with truth; however, those truths are not absolute even though it is independent of the individual (Healy and Perry, 2000). For this thesis, the purpose is to investigate a subjective topic of mental imagery, thus it requires more flexibility than the positivist perspective. On the other hand, the constructive perspective may be too unstructured to capture the concept. The realism perspective allows for both structure and flexibility to be used in the study of mental imagery and consumer social interaction process.

A researcher also needs to consider the way the data will be analysed when considering their philosophical paradigm. As argued by Healy and Perry (2000, p. 120):

“structural equation modelling may be the only appropriate survey analysis tool for a realism researcher to use for it has two attractive features: 1) it models structures with complex interdependencies; and 2) it explicitly allows for multi-item scales and some measurement error in its ‘unobservable’ construct”

For this thesis, the realism paradigm philosophically complements the process of structural equation modelling (SEM) because it recognises that constructs may not be objectively or directly measured and that those variables have complicated relationships with other variables. In this way, SEM is an appropriate analysis method given the realism perspective.

In summary, it is important for the researcher to have considered the different research paradigms because each perspective affects the research process in a different manner. This suggests that the research design depends on the chosen paradigm. This research is founded on the realism perspective as it offers both a measure of objectivity and flexibility.

Once the researcher has an established philosophical position, the next step in the research design process is the selection of the sampling procedure and data collection approach.
3.3 Research Design: Data Collection

This section of the methodology chapter contains a review of the way in which the data will be collected, including the sampling process and the data collection approach. The data collection approach will be self administered online surveys.

3.3.1 Sampling Procedures

There are two kinds of sampling procedures: probability and non-probability. Probability sampling occurs when each member of the population has an equal chance of being selected and non-probability relies on the judgment of the researcher to select the participants (Frankel, 1983). Probability sampling will be used in this research because this will produce results that are generalisable across the population and the sampling error can be computed.

Sampling Process-getting to the participants

The sampling process consists of the following elements:

- Defining the target population
- Identifying the sampling frame
- Selecting the sampling technique
- Determining sample size (Sudman, 1983)

The target population must be clearly defined in terms of what constitutes an element: an individual, a household, or an organisation (Sudman, 1983). The element for this research is the individual. This is because the object of the study is to identify the individual’s ability to create, Control and use imagery.

The next step is to identify the sampling frame. The sampling frame can be as simple as a telephone directory. The sampling frame can ensure that the sample is representative of the population (Wyner, 2001). Without an appropriate sampling frame the process of inference and generalisation are compromised because the researcher cannot be confident that the sample represents the population. Thus, the conclusions and implications of the research may not be accurate. To make the sampling frame more rigorous, the use of socio-demographic parameters can be used (Sudman, 1983). For instance, the sampling frame may be considered
in terms of percentages that reflect society such as including more females than males. The sampling frame for this research is determined by the internet host’s database (Online Research Unit). The ORU is a respected and established online research company who recruit from a range of participants. The sample frame consists of more than 300,000 participants. Each participant provides a demographic, psychographic, attitudinal and behavioural profile and is approached to respond to surveys based on that information. Each participant is approached via invitation given the requirements of the research ("The online research unit,"). In this way, each member of the database is a potential respondent.

There are several kinds of probability sampling techniques including simple random, systematic, stratified and cluster (Frankel, 1983). The choice of the sampling technique is dependent on the data collection tool as well as the purpose of the research. For instance, with cluster sampling there is an assumption that natural groups of elements exist and can be identified in order to understand the phenomenon. For this research the sampling technique will be simple random sampling. With simple random sampling each element has an equal chance of being selected at one stage without comparison to other elements (Sudman, 1983).

In this research, all members of the internet host’s database will have an equal opportunity to be part of the survey. This sampling procedure was chosen because: (a) it is appropriate given the data collection tool of an online self-administered survey and (b) the individual is the unit of analysis. Hence, simple random sampling technique will reach a representative sample because no particular groups need to be targeted in order to answer the research question.

One concern with probability sampling techniques is the effect of participant withdrawal. When participants withdraw from a study there is the potential that the sample is no longer representative (Goldberg, 2003). This can have an affect on the generalisability of the results. This issue is addressed further in the limitations section in Chapter 5 of the thesis. To ensure that research ethics were followed the participants were informed of their rights when they entered into the survey and consent was implicit given that they completed the survey. (For specific details please see Appendix Two Questionnaire.

Sample size is an important consideration in the research design process because a small sample may not have sufficient statistical power to generate meaningful results and a large sample may cause variables to be significant when they are not (Hair et al. 2002). In particular, having an appropriate sample size can also help avoid Type 1 and Type 2 errors.
(Sprowls, 1964). Thus, the sample size can impact on whether or not the null hypothesis should be rejected or accepted. The sample size can be determined in several ways, but for SEM modelling an appropriate way the sample size can be determined is by the number of individuals per parameter with an ideal ratio of approximately 5:1 (Kline, 1998). That is, the more complicated the model, the larger the sample size should be in order to ensure that the model parameters will be significant. The estimated number of parameters for this research is 87; this suggests that the required sample be at least 435 participants.

Finally, appropriate sampling techniques and questionnaire design are important in the research design process in order to reduce sampling errors. There are two kinds of sampling errors that can affect the reliability and validity of the research: random sampling error and non sampling error. Random sampling error occurs when the sample is not representative of the population (Assael and Keon, 1982). This suggests that the survey was answered by the wrong people. Non sampling error is the result of non-response and mistakes in answering the survey questions (Assael and Keon, 1982). When non-sampling errors occurs, respondents may not be representative of the population, and may be answering the question incorrectly or inappropriately. Sampling errors can be reduced by careful questionnaire design, survey distribution and an appropriate sample size.

In conclusion, the sampling process in research is designed to ensure that the participants that are surveyed can provide an answer to the research question. Thus, the sampling frame, size and sampling techniques should all be designed to meet the needs of the research project in order to answer the research question.

### 3.3.2 Data Collection Methods

Once the sampling process has been selected, the researcher needs to choose a way to collect the data. The following section contains an overview of the various data collection methods and a justification of the chosen method of internet surveys.
Overview of data collection methods

The choice of the data collection method is important in the research design because it can affect the sampling procedures, the choice of questions, and the format of the survey instrument. All methods of data collection have strengths and weaknesses (Dillman, 2007), thus it is important to assess the different methods to identify the most appropriate one given the needs of the research. As seen in Table 3.2, the choice of data collection method will depend on the desired or required level of interaction between the participants and researcher, the participant’s technical ability and the financial resources that are available. For example, data collection methods such as telephone and face to face have a higher level of interaction between the researcher and the participant than self-administered surveys conducted by mail or internet. The use of contemporary technologies like the internet requires the participant to understand and have access to the necessary technology which can restrict the sample population. Finally, mail, telephone and internet surveys can be distributed more easily to a wider geographical area than face to face interviews. There are advantages and disadvantages of the different data collection tools and are summarised in Table 3.2.
Table 3.2: Advantages and Disadvantages of common techniques of data

<table>
<thead>
<tr>
<th>Type of Survey tool</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail</td>
<td>Potential to contact respondents across a large geographical area</td>
<td>Typically requires motivational incentive</td>
</tr>
<tr>
<td></td>
<td>Participant are used to mail surveys</td>
<td>Accurate mailing lists can be difficult to obtain</td>
</tr>
<tr>
<td></td>
<td>Convenient for participants because it can be done in their home at any time</td>
<td>Costs of printing and mailing can be high</td>
</tr>
<tr>
<td></td>
<td>Potential to achieve high response rates</td>
<td>Takes longer to complete survey</td>
</tr>
<tr>
<td>Internet</td>
<td>Programs can ensure the participant cannot skip questions</td>
<td>Need reliable access to technology such as computers and internet</td>
</tr>
<tr>
<td></td>
<td>Interactive media that can stimulate and encourage engagement</td>
<td>Privacy and security issues</td>
</tr>
<tr>
<td></td>
<td>Less social desirability bias</td>
<td>Costs associated with design</td>
</tr>
<tr>
<td></td>
<td>Data entered automatically which can reduce data entry mistakes</td>
<td>Sampling issues</td>
</tr>
<tr>
<td>Telephone</td>
<td>Able to explore answers</td>
<td>Need to train the interviewers</td>
</tr>
<tr>
<td></td>
<td>Can assist participants if they are confused</td>
<td>Potential social desirability bias</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible technical issues</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Up to date phone lists can be difficult to obtain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Costs of calls can be expensive</td>
</tr>
<tr>
<td>Personal interview</td>
<td>Can assist participants</td>
<td>Need to train the interviewers</td>
</tr>
<tr>
<td></td>
<td>Able to explore answers</td>
<td>Identifying a suitable place to intercept and conduct survey</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High cost of training staff</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Potential social desirability bias</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Difficult to use for large geographical areas</td>
</tr>
</tbody>
</table>

Sources: Adapted from Fink,(2006); Dillman, (2007).

The next section contains a more in-depth review of the internet survey process, including its strengths and weaknesses, to justify the choice of online surveys as the data collection tool.

Using the Internet to collect data

Internet surveys are a contemporary alternative to more traditional self-administered survey methods. The internet is an interactive electronic format rather than paper and pencil (Furrer and Sudharshan, 2001). As shown in Table 3.3, the main advantages of internet based surveys are the ease of use, especially the collection of data in electronic format ready for
statistical analysis (Wilson and Laskey, 2003), and the richness of the stimulus material that respondents can be exposed to (Furrer and Sudharshan, 2001; Tingling, Parent, and Wade, 2003; Tourangeau, Couper, and Conrad, 2007). This suggests that the internet can make data collection faster for the researcher and the variety of stimulus materials can add to the design of questionnaire. That is, the medium can give researchers more freedom in their questionnaire design in order to experimentally expose respondents to various stimuli. Another important aspect is the control of the questions in terms of participants overlooking a question, skipping not applicable questions and controlling the order in which the participant fills in the questionnaire (Boyer et al., 2002; Gosling et al., 2004; Evans and Mathur, 2005). For example, when using online questionnaires the system can help to reduce the problem of missing data by refusing to accept questionnaires unless all the required fields are completed.

The main disadvantages of the internet survey as seen in Table 3.3 are issues to do with sampling and technology (Tingling et al., 2003; Evans and Mathur, 2005). These disadvantages have influenced the assumption that internet surveys are not as reliable or valid as more traditional collection methods. Gosling et al. (2004) argued that there are several myths about the validity and reliability of internet surveys including supposition about online sample demographics and the failures of the tool. The assumptions about online sample demographics included a bias towards socially awkward young, white men who are unmotivated. The failures of the tool itself included things such as investigators being unable to guarantee anonymity and differing results from other methods using the same measures because of presentation formats. The results of Gosling et al. (2004) investigation into the myths found that the online sample could be potentially more diverse demographically than traditional methods, that internet users were highly motivated, presentations format did not significantly affect responses and that the results were similar to those obtained using other collection methods. Several other researchers have also found evidence to support the reliability and validity of online surveys arguing that with careful survey design the results are comparable with traditional methods such as post-mail paper and pencil surveys (Boyer et al., 2002; Hayslett and Wildemuth, 2004; Akl et al., 2005). Anonymity can still be an issue for researchers, but the internet host (Online Research Unit) for this research provided unique id codes for privacy and to ensure participations only respond once. The host for this research also set in place a series of filter questions to ensure that the appropriate sample is targeted. The filtering question included was ‘Are you older that 18years of age?’. Other filtering questions focused on their participants behaviour for example “Do you create mental images
of products before you purchase them?” was asked to filter out consumers who did not engage in this behaviour.

Table 3.3: Advantages and Disadvantages of Internet Based Surveys

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilson and Laskey (2003)</td>
<td>Ease of use</td>
<td>Sampling is not representative</td>
</tr>
<tr>
<td></td>
<td>Electronic data</td>
<td>Response rates can be lower</td>
</tr>
<tr>
<td></td>
<td>Cost effective (once it is set-up)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quality of responses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Good sampling tracking processes</td>
<td></td>
</tr>
<tr>
<td>Furrer and Sudharshan (2001)</td>
<td>Response time compared to traditional mail is often very quick</td>
<td>Sampling has to be based on a dynamic frame</td>
</tr>
<tr>
<td></td>
<td>Richer support form interactive media (Audio/visual stimulus)</td>
<td>Unable to control the respondents identity</td>
</tr>
<tr>
<td>Ranchhod and Zhou (2001)</td>
<td>Global reach</td>
<td>Technical issues related to:</td>
</tr>
<tr>
<td></td>
<td>Flexible</td>
<td>- Experience of user and use of internet</td>
</tr>
<tr>
<td></td>
<td>Ease of data entry and analysis</td>
<td>- Technical aspects of system (size of email files)</td>
</tr>
<tr>
<td>Evans and Mathur (2005)</td>
<td>Technical controls (answer order, rich stimulus question diversity, required completion of question)</td>
<td>Seen as junk mail</td>
</tr>
<tr>
<td></td>
<td>Speed</td>
<td>Sampling issues</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low response</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Technical (system differences and capabilities)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Privacy and security</td>
</tr>
<tr>
<td>Tingling et al. (2003)</td>
<td>Accelerated data collection</td>
<td>Technical knowledge required by researcher and respondent</td>
</tr>
<tr>
<td></td>
<td>Geographical reach</td>
<td>Sample bias</td>
</tr>
<tr>
<td></td>
<td>Modifying questions</td>
<td>High start-up costs</td>
</tr>
<tr>
<td></td>
<td>Mediums potential to increase methodological rigour</td>
<td></td>
</tr>
<tr>
<td>Gosling, et al. (2004)</td>
<td>Internet users do not different significantly from no users</td>
<td>There are problems with anonymity such as one participant completing the survey more than once</td>
</tr>
<tr>
<td></td>
<td>Internet formats motivate participants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Internet samples can be more diverse than other methods</td>
<td></td>
</tr>
</tbody>
</table>
Despite the fact that the internet has several weaknesses, it is important to point out that many of the other methods have similar issues. For instance, with mail there is limited control over the identity of the participant. That is, the intended recipient may not be the person who fills in the questionnaire. Mail surveys can also been seen as junk mail and it is often difficult to set up an accurate and effective sampling frame (Dillman, 2007). With telephone surveys, the start up cost can be very high as well as the on-going cost and the sampling frame can also be difficult to establish with many people having unlisted and private numbers. Finally, with personal interviews there is the potential of sample bias and social desirability bias, it can be expensive to train researchers and difficult to intercept participants (Fink, 2006). Thus, it is clear that all data collection methods have weaknesses that the researcher must account for as part of their methodology.

The purpose of this review of methodology was to identify the strengths and weaknesses of the different approaches. It is apparent that many of the disadvantages associated with using internet surveys can be overcome with careful sampling and questionnaire design. That is, the sampling process can identify the participants who are competent with the technology and appropriate in terms of answering the research questions. Moreover, the internet offers interactivity and access to data that is cost effective. Thus, online self-administered questionnaires using an online host database (ORU) will be used in this research to gather the data.

Having considered how the data will be collected, the next section focuses on developing criteria for choosing appropriate measurement scales. This is important in the research process because it provides justifications for the chosen measurement scales and gives the researcher confidence that the relevant phenomenon is being accurately measured.

### 3.4 Criteria for Choosing Between Scales

In this section the criteria that will be used to justify the selection of scales to measure the IIP model are reviewed. There are three main criteria used in the process of choosing the right scales. First, understanding the purpose for which the scale was originally developed and how it was used. This involves understanding what the scale was designed to measure and the statistical methods used to analyse the data produced by the scale. Second, there is the issue
of reliability, which helps to determine if it can consistently measure the same phenomena again. Finally, there is the issue of validity, which determines if the scale provides an accurate measure of the phenomena. The presence of reliability and validity within a study enables the researcher to have confidence that the conclusions are a dependable and accurate explanation of the experience being measured. Although research is rarely 100% reliable and valid it is necessary to measures the levels of reliability and validity in order for the research to be considered robust (Peter 1979). It is important to have both reliability and validity tests because although a measure that is valid is also reliable, it is possible for a measure to be reliable without being valid (Churchill, 1979). The following section provides definitions and explanations for how the process of scale development and reliability and validity will be assessed for each of the scales examined.

3.4.1 Scale Development Process

It is important to understand how a scale was developed to ensure that the scale will be uni-dimensional and is being used for an appropriate purpose. In the traditional method of scale development described by Churchill (1979) and Peter (1979), they argued that validity and reliability could be achieved by the researcher systematically producing and reducing multiple item measures until the construct is uni-dimensional, then repeatedly testing the scale to establish both reliability and validity. In other words, scale development consists of a process of identifying all the potential elements within a construct and reducing the number of the elements until a precise measure of the concept is created. For instance, to measure an abstract concept such as happiness, the scale development process would begin with the widest range of ideas that represent the construct.

Reinecke, Flynn and Pearcy (2001) argued that there are problem areas within the traditional scale development process, such as unspecified acceptable sample size in the developmental stages and insufficient replication using the scale. This suggests that inappropriate scales have been created because the researcher did not have a sufficiently rigorous scale development process. A more contemporary view is that scale development need not be a list of synonyms of the construct. Moreover, it may not be necessary to use multiple-item scales at all, if the construct is easily understood and concrete (Bergkvist and Rossiter, 2007). Despite suggested changes to the structure of the scale development paradigm (see Rossiter
2001), the most important characteristic of scale development remains creating and maintaining rigour (Reinecke Flynn and Pearcy, 2001; Devellis, 2003).

As part of assessing the suitability of a scale, it is important to understand the purpose of the scale and how it was developed. An important aspect of designing a survey instrument is choosing appropriate scales for research that are reliable and valid. The next section focuses on the process of determining if the scale is reliable.

3.4.2 Reliability— Can it be repeated and is it internally consistent?

Reliability is defined as the “tendency towards consistency found in repeat measures of the same phenomenon” (Carmines and Zeller 1979, p.12). In other words, reliability is present when the research is repeated with the same results. In addition, reliability testing is designed to test the “extent to which scores on particular measures may be caused by irrelevant factors” (Heeler and Ray 1972, p361). In other words, reliability is present when the researcher is confident that the relationship between the variables explains the phenomena being measured rather than random chance errors. Reliability can be tested using test-retest, the split-half method and Cronbach alphas.

Test-retest
Test-retest involves re-sampling the same sample again with the same instrument after a specified interval of time (Carmines and Zeller, 1979). Reliability is established when you ask the same sample the same question again and they respond in the same way. However, there are some problems with this form of reliability testing that occur because of the process of re-testing. That is, re-testing reliability can be affected by a change in attitude prompted by the phenomena being studied, limited access to the sample and the effect of time (Carmines and Zeller, 1979; Peter, 1979). For instance, a participant can change their opinion about an issue because of the way the researcher presented the ideas, the sample may not be available to participate again and finally, time can change peoples’ opinion because the situation may have changed.
**Split-Halves Method**

Split-halves reliability testing uses one sample and occurs when the “total set of items is divided into halves and the scores on the halves are correlated” (Carmines and Zeller 1979, p41). In other words, the sample is divided in half and if the joint correlations are high then reliability in the sample can be assumed. Split-halves testing has a significant flaw in that the same sample could be split in different ways and produce different results (Peter 1979).

**Cronbach Alpha**

The coefficient alpha (also known as the Cronbach alpha and the reliability coefficient) measures internal consistency (Churchill, 1979). This method of establishing reliability does not have the same weaknesses as test-retest because it is only using one sample. Coefficient alphas are calculated as the average of all the possible split halves (Ullman, 2007). Thus, the coefficient alpha has overcome the randomness flaw within the split-half method. The Cronbach alpha is a commonly used test for reliability (Peter 1979). However, reliability can be increased by including redundant measurement items. Hence, the weakness of the Cronbach alpha is that it may be signalling reliability when the measurement scale is not reliable. To overcome this flaw in the Cronbach alpha the scale should also be tested for face validity to ensure that there are no inappropriate variables inflating the results. Alternative, the coefficient beta may be a better measure of internal reliability of scale than the Cronbach Alpha because it is an “estimate of the minimum split-half reliability” (Cooksey and Soutar, 2006, p. 80)( That is, when the coefficient beta is low (more than .10 (Rossiter, 2002) difference to the Cronbach alpha), it suggests there may be sub-scales in the factor. Thus, examining the coefficient beta is very important test when making judgments about the uni-dimensionality of scales particularly during the scale development process (Cooksey and Soutar 2006). However, the alpha measure is standard and acceptable.

The next section discusses the different types of validity.

**3.4.3 Validity— Is it true?**

Validity is a measure of the accuracy of the results based on the specific situation being studied (Carmines and Zeller, 1979). In other words, validity is present if, given the purpose
of the research; the results are an accurate description of the phenomena. Validity is demonstrated in various ways including consensus validity, criterion validity and construct validity.

Consensus or Face Validity
Consensus or face validity exists when the “measure looks as if it should indicate a particular variable” (Heeler and Ray 1972, p 361). This type of validity is also known as content validity. This level of validity is the easiest to establish, but the least dependable and it is based on the universal acceptance of the measure by expert judges (Cronbach and Meehl, 1955; Bergkvist and Rossiter, 2007). That is, face validity can be established when experienced researchers agree that the items represent the full domain of the phenomena. This suggests that while content validity is useful to establish, it is open to interpretation as some experts may not agree.

Criterion Validity
Criterion validity exists when there is a correlation between the measurement items and the observed behaviour (Carmines and Zeller, 1979). For example, criterion validity exists if there is a relationship between the amount of study and performance in a test. Criterion validity is established by either predictive or concurrent validity. Predictive validity involves determining the extent that the future can be predicted by the measurement’s relationship with the criterion (specified behaviour being tested) (Heeler and Ray, 1972). In other words, a scale is considered to have predictive validity if the behaviour matches what the items in the scale indicated would happen. Concurrent validity exists when the behaviour and measurement items can be measured at the same time, again showing that the behaviour matches what the items said would happen (Cronbach and Meehl, 1955). This type of validity is useful to ensure that the items used to measure the phenomena actually relate to the phenomena (behaviour) either in the future or at the current time.

Construct Validity
Construct validity measures whether or not the variables operate in an expected theoretical manner (Heeler and Ray, 1972). Hence, construct validity is established if there is
consistency between the hypothesised relationship of the variables and the concepts being studied. To this end, having the correct theoretical definition for the construct is vitally important when attempting to establish construct validity (Carmines and Zeller, 1979). Ultimately, construct validity is about the accuracy of the measure (Hair et al., 2006).

Construct validity has two main components used to test the robustness of the measure: (a) convergent validity and (b) discriminant validity. Convergent validity is demonstrated for a measure if it matches other measures of the same variable. For instance, in the context of SEM, convergent validity is demonstrated if all of the items in a scale have high loadings for a latent construct. Convergent validity can be established in SEM through size of the factor loadings (above 0.7), variance extracted (above 0.5) and construct reliability (above 0.7) (Hair et al. 2006). Factor loadings “indicate the degree of correspondence between the variable and the factor, with higher loadings making the variable representative of the factor” (Hair et al. 2006, p. 106). When these measures show high loadings there is evidence to support convergent validity. That is, that the measures are explaining the same phenomena and show little error variation.

Discriminant validity is evident when there is low correlation between measures that are supposed to measure different concepts (Heeler and Ray, 1972). In other words, the measures are not related because they are measuring different things. Thus, the researcher can be confident that the measures that have convergent validity are looking at the same construct and measures that have discriminant validity are unique constructs. In SEM, Fornell and Larcker (1981) argued that discriminant validity can be measured in two ways: (a) by specifying that the correlation of two constructs are equal to one and then testing the specified model against the actual model to see if there is a significant difference and (b) comparing the variance extracted percentage with the square of the correlations of the two constructs; the variance should be higher than the correlation demonstrating that the construct explains its items more than it explains other constructs.

In conclusion, it is necessary that the scales used in quantitative research achieve an acceptable level of reliability and validity in order for the results to be considered robust. The level of reliability and validity provide evidence for the veracity of the research conclusions. Convergent and discriminant validity are the two main forms of construct validity used for testing the robustness of the scale. Reliability and validity measures are also used to justify
the reuse of scales in other research. Thus, it is crucial that the previous work has accurately measured the phenomenon so future work can build upon existing scientific knowledge.

The next section contains a review and justification of the specific measurement scales that will be used in this thesis to answer the research question.

3.5 Review of measurement scales

This section contains a review of the scales used in studies on imagery (Control and Vividness), Self-image Congruence, Social Comparison, Impressions Management and Purchase Intentions. Each scale is briefly described and assessed in relation to its usefulness for this thesis. Scales were chosen based on the criteria developed in the preceding section; that is, the development and use of the scale and the evidence of sufficient reliability and validity. The scales have been adapted to suit the two products that were chosen for this research—camera and a holiday. These products were chosen because they are common and it is likely the participants will have had an experience with them. Theses products are also high involvement which suggests there is a high level of processing as opposed to a habitual purchase (milk) which requires little cognitive engagements for most consumers. Finally, these products can evoke emotional, social and symbolic aspects that may be necessary to consider the social implications of purchase as required by the research questions.

Scales to Measure Imagery—Vividness and Control

The first imagery scale is needed to measure Vividness. Vividness is a complex aspect of imagery research. Many of the scales have been developed in psychology and advertising to test the nature of imagery and the consumer’s response to product information (MacInnis and Price, 1987).

In the psychology literature, a scale to measure Vividness in imagery was developed by Sheehan (1967). Sheehan’s (1967) Short form of Betts’s Questionnaire on Mental Imagery (QMI) was developed from a scale created by Betts (1909) that was designed to test Vividness of imagery. The test measures the participant’s imagery in terms of visual, sound,
touch, muscular, taste, smell and bodily sensations. The respondents were asked to rate each object from (1) perfectly clear and vivid to (7) no image present at all. The QMI has been found to have a Cronbach alpha of 0.78, thus demonstrating the reliability of the shortened version. A principal components factor analysis was used to establish that convergent validity exists. Subsequent studies using the Shortened version of Betts’s QMI have recorded evidence of reliability with Cronbach alpha’s of 0.91 (Evans and Kamemoto, 1973) and 0.59 (White, Ashton, and Brown, 1977b) although the latter study found the alpha to be at the minimum acceptable level. This suggests the QMI scale has acceptable levels of both validity and reliability.

Sheehan’s (1967) scale was used to develop another popular Vividness scale called Vividness of Visual Imagery Questionnaire (VVIQ). This was developed by Marks (1999) and measures visual imagery only. The scale uses the same rating scale as QMI, but asks the participants to close their eyes and imagine suggested scenarios. Both the QMI and the VVIQ have been criticised for having low variability in response as the scales indicate that 80-90% of participants are able to create Vivid images, moreover, the scales also appear to measure Control (Kihlstrom et al., 1991). That is, the VVIQ measures both the participant’s ability to create a visual image as well as their Control over that image. These criticisms suggest that the QMI and VVIQ measures do not effectively differentiate respondents and lack uni-dimensionality.

A different scale was designed to measure the Vividness of imagery in response to advertising. The scale called “Vividness” was originally created by Ellen and Bone (1991) and adapted by Miller and Marks (1992) and later developed by Babin and Burns (1998). In the original study an advertisement was used in the scale to stimulate the participants. They were then asked to re-enact the advertisement through mental imagery. The participants were asked to indicate on a seven point scale ranging from (1) strongly disagree to (7) strongly agree the degree to which they agreed with each statement. Vividness by Ellen and Bone was found to be reliable with a Cronbach alpha of .86; Marks and Miller (1991) reported a Cronbach alpha of .90 and Babin and Burns (1998) produced a slightly higher Cronbach alpha of 0.93. This evidence suggests that the measure is reliable.

Babin and Burns (1998) used confirmatory factor analysis to establish the validity of the model. Babin and Burns (1998) reported a variance extracted estimate of 0.63 which suggest
there is evidence of convergent validity. A panel of experts was used to establish face validity at the beginning of the scale development process. The model was then analysed using regression to test the relationship between *Vividness* in imagery processing and the consumer’s attitude towards the brand. The results indicated that *Vividness* is a mediating variable for brand attitude.

Given the criticisms of low variations and multi-dimensionality for the QMI and VVQI scales of mental imagery and the complexity of these scales, the Babin and Burns (1998) scale of *Vividness* has been chosen for this research. The Babin and Burn’s scale was selected because first it has an acceptable level of reliability with a Cronbach alpha of 0.93 and there is evidence to suggest the scale has face and variance extract estimate of 0.63 for convergent validity. Second, the Babin and Burns scale has been used in the marketing context and has shown that Vividness of imagery has a significant mediating relationship with brand attitudes. Finally, the vividness scale has been analysed using regression and factor analysis which suggests that the scale would be appropriate for SEM. The scale items used by Babin and Burns (1998) are listed in Table 3.4. Please refer to question 5 and 6 from the survey in Appendix Two. The negative items in the scales will be reverse coded before the analysis of the scales is conducted.

### Table 3.4: Scales to measure imagery vividness

<table>
<thead>
<tr>
<th>Author</th>
<th>Scale Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babin and Burns</td>
<td><em>Vividness</em></td>
</tr>
<tr>
<td>(1998)</td>
<td>Clear</td>
</tr>
<tr>
<td></td>
<td>Detailed</td>
</tr>
<tr>
<td></td>
<td>Weak</td>
</tr>
<tr>
<td></td>
<td>Fuzzy</td>
</tr>
<tr>
<td></td>
<td>Vague</td>
</tr>
<tr>
<td></td>
<td>Vivid</td>
</tr>
<tr>
<td></td>
<td>Sharp</td>
</tr>
<tr>
<td></td>
<td>Well-defined</td>
</tr>
</tbody>
</table>

Please refer to question 5 and 6 from the survey in Appendix Two. The negative items in the scales will be reverse coded before the analysis of the scales is conducted.
The second scale for imagery is related to the construct of Control. No test for Control of imagery was identified in the Marketing literature. However, within the psychology literature there have been a few attempts to develop an independent measure for Control. Control is the generation and maintenance of imagery. A principal test is Gordon’s Test of Visual Imagery Control (TVIC). This scale was created in 1949 to measure the manipulation of mental imagery as a distinct concept to Vividness. With this scale the participants are asked to indicate if they can voluntarily manipulate the mental image of a car. The original scale was a 12 item, dichotomous response of yes/no measure. The TVIC scale was further developed by Richardson (1977) who asked the participants to indicate, using a pair of images, if the second image was easier or more difficult to form. For instance, the participants were asked to think of a car in the street. Then they were asked to think of the same car in the same place, but now upside down. Finally, they were asked to indicate if the second image was easier or more difficult to form and hold. This structure resulted in the test focusing on Control of the image rather than Vividness of the picture. Lequerica et al. (2002) developed the original scale by altering the response format to a 7 point rating scale ranging from 1 (very difficult) to 6 (very easy) with 0 indicating that no image could be formed. Discriminant validity was established with low correlations between the revised TVIC and scales for Vividness (-0.09). There was also evidence to suggest construct validity with factor loadings ranging from 0.58 to 0.91. The Cronbach alpha obtained in the Lequerica et al. (2002) study was 0.88. White, Sheehan and Ashton’s (1977a) review of imagery scales also provides evidence of reliability (Cronbach Alpha 0.88) and convergent validity (uni-dimensional in factor analysis) of Gordon’s TVIC. This suggests that the TVIC has an acceptable level of reliability and validity.

Another scale to measure Control was created by Owens and Richardson (1979). The scale contains 11 items which were evaluated using a three point response, where (1) represented a clear image, (2) represented a vague image and (3) represented no image at all. The items in the scale focused on movements such as creating a mental image of picking up a box and feeling the surface. The purpose of the scale was to examine the relationship between the nature of the stimuli and the individual’s pictorial memory. That is, the scale was used to study how simple objects (monochrome and geometric shapes) are remembered and verbalised in comparison to complex objects (a person’s face). A principal components factor analysis was conducted producing a six factors solution which suggests this scale is not uni-dimensional. The key conclusions suggest that easily verbalised images are more easily
remembered when related to high verbal intelligence and that mental imagery is a form of symbolic representation for individuals.

Morrison and White (1984) tested the correspondence between Owens and Richardson’s scale and Gordon’s (1949) control scale using a principal component factor analysis. Morrison and White found that Owens and Richardson’s scale contained three factors. They also argued that the first factor has clear correlations with one of the factors from Gordon’s analysis suggesting a level of convergent validity. Morrison and White concluded that Control was more about mental manipulation of movement, suggesting that scales to measure Control needed to contain mental images involving objects physically moving. However, they also argued that the Owens and Richardson scale contained items that loaded onto a third factor that they could not clearly interpret, suggesting there is some confusion in the scale.

Given the limitations of the Owens and Richardson’s scale, the Lequerica’s et al. (2002) TVIC scale of control based on Gordon’s original scale was chosen for this research because it has a level of reliability with a Cronbach alpha of 0.88 and there is evidence of construct validity from a confirmatory factor analysis with high factor loadings ranging from 0.58 to 0.91. In addition, the extended response options should increase the range and distribution of the scores (Lequerica et al., 2002). This scale has also been analysed using factor and regression analysis suggesting that it is an appropriate scale to be used in SEM analysis. The TVIC scale items are listed below in Table 3.5. Please refer to question 7 from the survey in Appendix Two.
Table 3.5: Test for Visual Imagery Control

<table>
<thead>
<tr>
<th>Author</th>
<th>Scale items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lequerica et al. (2002)</td>
<td>Car is standing in the road</td>
</tr>
<tr>
<td></td>
<td>Car in colour</td>
</tr>
<tr>
<td></td>
<td>Car in different colour</td>
</tr>
<tr>
<td></td>
<td>Car upside down</td>
</tr>
<tr>
<td></td>
<td>Car upright again</td>
</tr>
<tr>
<td></td>
<td>Car moving on the road</td>
</tr>
<tr>
<td></td>
<td>Car climbing a hill</td>
</tr>
<tr>
<td></td>
<td>Car climbing over top of hill</td>
</tr>
<tr>
<td></td>
<td>Car crashing through a house</td>
</tr>
<tr>
<td></td>
<td>Car moving with a couple inside</td>
</tr>
<tr>
<td></td>
<td>Car falls into a stream</td>
</tr>
<tr>
<td></td>
<td>Car is dismantled</td>
</tr>
</tbody>
</table>

A final scale that will be used to measure aspects of imagery was developed by Singer and Antrobus (1966) called the Imaginal Processes Inventory (IPI). The IPI is the only scale that measures these dimensions of imagery. The IPI has 345 items and 33 dimensions, so the whole scale will not be used in this study. Only one dimension in particular will be used in this study: Problem solving in daydreams. The first factor measures how the individual can use mental images to solve problems. The participants are asked to respond to a four point scale of certainly true for me to certainly false for me.

Giambra (1980) conducted factor analysis using principle components analysis on the IPI in an attempt to produce a shortened form. For construct validity, Giambra reported that the construct of Problem Solving the factor loadings were still low ranged from 0.76 to 0.45. This suggests that the constructs have construct validity issues and that the items may be measuring more than construct. However, this is the only scale that measures the constructs. Table 3.6 contain the scale items for these two factors as established by Giambra. This is the only scale that measures how consumers use
imagery in their problem solving. Please refer to question 8 in the survey in Appendix two.

**Table 3.6: Problem solving in day dreams**

<table>
<thead>
<tr>
<th>Author</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Giambra, 1980)</td>
<td>Sometimes the answer to a difficult problem will come to me in a mental image&lt;br&gt;My fantasies sometimes surprise me by suggesting an answer to a problem which I thought I could not work out&lt;br&gt;My images offer me useful clues to tricky situations I face&lt;br&gt;I can get a fresh approach to an old problem almost at once during what begins as an idle daydream&lt;br&gt;My mental images are always just sort of ways of passing time rather than attempts to actually solve my daily problems&lt;br&gt;When faced with a difficult situation, I imagine that I have worked out the problem and try out the solution in my mind&lt;br&gt;A really original idea can develop from a really fantastic mental image</td>
</tr>
</tbody>
</table>

In summary, imagery will be measured in terms of *Vividness* and *Control*. The scales were chosen because there is evidence to suggest that they are reliable and valid and will measure the principal constructs of mental imagery.

Next, the scales that will be used to measure product symbolism, *Impressions Management*, *Social Comparisons* and purchase intentions are described.

*Scales to Measure Self-image Congruence*

*Self-image Congruence*, as discussed in Section 2.4.3, is the match between products and the consumer’s self-identity. As argued by Hogg, Cox and Keeling (2000), *Self-image Congruence* is based on the symbolic meaning of products. In other words, consumers will use the value expressiveness of a product to explain something about themselves to others. For instance, a consumer whose self-image is wild and fast will purchase products such as a sports car to express that image. The concept of *self-image congruence* explains the role of symbolic products for consumers in terms of their product choices. For this thesis, *self-image*
*Congruence* explains the way consumers buy products for their symbolic value in order to express a consumer social identity.

The symbolic meaning of products is traditionally measured using semantic differential scales (Malhotra, 1981; Hogg, Cox, and Keeling, 2000; Bruner II, James, and Hensel, 2001). The semantic differential scales enable the researcher to plot consumers’ symbolic meaning for the specified products (Sirgy et al., 1997). However, Sirgy et al. (1997) criticised the traditional methods because they did not ask the participant directly about symbolism. This thesis is focused on the match between the symbolic meaning of the product and the consumer’s self-image. Thus, the scale has to measure whether or not the relationship between the consumer and the product is symbolic. That is, does the product express the image of the user or is the product merely functional and purchased for its utilitarian value rather than its symbolism.

The *Self-image Congruence* scale was created by Sirgy et al. (1997) to assess the validity of a new method of testing product symbolism in comparison to the traditional method that involved the use of semantic differential scales. The *Self-image Congruence* scale asks the participants to respond on a 7 point scale from *strongly disagree* to *strongly agree*. Sirgy et al. (1997) reported a Cronbach alpha of 0.90. This provides evidence to suggest there is an acceptable level of reliability. The measure was analysed using multiple regression, which suggests the scale will be appropriate for analysis in SEM. There was also significant correlation (−.48) between the new method and traditional methods of testing product symbolism indicating that there is a level of convergent validity. This implies that both scales are measuring *self-image congruence*. Thus, there is evidence to suggest that the *Self-image Congruence* scale will be a reliable and valid measure for this thesis.

The *Self-image Congruence* scale has been chosen for this research as it has acceptable evidence of reliability with a Cronbach alpha of 0.90 and evidence of convergent validity. The items of Sirgy et al.’s (1997) *Self-image Congruence* scale have been modified to match the context of this research. The items are presented in Table 3.7. Please refer to questions 18 and 19 from the survey in Appendix Two.
Table 3.7: Modified Self-image Congruence Scale

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Items</th>
</tr>
</thead>
</table>
| Sirgy et al. (1997)| This camera is consistent with how I see myself  
This camera reflects who I am  
People similar to me use this camera  
The kind of person who typically uses this kind of camera is very much like me  
This camera is the mirror image of my style |

Scales to Measure Impressions Management

Impressions Management refers to the way in which a consumer will monitor and adapt their own responses in relation to interactions with other people. There have been many scales developed in the sociology literature to measure this construct, but this review will focus on the scales that have been adopted by the marketing discipline.

The purpose of the Lennox and Wolfe’s (1984) Revised Self Monitoring Scale (RSM) is to measure both self-presentation and sensitivity towards others. The scale was developed from an earlier study intended to measure expressive behaviour by Snyder (1974). In the RSM scale the participants are asked to indicate how each item reflects their behaviour on a six point scale, from 0=certainty always false to 5=certainty always true. This has been altered from the original scale by Snyder (1974) which was dichotomous. The original scale by Snyder (1974) contained 25 items and was reported to have discriminant validity because of low correlations with other constructs and reliability was established through test-retest and a Cronbach alpha of 0.63 which was low, but still at an acceptable level for a new scale (Peter, 1979; Nunnally and Bernstein, 1994). The RSM scale was reduced to only 13 items after factor analysis which is a traditional method of scale development to remove redundant items. The Cronbach alpha for Lennox and Wolfe’s (1984) revised scale is 0.75 indicating an acceptable level of reliability. The Cronbach alpha relating to the factor “ability to change self-presentation” is 0.77 which signifies that this part of the scale also has a level of reliability. The scale has also demonstrated low correlation with other constructs such as
concern for appropriateness which provides some evidence of discriminant validity. Lennox and Wolfe (1984) also argued that the revised scale had face validity.

Further testing of the RMS scale by O’Cass (2000) found the measure to have an acceptable level of reliability with a Cronbach alpha of 0.86. O’Cass (2000) presented evidence of convergent validity, reporting factor loadings ranging from 0.714 to 0.787. Finally, O’Cass also found the measure was appropriate for structural equation modelling analysis, reporting acceptable goodness-of-fit results, with a GFI of 0.913 and a RMSEA of 0.049 for a two factor composite model.

The RSM scale has been chosen for this research because the scale has been used in the marketing context and it has evidence of reliability with a Cronbach alpha of 0.86 and convergent validity with factor loadings ranging above 0.7 (O’Cass, 2000). The scale items for the RSM scale have been modified to suit the context of this research and are presented in Table 3.8. Please refer to question 14 in Appendix Two. The negative items in the scales will be reverse coded before the analysis of the scales is conducted.

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lennox and Wolfe (1984)</td>
<td>Ability to modify self presentation in purchasing situations</td>
</tr>
<tr>
<td>Revised Self monitoring scale</td>
<td>In social purchasing situations, I have the ability to alter my behaviour if I feel that something else is called for</td>
</tr>
<tr>
<td>O’Cass (2000) used the same scale items</td>
<td>I have the ability to control the way I come across to people depending on the impression I wish to give them by purchasing different products</td>
</tr>
<tr>
<td></td>
<td>When I feel that the image I am portraying isn’t working, I can readily buy something to change it to an image that does work</td>
</tr>
<tr>
<td></td>
<td>I have trouble changing my purchasing behaviour to suit different people and different situations</td>
</tr>
<tr>
<td></td>
<td>I have found that I can adjust the products I want to buy to meet the requirements of any situation I find myself in</td>
</tr>
</tbody>
</table>
Scales to Measure Social Comparison

The scales described in this section are designed to measure Social Comparison. Social Comparison is about how the consumer compares themselves to others. This construct has also been studied in sociology and psychology; the following scales have been most commonly used in marketing.

There are two popular scales to measure Social Comparison in the marketing literature: Attention to Social Comparison Information (ATSCI) by Lennox and Wolfe (1984) and Consumer Susceptibility to Interpersonal Influence (CSII) developed by Bearden, Netemeyer and Teel (1989), which was originally created by Park and Lessig (1977). The CSII scale was later revised by Auty and Elliott (2001). The CSII measures the impact of Social Comparison on the consumer’s decision making process.

Lennox and Wolfe (1984) developed the ATSCI scale as a sub-scale of the Revised Self Monitoring Scale that was discussed in the previous section. Thus, the focus of this scale is not only Social Comparison, but also the individual’s alterations to behaviour in terms of conformity. That is, the ATSCI scale measures how the consumer changes, given their comparisons in a social situation. Because the Revised Self Monitoring Scale is already assessing the participant’s Impressions Management as a separate construct, the ATSCI scale cannot be used to ensure discriminant validity between constructs.

The scale chosen for this research is the revised CSII, which is a two factor 12 item scale. The participants are asked to respond on a 7 point bi-polar agree/disagree scale for each item. The CSII was developed using the traditional method of scale development. One hundred and sixty six items were reduced using a process beginning with expert judges to develop face validity. Then item-to-total correlation (any items correlating below 0.5 were removed) and factor analysis were used to reduce the scale further. Bearden et al. (1989) demonstrated reliability through significant results for a test-retest and with Cronbach alphas of 0.75 (informational- accepting information) and 0.79 (normative- conforming to expectations) suggesting the scale was reliable for both factors. Content validity was established by the use of external judges rating the appropriateness of the items. There was evidence of convergent validity, with variance extracted estimates ranging within acceptable levels from 0.53 to 0.55.
Some evidence of discriminant validity was provided with low correlations with other constructs.

Construct validity for both ATSCI and CSII was established by Auty and Elliott (2001) when they tested the scales against each other and found weak convergent validity and strong discriminant validity when tested in comparison with a scale measuring self-esteem. Auty and Elliott (2001) retested the CSII scale and found evidence of reliability with Cronbach Alphas of 0.70 (normative) and 0.63 (informational). This finding indicated that the reliability of the informational factor is still low, but the normative factor is stable and reliable.

The CSII by Bearden et al. (1989) has been chosen for this research. For this research, the informational factor items are not relevant, so this factor will be excluded from the scale. The scale has demonstrated reliability with a Cronbach alpha of 0.79 for the normative factor. Content and discriminant validity have also been established, and variance estimates above 0.5 suggest the measure has convergent validity. The scale items for the CSII have been altered slightly to fit the context of this research and are presented in Table 3.9. Please refer to questions 16 and 17 in Appendix Two.

<table>
<thead>
<tr>
<th>Table 3.9: Consumer Susceptibility to Interpersonal Influence Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Author(s)</strong></td>
</tr>
<tr>
<td>Bearden, Netemeyer and Teel (1989)</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
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</table>
Scales to Measure Purchase Intentions

The final scale is designed to measure *Purchase Intentions*. Measuring *Purchase Intentions* is one of the most commonly studied areas in marketing (Kalwani and Silk, 1982) and consequently there are number of scales to measure this construct. Many academics support the measurement of *Purchase Intentions* in relation to measuring the likelihood of purchase (Warshaw, 1980). Two commonly used scales to measure *Purchase Intentions* are *Purchase Intentions* (Baker and Churchill Jr, 1977) and the *Juster Scale* (Juster, 1966).

A popular scale in the marketing literature called *Purchase Intentions* was developed to measure responses to advertising by Baker and Churchill (1977). The scale has three questions asking the participant to respond on a seven point scale from *yes, definitely* (will purchase/try/seek) to *no, definitely not*. The scale is designed to measure the behavioural aspect of purchasing attitude. Subsequent testing of this scale has suggested a moderate to high level of reliability with Cronbach alphas ranging from 0.73 (Baker and Churchill Jr, 1977), 0.81 (Perrien, Dussart, and Paul, 1985) to 0.91 (Kilbourne, Painton, and Ridley, 1985). Baker and Churchill (1977) provided further evidence of reliability with the item-to-total correlations ranging from 0.85 to 0.95 for the scale, suggesting that the behaviour component items are relatively uniform and thus are measuring the same concept. The scale has demonstrated a level of content validity with a panel of 15 experts agreeing on the appropriateness and sufficiency of the terms being used (Perrien *et al.*, 1985).

The *Juster Scale* (1966) is another measure used to predict actual purchase based on the probabilities of purchase. The participants are shown a product and are asked to respond to a single question “Taking everything into account, what would be the chances that you would buy this product?” The response options range on an 11 point scale from *certain practically certain* to *no chance* and are presented in Table 3.10. The scale has been widely used (Brennan, 2004) and has received support for its reliability, validity and predictive qualities (Kalwani and Silk, 1982; Day and Gan, 1991). Please refer to questions 10, 11, 12 and 13 in Appendix Two.
Table 3.10: Juster Scale

<table>
<thead>
<tr>
<th>Author</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Juster Scale (1966)</td>
<td>10 certain practically certain (99 in 100)</td>
</tr>
<tr>
<td></td>
<td>9 Almost sure (9 in 10)</td>
</tr>
<tr>
<td></td>
<td>8 Very probable (8 in 10)</td>
</tr>
<tr>
<td></td>
<td>7 Probable (7 in 10)</td>
</tr>
<tr>
<td></td>
<td>6 Good possibility (6 in 10)</td>
</tr>
<tr>
<td></td>
<td>5 Fairly good possibility (5 in 10)</td>
</tr>
<tr>
<td></td>
<td>4 Fair possibility (4 in 10)</td>
</tr>
<tr>
<td></td>
<td>3 Some possibility (3 in 10)</td>
</tr>
<tr>
<td></td>
<td>2 Slight possibility (2 in 10)</td>
</tr>
<tr>
<td></td>
<td>1 Very slight possibility (1 in 10)</td>
</tr>
<tr>
<td></td>
<td>0 No chance, almost no chance (1 in 100)</td>
</tr>
</tbody>
</table>

The *Purchase Intentions* scale was chosen as well as the Juster Scale because it asks a range of *Purchase Intentions* questions including impulse purchase, trial and active purchase. This scale will be used in addition to the Juster Scale as it is important in SEM to have multiple items for each scale particularly for the dependent variable. The Purchase Intention scale items are presented in Table 3.11.

Table 3.11: Response Items to Measure Purchase Intentions

<table>
<thead>
<tr>
<th>Author</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baker and Churchill (1977)</td>
<td>Would you like to try this product?</td>
</tr>
<tr>
<td></td>
<td>Would you buy this product if you happened to see it in a store?</td>
</tr>
<tr>
<td></td>
<td>Would you actively seek out this product in a store in order to</td>
</tr>
<tr>
<td></td>
<td>purchase it?</td>
</tr>
</tbody>
</table>

In summary, the preceding scales were chosen for this research because it has been established that they contain acceptable levels of reliability and validity. Therefore, there is evidence to suggest that these scales will measure the constructs proposed in the Imaginative Interpretation Processing model (Chapter 2 Section 2.5). Table 3.12 is a summary of the scales in terms of what they measure and their validity and reliability.
### Table 3.12: Summary of scales in terms of suitability for use

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Author(s)</th>
<th>Reliability</th>
<th>Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vividness</td>
<td>Babin and Burns (1998)</td>
<td>Cronbach alpha</td>
<td>Face, Discriminant and convergent validity</td>
</tr>
<tr>
<td>Control</td>
<td>Lequerica et al. (2002)</td>
<td>Cronbach alpha</td>
<td>Discriminant validity</td>
</tr>
<tr>
<td>Usage</td>
<td>Giambia (1980)</td>
<td>Cronbach alpha</td>
<td>Discriminant and construct validity</td>
</tr>
<tr>
<td>Self-image Congruence</td>
<td>Sirgy et al. (1997)</td>
<td>0.90</td>
<td>Convergent validity</td>
</tr>
<tr>
<td>Social Comparison</td>
<td>Bearden, Netemeyer and Teel (1989)</td>
<td>Cronbach alpha of 0.75 and discriminant and convergent (informational and normative)</td>
<td></td>
</tr>
<tr>
<td>Impressions management</td>
<td>Lennox and Wolfe’s (1984)</td>
<td>0.75</td>
<td>Convergent validity</td>
</tr>
<tr>
<td>Purchase intention</td>
<td>Baker and Churchill (1977)</td>
<td>Cronbach alpha of 0.73</td>
<td>Content validity and Construct validity</td>
</tr>
</tbody>
</table>

The structure of the survey instrument for this research begins with filtering questions about imagery usage, the respondents are asked about their ability to create vivid images for a holiday and then a camera. The next section asks the participants about their ability to control their mental images. Then their purchase intentions towards a holiday and then a camera are asked. The next section is about social interaction beginning with Impressions management, social comparison and then self-image congruence. The final section of the survey is demographic information. Please see Appendix Two- Survey Instrument for the ordering of the questions and the response fields.
Once the data have been collected using the proposed scales, the next stage is data analysis. The data analysis technique chosen for this research is Structural Equation Modelling (SEM). The next section of this chapter contains a review of the SEM technique including a discussion of its strengths and weaknesses.

3.6 Data Analysis Method

3.6.1 Structural Equation Modelling

Structural Equation Modelling (SEM), as defined by Kline (2005), is a data analysis method that maps the relationship between latent and manifest factors. In this way, SEM provides a framework for combining regression and factor analysis (Hox and Bechger, 1998). The power of SEM is the simultaneous estimation of separate, but interdependent multiple regression equations in a structural model that incorporates latent factors and controls for error (Hair et al., 2006). In other words, SEM shows the influence of all the pathways between the dependent and independent variables as well as the covariances between the different constructs within a model. The model can then be tested against the data and models that exhibit a reasonable goodness-of-fit can be said to explain the phenomena.

SEM is a complex modelling technique and it is common practice to use statistical software. For this research, AMOS 17 will be used to develop the measurement and structural models. AMOS 17 was chosen because of its graphic design functions that make it user friendly and its analysis functions that aid the development of the model (Byrne, 2001).

There are various types of relationships between the variables and constructs in SEM. The measurement model relationships are between a construct and single variable or multiple variables. The structural model relationships consist of the dependent relationship between at least two latent constructs and/or correlation of two constructs (Byrne, 2001). For instance, in the IIP model there is a measurement model relationship between Vividness (latent construct) and the item variable clear. When the structural models are built, there will be a relationship between constructs such as Vividness to Purchase Intentions. Figure 3.1 shows the different types of theoretical relationships that can be modelled in SEM.
There is more than one strategic way to approach SEM with much debate about the most appropriate strategy for researchers to adopt. The debate has focused on identifying the appropriate number of steps for modelling with various strategic approaches suggested such as one step (Bollen, 2000), two steps (Hayduk and Glaser, 2000) or four steps (Mulaik and Millsap, 2000). The different steps represent different modelling strategies. Hair et al. (2006) outlined the three common strategies; confirmatory modelling, competing modelling and model development. Confirmatory modelling is a test of the relationships to see if the model fits the data (one step). Competing modelling is designed to evaluate the model in contrast to other plausible hypothesised models. The competing models allow for respecification of the measurement constructs (two steps). Model development is more exploratory modelling based on theory; it is often focused on the early stages of identifying the construct and measurement models trying to develop insights into the constructs as well as test the relationships (four-steps). Given this perspective, a two- stage model will be used in this thesis. The two step procedure allows the latent constructs and variables to be respecified in the measurement model stage and then examines the relationships between the

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**Figure 3:1:** Types of relationships in SEM
latent constructs with the structural model in order to test the hypotheses and examine them against competing models. Each model plays an important role in the analysis of SEM and will be discussed separately in the following sections.

*The Measurement Model*

It is important to note as part of the definition of measurement and structural models that these two models perform different roles in the development of a full structural equation model (Loehlin, 2004). The measurement model shows how the observed variables (measurement items) relate to the latent factors. The structural model shows how the latent factors relate to each other (Anderson and Gerbing, 1988; Burke Jarvis, Mackenzie, and Podsakoff, 2003; Hair et al., 2006). For example, the measurement model shows how the measurement items of fatigue (F), insomnia (I) and restlessness (R) relate to the latent construct of sleep disorder. As shown in Figure 3.2, the measurement models are shown in the two rectangles, with rectangle one being the observed variables of fatigue (F), insomnia (I) and restlessness (R) and the latent construct of sleep disorder. Rectangle two is the observed variables for depression. The structural model is then indicated by the arrow linking the latent factor of sleep disorder to the latent factor of depression. Figure 3.2 shows graphically the different roles of the two models; the measurement model has determined the relationships between the observed variables and the latent construct and the structural model has determined the relationship between the latent constructs.
The first critical aspect of developing the measurement model is determining if the relationship between the latent construct and observed variables is formative or reflective in nature. Burke Jarvis et al. (2003, p. 203) argued that a formative factor model can be identified if (a) the variables are defining characteristics of the construct, (b) a change in the variable causes a change in the construct, but not vice versa and (c) the variables are not necessarily correlated or affected by each other nor do they have the same antecedence or consequences. A reflective model can be identified if the above characteristics are reversed. Graphically, formative factor models have path indicators where the arrow points from the items to the latent construct. Thus, the items show different aspects of the construct. For instance, a child’s socio-demographic factor is made up of observed measures such as family income and parents’ education. The arrows point from the measurement items to the latent variable because a change in the parents’ education would cause a change in the child’s socio-demographics construct, but a change in the child’s socio-demographics would not change the parents’ education.

On the other hand, reflective models are causal indicators and the arrows point from the construct to the items. In this way, the items are paths that are expected to be related and that
changes in the construct are expected to cause changes in the variables (Law and Wong, 1999). For example, the construct of leadership explains the related observed variables of power and control. The model is reflective because a change in leadership would cause a change in power and control. Thus graphically, the arrows point from leadership to power and control. It is important to understand if the construct is formative or reflective because failure to recognise the nature of the model could lead to the inferences and specifications being incorrect (Burke Jarvis et al., 2003). The measurement models for this research are reflective latent construct that changes as the construct changes, are likely to be correlated and are not defining characteristics of the various constructs. Figure 3.3 shows the graphical difference between formative and reflective factor models.

**Figure 3:3**: Formative and Reflective Models showing arrow direction

![Formative and Reflective Models](image)

Source: Adapted from Burke Jarvis, Mackenzie, and Podsakoff, (2003, p. 201)

Once the model’s reflective or formative nature has been established then the researcher has to specify the model. The measurement models are specified when each of the measurement items are assigned to the latent factors. The latent factors are based on the theoretical hypotheses that the researcher wishes to measure (Kline, 1998). Hence, the measurement model contains concepts that have been identified in theory as having a relationship. Confirmatory factor analysis (CFA) is used in SEM as part of the specification process. In CFA the parameters are imposed on the data and used to test the variance within the model to
assess the fit of the model (Bentler and Bonett, 1980; Hox and Bechger, 1998). In other words, the purpose of the CFA is to specify and impose structure on the data. Moreover, confirmatory factor analysis provides evidence of a valid and reliable measure.

However, not all measurement models match the observed data. To this end, the measurement model goes through a respecification process. In this instance, the measurement model becomes less of a confirmatory factor analysis (Anderson and Gerbing, 1988) and has to be altered to achieve a more acceptable fit. Exploratory Factor Analysis (EFA) is often used during the respecification process or prior to confirmatory factor analysis because the relationship between the observed variables and the latent factor is not fully understood (Byrne, 2001). The purpose of EFA is to explore the different possible pathways between the variable and the latent factor in order to build models rather than test them. Thus, as the observed variables are explored it becomes clear which item relates to the latent factor. For example, in EFA the researcher considering the theoretical concept of obedience would consider the different items related to obedience such as willingness to comply to determine if each item accurately describes obedience. The re-specification process is common in SEM as the relationship between the latent factors and measured variables is often unknown because the theoretical definitions lack clarity (Bollen, 2000) or the development of measurement items is weak (Rossiter, 2002). Exploratory factor analysis enables the researcher to remove items that cause confusion in the data, but removing variables should never been done arbitrarily. If changes need to be made to the measurement models, it should be based on theoretical arguments of the value of the item.

Specification of the one congeneric measurement models for this thesis

Each latent construct forms a single congeneric measurement model. This models are then placed together to form the structural model. This section contains each measurement model. Each construct is measured using the items from the scale. In SEM, the latent constructs are modelled showing their items and measurement errors. Covariance in error terms in measurement models can be the result of socially desirable responses (random) or error uniqueness (non random) (Byrne, 2001). Covariances between these errors can suggest that there is an issue with the way the item explains the construct. This is a limitation of the study and will be discussed more in Chapter 5 (section 5.4). The measurement models were based
on CFAs and scale reliability conducted in the SPSS. Each construct was examined for uni-
dimensionality and item redundancy. Once in AMOS the constructs were tested again for 
validity. The method used was the comparison of the squared correlations with the average 
variance extracted. Once the discriminant validity of the constructs was established the 
structural models were developed. Each construct, estimated error and structural path was 
then examined in AMOS to improve the model fit. First, the standardised residuals 
Covariances were examined; values exceeding 2 would indicate excessive covariance errors. 
The sample correlations were examined to determine if there were redundant items; 
correlations greater than 0.8 indicate item redundancy and could be removed to improve the 
model. Finally, the modification indices were examined. The decision to adopt the 
recommendations of the modifications indices was based on the theoretical assumptions 
about the construct, which is common practice (Hox and Bechger, 1998). Figures 3.4 to 3.10 
are the measurement models for this thesis.

Figure 3:4: Measurement model for Impressions Management

![Diagram](image-url)
Figure 3:5: Measurement Model for Control
Figure 3:6: Measurement Model for Vividness-Camera
Figure 3:7: Measurement Model for Vividness- Holiday

Figure 3:8: Measurement Model for Self-image Congruence- Camera
Figure 3:9: Measurement Model for Self-image Congruence - Holiday

SIC_H

1

SICH_holidaymatches 1 e1
SICH_holidayreflects 1 e2
SICH_peoplesimilar 1 e3
SICH_holidaylikeme 1 e4
SICH_holidaymirrorimage 1 e5

Figure 3:10: Measurement Model for Social Comparison-Camera

SC_C

SCC_cameraapproval e1
SCC_cameralike e2
SCC_brandapproval e3
SCC_brandexpectations e4
SCC_brandsgoodimpressions e5
SCC_camerabelonging e6
SCC_cameralikelike e7
SCC_cameralidentity e8
Figure 3:11: Measurement Model for Social Comparison - Holiday

\[ e_7 \rightarrow SCH_{\text{holidaysapproval}} \]
\[ e_6 \rightarrow SCH_{\text{holidayslike}} \]
\[ e_5 \rightarrow SCH_{\text{holidaydestination}} \]
\[ e_4 \rightarrow SCH_{\text{holidayexpectations}} \]
\[ e_3 \rightarrow SCH_{\text{holidaygoodimpressions}} \]
\[ e_2 \rightarrow SCH_{\text{holidaybelonging}} \]
\[ e_1 \rightarrow SCH_{\text{holidaytobelike}} \]
\[ e_8 \rightarrow SCH_{\text{holidayidentify}} \]
Assessing the validity and model fit of the measurement model

Once the measurement models have been established, the validity and suitability of the measurement model is established by model fit indices and be demonstrating construct validity.

Model Fit

Model fit indices fall into three primary categories: (a) Absolute Fit, (b) Comparative Fit, and (c) Model Parsimony (Schumacker and Lomax, 2004). The Absolute Fit indices directly measure the fit of the specified model given the observed data. The Comparative Fit, also known as incremental fit, indices compare the fitted model with a baseline model. Finally, Model Parsimony is related to the simplicity of the model and an acceptable model fit. Model parsimony is based on the principle of Occam’s razor that if the simpler model predicts equally well, it is preferred over a more complex model (Hair et al., 2006). All of the fit
indices are attempts to provide evidence of the suitability of the model in SEM analysis. Measures from each of these categories of model fit will now be described in greater detail.

The purpose of testing the data with the absolute fit indices is to determine if the model is an appropriate representation of the phenomenon (Hair et al., 2006). One of the most common absolute fit indices used to establish goodness-of-fit is the chi-square measure ($\chi^2$). The chi-square test provides support against the claim that the relationships in the model are simply a matter of statistical chance (Bentler and Bonett, 1980). However, the use of the chi square goodness-of-fit measure has been criticised because it is often dependent on normal distributions and can be influenced by the sample size (Bentler and Bonett 1980; Kline 2005). For instance, larger samples will almost always have a significant chi-square\(^1\) (<0.05) causing the model to be rejected even if the fit the data well (Hox and Bechger 1998). Thus, although the model representing the sample data suggests the phenomenon exists, the model is rejected as an inaccurate picture of the phenomena. The Goodness-of-Fit and Adjusted-Goodness-of-Fit Indices are measures of fit that are less sensitive to sample size. The adjusted GFI measures the model fit with consideration given the complexity of the model (Hair et al., 2006). The Root-Mean-Square Residual Index can be used to compare models with the same data to determine which model fits the data better (Schumacker and Lomax, 2004). The Root Means Square Error Of Approximation (RMSEA) acknowledges that the models are only approximations and provides a fit of the model based on how closely the model approximates the data (Hox and Bechger, 1998). Table 3.13 summarises the absolute fit indices.

\(^1\)Unlike many other statistical applications, in SEM the goal is to achieve an insignificant p-value (>0.05) which indicates that there is a reasonable fit between the model and the data
### Table 3.13: Absolute Fit Indices

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi Square $\chi^2$</td>
<td>Calculated based on the difference between the observed and estimated covariance matrices. The closer the two matrices are the better the model. Values above 0.05 indicate a good fit.</td>
</tr>
<tr>
<td>Normed chi square $\chi^2$ statistic</td>
<td>Used to measure the existence of a relationship between non-metric measures. In SEM, the normed $\chi^2$ statistic should be low showing there is no difference between the data and the model. It should be $&lt;3$.</td>
</tr>
<tr>
<td>Root means squared residual (RMSR) and Standardised root means squared residual (SRMSR)</td>
<td>This is an average of the residuals between the elements in the observed and estimated covariance matrices. Standardising the RMSR means that the results can be compared with other models. Lower RMSR and SRMSR scores are desired for a good fit. The statistic should be $&lt;0.05$.</td>
</tr>
<tr>
<td>Goodness-of-Fit Index (GFI) and Adjusted-Goodness-of-Fit (AGFI)</td>
<td>The ratio of sum of the squared differences between the observed matrices to the observed variance. The adjusted GFI accounts for the degrees of freedom relative to the number or variables GFI and AGFI should be close to one.</td>
</tr>
<tr>
<td>Root Means Square Error Of Approximation (RMSEA)</td>
<td>Attempts to measure the Goodness-of-fit with an allowance for sample size and the complexity of the model. Lower RMSEA means a better model. The statistic should be $&lt;0.05$.</td>
</tr>
</tbody>
</table>

Sources: Hair et al. (2006); Fan, Thompson, and Wang (1999); Schumacker and Lomax, (2004).

There are two common comparative fit indices that measure the tested models in comparison to null (where it is assumed that there is no covariance) models with differing degrees of freedom (Schumacker and Lomax, 2004; Chen, 2007). The first is the Comparative Fit Index (CFI) which is used to compare a baseline model with a fitted model. The CFI is not sensitive to sample size and model complexity (Hair et al., 2006). The Tucker and Lewis Index (TLI), also known as the Non Normed Fit Index (Hox and Bechger, 1998), has been found to be unbiased in measures of non-centrality (Schumacker and Lomax, 2004). The TLI is also a useful measure to use for comparing models because it adjusts for the complexity of the model (Hox and Bechger, 1998). Table 3.14 is a summary of these two commonly used comparative fit indices.
Table 3.14: Comparative Fit Indices

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparative Fit index (CFI)</td>
<td>Attempts to compare the baseline model with the fitted model. Results closer to one are desired, but an acceptable range is 0.90 to 1.</td>
</tr>
<tr>
<td>Non Normed fit index (NNFI) also known as Tucker and Lewis Index (TLI)</td>
<td>The NNFI is based on the Tucker Lewis Index. It is the ratio of the $\chi^2$ of the fitted model and the $\chi^2$ of the null model. Closer to one indicates a perfect fit.</td>
</tr>
<tr>
<td></td>
<td>Sources: Hair et al. (2006); Fan, Thompson, and Wang (1999); Schumacker and Lomax, (2004).</td>
</tr>
</tbody>
</table>

The final type of model fit indices is model parsimony. This measure of fit involves determining if the model is unnecessarily complicated. The main aim is to have the simplest model possible. Parsimony fit can only be compared across the same data set (Hair et al. 2006). The principal indices that focus on the parsimony of the model are the Parsimony of Goodness Fit (PGFI), Parsimony Normed Fit Index (PNFI) and the Constant Akaike Information Criterion (CAIC). Table 3.15 contains a summary of the parsimony model indices.

Table 3.15: Model Parsimony Indices

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parsimony of goodness of fit (PGFI)</td>
<td>Involves adjusting the GFI by multiplying by the parsimony ratio (degrees of freedom: degrees of freedom available) used only in comparison to other models. Scores should be closer to one.</td>
</tr>
<tr>
<td>Constant Akaike Information Criterion (CAIC)</td>
<td>Used to compare models when there are a different number of latent constructs in the models. A value close to zero indicates a more parsimonious model, but $&lt; 2$ is acceptable.</td>
</tr>
<tr>
<td>Parsimony Normed fit index (PNFI)</td>
<td>Adjusting the NFI by multiplying by the parsimony ratio. Scores closer to one indicate a better fit.</td>
</tr>
<tr>
<td></td>
<td>Sources: Hair et al. (2006); Fan, Thompson, and Wang (1999); Schumacker and Lomax, (2004).</td>
</tr>
</tbody>
</table>

Many of the goodness-of-fit measures have problems in their application (Bone, Sharma, and Shimp, 1989). For instance, many goodness-of-fit measures are affected by sample size, estimation and misspecification variations and bias. This implies that even when appropriate
goodness-of-fit measures are applied there is no guarantee that the model is accurate (Hayduk and Glaser, 2000). Fan, Thompson and Wang (1999) argued that the problems with the model fit measures stem from the lack of uniformity in the development of the indices, because each type of index was designed with a different motivation in mind. Given the problems with model fit measures, it is advisable to use more than one index in order to measure validity more rigorously.

Construct Validity

Part of developing the measurement models is testing construct validity. Construct validity needs to be established for the measurement models in addition to the goodness-of-fit. Construct validity can be established using confirmatory factor analysis (Hooley and Hussey, 1999). As discussed in Section 3.4.3 construct validity is established when the scale has convergent validity (items measure the same as other scales for the same construct) and discriminant validity (items measure are different from other constructs). Discriminant validity is established in SEM, in two ways: (a) by specifying that the correlation of two constructs are equal to one and then testing the specified model against the actual model to see if there is a significant difference and (b) comparing the variance extracted percentage with the square of the correlations of the two constructs; the variance should be higher than the correlation demonstrating that the construct explains its items more than it explains other constructs (Hair et al. 2006).

The Structural Model

The structural model is the second model type in SEM (see Figure 3.2 p 122). Specifying the structural model involves identifying the relationship between the constructs based on the theoretical foundations (Kline, 1998). Each hypothesis is represented by a specific relationship in the structural model. The structural model can then be imposed on the measurement models, showing all the relationships between the constructs and the measurement indicators used to measure the constructs (Hair et al. 2006). For example, once the measured variables (scale items) for the factors of Vividness, Control, Impressions Management, Social Comparison and Self-image Congruence have been established, the relationship between the latent factors can be imposed in the structural model.
The full structural model is tested to see the fit of the data to the model. The same model fit indices used to measure the suitability of the measurement model can be used to assess the structural model fit (Hair et al. 2006). A model that has acceptable goodness-of-fit can be argued to support the data well. This suggests that there is evidence to indicate that the model is valid and can be used to answer the research question and test the hypotheses.

*The structural model for this thesis*

Once the one factor congenric measurement models have been developed the latent constructs can be connected with the hypothesised pathways in the structural models. Figures 3.12 and 3.13 are the hypothesised models for this thesis. It is important to note that the structural models follow an iterative estimation procedure and that the models are appropriately identified. The easiest way to determine if an model is identified is to count the number of exogenous variable and the number of pathways to ensure that they match (Hess, 1999, p. 34). Model identification is important to be able to make valid conclusions about the estimated relationships. Identification issues are very complex; the problem cannot be solved with statistics, but with theory. On the other hand, theory cannot be restricted just to solve an identification issue (Hess, 1999).
Figure 3:13: Structural model with hypothesised pathways - Camera
In summary, the structural model will show the relationship between the constructs of this thesis.

Other issues in SEM

There are three important issues that need to be addressed when considering SEM namely, missing data, use of second order factors and how to test differences between groups using multi-group analysis. The next section contains a discussion of these issues and how they will be addressed in this research.

Missing Data

Missing data is a common problem in quantitative research. This problem can be caused by sampling problems such as having incorrect participant information (e.g. they are no longer living in the sample frame area) and non-sampling problems such as the participant refusing...
to answer or overlooking certain questions (Song and Lee, 2002). Because missing data has potentially serious implications for the statistical validity of the results, the researchers need to establish two things: (a) be able to identify missing data and (b) have strategies to deal with the problem.

First, the researcher has to identify the type of missing data. Data can be *missing completely at random* (MCAR) if the probability of the missing data is not because of the variable being measured. For example, data can be said to be MCAR when the participants did not systematically miss a specific question such as avoiding income and age. Data can also be *missing at random* (MAR) if the probability of missing the question is not related to the variable itself (Allison, 2002).

Second, the researcher has to develop strategies to deal with missing data that will ensure the best statistical results. The most efficient and effective means of dealing with missing data is casewise deletion (Allison, 2002). Casewise deletion means that a participant’s survey with any missing data will be removed from the sample. However, employing casewise deletion can have a significant impact on the overall sample size. Other ways of dealing with missing data include pairwise deletion, predicting the missing values, replacing the missing value with the mean and modelling the missing values (Schumacker and Lomax, 2004).

For this research, the questionnaires that have missing data will be deleted using casewise method. The sampling frame is an online panel so it is anticipated that there will not be sampling errors, but there may be item non-response for certain questions. To avoid missing data from the most common questions such as income, the statement “I do not wish to answer this question” will be placed in the demographic section of the questionnaire.

*Second order factor models*

Second order factors are used when theory suggests that there is an overarching concept or second operationalised level of abstraction (Hair et al. 2006). In other words, a second order factor is used when the concepts are components of a more holistic idea. Second order factors must be foremost theoretically driven, not statistically achievable (Kline, 1998). That is, even though the software can produce a statistically significant model, it does not
automatically mean that the second order factor actually exists. Figure 3.15 shows how a second order factor works.

**Second Order factor Model**

Second order factors are difficult to establish (Chen, West, and Sousa, 2006; Hair et al., 2006). Second order factors need to be tested rigorously for validity to ensure that they are measuring the variables and not being confounded. Hair et al. (2006) suggested that there are many conditions that need to be met to support a second order factor beginning with theoretical significance and strong evidence of nomological validity. The second order factor must also meet identification conditions, have a better model fit and predict more accurately than a first order factor. Finally, there needs to be at least three first order factors forming the second order factor.

For this research, the relationships between the constructs will be modelled as a first and second order factor model based on Hair et al.’s (2006) criteria. This approach will be taken because there is theoretical support for high correlations between Control and Vividness of imagery (White et al., 1977a; Lequerica et al., 2002; Fauconnier and Turner, 2003; d'Astous and Deschenes, 2005), which suggests these two constructs may form second order factor of mental imagery. The final model will be determined by the model fit statistics.

**Strengths and Weaknesses of SEM**

SEM has many strengths relating to effectiveness of the analysis tool. SEM can incorporate the measurement of both latent and manifest variables (Kline 2005). This enables the
researcher to see the impact of each of the measured variables on the latent construct. For instance, the SEM can show the standardised regression coefficients for each pathway for the latent construct of *Vividness* indicating which measured items have the most significant impact on the construct. In addition, SEM enables the researcher to test the relationships between latent factors as well as observed variables (Hox and Bechger, 1998; Byrne, 2001). In other words, SEM can identify complex relationship pathways (Hox and Bechger, 1998; Hair *et al.*, 2006; Ullman, 2007). This means that SEM has the potential to mirror the complexity of the relationships in the real world. SEM can show the direct relationship between constructs as well as indirect effects. For example, SEM can show the direct effect (sign, strength and significance) of *Vividness* on *Purchase Intentions* as well as the indirect effect of *Vividness* through *Impressions Management* on *Purchase Intentions*. Finally, SEM creates explicit estimates for the error parameters. This means that SEM is an attempt to reduce measurement error, by measuring indirectly through latent factors (Byrne, 2001; Ullman, 2007). Thus, because the error has been recognised, the researcher can argue with more confidence about the sign, strength and significance of the item’s impact on the relationship between the constructs.

The weaknesses of SEM include issues with sample size, normal distributions and the danger of making causal conclusions on correlation data (Hox and Bechger 1998). Sample size can be problematic because some samples are difficult to fully capture. A small sample size (less than 100 participants) can make SEM unusable. To reduce the impact of sample size, this research will adopt the rule of thumb suggested by Kline (1998) of the ratio of 5:1 (five participants for each variable). Non-normal distribution is an issue for many parametric statistical analysis tools. The data collected will be tested for normality and bootstrapping and other estimation techniques can be employed if the data are found to be non-normally distributed (Ullman, 2007). Finally in terms of causation, the researcher must be careful when considering the implications of the model because although the technique shows the relationship between the factors this does not automatically mean that one factor causes the other. This weakness can be addressed by referring back to the theoretical foundations to establish if there is any evidence from previous research or theory to suggest causation.

Another weakness of SEM is that the factor models have difficulty identifying multidimensional and uni-dimensional constructs (McGartland Rubio, Berg-Weger, and Tebb, 2001). This again supports the idea that the researcher must have a very clear
operational definition concerning the dimensionality of the constructs prior to the measurement model being developed. The chosen scales will be examined using CFA in SPSS before the measurement model is created in AMOS to confirm the uni-dimensionality of the constructs. If the factors are shown to be multi-dimensional, then based on theoretical considerations, items may be removed.

In summary, the strengths of SEM suggest that this analysis tool is useful for research where there are hypothesised relationships between several complex latent constructs. To ensure that the weaknesses of SEM do not affect the use of the method, the researcher must be certain that each latent construct is theoretically well defined to obtain a uni-dimensional construct, the sample size is proportionate to the number of parameters in the model and that the data are tested for normality. Moreover, the researcher must be careful to avoid making assumptions of causation when there is no clear evidence of causation.

In conclusion, SEM is an analysis tool that can be used when testing the relationship between theoretical concepts. The full structural model can simultaneously show the pathways between all the latent factors and the observed variables. The weaknesses of SEM can be overcome by careful operationalisation of the concepts that are uni-dimensional and sufficient sample sizes. The process of SEM enables the researcher to impose structure on the measurement models in order to test hypothesis, but also contain enough freedom for the measurement model to be re-specified if necessary. The use of SEM for this thesis is appropriate as the research question is focused on the relationship between the constructs for imagery, social interactions and consumer Purchase Intentions. These constructs are latent with many measurable variables. Thus, the measurement model will show which observed variables are part of the latent factors, then the structural model will show how the latent factors relate to each other.

**3.7 Conclusions**

The purpose of this chapter was to present the research design, the measurement scales and the analysis tool for this thesis.

The chapter began with a review of philosophical paradigms. Each paradigm affects the choice of methodology for the research. This research will be undertaken from the realism
perspective. The realism view enables the researcher to examine the situation, understanding that there are boundaries to reality, but acknowledging that the individual is also able to consider past experiences. The realism perspective with its bounded approach is the most appropriate philosophical position for this research project.

Sampling and data collection methods were discussed next. The sampling procedure needs to be structured to ensure that a representative sample of participants are selected that are able to answer the research question. The sampling process chosen is simple random sampling which is appropriate given the research questions and the data collection tool. The choice of a data collection method is again based on the needs of the research problem. Each data collection method has strengths and weaknesses. Some of the weaknesses can be overcome with careful design of the questionnaire and sampling distribution.

The data collection method for this research will be self-administered online questionnaires. The internet host will administer the survey using simple random sampling from their database. Each participant will be paid to complete the questionnaire. The strengths of the online environment for the data collection are its interactive nature, the potential of stimulus material, the automated structure of the questionnaire and electronically entered data. The weaknesses of online questionnaires are related to technical issues and sampling. However, by using an existing online panel, the sample will be familiar with the system and competent to handle minor technical issues. Thus, the online environment was chosen as an appropriate method of data collection for this research.

Section 3.4 provided criteria to justify the choice of the measurement scales. This section contained a review of the scale development process and the concepts of reliability and validity. It is important to understand how and why the scales were developed and the previous applications of the scale because it enables the researcher to assess whether or not this scale will help them to answer their research question. The concepts of validity and reliability are also central to all research projects as they provide evidence to suggest that the conclusions and inferences draw from the research are repeatable and true given the research design. Thus, previous scales that have reliability and validity are more likely to provide an accurate measurement of a phenomenon.
Following the discussion of scale development, reliability and validity is a review of the proposed scales for this research. Each scale was described and a justification for its inclusion in the research based on its reliability and validity and an assessment of its application given its previous use. A summary of the scales and justification for their inclusion is provided in Table 3.11 at the end of Section 3.5.

The final section for Chapter 3 was a discussion of the data analysis tool of Structural Equation Modelling. SEM has been chosen for this research because the primary function of this data analysis tool is to understand the relationships between latent constructs. This means that the model can establish how constructs function together to explain the phenomenon. Thus, SEM will help to answer the fundamental research problem of this thesis, which is to understand the relationship between the consumer Purchase Intentions, social interaction process, and mental imagery.

The next chapter contains the results of the data analysis. The data analysis section begins with a description of the pilot testing phase. The purpose of the pilot testing phase is to examine each construct and the survey instrument. The main data collection phase will use the same survey instrument with a new sample. The sample was controlled by the Online Research Unit (ORU).
Chapter 4 Results

4.1 Introduction

In the preceding chapter, the methodology that would be used to collect and analyse the data was discussed. The purpose of Chapter 4 is to report the results of the fieldwork. The data were collected using quantitative questionnaires and was analysed using structural equation modelling (SEM).

To begin, Chapter 4 contains an explanation of the pilot testing process. A pilot test was conducted to ensure the effectiveness of the measures prior to the major fieldwork. The results of the pilot test were examined in relation to the reliability and validity of the measures and to provide an answer to the research question.

Next, the full field work phase is described beginning with the sampling process. The source of the data is explained and the demographics are described. The sample was gathered using an online database research company.

Then, the results of the main fieldwork are presented, following the modelling process used in the pilot phase. The measurement models are tested first to ensure they are appropriate representations of the data. Then the structural models are presented to show the relationship between the constructs. At the end of Chapter 2 the research question was formally stated as: *How do consumers use mental imagery to evaluate the symbolic and social meaning of products?* To unpack this question a series of hypotheses based on the literature were developed. Each of these hypotheses will be tested in this chapter using the results of the SEM analysis.

The final section of this chapter contains conclusions about the fieldwork process and results.
4.2 Pilot Testing

A pilot study was conducted to ensure the validity and reliability of the measures as well as to
gauge if the measures would answer the research question. The pilot testing process is
therefore a trial for the main sample. The following section outlines the results of the pilot
study, explaining the sample and providing evidence to support the appropriateness of the
measures. Finally, the results of the pilot measurement and structural equation models are
presented.

4.2.1 Pilot sample

The data were collected from a convenience sample of 300 staff and students at Charles Sturt
University. The questionnaire was distributed face-to-face. From the sample, 287
questionnaires were returned and 256 were usable questionnaires.

The data collected in the pilot were first transformed and coded in the statistical program
SPSS. The negative items in the scales were reverse coded before the analysis of the scales
was conducted. Then, the data were tested using factor analysis to ensure that each measure
was uni-dimensional, and hence measures just one construct (Gerbing and Anderson, 1988).
There are several widely accepted ways of establishing uni-dimensionality including factor
analysis (Gerbing and Anderson, 1988; Clark and Watson, 1995) and structural equation
modelling (Reinecke Flynn and Pearcy, 2001). In this research, each construct was tested
using exploratory factor analysis in SPSS. The principal component extraction method was
used with the Oblimin Kaiser Normalisation rotation. During this process, two constructs
were shown to be multi-dimensional: Control and Vividness. Control was separated and each
factor was labelled separately: easy to Control and difficult to Control. Vividness was also
separated into two factors: Vivid and not Vivid. For the construct of Control the factor of
difficult to control was used (called Control) and the Vivid factor was used for the construct
of Vividness. Vividness had both positive and negative statements. Despite reverse coding,
the negative statements loaded into a second factor for this construct. The construct was
separated into two factors. The divided construct had strong scale reliability when tested in
SPSS. The construct of control had no negatively phrased items, but when the factor analysis
was performed it was clear that four of the items loaded into a second factor. This construct
also had strong scale reliability. This construct was called “difficult to control”. The full
scales were used again in the main study survey instrument and retested for their uni-
dimensionality, but similar factor loadings emerged.

4.2.2 Pilot Measurement Model Results

The factors that were identified in SPSS were then used to create measurement models in
AMOS. There are many indices to measure the model fit for SEM, and these have been
outlined and discussed in Chapter Three of this thesis. Because each index was designed for a
specific purpose and has limitations (Fan et al., 1999), it is important to use a range of
different indices to ensure the results are robust. The following model fit indices were used in
this research to establish the validity for the measurement models:

- CMIN/DF minimum discrepancy should be below three
- GFI-the ratio of sum of the squared differences between the observed matrices to the
  observed variance. The adjusted GFI accounts for the degrees of freedom relative to
  the number or variables. The GFI and AGFI should be close to one. The acceptable
  range is >0.90
- CFI (Comparative Fit Index)- Attempts to compare the baseline model with the fitted
  model. Results closer to one are desired. The acceptable range is >0.95
- RMSEA (Root Means Square Error of Approximation)- Attempts to measure the
  goodness-of-fit with an allowance for sample size and the complexity of the model.
  Lower RMSEA values means a better model. The statistic should be <0.05.

The fit of the pilot measurement models is satisfactory. The initial $\chi^2$ test shows that most of
the measurements models have an insignificant p-value >0.05. This suggests that the data
provided a good fit to the model (Byrne, 2001$^2$). Table 4.1 shows the fit indices used to
establish the goodness of fit including the $\chi^2$, CMIN/DF, CFI, GFI, RMSEA results for the
measurement models. Social Comparison (holiday/camera) were the only constructs that did
not meet the criterion for the chi-square value. Four of the constructs also had RMSEA values
that were greater than 0.05. However, Hair et al. (2006) argues that an RMSEA of 0.080 is
still within an acceptable range

$^2$ Unlike many other statistical applications, in SEM the goal is to achieve an insignificant p-value which
indicates that there is a reasonable fit between the model and the data.
Table 4.1: Fit indices for Pilot Measurement models

<table>
<thead>
<tr>
<th>Measurement Model</th>
<th>Chi-square</th>
<th>Degrees of freedom</th>
<th>Probability level (p-value)</th>
<th>CMIN &lt;3</th>
<th>CFI &gt;0.9</th>
<th>GFI &gt;0.9</th>
<th>RMSEA &lt;0.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficult to Control</td>
<td>0.008</td>
<td>1</td>
<td>0.929*</td>
<td>.008</td>
<td>1</td>
<td>1</td>
<td>&lt;0.00</td>
</tr>
<tr>
<td>Impressions Management</td>
<td>4.120</td>
<td>3</td>
<td>0.249*</td>
<td>1.373</td>
<td>.996</td>
<td>.990</td>
<td>0.038</td>
</tr>
<tr>
<td>Purchase Intentions Holiday</td>
<td>5.234</td>
<td>2</td>
<td>0.073*</td>
<td>2.617</td>
<td>.991</td>
<td>.990</td>
<td>0.080</td>
</tr>
<tr>
<td>Social Comparison Holiday</td>
<td>22.562</td>
<td>12</td>
<td>0.032</td>
<td>1.880</td>
<td>.994</td>
<td>.978</td>
<td>0.059</td>
</tr>
<tr>
<td>Self-image Congruence Holiday</td>
<td>7.212</td>
<td>3</td>
<td>0.065*</td>
<td>2.404</td>
<td>.994</td>
<td>.989</td>
<td>0.074</td>
</tr>
<tr>
<td>Vividness Holiday</td>
<td>3.281</td>
<td>2</td>
<td>0.194*</td>
<td>1.641</td>
<td>.998</td>
<td>.994</td>
<td>0.050</td>
</tr>
<tr>
<td>Purchase Intentions Camera</td>
<td>.478</td>
<td>1</td>
<td>0.489*</td>
<td>.478</td>
<td>1</td>
<td>.999</td>
<td>&lt;0.00</td>
</tr>
<tr>
<td>Social Comparison Camera</td>
<td>33.162</td>
<td>15</td>
<td>0.004</td>
<td>2.211</td>
<td>.990</td>
<td>.970</td>
<td>0.069</td>
</tr>
<tr>
<td>Self-image Congruence Camera</td>
<td>4.469</td>
<td>3</td>
<td>0.215*</td>
<td>1.490</td>
<td>.999</td>
<td>.993</td>
<td>0.044</td>
</tr>
<tr>
<td>Vividness Camera</td>
<td>3.467</td>
<td>3</td>
<td>0.325*</td>
<td>1.156</td>
<td>.999</td>
<td>.995</td>
<td>0.025</td>
</tr>
</tbody>
</table>

* p-value is not significant at the 5% level suggesting the data is a good fit for the model

4.2.3 Pilot Reliability and Validity

Next, each measurement model was also tested for construct validity. To test discriminant validity the average variances extracted are compared to the squared correlations. As shown in Tables 4.2 and 4.3 for each of the scales the average variance extractions are significantly larger than the square correlations (values shown in columns in table) so for each scale discriminant validity is established (Hair et al., 2006). Convergent validity can be established by assessing the factor loadings because factor loadings represent the correlation between the original variable and the factor. In SEM, convergent validity can be established by examining the size of the factor loadings (above 0.7) and Cronbach Alpha (above 0.7) (Hair et al. 2006). When these measures show high loadings there is evidence to support convergent validity. This means that each item’s factor loading should be examined to determine its usefulness to the factor. Acceptable factor loading levels are affected by sample size; for samples larger...
than 100, a factor loading of 0.50 is acceptable and for samples of 250 or larger then a factor loading of 0.35 is acceptable at the 0.05\% level (Hair et al. 2006, p112). Given that the pilot sample was 256, there is evidence to suggest that the data has an acceptable level of convergent validity with all of the factor scores exceeding 0.35.

Then, the data were tested for scale reliability. Hair et al. (2006) argued that for a scale to be considered reliable it needs to have a Cronbach Alpha of at least 0.7 for an established scale and 0.60 for a new scale. Tables 4.2 and 4.3 (below) show the Cronbach Alphas for each scale used in the pilot. The Cronbach Alphas range from 0.754 to 0.920 which suggests that each scale has an acceptable level of reliability.

**Table 4.2: Pilot Discriminant and Convergent Validity and Reliability for Camera**

<table>
<thead>
<tr>
<th>Constructs</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Difficult to Control</td>
<td>.920</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Vividness</td>
<td>0.070</td>
<td>.905</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Social Comparison</td>
<td>0.015</td>
<td>0.001</td>
<td>.944</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Impressions Management</td>
<td>0.000</td>
<td>0.007</td>
<td>0.033</td>
<td>.767</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Purchase Intentions</td>
<td>0.035</td>
<td>0.152</td>
<td>0.007</td>
<td>0.112</td>
<td>.758</td>
<td></td>
</tr>
<tr>
<td>(6) Self-image Congruence</td>
<td>0.008</td>
<td>0.075</td>
<td>0.072</td>
<td>0.072</td>
<td>0.181</td>
<td>.913</td>
</tr>
<tr>
<td><strong>Average Variance Extracted</strong></td>
<td><strong>0.775</strong></td>
<td><strong>0.571</strong></td>
<td><strong>0.700</strong></td>
<td><strong>0.417</strong></td>
<td><strong>0.567</strong></td>
<td><strong>0.675</strong></td>
</tr>
<tr>
<td><strong>Range of Correlation scores for items</strong></td>
<td>0.835</td>
<td>0.539</td>
<td>0.713</td>
<td>0.452</td>
<td>0.413</td>
<td>0.638</td>
</tr>
<tr>
<td></td>
<td>to</td>
<td>to</td>
<td>to</td>
<td>to</td>
<td>to</td>
<td>to</td>
</tr>
<tr>
<td></td>
<td>0.913</td>
<td>0.886</td>
<td>0.897</td>
<td>0.725</td>
<td>0.964</td>
<td>0.913</td>
</tr>
</tbody>
</table>

The Cronbach Alpha for each construct is reported in italics on the main diagonal.
Table 4.3: Pilot Discriminant and Convergent Validity and Reliability for Holiday Constructs

<table>
<thead>
<tr>
<th>Constructs</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Difficult to Control</td>
<td>.920</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Vividness</td>
<td>0.018</td>
<td>.872</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Social Comparison</td>
<td>0.030</td>
<td>0.000</td>
<td>.938</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Impressions Management</td>
<td>0.029</td>
<td>0.011</td>
<td>0.024</td>
<td>.767</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Purchase Intentions</td>
<td>0.040</td>
<td>0.106</td>
<td>0.000</td>
<td>0.166</td>
<td>.728</td>
<td></td>
</tr>
<tr>
<td>(6) Self-image Congruence</td>
<td>0.070</td>
<td>0.163</td>
<td>0.012</td>
<td>0.169</td>
<td>0.301</td>
<td>.853</td>
</tr>
</tbody>
</table>

Average Variance Extracted

<table>
<thead>
<tr>
<th>Range of Correlation scores for items</th>
<th>to</th>
<th>to</th>
<th>to</th>
<th>to</th>
<th>to</th>
<th>to</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.835</td>
<td>0.512</td>
<td>0.679</td>
<td>0.452</td>
<td>0.479</td>
<td>0.479</td>
</tr>
<tr>
<td></td>
<td>0.913</td>
<td>0.833</td>
<td>0.878</td>
<td>0.725</td>
<td>0.917</td>
<td>0.917</td>
</tr>
</tbody>
</table>

The Cronbach Alpha for each construct is reported in italics on the main diagonal

In summary, the pilot results suggest that the measures are robust with acceptable levels of reliability and validity. This suggests that the scales are appropriate and can be used to create structural models. It also provides evidence to support the use of these scales for the main survey.

4.2.4 Pilot Structural Models

Once the measurement models have been developed, the relationships between the constructs can be examined in the structural models. First, the structural model fit is established using the same goodness of fit measures that are used for the measurement models. Table 4.4 shows the results for the pilot structural models. The GFI is below the criterion of 0.90; however the results are above 0.85 which is within an acceptable range (Hair et al. 2006). Because this thesis focused on two different products—a camera (functional) and a holiday (symbolic)—two structural models were created. The measurement model estimates and structural diagrams for the pilot are shown in Appendix one.
Table 4.4: Fit indices for Pilot Structural Model

<table>
<thead>
<tr>
<th>Structural Model</th>
<th>CMIN</th>
<th>CFI</th>
<th>GFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot conceptual model Camera</td>
<td>1.523</td>
<td>0.961</td>
<td>0.862</td>
<td>0.046</td>
</tr>
<tr>
<td>Pilot conceptual model Holiday</td>
<td>1.625</td>
<td>0.950</td>
<td>0.850</td>
<td>0.050</td>
</tr>
</tbody>
</table>

Next, the models are examined to see which of the relationships are significant based on the unstandardised regression weights. Based on the hypothesised relationships the constructs are linked by arrows to determine if that relationship is significant given the data.

**Structural model for cameras**

For the camera there are several significant relationships that vary in sign and size. The structural model shows that the relationship between Control and Social Comparison is significant, but small in size and negative. This suggests that as Control over their mental image increases, the consumer will reduce their comparisons with others. The relationship between Impressions Management and Social Comparison is significant, small in magnitude and positive. This relationship implies that as the consumer adopts a role to display this will increase the likelihood of them comparing themselves to others. The next significant relationship is between Impressions Management and Self-image Congruence. This relationship is moderate in strength and positive which suggests that as consumers present an image this will increase their use of product matching to express their identity. Vivid mental imagery also has a moderate, significant and positive relationship with Self-image Congruence. Thus, as the consumer’s clear imagery increases so does the extent to which they attempt to create a match between themselves and the product. Social Comparison has a significant, positive and weak relationship with Self-image Congruence. This suggests that as Social Comparisons increase so will Self-image Congruence. Self-image Congruence also has a significant, positive, but moderate relationship with Purchase Intentions. That is, the consumer’s intention to purchase a product will increase if they have matched their identity to the product. Impressions Management has as a significant, moderate and positive relationship with Purchase Intentions. This suggests that consumers are more likely to purchase products that can help them to display their adopted image. Finally, Vivid mental image has a positive, moderate and significant relationship with Purchase Intentions. This suggests that as clear
imagery increases, the consumer’s intentions to purchase products increases too. A summary of the significant pathways is shown in Table 4.5

Even though many of the hypotheses were supported, there were several relationships that were identified as being non-significant. As seen in Table 4.5, these relationships included: Control and Impressions Management, Vivid and Impressions Management, Vivid and Social Comparison, Control and Self-image Congruence, Control and Purchase Intentions, and Social Comparison and Purchase intentions. It is apparent that the variable Control is rarely significant in the pilot stage. Control of imagery is only significant for two relationships: Vividness and Social Comparison. For all other links Control is not significant implying that Control over imagery does not help consumer adopt identity, match identity with products nor does it help them to develop Purchase Intentions. However, the significance of Control may be related to the sample size of the pilot study.

Table 4.5: Summary of Pilot results: Camera

<table>
<thead>
<tr>
<th>Relationship Constructs</th>
<th>Sig.</th>
<th>Sign</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vividness &lt;--- Control</td>
<td>Yes</td>
<td>+</td>
<td>Moderate</td>
</tr>
<tr>
<td>Impressions Management &lt;--- Control1</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impressions Management &lt;--- Vividness</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Comparison &lt;--- Control1</td>
<td>Yes</td>
<td>-</td>
<td>Small</td>
</tr>
<tr>
<td>Social Comparison &lt;--- IM</td>
<td>Yes</td>
<td>+</td>
<td>Small</td>
</tr>
<tr>
<td>Social Comparison &lt;--- Vividness</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-image Congruence &lt;--- IM</td>
<td>Yes</td>
<td>+</td>
<td>Moderate</td>
</tr>
<tr>
<td>Self-image Congruence &lt;--- Vividness</td>
<td>Yes</td>
<td>+</td>
<td>Small</td>
</tr>
<tr>
<td>Self-image Congruence &lt;--- SC</td>
<td>Yes</td>
<td>+</td>
<td>Small</td>
</tr>
<tr>
<td>Self-image Congruence &lt;--- Control1</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase Intentions &lt;--- SIC</td>
<td>Yes</td>
<td>+</td>
<td>Small</td>
</tr>
<tr>
<td>Purchase Intentions &lt;--- IM</td>
<td>Yes</td>
<td>+</td>
<td>Moderate</td>
</tr>
<tr>
<td>Purchase Intentions &lt;--- Control1</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase Intentions &lt;--- Vividness</td>
<td>Yes</td>
<td>+</td>
<td>Moderate</td>
</tr>
<tr>
<td>Purchase Intentions &lt;--- SC</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.6 shows the unstandardised regressions weights for the structural model for cameras. The significant pathways are shown in bold. Table 4.6 shows the estimates which are significant at the 0.05 level. That is, these are the significant relationships between the constructs. These estimates are represented with unstandardised weights as per the AMOS output, so no interpretation should be made about the relative impact of the relationships.
### Table 4.6: Unstandardised Regression Weights: Pilot Camera

<table>
<thead>
<tr>
<th>Construct</th>
<th>Path</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vividness</td>
<td>Control1</td>
<td>.355</td>
<td>.088</td>
<td>4.029</td>
<td>***</td>
</tr>
<tr>
<td>Impressions Management (IM)</td>
<td>Control1</td>
<td>-.026</td>
<td>.051</td>
<td>-.506</td>
<td>.613</td>
</tr>
<tr>
<td>Impressions Management</td>
<td>Vividness</td>
<td>.059</td>
<td>.040</td>
<td>1.482</td>
<td>.138</td>
</tr>
<tr>
<td>Social Comparison (SC)</td>
<td>Control1</td>
<td>-.157</td>
<td>.078</td>
<td>-2.026</td>
<td>.043</td>
</tr>
<tr>
<td>Social Comparison</td>
<td>IM</td>
<td>.297</td>
<td>.125</td>
<td>2.377</td>
<td>.017</td>
</tr>
<tr>
<td>Social Comparison</td>
<td>Vividness</td>
<td>.059</td>
<td>.060</td>
<td>.982</td>
<td>.326</td>
</tr>
<tr>
<td>Self-image Congruence (SIC)</td>
<td>IM</td>
<td>.438</td>
<td>.156</td>
<td>2.809</td>
<td>.005</td>
</tr>
<tr>
<td>Self-image Congruence</td>
<td>Vividness</td>
<td>.255</td>
<td>.075</td>
<td>3.415</td>
<td>***</td>
</tr>
<tr>
<td>Self-image Congruence</td>
<td>SC</td>
<td>.279</td>
<td>.086</td>
<td>3.254</td>
<td>.001</td>
</tr>
<tr>
<td>Self-image Congruence</td>
<td>Control1</td>
<td>.076</td>
<td>.095</td>
<td>.803</td>
<td>.422</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>SIC</td>
<td>.299</td>
<td>.073</td>
<td>4.122</td>
<td>***</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>IM</td>
<td>.555</td>
<td>.166</td>
<td>3.336</td>
<td>***</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>Control1</td>
<td>.125</td>
<td>.097</td>
<td>1.288</td>
<td>.198</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>Vividness</td>
<td>.335</td>
<td>.080</td>
<td>4.195</td>
<td>***</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>SC</td>
<td>-.015</td>
<td>.088</td>
<td>-.169</td>
<td>.866</td>
</tr>
</tbody>
</table>

*Bold text* means the relationship is significant.

Once the significance and sign of the pathways have been identified the total standardised effects can be viewed to see the relative effect the constructs have on the dependent variable of Purchase Intentions. The complete standardised total effect for the camera is shown in the bottom row of Table 4.7. Table 4.7 contained the standardised weights so interpretation could be made about the size, significance and direction of relationships between the latent constructs. For cameras, the largest total standardised effect is for Vivid imagery (0.380). That is, if Vividness of the image increases by one unit then the Purchase Intentions for a camera will increase by 0.380. Impressions Management increases the likelihood of purchase by 0.300 and Self-image Congruence increases purchase by 0.276. The total standardised effects table also shows the indirect effects of the relationships. Thus, even though the direct relationship is insignificant the construct can still have an effect on Purchase Intentions through links with other variables. For example, Social Comparison has no direct significant pathway to Purchase Intentions, but has an indirect effect through Self-image Congruence.
Table 4.7: Pilot Standardised Total Effects for camera

<table>
<thead>
<tr>
<th></th>
<th>Control1</th>
<th>Vividness</th>
<th>IM</th>
<th>SC</th>
<th>SIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vividness</td>
<td>.272</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Impressions Management (IM)</td>
<td>-.007</td>
<td>.116</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Social Comparison (SC)</td>
<td>-.124</td>
<td>.090</td>
<td>.178</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Self-Image Congruence (SIC)</td>
<td>.087</td>
<td>.273</td>
<td>.240</td>
<td>.214</td>
<td>.000</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>.179</td>
<td>.380</td>
<td>.300</td>
<td>.049</td>
<td>.276</td>
</tr>
</tbody>
</table>

Structural model for holiday

The structural model is slightly different for the more symbolic product of the holiday. There are several significant relationships that are similar to what was found for cameras. In contrast with the camera, the results are different in two ways. First, the significance of the relationships has changed. Specifically, Vivid imagery, Social Comparison and Self-image Congruence no longer have a significant direct effect on Purchase Intentions. In addition, Control no longer has a significant relationship with Vividness, but now has a small positive relationship with Self-image Congruence. Second, the size of some of the effects has changed too: Impressions Management now has a larger effect on Self-image Congruence, Vividness now has a stronger effect on Self-image Congruence and Impressions Management has a moderate effect on Social Comparison.

Table 4.8 shows the unstandardised regressions weights for the structural model for holidays. The significant pathways are again shown in bold.
Table 4.9 shows a summary of the results for the significance, sign and size of the regression for the pilot holiday.

Table 4.9: Summary of Pilot Results: Holiday

<table>
<thead>
<tr>
<th>Relationship Constructs</th>
<th>Sig.</th>
<th>Sign</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vividness</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impressions Management</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impressions Management</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Comparison</td>
<td>Yes</td>
<td>-</td>
<td>Small</td>
</tr>
<tr>
<td>Social Comparison</td>
<td>Yes</td>
<td>+</td>
<td>Moderate</td>
</tr>
<tr>
<td>Social Comparison</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-image Congruence</td>
<td>Yes</td>
<td>+</td>
<td>Large</td>
</tr>
<tr>
<td>Self-image Congruence</td>
<td>Yes</td>
<td>+</td>
<td>Moderate</td>
</tr>
<tr>
<td>Self-image Congruence</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-image Congruence</td>
<td>Yes</td>
<td>+</td>
<td>Small</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>Yes</td>
<td>+</td>
<td>Moderate</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>Yes</td>
<td>+</td>
<td>Moderate</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bold text** means the relationship is significant.
As shown in the bottom row of Table 4.10 the standardised total effects for the holiday indicate that the construct with the strongest impact is Self-image Congruence with a one point increase in Self-image Congruence increasing Purchase Intentions by 0.441. Impressions Management also has a moderate impact on Purchase Intentions and Self-image Congruence. Vivid imagery also has a moderate impact on Self-image Congruence.

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Vividness</th>
<th>IM</th>
<th>SC</th>
<th>SIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vividness</td>
<td>.126</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Impressions Management (IM)</td>
<td>.010</td>
<td>.121</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Social Comparison (SC)</td>
<td>-.148</td>
<td>.059</td>
<td>.175</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Self-Image Congruence (SIC)</td>
<td>.173</td>
<td>.384</td>
<td>.349</td>
<td>.033</td>
<td>.000</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>.109</td>
<td>.291</td>
<td>.327</td>
<td>-.024</td>
<td>.441</td>
</tr>
</tbody>
</table>

In conclusion, the results of the pilot study suggest that the measures are effective and are appropriate for collecting data that will address the research question. The pilot test has provided evidence that the measures are robust with construct validity and reliability being established.

The measurement models which were estimated in Amos have demonstrated a reasonable fit to the data, which suggests that the concepts being modelled are statistically as well as conceptually acceptable.

The structural models show the relationships between the concepts in terms of whether or not the pathways are significant and the standardised effect of the constructs on each other and the dependent variable. The results suggest that many significant pathways, which were hypothesised from the literature, were supported. The next section contains the results of the full fieldwork. The same procedures from the pilot test for model development and analysis were followed in the full fieldwork to ensure consistency.

### 4.3 Main Sample

The sample frame for the survey was the database of the Online Research Unit (ORU) (http://www.theoru.com/), which is an online research company with an Australia-wide panel. The process of data collection begins with the company sending out invitations to its
members asking them to participate in the survey. Each participant was paid to complete the survey. The only limitation for participation was that the participant needed to be at least 18 years old. The data were collected over a five day period. A simple random sampling procedure was used to ensure that the data were demographically representative of the population. That is, the researcher sets the parameters and then the research panel is developed randomly from the sample frame. For example, the only restriction placed on the research panel, for this research, was an age requirement of 18 years or older in order to comply with ethics. Then a simple random sampling approach invited participants to respond to the survey.

The sample consisted of 515 respondents. After examining the data, 482 questionnaires were found to be usable. Questionnaires that had response errors were deleted using case-wise deletion. To ensure that the sample was representative, the respondents were asked to answer a series of demographic questions concerning their gender, age, location, income, relationship status, education and employment. To determine if this sample is representative of the Australian population a comparison was made with the 2006 census data complied by the Australian Bureau of Statistics (ABS). Table 4.1 contains the demographic variables for both the sample and the population. The averages were compared using t-tests and chi-square tests to determine if there was a statistical significant different between the sample and the population. The results of the t-tests for income and age suggest that the sample was not representative of the population. The results of the chi-square tests for education, employment and relationship status and gender suggest that only gender had an insignificant p-value (>0.05). This suggests that sample is representation of gender as there is no statistical difference between the sample and the population. The p-values for the chi-square and t-tests are reported in Table 4.11.
The results of the comparison between the sample data and the population suggest this sample is not fully representative. This will have implications for the generalisability of the results and will be addressed in the limitations section (Chapter 5) of this thesis.

### 4.4 SEM: Measurement and Structural models

In this section of Chapter 4 the results of data analysis for the main sample are presented. First, the measurement models are presented showing the evaluation of the models with the model fit indices. Next, the data are tested for reliability and validity. The structural models that were developed using the measurement models are then reported. Finally, once the models have been evaluated, the hypotheses developed from the literature review (Chapter Two) are tested.

#### 4.4.1 Model fit Indices used to assess model

Similar to the pilot, the data were screened and transformed before being analysed. Items with negative questions were reversed coded. Normality for each constructs was assessed using SPSS histograms and again in AMOS using Mardia’s coefficient for Multivariate Kurtosis. There was an issue of non-normality and bootstrapping using the Bollen –Stine $p$ was used to account for the irregularity of the distribution. Outliers were identified using Mahalanobis distances. Ten participants were removed as they were the perceived as outliers. Then each of the measurement models were assessed for goodness of fit. Table
4.12 shows the results given the various indices of fit used in this research. These results show that each measurement model has a significant $\chi^2$, and meets the acceptable range for each of the fit indices of CMIN, GFI, CFI, and RMSEA. This indicates that the models are robust and can be used to develop structural models to test the relationships between the latent constructs.

Table 4.12: Goodness of Fit indices for full data set

<table>
<thead>
<tr>
<th>Measurement Model</th>
<th>Chi-square</th>
<th>Degrees of freedom (p-value)</th>
<th>Bollen-Stine (p)</th>
<th>CMIN &lt;3</th>
<th>CFI &gt;0.9</th>
<th>GFI &gt;0.9</th>
<th>RMSEA &lt;0.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficult to Control</td>
<td>0.025</td>
<td>1</td>
<td>0.874*</td>
<td>0.914*</td>
<td>0.025</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Impressions Management Holiday</td>
<td>8.65</td>
<td>4</td>
<td>0.070*</td>
<td>0.005</td>
<td>2.163</td>
<td>.991</td>
<td>.993</td>
</tr>
<tr>
<td>Purchase Intentions Holiday</td>
<td>0.168</td>
<td>1</td>
<td>0.682*</td>
<td>0.134*</td>
<td>0.168</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Social Comparison Holiday</td>
<td>14.77</td>
<td>8</td>
<td>0.064*</td>
<td>0.343*</td>
<td>1.843</td>
<td>.998</td>
<td>.992</td>
</tr>
<tr>
<td>Self-image Congruence Holiday</td>
<td>2.065</td>
<td>1</td>
<td>0.356*</td>
<td>0.497*</td>
<td>1.032</td>
<td>1</td>
<td>.998</td>
</tr>
<tr>
<td>Vividness Holiday</td>
<td>5.56</td>
<td>3</td>
<td>0.135*</td>
<td>0.204*</td>
<td>1.852</td>
<td>.999</td>
<td>.995</td>
</tr>
<tr>
<td>Purchase Intentions Camera</td>
<td>0.635</td>
<td>1</td>
<td>0.426*</td>
<td>0.373*</td>
<td>.635</td>
<td>1</td>
<td>.999</td>
</tr>
<tr>
<td>Social Comparison Camera</td>
<td>16.24</td>
<td>9</td>
<td>0.062*</td>
<td>0.764*</td>
<td>1.804</td>
<td>.998</td>
<td>.992</td>
</tr>
<tr>
<td>Self-image Congruence Camera</td>
<td>1.576</td>
<td>1</td>
<td>0.209*</td>
<td>0.422*</td>
<td>1.576</td>
<td>1</td>
<td>.999</td>
</tr>
<tr>
<td>Vividness Camera</td>
<td>6.10</td>
<td>3</td>
<td>0.072*</td>
<td>0.184*</td>
<td>2.231</td>
<td>.998</td>
<td>.994</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>61.8</td>
<td>19</td>
<td>0.00</td>
<td>0.348*</td>
<td>3.325</td>
<td>.972</td>
<td>.969</td>
</tr>
</tbody>
</table>

* p-value is not significant (> 0.05) suggesting the data is a good fit for the model

4.4.2 Confirmatory Factor Analysis

The first stage in developing an SEM is the creation of a CFA for each construct, which are now presented in Figures 4.1 to 4.10. These figures show that the standardised regression estimates for each construct are within acceptable ranges. Each of the items was significant with regression p-values below 0.05. For each item, the standardised regression estimates should be above 0.35 for a sample of 200 or more (Hair et al., 2006) which occurs for all of the items for each of the measurement models. Please see Tables A.1 to A.5 in the appendix for item estimates and p-values.
Figure 4.1: Control

Figure 4.2: Impressions Management
Figure 4:3: Social Comparison: Camera

Figure 4:4: Purchase Intentions: Camera
Figure 4:5: Vividness: Camera

Figure 4:6: Self-image Congruence: Camera
Figure 4:7: Social Comparison: Holiday

Figure 4:8: Purchase Intentions: Holiday
Figure 4:9: Vividness: Holiday

Figure 4:10: Self-image Congruence: Holiday
Figure 4.11: Measurement model for Problem Solving
4.4.3 Testing for Reliability and Validity
As with the pilot data, the main sample data were tested for reliability and validity. The data were first tested for scale reliability in SPSS. The scales were then examined using factor analysis to ensure uni-dimensionality. Tables 4.13 and 4.14 show the reliability and validity results for the measurement models. Again, as with the pilot test, the measures have been found to meet the acceptable levels, indicating that the scales are robust (Tables 4.13 and 4.14). The results show that the constructs have discriminant validity with the average variance extracted exceeding the size of the squared correlations scores. Convergent validity is tested by examining the range of factor loadings and all the constructs exceeded 0.5. Reliability was demonstrated with all the Cronbach Alpha’s exceeding 0.7.

Table 4.13: Construct discriminant validity and reliability for Holidays

<table>
<thead>
<tr>
<th>Constructs</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Difficult to Control</td>
<td>.938*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Vividness</td>
<td>0.043</td>
<td>.919</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Social Comparison</td>
<td>0.005</td>
<td>0.011</td>
<td>.950</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Impressions Management</td>
<td>0.073</td>
<td>0.092</td>
<td>0.029</td>
<td>.736</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Purchase Intentions</td>
<td>0.025</td>
<td>0.166</td>
<td>0.000</td>
<td>0.179</td>
<td>.891</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) Self-image Congruence</td>
<td>0.008</td>
<td>0.115</td>
<td>0.000</td>
<td>0.099</td>
<td>0.192</td>
<td>.879</td>
<td></td>
</tr>
<tr>
<td>(7) Problem Solving</td>
<td>0.092</td>
<td>0.230</td>
<td>0.002</td>
<td>0.239</td>
<td>0.197</td>
<td>0.159</td>
<td>.875</td>
</tr>
<tr>
<td>Average Variance Extracted</td>
<td>.793</td>
<td>.574</td>
<td>.704</td>
<td>.343</td>
<td>.603</td>
<td>.546</td>
<td>.475</td>
</tr>
<tr>
<td>Range of factor loadings for items</td>
<td>.943</td>
<td>.919</td>
<td>.917</td>
<td>.794</td>
<td>.940</td>
<td>.845</td>
<td>.795</td>
</tr>
<tr>
<td>to</td>
<td>to</td>
<td>to</td>
<td>to</td>
<td>to</td>
<td>to</td>
<td>to</td>
<td>to</td>
</tr>
<tr>
<td>.892</td>
<td>.815</td>
<td>.802</td>
<td>.640</td>
<td>.893</td>
<td>.801</td>
<td>.62</td>
<td></td>
</tr>
</tbody>
</table>

*The Cronbach alpha for each construct is reported in italics on the diagonal
Table 4.14: Construct validity and reliability for Camera

<table>
<thead>
<tr>
<th>Constructs</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Difficult to Control</td>
<td>.938*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Vividness</td>
<td></td>
<td>0.080</td>
<td>.943</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Social Comparison</td>
<td></td>
<td>0.008</td>
<td>.946</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Impressions Management</td>
<td></td>
<td>0.061</td>
<td>0.076</td>
<td>0.012</td>
<td>.736</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Purchase Intentions</td>
<td></td>
<td>0.014</td>
<td>0.218</td>
<td>0.011</td>
<td>0.154</td>
<td>.869</td>
<td></td>
</tr>
<tr>
<td>(6) Self-image Congruence</td>
<td></td>
<td>0.018</td>
<td>0.060</td>
<td>0.114</td>
<td>0.086</td>
<td>0.120</td>
<td>.923</td>
</tr>
<tr>
<td>(7) Problem Solving</td>
<td></td>
<td>0.092</td>
<td>0.158</td>
<td>0.00</td>
<td>0.203</td>
<td>0.153</td>
<td>0.067</td>
</tr>
<tr>
<td><strong>Average Variance Extracted</strong></td>
<td></td>
<td>.793</td>
<td>.639</td>
<td>.764</td>
<td>.379</td>
<td>.528</td>
<td>.683</td>
</tr>
<tr>
<td><strong>Range of factor loadings for items</strong></td>
<td></td>
<td>.943</td>
<td>.942</td>
<td>.933</td>
<td>.794</td>
<td>.934</td>
<td>.896</td>
</tr>
</tbody>
</table>

*The Cronbach alpha for each construct is reported in italics on the main diagonal.

Now that the reliability and validity of the measures have been established, the data are analysed in AMOS to link the measurement models together with the hypothesised pathways to create the structural models.

### 4.4.4 Structural models

The structural models show the relationships between the measurement models. When building structural models a key underpinning is the theoretical relationships between the concepts (Hair *et al.*, 2006). The theory is a very important consideration when testing models because computer programs such as AMOS can create models that are statistically significant, but make no conceptual sense. However, it is typically possible to develop several different models that are consistent with theory. In this section, only the preferred models both conceptually and statistically will be presented in order to answer the research question and address the hypotheses. Alternative models that were developed during the analysis such as second order factor models and naïve models can be found in the appendices with a brief explanation about why these models were not adopted.
As with the pilot, because the research project focused on two different products—a camera (functional) and a holiday (symbolic)—two structural models were created.

The same fit indices that were used to establish the fit of the data for the measurement models are used to analyse the structural models. Table 4.15 shows the acceptable range for each index and the results for the two structural models. As seen in Table 4.4.4, both structural models are shown to represent the data well and meet the acceptable criteria.

<table>
<thead>
<tr>
<th>Structural Model</th>
<th>CMIN &lt;3</th>
<th>CFI &gt;0.95</th>
<th>GFI &gt;0.9</th>
<th>RMSEA &lt;0.05</th>
<th>Bollen Stine P &gt;0.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full conceptual model</td>
<td>1.953</td>
<td>0.956</td>
<td>0.900.8</td>
<td>0.045</td>
<td>0.06</td>
</tr>
<tr>
<td>Camera</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full conceptual model</td>
<td>2.046</td>
<td>0.946</td>
<td>0.868</td>
<td>0.047</td>
<td>0.07</td>
</tr>
<tr>
<td>Holiday</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figures 4.4.1 and 4.4.2 show how the constructs of Vivid and Control have been linked to the social interaction constructs that influence Purchase Intentions for a holiday and for a camera respectively. The significant pathways’ regression weights are shown in bold. The insignificant pathways regression weights are shown in grey to distinguish them from the significant paths. The significance of the estimate is used to determine whether or not the hypothesis that the path is equal to zero should be rejected.

Each link in the structural model represents a hypothesised relationship. The hypotheses are formally stated and analysed in Section 4.4.4 of this chapter. However, a brief summary explaining each model is presented below.

*Structural Model: Camera*

The first product used in this research was a camera. The unstandardised estimates indicate that the strongest direct relationship exists between Impressions Management and Purchase Intentions (0.522). The Vivid construct has a direct, significant, moderate and positive effect on Purchase Intentions (0.428). Vivid Imagery also has a small positive and significant relationship with both Impressions Management and Self-image Congruence. Control has a
small, positive significant relationship with both Impressions Management and Vividness. However, Control does not have a significant direct influence on Purchase Intentions, Social Comparison or Self-image Congruence. Impressions Management has a small, positive, and significant relationship with Self-image Congruence and Purchase Intentions. Social Comparison does not have a significant direct relationship with Purchase Intention, but does have a significant, positive and moderate relationship with Self-image Congruence. Self-image Congruence has a direct, significant, small and positive relationship with Purchase Intentions. Table 4.16 below shows the estimates and the relationships between the constructs in terms of their significance, size and sign. For the Purchase Intentions for cameras the r-squared value was 0.37, which indicates 37% of the variance is explained. The bold text shows the significant pathways.

Table 4.16: Camera Unstandardised Regression Weights

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impressions Management &lt;--- control1</td>
<td>.033</td>
<td>.018</td>
<td>1.896</td>
<td>.058</td>
</tr>
<tr>
<td>Impressions Management &lt;--- Vivid_C</td>
<td>.044</td>
<td>.025</td>
<td>1.733</td>
<td>.083</td>
</tr>
<tr>
<td>Impressions Management &lt;--- PS</td>
<td>.341</td>
<td>.057</td>
<td>5.994</td>
<td>***</td>
</tr>
<tr>
<td>Social Comparison &lt;--- IM</td>
<td>.266</td>
<td>.134</td>
<td>1.991</td>
<td>.046</td>
</tr>
<tr>
<td>Social Comparison &lt;--- PS</td>
<td>-.160</td>
<td>.113</td>
<td>-1.424</td>
<td>.154</td>
</tr>
<tr>
<td>Social Comparison &lt;--- control1</td>
<td>.050</td>
<td>.036</td>
<td>1.384</td>
<td>.166</td>
</tr>
<tr>
<td>Self-image Congruence sic_e &lt;--- SC</td>
<td>.342</td>
<td>.050</td>
<td>6.859</td>
<td>***</td>
</tr>
<tr>
<td>Self-image Congruence sic_e &lt;--- IM</td>
<td>.566</td>
<td>.122</td>
<td>4.622</td>
<td>***</td>
</tr>
<tr>
<td>Self-image Congruence sic_e &lt;--- Vivid_C</td>
<td>.285</td>
<td>.050</td>
<td>5.648</td>
<td>***</td>
</tr>
<tr>
<td>Purchase_ Intentions &lt;--- sic_c</td>
<td>.227</td>
<td>.056</td>
<td>4.019</td>
<td>***</td>
</tr>
<tr>
<td>Purchase_ Intentions &lt;--- IM</td>
<td>.414</td>
<td>.140</td>
<td>2.950</td>
<td>.003</td>
</tr>
<tr>
<td>Purchase_ Intentions &lt;--- Vivid_C</td>
<td>.380</td>
<td>.057</td>
<td>6.722</td>
<td>***</td>
</tr>
<tr>
<td>Purchase_ Intentions &lt;--- SC</td>
<td>-.017</td>
<td>.051</td>
<td>-3.30</td>
<td>.741</td>
</tr>
<tr>
<td>Purchase_ Intentions &lt;--- control1</td>
<td>-.075</td>
<td>.037</td>
<td>-2.060</td>
<td>.039</td>
</tr>
<tr>
<td>Purchase_ Intentions &lt;--- PS</td>
<td>.327</td>
<td>.118</td>
<td>2.780</td>
<td>.005</td>
</tr>
</tbody>
</table>
Figure 4:12: Structural Model for Camera

- **Vividness_C**
- **Problem Solving**
- **Control**
- **Social Comparisons_C**
- **Self-image Congruence_C**
- **Impressions Management**
- **Purchase Intentions_C**

Significant paths:
- Vividness_C → Control: 0.30
- Vividness_C → Problem Solving: 0.51
- Problem Solving → Control: 0.34
- Control → Purchase Intentions_C: 0.10
- Social Comparisons_C → Self-image Congruence_C: 0.32
- Social Comparisons_C → Purchase Intentions_C: 0.13
- Self-image Congruence_C → Purchase Intentions_C: 0.00

Not significant paths:
- Vividness_C → Social Comparisons_C: 0.39
- Problem Solving → Self-image Congruence_C: 0.37
- Control → Social Comparisons_C: 0.07
- Control → Self-image Congruence_C: 0.01
- Problem Solving → Social Comparisons_C: 0.17

Not significant dotted lines indicate paths that were tested but did not reach statistical significance.
As with the pilot, the unstandardised regression estimates show the direct pathways. The standardised total effect on *Purchase Intentions* for the camera model suggests that the largest effect is *Vivid* imagery on *Purchase Intentions* (0.420). The effect can be stated as a one point increase in *Vivid* imagery would result in a 0.420 increase in *Purchase Intentions* for a camera. *Problem Solving* has the next largest impact on *Purchase Intentions* (0.236) with *Impressions Management* effect of 0.229 on *Purchase Intentions* followed by *Self-image Congruence* (0.214). The standardised total effect in Table 4.17 also includes the indirect effects. For example, *Social Comparison* (0.053) has a small indirect effect on *Purchase Intentions*. *Control* also has an indirect, small, negative effect on *Purchase Intentions* (0.066).

### Table 4.17: Standardised Total Effects: for Camera

<table>
<thead>
<tr>
<th></th>
<th>PS</th>
<th>Vivid_C</th>
<th>control1</th>
<th>IM</th>
<th>SC</th>
<th>sic_c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impressions Management (IM)</td>
<td>.386</td>
<td>.096</td>
<td>.100</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Social Comparison (SC)</td>
<td>-.037</td>
<td>.012</td>
<td>.083</td>
<td>.125</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Self-image Congruence (sic_c)</td>
<td>.083</td>
<td>.298</td>
<td>.051</td>
<td>.285</td>
<td>.317</td>
<td>.000</td>
</tr>
<tr>
<td><em>Purchase Intentions</em></td>
<td>.236</td>
<td>.420</td>
<td>-.066</td>
<td>.229</td>
<td>.053</td>
<td>.214</td>
</tr>
</tbody>
</table>

**Structural Model: Holiday**

The structural model for the holiday has several significant pathways. As with the pilot, many of the significant direct pathways are similar for the camera and the holiday. The difference in the models can be seen in the significance and size of the estimated relationships. Specifically, *Impressions Management* now has a significant, positive and moderate effect on *Social Comparison* (0.491 unstandardised regression weight). *Vividness* now has a significant, negative and small influence on *Social Comparison*. *Social Comparison* still has a significant and positive effect on *Self-image Congruence*, but it has reduced in size to be only small in magnitude. The influence of *Self-image Congruence* on *Purchase Intentions* (0.392) and *Impressions Management* on *Purchase Intentions* (0.873) have however, increased in magnitude. Table 4.18 contains the estimates with the size, sign and significance.
Table 4.18: Unstandardised Regression Weights for Holiday

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impressions Management</td>
<td>&lt;--- control1</td>
<td>.038</td>
<td>.018</td>
<td>2.177</td>
</tr>
<tr>
<td>Impressions Management</td>
<td>&lt;--- Vivid_H</td>
<td>.045</td>
<td>.031</td>
<td>1.465</td>
</tr>
<tr>
<td>Impressions Management</td>
<td>&lt;--- PS</td>
<td>.347</td>
<td>.058</td>
<td>5.931</td>
</tr>
<tr>
<td>Social Comparison</td>
<td>&lt;--- IM</td>
<td>.290</td>
<td>.118</td>
<td>2.447</td>
</tr>
<tr>
<td>Social Comparison</td>
<td>&lt;--- PS</td>
<td>-.251</td>
<td>.100</td>
<td>-2.500</td>
</tr>
<tr>
<td>Social Comparison</td>
<td>&lt;--- control1</td>
<td>.050</td>
<td>.032</td>
<td>1.538</td>
</tr>
<tr>
<td>Self-image Congruence_h</td>
<td>&lt;--- Vivid_H</td>
<td>.199</td>
<td>.049</td>
<td>4.016</td>
</tr>
<tr>
<td>Self-image Congruence_h</td>
<td>&lt;--- IM</td>
<td>.434</td>
<td>.102</td>
<td>4.249</td>
</tr>
<tr>
<td>Self-image Congruence_h</td>
<td>&lt;--- SC</td>
<td>.136</td>
<td>.046</td>
<td>2.997</td>
</tr>
<tr>
<td>purchase_intentions</td>
<td>&lt;--- IM</td>
<td>.498</td>
<td>.142</td>
<td>3.514</td>
</tr>
<tr>
<td>purchase_intentions</td>
<td>&lt;--- Vivid_H</td>
<td>.255</td>
<td>.066</td>
<td>3.868</td>
</tr>
<tr>
<td>purchase_intentions</td>
<td>&lt;--- sic_h</td>
<td>.342</td>
<td>.074</td>
<td>4.622</td>
</tr>
<tr>
<td>purchase_intentions</td>
<td>&lt;--- PS</td>
<td>.371</td>
<td>.124</td>
<td>2.987</td>
</tr>
<tr>
<td>purchase_intentions</td>
<td>&lt;--- control1</td>
<td>-.012</td>
<td>.036</td>
<td>-3.41</td>
</tr>
<tr>
<td>purchase_intentions</td>
<td>&lt;--- SC</td>
<td>-.032</td>
<td>.055</td>
<td>-5.86</td>
</tr>
</tbody>
</table>
Figure 4:13: Structural Model for Holiday

- Control
- Problem Solving
- Vividness_H
- Social Comparisons_H
- Self-image Congruence_H
- Impressions Management

Path Coefficients:

- Purchase Intentions_H
  - Control: .76
  - Problem Solving: .28
  - Vividness_H: .47

- Social Comparisons_H
  - Control: .16
  - Vividness_H: .24
  - Problem Solving: .39

- Self-image Congruence_H
  - Control: .15
  - Vividness_H: -.09

- Impressions Management
  - Control: .29
  - Vividness_H: .08

Not significant paths are shown in red dashed lines.
In terms of the standardised total effects for holiday, the strongest effect is Problem Solving to Impressions Management *Vivid* with a one point increase in *Problem Solving* imagery resulting in a 0.392 increase in *Impressions Management*. *Impressions Management* also has a weak impact on *Purchase Intentions* with a total effect of 0.271. Although *Social Comparison* and *Control* do not have direct effect on *Purchase Intentions*, they still impact the dependent variable through *Self-image Congruence* and *Impressions Management*. In this instance, *Social Comparison* has a small, negative impact on *Purchase Intentions*. The $r^2$ for *Purchase Intentions* for holiday is 0.33 which suggests only 33% of the variance is explained by the model. Table 4.19 contains the standardised total effects for holidays.

<table>
<thead>
<tr>
<th>Table 4.19: Standardised Total Effects for Holiday</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>Impressions Management (IM)</td>
</tr>
<tr>
<td>Social Comparison (SC)</td>
</tr>
<tr>
<td>Self-image Congruence (sic_h)</td>
</tr>
<tr>
<td>Purchase Intentions</td>
</tr>
</tbody>
</table>

The next section contains the formally stated hypotheses and results.

### 4.4.5 Hypotheses testing

The structural model pathways were developed based on specific hypotheses drawn from literature. The following section contains results for each hypothesis listed in Section 2.5 of Chapter 2. The first eight hypotheses are based on the relationships between *Vivid* imagery and *Control, Purchase Intentions* and the social interaction constructs. Hypotheses 9-15 are focused on the relationships between the social interaction constructs and *Purchase Intentions*.

**H1:** *Problem Solving is positively related to Purchase intentions* (Accept)

There is a significant and positive relationship between *Problem Solving* and *Purchase Intentions*. The magnitude for camera is 0.24 which suggests a small relationship. For holiday
the magnitude is 0.28 which also suggests a small relationship. Thus, there is evidence to indicate that H1 should be accepted.

H2:  *Vivid mental imagery is positively related to Purchase Intentions (Accept)*

The second Hypothesis stated that *Vivid* mental images have a direct, positive relationship with *Purchase Intentions*. The estimate for this relationship was positive and significant, suggesting that H2 is supported. The size of the estimate path for holiday was small (0.27) and for camera it was moderate (0.42).

H3  *Vivid imagery is positively related to Impressions Management (Reject)*

The next hypothesis was based on the concept that an increase in *Vivid* mental images is likely to increase *Impressions Management*. The estimate for this relationship was found to be insignificant. Thus, there is evidence that H3 should be rejected.

H4:  *Problem Solving is positively related to Impressions Management*

*Problem Solving imagery* is positively related to *Impressions Management*. The relationship is positive and moderate for camera (0.39) and positive and moderate for holiday (0.39). This suggests that H4 should be accepted.

H5:  *Control over mental images is positively related to Impressions Management (Accept)*

Hypothesis 5 was the argument that consumers who have *Control* over their mental images will have a higher value for their *Impressions Management*. The estimates for this relationship were found to be significant with small and positive scores for cameras (0.1) and for holidays (0.11). This suggests that H4 should be supported.

H6:  *Control over mental images is positively related to Self-image Congruence (Reject)*

Hypothesis 6 was based on the positive relationship between the consumer’s *Control* of their mental image and matching products to their Self-image. However, the paths for this relationship were not significant which suggest that H6 should be rejected.
H6: *Vivid mental images will positively affect Self-image Congruence (Accept)*

*Self-image Congruence* is the match with the consumer’s image and the product. This hypothesis was based on the idea that the consumer will use *Vivid* imagery to match products with self. The path was positive and moderate for both the camera (0.30) and small for the holiday (0.24). As the path was significant for both products H7 should be accepted.

H7: *Problem Solving mental images is positively related to Social Comparison (Reject)*

The next hypothesis was about consumers using *Problem Solving* imagery being positively related to *Social Comparison*. The estimate for holidays was significant, but negative with a small effect of -0.09. However, the estimate for cameras was insignificant. There is no evidence of a positive effect. This suggests that H7 should be rejected.

H8: *Control over mental images will positively affect Social Comparison (Reject)*

The relationship between *Control* of images and *Social Comparison* was also tested. However, as with other *Control* relationships, the estimates were not significant and H8 is rejected.

H9: *Impressions Management is positively related to Social Comparison (Accept)*

*Impressions Management* occurs when the consumer adopts a role to project. The hypothesised relationship is that consumers who have adopted an identity are more likely to compare themselves to others. The path for holidays was small (0.16), positive and significant. However, the path for cameras was small and positive (0.13). Thus, H9 should be accepted.

H10: *Impressions Management is positively related to Self-image Congruence (Accept)*

The next hypothesis is based on the relationship between *Impressions Management* and *Self-image Congruence*. The estimate for the camera was small (0.28) and for the holiday it was
also small (0.29). Both estimates were positive and significant providing evidence that H10 should be accepted.

H11: *Impressions Management is positively related to Purchase Intentions towards specific products* (Accept)

Hypothesis 11 proposed that *Impressions Management* had a direct, positive relationship with *Purchase Intentions*. Both the estimates were positive and significant with scores for the camera being small (0.23) and for the holiday it was small (0.27). This suggests that H12 is supported.

H12: *Social Comparison is positively related to Self-image Congruence* (Accept)

There is also a hypothesised relationship between *Social Comparison* and *Self-image Congruence*, based on the view that consumers who are socially aware will use that social information as part of their product matching process. For both camera and holiday the estimates were found to be positive and significant with moderate (0.32) and small (0.15) scores respectively. This is evidence to support H12.

H13: *Social Comparison is positively related to Purchase Intentions towards specific products* (Reject)

Hypothesis 13 argues that *Social Comparisons* have a direct, positive relationship with *Purchase Intentions*. However, the path was found to be insignificant for both camera and holiday, suggesting that H14 should be rejected.

H14: *Self-image Congruence is positively related to Purchase Intentions* (Accept)

The final hypothesis was the direct, positive relationship between *Self-image Congruence* and *Purchase Intentions*. The estimates for both the camera and the holiday were significant and positive with small co-efficients of 0.21 and 0.24 respectively. Thus, H14 should be accepted.
In summary, many of the hypotheses were accepted based on the results of structural models. Table 4.20 and 4.21 provide a summary of the pathways for each hypothesis indicating whether or not the hypothesis was supported for the camera and holiday respectively.

**Table 4.20**: Summary pathways in relation to supporting hypotheses—Camera

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Sig.</th>
<th>Size</th>
<th>Sign</th>
<th>Accept/Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Problem Solving is positively related to Purchase Intentions</td>
<td>Yes</td>
<td>Small</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H2: Vividness of mental images is positively related to Purchase Intentions</td>
<td>Yes</td>
<td>Moderate</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H3: Vivid mental imagery is positively related to Impressions Management</td>
<td>No</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H4: Problem Solving imagery is positively related to Impressions Management</td>
<td>Yes</td>
<td>Moderate</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H5: Control over mental images is positively related to Impressions Management</td>
<td>No</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H6: Vividness of mental images is positively related to Self-image Congruence</td>
<td>Yes</td>
<td>Moderate</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H7: Problem Solving mental images is positively related to Social Comparison</td>
<td>No</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H8: Control over mental images will positively affect Social Comparison</td>
<td>No</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H9: Impressions Management is positively related to Social Comparison</td>
<td>Yes</td>
<td>Small</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H10: Impressions Management is positively related to Self-image Congruence</td>
<td>Yes</td>
<td>Small</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H11: Impressions Management is positively related to Purchase Intentions towards specific products</td>
<td>Yes</td>
<td>Small</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H12: Social Comparison is positively related to Self-image Congruence</td>
<td>Yes</td>
<td>Moderate</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H13: Social Comparison is positively related to Purchase Intentions towards specific products</td>
<td>No</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H14: Self-image Congruence is positively related to Purchase Intentions</td>
<td>Yes</td>
<td>Small</td>
<td>Positive</td>
<td>Accept</td>
</tr>
</tbody>
</table>
### Table 4.21: Summary pathways in relation to supporting hypotheses—Holiday

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Sig.</th>
<th>Size</th>
<th>Sign</th>
<th>Accept/Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Problem Solving is positively related to purchase intentions</td>
<td>Yes</td>
<td>Small</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H2: Vividness of mental images is positively related to Purchase Intentions</td>
<td>Yes</td>
<td>Small</td>
<td>Positive</td>
<td>Reject</td>
</tr>
<tr>
<td>H3: Vivid mental imagery is positively related to Impressions Management</td>
<td>No</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H4: Problem Solving imagery is positively related to Impressions Management</td>
<td>Yes</td>
<td>Moderate</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H5: Control over mental images is positively related to Impressions Management</td>
<td>Yes</td>
<td>Small</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H6: Vividness of mental images is positively related to Self-image Congruence</td>
<td>Yes</td>
<td>Small</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H7: Problem Solving mental images is positively related to Social Comparison</td>
<td>Yes, Small</td>
<td>Negative</td>
<td>Reject</td>
<td></td>
</tr>
<tr>
<td>H8: Control over mental images will positively affect Social Comparison</td>
<td>No</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H9: Impressions Management is positively related to Social Comparison</td>
<td>Yes</td>
<td>Small</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H10: Impressions Management is positively related to Self-image Congruence</td>
<td>Yes</td>
<td>Small</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H11: Impressions Management is positively related to Purchase Intentions towards specific products</td>
<td>Yes</td>
<td>Moderate</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H12: Social Comparison is positively related to Self-image Congruence</td>
<td>Yes</td>
<td>Small</td>
<td>Positive</td>
<td>Accept</td>
</tr>
<tr>
<td>H13: Social Comparison is positively related to Purchase Intentions towards specific products</td>
<td>No</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H14: Self-image Congruence is positively related to Purchase Intentions</td>
<td>Yes</td>
<td>Small</td>
<td>Positive</td>
<td>Accept</td>
</tr>
</tbody>
</table>

### 4.5 Conclusions

Chapter 4 contains the results of the fieldwork for this thesis. This chapter was divided into sections for the pilot and full field work.

The pilot fieldwork was designed to assess the validity and reliability of the measures and their effectiveness at addressing the research questions. In the first section of Chapter 4 the
results of the pilot are explained. First, the measurement models are discussed in term of the
terms and significant unstandardised regressions weights. Next, evidence to support the
reliability and validity of the measures validity is presented. Finally, the structural models
are developed showing the relationships between the constructs.

The results of the pilot field work suggest that the constructs are robust with the majority
meeting the standard desired for this research. For those constructs outside the standards set
for this research, they still meet generally accepted standards of model fit. The relationships
between the constructs in the structural models indicate that many of the hypothesised
relationships exist.

The full study field work followed the same procedures and measures as used in the pilot
study. The only difference was the sampling procedure. For the pilot, a convenience sampling
process was used with a face-to-face paper survey. For the full study fieldwork, Online
Research Unit (ORU) was employed to collect a simple random sample from their database.
The participant’s responses were collected using an online survey.

Imagery was measured in terms of Vivid and Control. Vividness is the clarity of the mental
picture and Control is about being able to generate and sustain the mental picture on
command. The results of the structural models for the full study imply that many of the
relationships between Vivid imagery and the other constructs are significant and positive, but
Control has a limited and mainly indirect impact on the consumers. Vivid imagery has direct
relationship with Purchase Intentions and Self-image Congruence for both holidays and
cameras. Vivid also has a significant, correlation with problem solving and control
relationship. These results imply that as Vivid imagery increases so does the consumer social
interactions such as presenting an identity, matching that identity to products and then
developing Purchase Intentions. The clearer the Vivid images are, the more the Purchase
Intentions and social interactions increase.

Problem Solving in imagery has a significant and positive relationship with Purchase
Intentions and Impressions Management, but a negative relationship with Social Comparison.
It has strong positive correlations with vividness of imagery and control over imagery. This
suggests that consumers engage in problem solving using mental imagery and this can help
them to develop purchase intentions and impressions for the self-concept.
For Control, the significant direct relationships were with Vivid (for both products) and with Impressions Management (for camera purchases only). In this instance, Control over the mental image has a weak relationship with adopting an identity to project when buying a camera. Control does not have significant links with the other constructs directly, but does have weak indirect relationships through its effect on Vivid images.

Social interactions were measured using three specific constructs: Social Comparison, Impressions Management and Self-image Congruence. Social Comparison is the individual in the social situation, Impressions Management involves adopting a social role and Self-image Congruence is matching products to identity. These social interactions processes help the consumer to communicate who they are through their social relationships and Purchase Intentions.

Social Comparison was theoretically linked to Self-image Congruence, Impressions Management and Purchase Intentions as well as Vivid and Control. However, the results have indicated that Social Comparison is not empirically linked in all the hypothesised ways. Social Comparison has a significant influence on Self-image Congruence for cameras and holidays indicating that when consumers’ comparisons increase then their attempt to match a specific holiday and camera to their self-image increase. This implies that they are concerned about the social meaning of the product. However, Social Comparison has no direct effect on Purchase Intentions. This implies that Social Comparison did not directly influence the consumer’s buying behaviours.

Impressions Management has many significant effects. First, Impressions Management has a significant direct influence on Purchase Intentions. That is, as consumer’s adoption of a social role increases so does their intention to purchase both cameras and holidays. Impressions Management also has a significant impact on Self-image Congruence. So as a consumer’s self presentation increases then the match between the product and their self-image also increases. For instance, a consumer who wants to project a technologically savvy identity will match the latest cameras to their self-image and then develop Purchase Intentions towards that model of camera. Impressions Management has a significant and positive relationship with Social Comparison, but it is affected by the type of product. For a camera, the relationship between was significant, small and positive; but the relationship was
not significant for a holiday. This suggests that holidays are less about social acceptance and displaying the right social role; but for consumers, owning and using a camera can have social meaning.

The final social interaction construct was Self-image Congruence. This construct has a significant direct influence on Purchase Intentions. It also acted as a mediating variable for Social Comparison, Impressions Management and Vivid leading to Purchase Intentions. For example, as consumers’ use of Vivid imagery increases, their presentation of social role and Social Comparison also increases. Once they have that social information they can match the product to their identity which leads to purchasing intentions towards the holiday or camera.

In summary, the results of the field work have suggested that Vivid and Controlled imagery and social interactions processes have significant impacts on Purchase Intentions. The next chapter will present the results in relations to theory, conclude the theoretical argument and outline limitations, contributions and future research.
Chapter 5 Conclusions

5.1 Introduction

The preceding chapters of this thesis contain a review of theoretical concepts, the measures to test those concepts and the analysis of the results from the fieldwork concerning the relationships between mental imagery, social interactions and consumer Purchase Intentions.

The purpose of the first four chapters was to develop the theoretical framework and foundation for the thesis. Chapter 1 introduced the theoretical concepts and the overall intentions of the research project. Chapter 1 also described the structure of the thesis and provided a justification for its importance and contributions to the marketing discipline.

The intention of Chapter 2 was to describe and analyse the theoretical arguments that would be the foundation for the conceptual model. The main theoretical argument of Chapter 2 is that consumers are influenced by internal cognitive processes as well as their interactions with other people. The literature was drawn from various discipline areas including sociology, psychology, philosophy and marketing. The chapter began with a review of the seminal consumer information processing models. Then the cognitive process of conceptual blending was discussed. The outcome of the conceptual blending of perceptions, memories and fantasy is the creation of mental images. Then mental imagery was discussed in terms of consumers’ level of Control and Vividness. The next section of Chapter 2 focused on social identity and the creation of a social consumer. The three variables that were the focus of this section were Social Comparison, Self-image Congruence and Impressions Management. These variables were discussed in terms of the influence they have over the consumer. In the final section of Chapter 2, the research question was formally stated as:

How does consumers’ mental imagery affect their social interactions and purchase intentions?
Then, the Imaginative Interpretation Processing (IIP) conceptual model was built and hypotheses were developed to help answer the research question. The IIP model will be discussed in the next section.

Chapter 3 was a review of the methodology that was used to gather the data including the measurement scales, the research paradigm and research method for gathering and analysing the fieldwork. The research paradigm used in this project was the realist perspective which accepts that there are scientific truths and a bounded reality. The data collection process was discussed in terms of the strengths and weaknesses of online surveys and sampling processes. Then each measurement scale was analysed and compared against a predetermined criteria of reliability and validity requirements. The final section of Chapter 3 was the review of Structural Equation Modelling (SEM) which was the main analytical tool used in this thesis. SEM is a method of analysis that enables the researcher to examine the relationships between latent variables. SEM has two components: the measurement models and the structural models. Measurement models examine the relationship between each latent variable and the items (questions) used to measure that variable. The structural model is the relationship between the latent variables. The structural models determine if there is a significant relationship between the concepts, but does not necessarily show a causal pathway. SEM was also discussed in terms of second order factors and multi-group analysis.

Finally, Chapter 4 contained the analysed results of the fieldwork where the hypotheses from Chapter 2 were tested using the data collected based on the methodology described in Chapter 3. A pilot test was conducted to ensure the validity and reliability of the measures. The results of the pilot test provided evidence to suggest that the measures were appropriate. Then the results of the main study were analysed. The data were tested for reliability and validity which were both demonstrated. The models were created in two stages with the measurement models developed first and tested for model fit. Then, the structural models were developed to test the hypotheses that were developed in Chapter 2. Several alternative models were developed to determine the most appropriate fit of the data. Finally, multi-group analysis was conducted based on the different products (camera and holiday) to test whether or not there is a statistically significant difference between the relationships across the two products. The results indicated that there were differences in the measurement models which suggest that comparison between structural models may be inappropriate.
Conceptual model

The conceptual model, called the Imaginative Interpretation Processing Model (IIP) which was developed in Chapter 2, shows the hypothesised relationships between imagery, social interactions and *Purchase Intentions*. It also shows the feedback loops into the conceptual blending process. The IIP model is presented below. Fauconnier and Turner (2004) argued that individuals engage in a process called conceptual blending – it enables an individual to conceive of things that do not exist and things that do, and to merge these ideas together to form new meaning. In contrast, more traditional consumer behaviour theorists such as Bettman (1971) suggested that information processing is based on the use of new or existing information. He argued that consumers use one or the other process. Conceptual blending, on the other hand, combines fantasy, perceptions and memories to create an interactive and interpretative imagination. This is the foundation of the Imaginative Interpretation Processing Model (IIP). From this conceptual blend the consumer creates mental images which vary among consumers in terms of *Control, Vividness and their use of imagery as a problem solving technique*.

In sociology, theoretical debate has focused on the individual and his/her place in the social context. For many theorists, identity is developed through social knowledge or social interactions. The literature stream of symbolic interactionists was founded on the concept that it is through these interactions that the individual will come to know his/her self and their place in society (Mead, 1974; Solomon, 1983). From this perspective, the conceptual model shows social relationships concepts interacting with *Self-image Congruence* and *Purchase Intentions*. A feedback loop continuously connects social interactions with conceptual blending as each interaction with the world can change a consumer’s understanding of their social and self-identity which then affects the products they buy. This thesis is a snapshot of the dynamic process that exists between the consumer and his/her social and consumption activities.

The final component of the model is *Purchase Intentions*. As Sheth (1969) argued, *Purchase Intentions are uncompleted plans*. Thus, this model is not attempting to measure what people have bought, just what they intend to buy given their situation. Also, a plan may be focused on a variety of goals (Read, 1987) as consumers develop *Purchase Intentions* for social
reasons as well as product needs. Finally, *Purchase Intentions* loop back into the conceptual blending process.

Below the IIP conceptual model is presented, again showing the relationships between the concepts that were used as the foundation for the structural models.

**Figure 5:1: Imaginative Interpretation Processing Model**

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*Feedback loops*
5.2 Key Findings- Contributions to Theory

The key findings section shows the contributions of the results of this thesis to the existing literature. There are 11 key findings from this thesis. In the literature review (pages 48- 54) the topic of imagery creation and usage was discussed. The key theoretical arguments related to the consumers’ capacity to develop and maintain images and how to use imagery to solve problems (Hirschman, 1983; MacInnis and Price, 1987;; Zhao et al., 2009). The findings of this research supported and extended many of these theoretical points in particular is the way the relationship between control, vividness and usage of imagery as a problem solving technique. That is, imagery helps consumers develop purchase intentions and as imagery increases so does the likelihood of purchase. Another key aim of the research was to extend theory in terms of developing the understanding the relationships between social interactions and purchase behaviour. The key literature (pp 55- 78) on Impressions Management, Self-image Congruence and Social Comparisons focus on explaining how consumer develop and display their identity (Belk, 1988; Goffman, 1996 ; Dabbs et al. 2000; Swaminathan et al. 2007; Bosnjak and Rudolph, 2008). The findings of this research in general support the preceding theory including as the consumer increases their capacity to control their image and match products to their self-image the likelihood of purchase increases too. In contrast, to previous studies (Ackerman, MacInnis and Folkes, 2000) social comparison was found to only have indirect effects on consumer purchase intentions. Finally, the research focused on the relationship between imagery and social interactions, only a limited amount of research has been conducted in this area (Phillips et al., 1995; Walters, Sparks, and Herington, 2007). The findings of this research provide evidence to suggest that increases in imagery generation, usage and vividness have positive effects on matching products to self and the consumers’ capacity to develop the self- presentation persona. Ultimately, the positive relationship between imagery and social interaction variables also leads to purchase intentions. This suggests that there are practical applications for marketers in terms of positioning products and creating marketing communication campaigns.

5.2.1 Mental Imagery

A fundamental concept behind this thesis is that consumers engage in imaginative processes to create and develop meaning. In the consumer behaviour literature, research has
investigated the way imagination influences projection, behaviour, understanding and evaluation of products (Hirschman, 1983; MacInnis and Price, 1987; Martin, 2004; d'Astous and Deschenes, 2005; Zhao et al., 2009). The purpose of this study is to develop and expand this field of research by adding in the interaction between the mental images, social influences and Purchase Intentions.

Key Finding One - Control, Vividness and Problem Solving using imagery are correlated variables

As with previous research, mental imagery was divided into two constructs: Control and Vividness. Theoretically, Vividness is “a combination of clarity and liveliness” (Marks 1999 p 570). In other words, for a consumer to create a Vivid mental image, the picture must be clear and engaging. Control is about generating and maintaining a mental image (Richardson 1977; Morris and Hampson 1983; Leguerica et al. 2002). In this thesis, the focus is on the relationship between Control and Vivid images and then how consumers can use these images whilst engaging in social relationships and to evaluate products.

The first theoretical relationship between Vivid and Control was founded on Petrova and Cialdini (2005). In their study they found that if consumers were provided with detailed information they could construct a Vivid image. Similarly to previous research in psychology, which argued that Control and Vividness were correlated concepts (Lequerica et al., 2002), in this thesis, the Vividness of the image was correlated by the level of Control the consumer had over the image. This correlation is also affected by a third correlated variable of Problem Solving. This suggests that Control, Vividness and Problem Solving have a positive, correlated relationship.

This thesis supports this concept as the data suggest that there is a positive and direct relationship between Vividness and Control. That is, as Control over the image increases, the Vividness of the image also increases.
Key Finding Two- Problem solving and Vividness has a direct impact on Purchase Intentions

In consumer behaviour literature, there are several streams of research connected to imagery and Purchase Intentions. The first stream is about creating mental visualisations of products so the consumer can rehearse ownership. Consumers act out in their minds scenarios that can help them make decisions in the purchasing environment. The re-creation of the world through imagery enables the consumer to develop consumer goals and consumption visions (Gregory et al., 1982; Unnava and Burnkrant, 1991; Phillips et al., 1995; Schlosser, Mick, and Deighton, 2003; Escalas, 2004). The goals provide motivation for purchase because the consumer can see what having the product would do for them. Another important stream is the impact of advertising in creating imagery (Bone and Ellen, 1992; Unnava, Agarwal, and Haugtvedt, 1996; Thompson and Hamilton, 2005). These studies argued that imagery in advertising helps the consumer to remember the product because they can recall the images.

For this thesis, the participants were asked to develop their own mental images and Purchase Intentions towards two types of products: holiday and camera. The results indicate that there is a direct and positive relationship between the Problem Solving and Vividness of the imagery and the consumer’s Purchase Intentions for both these products. This suggests there is evidence to support the concept that the more vividly the consumers can see these consumption visions and goals, the more this will increase the consumer’s intentions to buy these products.

The results indicate that Control does not have a direct relationship with Purchase Intentions. That is, Control over image creation does not directly increase Purchase Intentions towards the product. However, Control has an indirect effect on Purchase Intentions through its significant relationship with Vividness. Overall, though, the total effect on Purchasing Intentions is much larger for Vividness than for Control. This implies that Control over consumption visions is not as important as the Vividness of the imagery for the consumer in terms of creating consumption plans. For instance, the consumption vision may only last for a second, but if it is Vivid then the consumer can still see what it would be like to own that product—and the clearer this image is, the more likely the consumer is to create an intention to buy that product.
In summary, there is support for the thesis that a consumer who can *Control* and create clear mental images will use imagery to develop *Purchase Intentions*. This also implies that the consumer’s ability to create controlled and *Vivid* imagery will affect the level at which they will use this mental tool to evaluate the products they intend to buy. In this way, this thesis has added to the literature by unpacking the process of mental imagery for the consumer and its direct effect on *Purchasing Intentions*.

### 5.2.2. Social Interactions

The second aspect of this IIP conceptual model was to determine the relationship between three different social interactions variables. Even though there are many ways in which consumers can interact with each other, for this research three specific constructs were identified: *Social Comparison, Self-image Congruence and Impressions Management*. These constructs were chosen because they are different aspects of the process of social interaction. *Social Comparison* explores how the individual interacts with others to develop a social identity (Mead, 1974; Ramanathan and McGill, 2007), *Self-image Congruence* is about choosing products that match the desired identity (Sirgy *et al.*, 1997) and *Impressions Management* is about controlling the communication of that image to others in the social context (Jones and Pittman, 1982; Riggio and Friedman, 1986). Together these three concepts focus on the way an individual can engage in society by adopting expected behaviours, belonging to a group and matching the meaning of products with consumer identity.

*Key Finding Three- The consumers’ Impressions Management ability can motivate them to compare themselves with others and match products to self.*

Psychologists have defined *Impressions Management* as a deliberate attempt to present behaviours to make others respond in a desired way (Jones and Pittman, 1982). *Impressions Management* is measured by assessing the consumer’s ability to adopt role-playing and performance or self-presentation to meet social expectations (Goffman, 1990; Hogg and Michell 1996; Stets and Burke, 2000) using a script of acceptable and specific pre-planned actions (Schudson 1984; Schlenker 1985). This means that the individual already understands
what behaviour is expected in the situation and can adopt an acceptable identity to a varying 
degree, depending on their ability to control their presentation.

Sociologists explain *Social Comparison* as a way for people to develop social identity by 
placing themselves in a social context. The social context is membership in a group based on 
their evaluation of the similarities and differences of themselves in comparison to those 
around them (Cooley 1922; Mead 1934; Pieters *et al.* 1998; Simon and Hastedt 1998; 
Crocker and Park 2004). Moreover, Spencer, Fein and Lomore (2001) contended that the 
primary purpose of *Social Comparison* is to enable individuals to function within defined 
parameters of the social relationship. Thus, sociological and psychological theory suggests 
that consumers adopt a social role. This social role is used to compare themselves with others 
in order to join a group. This is the foundation for the relationship between *Impressions 
Management* and *Social Comparison* as the individual will modify their behaviour to 
continue to meet the needs of their group membership.

The results from this thesis suggest that the relationship between *Impressions Management* 
and *Social Comparison* is affected by product type. That is, when considering a camera the 
relationship is significant and positive. However, when consumers are considering a holiday, 
the relationship becomes insignificant. This suggests that the influence of *Impressions 
Management* on *Social Comparison* may be affected by visible consumption. For instance, a 
camera is more visible in the consumer’s interactions with others (eg seen using the camera 
to take groups pictures) than a holiday which is generally not seen by group members. In this 
way, the consumer has to be more careful to adopt their presentation role for products where 
they may be seen to be using them. Moreover, it indicates that for some products, 
consumer’s ability to adopt a desired role will help to compare themselves to others.

A significant stream of consumer behaviour research has focused on the role of social 
interactions and symbolic products. The results of both seminal and contemporary research 
have found that consumers recognise the importance of the relationship with other people as 
part of the purchasing process as well as the social meaning of the product (Levy, 1959; 
Solomon, 1983; Belk, 1988; Leigh and Gabel, 1992; Hogg *et al.*, 2000; Kleine and Kleine, 
2000; Ahuvia, 2005).
Based on the work by Hogg et al. (2000) and Dabbs et al. (1980) the IIP model specifies that *Impressions Management* influences *Self-image Congruence*. *Impressions Management* is the consumer’s ability to change their presentation to others. That is, a consumer who has high *Impressions Management* skills can buy products that can help them to produce the image they want others to see. Hogg et al. (2000) argued that self-monitors develop *Purchase Intentions* by examining the intrinsic and extrinsic value of the products to match their presentation image. This suggests they already know the image they want to present to others and are seeking the characteristics in the products to help them present that image. Dabbs et al. (1980) found that high self-monitors want to set an example for low self-monitoring people. This suggests that high self-monitors aim to be in control of the situation and influence others through social interactions processes. Consequently, the consumer’s ability to self-monitor their presentation will affect the process of matching self to products. For instance, if the consumer desires to present an image of sophistication they will seek products that possess characteristics that represent sophistication such as simplicity, elegance and quality. When the product is found to match the presentation image then *Purchase Intentions* are developed. In contrast, O’Cass’s (2001) argued that high self monitors use the situation and products as props to maintain a positive *Impressions Management*. This suggests that the consumer matches product to their self-image first and then uses it to maintain their social presentation image. After personal communication with O’Cass (December, 2009), an additional model was developed with the arrows indicating that the direction of the relationship is from *self-image congruence* to *Impressions Management*. This model and an explanation for why it was not adopted are in the appendix.

The results in this research suggest that *Impressions Management* has a positive, significant and direct effect on *Self-image Congruence*. That is, as *Impressions Management* increase so does *Self-image Congruence*. Thus, there is support for the perspective that consumers are developing their self-presentation roles and then going out to match products to that identity. In other words, the consumer’s ability to control how they will be seen will affect how they choose products to ensure they are congruent with their image. The consumer is motivated by their interest in *Impressions Management* to control the situation. Consumers then display their adopted presentation role to others through consumption of specific products. As Hogg et al. (2000) argued, higher impressions managers are more likely to choose products that will display their desired self and social image. In this way, their product choice is concerned with presenting the right image. The results from this thesis support Hogg et al. (2000), as
they indicated that as the consumer’s ability to control their *Impressions Management* increases so too does their *Self-image Congruence*. This relationship between the two constructs is significant when consumers are purchasing both a holiday and a camera. This suggests that both these products have qualities that consumers can use to display their role adoption. Further it suggests that consumers are motivated to increase their match between self-image and product by their ability to control their self-presentation.

**Key Finding Four - Social Comparison effects Self-image Congruence**

The final social interaction relationship examined in this thesis is the link between *Social Comparison* and *Self-image Congruence*. Previous studies have connected *Social Comparison* with *Self-image Congruence* through the process of stereotyping (Belk *et al.*, 1982; Meyers-Levy and Tybout, 1989) and evaluation processes (Burris and Rempel, 2004). That is, the consumer engages in a process of comparing themselves with others and then will evaluate and match products based on this comparison. For example, consumers will compare themselves to others based on stereotypical assumptions about a product’s symbolic meaning. They will then go out and purchase a product based on the desired social group they wish to join. In this way they will match their identity to the symbolic meaning of the product and their *Social Comparison* of product ownership.

For this research, the results indicate that for both cameras and holidays there is a significant and positive relationship between *Social Comparison* and *Self-image Congruence*. The consumer’s *Social Comparison* was measured in terms of the consumer’s interest in *Social Comparison*. That is, the measure asked how important *Social Comparison* information is to the consumer in terms of belonging and purchasing decisions. For instance, the consumer may value a friend’s opinion of a product and use that to make a purchase decision. In this way, as argued by Burris (2004), the consumer is using socially derived information to evaluate products. The results of this thesis indicate that as the importance of this social information increases for the consumer, so does *Self-image Congruence*. This implies that consumers are using social information to help them match product to themselves.
In summary, this thesis has found support for previous social interaction literature; moreover it has added to the literature in exploring the way social variables can interact with each other from a consumer behaviour perspective.

5.2.3 Social Interactions and Imagery

The fundamental argument in this research is that the consumer is processing information through a conceptual blend. This cognitive process incorporates perceptions, fantasy and memory and results in the creation of mental images. Consumers will then use those images to help them understand their social interactions. This research measured consumer’s Control over and the Vividness of those images. The Imaginative Interpretation Processing Model (IIP model) developed for this research suggests that consumers are aware of the symbolic and social meaning behind their product choice because their social experiences have looped back into their conceptual blend. From the conceptual blend the consumer forms new mental images of products. This section of the key findings examines the relationships between mental imagery and the social interaction variables.

Although there is a significant amount of previous research on mental imagery and social interactions, there is little research that has combined these specific elements. For this research, the hypothesised relationships between imagery and social interactions were based on logical deduction. For instance, Impressions Management is often about avoiding embarrassment in the social context (Goffman, 1990; Leary and Kowalski, 1990). Therefore, the consumer’s ability to create a mental image prior to purchase should enable the consumer to avoid purchasing products that would cause them embarrassment. The more controlled and clear the mental image is, the more likely the consumer can be confident of presenting a desired image. Hence, relationships were hypothesised between Vivid and Impressions Management and Control and Impressions Management.

For Social Comparison, the consumer is making a judgment about their place in the social context. Theoretically, this is often referred to as a process of internal or self-reflection (Schul, Burnstein, and Martinez, 1983; Solomon, 1983; Bearden and Rose, 1990; Giddens, 1991; Schau, 2000). The relationship between Social Comparison and imagery was studied in terms of the individual’s mental evaluations of others (Moscovici and Personnaz, 1991).
and in terms of creating ideals through wishful thinking (Ogden and Venkat, 2001). Previous research has found that individuals will be affected by the group’s interpretation and their own mental images. This indicates a feedback loop between comparisons and imagery. For this research, this cognitive process was deduced to occur in the conceptual blend and be seen in the consumer’s mind through their mental imagery. Thus, it was hypothesised that a relationship existed between Control and Vivid images and Social Comparison.

Finally, Self-image Congruence has been hypothesised to be related to Impressions Management and Social Comparison. However, previous research does not explain how the consumer develops product congruence in their mind. That is, how they match the product with self prior to purchase. The IIP model of this doctoral research suggests that product congruence can be developed by the consumer’s mental rehearsal. Consumers create mental images about the products to see if they match their identity. Thus, a relationship was hypothesised between Vivid and Control and Self-image Congruence.

**Key Finding Five- Problem Solving and Vividness has a significant and positive effect on Impressions Management, Social Comparison and Self-image Congruence**

The results of this thesis suggest that Problem solving and Vivid imagery have direct and significant effect on two of the social interaction variables. That is, as Problem Solving increases so too does Impressions Management and Social Comparisons and as Vividness increases so does Impressions Management and Self-image Congruence. This implies that consumers use imagery to find solutions to their social dilemmas. In this way, the consumer is more confident that their adopted social roles will receive the desired social responses. The findings further suggests that increasing the clarity of the image can increase the consumer’s ability to control their social role because they have created a mental image of how those social relationships may function. Moreover, as those images increase in clarity, the consumer may feel more confident in their match with product choices.

**Key Finding Six- Vividness has a significant, but negative influence on Social Comparison**

The relationship between Vividness and Social Comparison was negative and significant for holidays, but not significant for cameras. The results imply that as the clarity of the imagery
increases, the importance of Social Comparison decreases. Thus, the results suggest that the hypothesised relationship does not exist as anticipated because Vividness and Social Comparison are negatively related rather than positively related. The reason why this relationship is negative is unclear and needs further research to explore why consumer’s clarity and Control over imagery would not help them to understand their Social Comparison. The implication of this negative relationship is that clear imagery does not help consumers to compare themselves to others. Vividness does have a positive indirect affect on Social Comparison through Impressions Management, however overall the total effect was negative.

Key Finding Seven- Control affects the social interaction variables primarily through indirect relationships

Control does not have a direct significant effect on any of the social interaction variables except Impressions Management. This relationship is small and positive indicating that as Control over the image increases, Impressions Management increases too. This implies that controlled imagery helps the consumer adopt a role. Although that is the only direct relationship, Control has indirect effects on the other social interaction variables through the correlations with Vividness and Problem Solving and also through the positive relationships with Impressions Management. Similarly, because Control has a positive effect on Impressions Management, it has an indirect effect on Self-image Congruence and Social Comparison.

In summary, the generation and clarity of imagery has significant and mainly positive relationships with social interaction variables. This implies that consumers are using mental imagery to understand their social relationship.

5.2.4 Social interactions and Purchase Intentions

The final set of findings is focused on the direct relationship between social interactions variables and Purchase Intentions. That is, the way social interactions help consumers make plans to buy products.
Key Finding Eight- Impressions Management has direct and indirect effects on Purchase Intentions

From the sociological perspective, Miller et al. (1960) and Schlenker (1985) argued that goals are fundamental to self presentation roles because they provide a purpose. For a consumer, the goals can be related to purchasing products. In consumer behaviour literature, Lee (1990) combines symbolic interactions processes with consumer purchasing. Lee’s (1990) model suggested that consumers consider their social interaction needs and develop Purchase Intentions for products that communicate his/her self identity.

Bettman et al. (1998) argued that the consumer is a social being that has to justify his/her purchases in the social context. This implies that decisions have to be acceptable to society in order to maintain a positive impression. Thus, as part of the evaluation process consumers consider how people will react to their purchases. Products are used as props to help maintain the correct social identity through Impressions Management. The individual relies on the meaning of the product to help maintain their social identity because the product’s symbolism provides an explanation to others.

The results for this research suggest that Impressions Management has a direct and positive influence on Purchase Intentions. This supports the theoretical argument that consumers have specific goals for their self presentation and that purchasing products can help the consumer to display the desired image. Impressions Management also has an indirect relationship with Purchase Intentions through its positive relationship with Self-image Congruence. These findings imply that consumers have the capacity to adopt a role, and this influences their attempt to match products to that role, and both of which influence their plan to buy specific products.

Key Finding Nine- Social Comparison does not directly influence Purchase Intentions, but has an indirect affect through Self-image Congruence

A principal way for consumers to develop their understanding of their social interactions is to place people in stereotypical groups. Sociologists view stereotyping as a way to categorise
observed behaviour (Goffman 1990; Prentice and Miller 2002), form judgments (Manis, Paskewitz and Cotler 1986) and join groups (Turner 1982). This suggests that as consumers interact with others they use stereotyping as a mechanism to place people in those groups and then to decide whether or not they want to join that group. From the psychological perspective, Kunda and Spencer (2003) argued that the application of stereotypes aids comprehension and enables individuals to justify their social choices. In terms of consumer behaviour, this suggests that consumers will group others based on their observations of consumption.

In consumer behaviour, research has linked Social Comparison to possessions (Ackerman et al., 2000; Ramanathan and McGill, 2007). That is, theory suggests that consumers are using products as a way to evaluate themselves against relevant others because it makes them feel satisfied and in some instances superior. In addition, social relationships are often seen as a valuable source of information that can lead to Purchase Intentions (Martin and Bush, 2000). Thus, the hypothesis is that Social Comparison should have a positive relationship with Purchase Intentions.

The results in this research however indicate that there is no significant direct relationship between Social Comparison and Purchase Intentions. However, there are indirect effects because of the positive relationship between Social Comparison and Self-image Congruence. This suggests that Social Comparison is being used to inform the match between the self and the product and it is this match that leads to Purchase Intentions. The implication for this relationship is that although Social Comparison is an important component of social interactions, it is ultimately, the match of the product with the self that influences Purchase Intentions. For instance, buying products based on the axiom of “keeping up with the Jones” only becomes relevant if the product matches the individual and is only indirectly based on the actual comparison with other people.

**Key Finding Ten- Self-image Congruence has a direct relationship with Purchase Intentions as well as being affected indirectly through the influence of social interactions.**

To be congruent, the consumer must have a strong and positive reaction to the product. For instance, Belk (1988) argued that possessions become part of an extended concept of self.
Indeed, the products are self. Research has been conducted on this topic from the 1950’s and the results suggest that consumers develop *Purchase Intention* based on their match with the product (Bettman 1971; Sirgy 1984; Zinkhan and Hong 1991; Allen 2002). There have been a wide range of products tested for this concept including: electrical devices, magazines, clothing, food and cars (Birdwell, 1968; Green, Maheshwari and Rao 1969; Grubb and Hupp 1968; Quester et al. 2000; Jamal and Goode 2001; Allen 2002). The variety of products that have been used indicates how prevalent symbolism is in consumer choices.

As stated previously, this research used a camera and a holiday as the product choices. The participants were asked to imagine their own version of these products rather than being asked to focus on a specific brand or destination. The results of this research support previous research findings, as there were significant and positive relationships between *Self-image Congruence* and *Purchase Intentions*. These results suggest that consumers are matching their self-image to the products which can help them to develop *Purchase Intentions*.

However, the relationship between *Self-image Congruence* and *Purchase Intentions* is also being indirectly affected by relationships with the other social interaction constructs of *Social Comparison* and *Impressions Management*. That is, the matching process for the individual is affected by the importance they place on social roles and group memberships. For instance, buying a camera may be based on the image the consumer wants to project and their feelings of being equal, superior or inferior to their group as well as matching their self-identity. In this way, a finding of this research is that the consumer’s ability to engage in social interactions can help the consumer to understand the social meaning of products which in turn helps them to know it matches their identity.

In summary, social interaction variables have direct and indirect relationships with the consumer’s intention to buy products. This implies that social relationships are important influences on the consumer’s engagement in the marketplace. Moreover, social relationships are sources of information for the consumers to match products to themselves which lead to *Purchase Intentions*. 
Key finding Eleven- Testing of the Imaginative Interpretation Processing Model

The final contribution to theory is the development and testing of the Imaginative Interpretation Processing (IIP) Model. At the beginning of Chapter 5 the IIP was presented as a conceptual model. The model is presented again here showing the hypothesised relationships that have empirical support from this research. Thus, a final significant contribution to the literature is the development of a model of consumer processing that incorporates Vividness, Problem Solving and Control of imagery as well as social interaction processing variables. Figure 5.2 shows the significant relationships between the constructs. The feedback loops were not shown in this final model as they were not tested in this research.

**Figure 5:2:** Tested and Supported paths for the Imaginative Interpretation Model (IIP)

In summary, this section was focused on connecting the empirical results of this thesis with existing theory. The purpose was to show the contributions this research has made to theory.
5.3 Contributions to industry

5.3.1 Implications for Marketing

This research project has several practical implications for marketing strategy. Understanding consumer processes can help marketers develop strategies to move customers through the decision making process more efficiently. In particular, the results of this research have implications on the content and style of communication messages. The results of this research suggest that imagery can be an effective and engaging way of communication. Imagery can stimulate a consumer’s imagination making it easier for them to create their own mental images. Social relationships and connections are also important to consumers and therefore have a place in marketing strategy. The results of this research suggest that strategy using social relationships needs to balance the role of the group with the individual’s self-image congruence and their ability to control their image presentation.

Moving consumers through the decision process

A principal goal for marketers is to help consumers make a purchase decision (Howard and Sheth, 1969; Hoch and Kunreuther, 2001). This suggests that the more marketers understand about consumer behaviour the more they will be able to make their product attractive, create engaging messages and encourage consumers to purchase their brand over the competition. The focus of this thesis was to explore and identify the relationships between specific elements of imagery and social interactions that affect consumers’ decision process.

Ways to communication- importance of imagery

Many of the implications to industry are based on the theoretical conclusions drawn from this empirical study and previous research in particular the research on imagery by Petrova and Cialdini (2005) who found vividness and control to be significant and important aspects of consumer decision making and their responses to marketing strategy. The results of this thesis suggest that consumers are using imagery to evaluate products based on how easily and clearly they can generate a mental image. From a marketing communication perspective, this implies that using evocative words, music, and pictures can help to stimulate the consumer’s mental image— the more Vivid the consumer’s imagery is the more they will use it to develop Purchase Intentions. Marketing communications can therefore help them to engage with their own mental image of the product prior to purchase. Giving the consumers clear
imagery during marketing communications may also make it easier for the consumer to generate \textit{(Control)} their own images. This in turn may make the consumer’s images even more \textit{Vivid} because as \textit{Control} increases so too does \textit{Vividness}.

In practical terms, marketers also need to be thinking in imaginative ways. Imaginative marketers can create better brand stories if they understand how their target audience is processing information (Engen, 2002). That is, the marketer needs to be adopting the right types of imagery in order to stimulate the consumer’s imaginative interpretation. For example, given the influence of social interaction processes, marketing communications should use evocative imagery that shows consumers engaging with the products and social relationships. Many of the implications for industry are based on the theoretical conclusions drawn from this empirical study and previous research in particular the research on imagery by Petrova and Cialdini (2005) who found vividness and control to be significant and important aspects of consumer decision making and their responses to marketing strategy. For a marketing communications agency the implication is to focus on the impact of imagery on the consumer in two ways. First, the focus can be on the use of imagery to stimulate the consumer. Second, the focus can be on asking the consumer to engage in their own imaginative processes. For example, if the objective of the campaign is to encourage the consumer to feel as if they own the product the focus should be encouraging the consumer to use their own imagination: to create vivid images of them using and enjoying the product.

\textit{Social Networks}

The results of this thesis suggest that consumers’ ability to control the situation and the importance of group membership can have direct and indirect effects on their purchasing decisions. This suggests that marketers need to focus on social elements in the marketing campaigns. In terms of social interaction variables, this thesis has found support for the work of (Ackerman \textit{et al.}, 2000; Ramanathan and McGill, 2007) who argued that a relationship exists between \textit{Social Comparisons} and \textit{Self-image Congruence} and they have a positive affect on \textit{Purchase Intentions}. To extend to this relationship, this thesis found that Social Comparison only effect of \textit{Purchase Intentions} is indirectly through \textit{Self-image Congruence}. The theoretical relationship of \textit{Impressions Management} to \textit{Self-image Congruence} and \textit{Purchase Intentions} is based on Lee (1990) symbolic interactionist perspective and Hogg \textit{et al.}, (2000) who argued that the individual’s creates a image they want to present and then
match products to that image. For example, the consumers’ ability to control their presentation can affect their choice of products. In many ways, the products are props that consumers use in order to present an effective public persona. In addition, as the consumer engages with their self image this increases the likelihood of purchase. In practical terms the implication for marketers include creating messages with comparisons of products and the affect these differences can have on the consumers’ self-presentation. For instance, the message may emphasise the presentation value of product ownership. That is, clearly explaining what owning the product would mean socially. In this instance, consumers who have a higher interest in controlling their own self-presentation may be more engaged in the message because it contains an element that is important to them. The evidence in this thesis suggests, however, that Social Comparison does not have a direct relationship with Purchase Intentions. This suggests that even though the opinions of others may be important to the individual, it may not be sufficient to motivate the consumer to make purchasing plans.

Another important aspect of social interactions is Self-image Congruence and its mediating effect between Social Comparison and Purchase Intentions. This thesis has found evidence to support the argument that Social Comparison can be important to consumers when they are matching products to self and develop Purchase Intentions. In this way, consumers compare themselves to others and then match products to self before making the plan to buy it. This implies that marketing communications only based on Social Comparison may be missing the valuable component of self-matching. For the consumer, it is not just about whether or not others have the product, but also if that products matches who they are too. This suggests that brand communities are developing not because consumers are comparing themselves to others and joining brand groups, but that joining the group also fits with their sense of self. In practical terms, this implies that brand messages should emphasise both the importance of the opinion of the group and the individual.

Given the results of this thesis about social interaction processes, marketing communications strategy should use word-of-mouth (WOM). Word of mouth about products often occurs incidentally because products are part of life (Mangold, Miller, and Brockway, 1999). That is, consumers often talk about the products that they own, want or intend to buy using brands names as part of their everyday conversations. For example, women talking about new shoes will use a brand name like Jimmy Choo Shoes to make it clear which product they want to buy. By talking about products on a brand level, they can express the symbolic meaning of
the product. Word of mouth conversations also help the consumer to see if the product is congruent with their image and gives them the opportunity to engage in social comparisons because they have heard other peoples’ opinion. Hence, marketing communications based on social interactions need to encourage further WOM activities to take advantage of the influence of social interactions variables on Purchasing Intentions.

Product Type

The two products were chosen because they shared some similarities including being higher involvement, yet relatively common products suggesting that consumers may have owned or had experience with the products. Both products also can evoke emotional attachment and have social and symbolic meaning which would affect their processing level. The primary difference between the two products is a holiday is more intangible and the camera is more tangible. Although it is also clear that a holiday has tangible aspects (souvenirs) and a camera has intangible aspects (customer service). Given the similarities between the products, it was originally conceived that the participants would have similar responses in terms of their capacity to develop mental imagery. There were differences in the regression weights between the products which suggested that the product type may be a significant factor. For example, the relationship between Control and Vividness was stronger for camera than holiday. This implies that it easier for the consumer to generate a clearer image of a tangible product than an intangible service. In this way, consumers may find it easier to generate clear imagery for some products than for other products. In terms of practical implications, the results suggest that product type may influence the effectiveness of marketing campaigns. However, this area needs further research to determine if the difference between the products is significant before recommendations can be made.

5.4 Limitations and future research

A common limitation with research is sampling. For this research, an online survey was conducted. A comparison with Australian Bureau of Statistics census data indicated that the sample was not representative of the Australian Population. The t-tests for income and age and the chi-square tests for employment, education and relationship status all had significant
p-values (p<0.05). Gender was the only variable that had an insignificant p-value (p>0.05) which suggests there is no statistical difference between the sample and the population.

There are several limitations for this study from an analysis perspective including multi-dimensional constructs and covariances errors in the structural models.

During the screening process, before the analysis, two of the constructs (Control and Vividness) were found to be multi-dimensional. Further to this, there were in the structural models covariances errors were estimate. As covariance errors are the result of socially desirable responses to the items by the participants or lack of uniqueness in the item (Byrne 2001) this suggests they may have been other issues with the items used to measure the latent constructs. The effect of these limitations can be to reduce the confidence in the results because there may be more than one reason to explain the relationships that were significant.

The modification indices available in AMOS were used to examine the affect of the error covariances and improve the fit of the model. The existence of error in the covariances and multi-dimensions in constructs are limitations of the study. However, the modified constructs were tested for reliability and validity and the modifications to the model were based on theoretical considerations and not on the modification indices provided in AMOS.

Another limitation is the data analysis method. The analysis method of structural equation modelling has issues with sample size, normality, missing data and over-interpretation of pathways (Hair et al., 2006). Given these weaknesses, the research was carefully designed to gather a sample size that would be sufficient, the data were cleaned and missing data were systematically removed. In terms of over-interpretation, the results were discussed in terms of the relationships between the structural pathways, not in terms of causation.

Finally, the structure of the task in the questionnaire may present a limitation. The tasks required of the respondents, in terms of generating mental images of products, were deliberately vague to allow the consumers’ own capacity to be self-evident. That is, rather than direct them to a specific product, the task asks them to engage in their own mental processes and then report on the outcome. The range of responses should be based on the individual’s capacity to generate a vivid image rather than their knowledge of a specific product. While it is true that we cannot really know what was going on in the consumers’
minds, this can be true of any research task. The product chosen were designed to be familiar and meaningful (symbolically/ functionally) and it hoped that respondents were truthful and sincere in their responses.

Future directions

The purpose of this research was to examine how consumers use their mental imagery and the relationship this has with social interaction variables and purchase intentions. The results have provided evidence to indicate that imagery does play a role in the evaluation process for consumers and their ability to generate vivid images can help them to develop purchase intentions that match their self-image and fulfil their impressions management needs. Future research needs to further unpack the impact of imagery in terms of its acceptability in society and how imagery operates in the consumers’ problem solving process.

This thesis has provided a foundation to suggest the hypothesised relationships exist and are significant between several social variables, but it could further explore why the positive hypothesised relationship between Vividness and Social Comparison was not support. For instance, if the vividness of the image is not significant how, if at all, do internal mental processes affect the decision to compare self to others? Moreover, Social Comparisons was not found to have a significant direct positive relationship with purchase intentions. This is another area that needs further research as it implies that social pressures are not sufficient to encourage consumers. Social Comparison did have an indirect affect through Self-image Congruence, which indicated that the social considerations still have to match the self identity. Future research in this area could examine in more detail the difference between consumers in terms of those who are more socially orientated and those that are more individually orientated to determine the strength vividness and control of imagery has on the development of Purchase Intentions.

Another area of future research could be to re-examine the social variables scales as measurement instruments. As society changes and new norms are developed, it is logical to assume that older measures of social interactions may no longer accurately account for consumer behaviour. This could be very significant given the increasing customisation of processes consumers are adopting particularly in the service industries. That is, consumers
are focused on getting the process of service closely aligned to their own needs. This flexibility, as a market trend, may reflect a reduction in the impact of the social variables.

Other possible directions for future research include imposing controls in the experimental design including a cultural component, sampling children, brand names and other specifics about the product choices.

An important design variable is the effect of culture on the social context. That is, different cultures have different social norms and behaviour. Thus, there may be a difference in the social interactions across cultures. To this end, a future research project could examine the IIP model in a different cultural context.

Another future direction is to test the IIP model with children who may experience social interactions and imagery in a different way. It would also be interesting to explore gender differences.

Finally, because the product type appeared to be create some differences in the model paths, future research could explore the effects of different products across a range of parameters including lower/higher involvement, tangible/intangible, privately/publicly consumed and luxury/necessity and the affect of brand names. Future testing of the IIP model will also be able to establish if the model can be generalised across several product classes.

5.5 Conclusions

The purpose of Chapter 5 was to present the conclusions of this research thesis including the contributions to theory and industry, limitations of the project and future research plans. Chapter 5 began with a summary of the preceding four chapters of this dissertation. Then the conceptual model was reviewed to present the theoretical relationships that were the focus of the project. Next the key findings and theory were discussed. There are 11 key theoretical findings from this research. There are also practical implications for industry too. These findings suggest that there are direct and indirect relationships between controlled and Vivid imagery and social interactions processes which affect Purchase Intentions.
This thesis was based on the idea that individuals are using a conceptual blend of perception, memory and fantasy to develop an understanding of their consumer processes. The conceptual blending is experienced by individuals through their mental images. Social experiences loop back into the conceptual blend as every event can change consumers’ perceptions, memories and fantasies. On this theoretical premise, a conceptual model of this dynamic process was developed. Hypothesised relationships were tested to see if they are supported and to identify their magnitude and direction. Many of these hypotheses have been supported suggesting that Vividness, Control and the use of mental imagery and social interactions are part of consumers’ planning process and problem solving.

The final Imaginative Interpretation Processing model shows the consumer’s ability to Control and create Vivid images and their use of these images as a problem solving technique increases their ability to control their Impression Management, and Self-image Congruence which has a positive direct and indirect effect on their Purchase Intentions.
Reference List


The online research unit. 2008, from [http://www.theoru.com/](http://www.theoru.com/)


Appendix One: Measurement and Structural Models

The appendix contains tables of the estimates for the measurement models for both the pilot and the full data phases. Also, two sets of alternative Structural Models are presented here with a brief explanation about why they were not adopted.
**Measurement Model Estimates**

The measurement models all were found to have significant p-values <0.05. The following tables also show the items that were measured.

**Table A.1**: Measurement models for Difficult to Control and Impressions Management showing unstandardised regression weights

<table>
<thead>
<tr>
<th></th>
<th>Pilot data</th>
<th></th>
<th></th>
<th>Full data</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>Estimate</td>
<td>S.E.</td>
<td>C.R.</td>
<td>P</td>
<td>Estimate</td>
<td>S.E.</td>
</tr>
<tr>
<td><strong>Difficult to Control</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Car upside down</td>
<td>1.365</td>
<td>.084</td>
<td>16.191</td>
<td>***</td>
<td>1.608</td>
<td>.070</td>
</tr>
<tr>
<td>Car crashing through a house</td>
<td>1.497</td>
<td>.084</td>
<td>17.732</td>
<td>***</td>
<td>1.598</td>
<td>.064</td>
</tr>
<tr>
<td>Car falls into a stream</td>
<td>1.552</td>
<td>.084</td>
<td>18.560</td>
<td>***</td>
<td>1.636</td>
<td>.070</td>
</tr>
<tr>
<td>Control Car is dismantled</td>
<td>1.544</td>
<td>.097</td>
<td>15.907</td>
<td>***</td>
<td>1.750</td>
<td>.062</td>
</tr>
</tbody>
</table>

**Impressions Management**

When I feel that the image I am portraying isn’t working, I can readily buy something to change it to an image that does work

<table>
<thead>
<tr>
<th></th>
<th>Pilot data</th>
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<th>Full data</th>
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<tbody>
<tr>
<td></td>
<td>Estimate</td>
<td>S.E.</td>
<td>C.R.</td>
<td>P</td>
<td>Estimate</td>
<td>S.E.</td>
</tr>
<tr>
<td>When I feel that the image I am portraying isn’t working, I can readily buy something to change it to an image that does work</td>
<td>.469</td>
<td>.074</td>
<td>6.362</td>
<td>***</td>
<td>.623</td>
<td>.036</td>
</tr>
<tr>
<td>I have trouble changing my purchasing behaviour to suit different people and different situations</td>
<td>.566</td>
<td>.071</td>
<td>8.009</td>
<td>***</td>
<td>.410</td>
<td>.044</td>
</tr>
<tr>
<td>I have the ability to Control the way I come across to people depending on the impression I wish to give them by purchasing different products</td>
<td>.776</td>
<td>.072</td>
<td>10.844</td>
<td>***</td>
<td>.384</td>
<td>.046</td>
</tr>
<tr>
<td>In social purchasing situations, I have the ability to alter my behaviour if I feel that something else is called for</td>
<td>.663</td>
<td>.064</td>
<td>10.354</td>
<td>***</td>
<td>.398</td>
<td>.038</td>
</tr>
<tr>
<td>I have found that I can adjust the products I want to buy to meet the requirements of any situation I find myself in</td>
<td>.532</td>
<td>.064</td>
<td>8.248</td>
<td>***</td>
<td>.543</td>
<td>.035</td>
</tr>
</tbody>
</table>

*** indicate p-value = 0.00 at 0.001 % level
<table>
<thead>
<tr>
<th></th>
<th>Pilot Data</th>
<th>Full Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimate</td>
<td>S.E</td>
</tr>
<tr>
<td>Vividness holiday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear holiday</td>
<td>1.099</td>
<td>.087</td>
</tr>
<tr>
<td>Detailed holiday</td>
<td>1.210</td>
<td>.096</td>
</tr>
<tr>
<td>Vivid holiday</td>
<td>.750</td>
<td>.092</td>
</tr>
<tr>
<td>Sharp holiday</td>
<td>1.013</td>
<td>.090</td>
</tr>
<tr>
<td>Well defined holiday</td>
<td>1.207</td>
<td>.091</td>
</tr>
<tr>
<td>Purchase Intentions holiday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would you like to try this service?</td>
<td>1.511</td>
<td>.10</td>
</tr>
<tr>
<td>Would you buy this service if you happened to see it?</td>
<td>1.555</td>
<td>.09</td>
</tr>
<tr>
<td>Would you actively seek out this service in order to purchase it?</td>
<td>.963</td>
<td>.09</td>
</tr>
<tr>
<td>Please indicate on the following scale, taking everything into account, what are the chances that you would buy the holiday that you have been imagining in the next 12 months? - 0- no chance to 11- definitely buy</td>
<td>1.530</td>
<td>.20</td>
</tr>
</tbody>
</table>

*** indicate p-value = 0.00 at 0.001 % level
<table>
<thead>
<tr>
<th>Table A.3: Measurement models for <em>Self-image Congruence</em> and Social Comparison (Holiday)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-image Congruence holiday</strong></td>
</tr>
<tr>
<td><strong>Estimate</strong></td>
</tr>
<tr>
<td>This holiday is consistent with how I see myself</td>
</tr>
<tr>
<td>This holiday reflects who I am</td>
</tr>
<tr>
<td>People similar to me go these holiday</td>
</tr>
<tr>
<td>The kind of person who typically goes on this kind of holiday is very much like me</td>
</tr>
<tr>
<td>This holiday is the mirror image of my style</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Social Comparison holiday</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>If I want to be like someone, I often try to buy the same holiday that they buy.</strong></td>
</tr>
<tr>
<td><strong>I achieve a sense of belonging by purchasing the same holidays that others purchase.</strong></td>
</tr>
<tr>
<td><strong>I like to know what holiday destinations make good impressions on others.</strong></td>
</tr>
<tr>
<td><strong>If other people can see me going on holiday, I often purchase the type they expect me to buy.</strong></td>
</tr>
<tr>
<td><strong>When buying holidays, I generally choose destinations that I think others will approve of.</strong></td>
</tr>
<tr>
<td><strong>It is important that others like the holidays I go on.</strong></td>
</tr>
<tr>
<td><strong>I rarely purchase a holiday until I am sure my friends approve of it.</strong></td>
</tr>
<tr>
<td><strong>I often identify with other people by purchasing the same holiday destination that they purchase.</strong></td>
</tr>
</tbody>
</table>

*** indicate p-value = 0.00 at 0.001% level
**Table A.4:** Measurement model for Vividness and Purchase Intentions (camera)

<table>
<thead>
<tr>
<th></th>
<th>Pilot data</th>
<th></th>
<th></th>
<th></th>
<th>Full data</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimate</td>
<td>S.E</td>
<td>C.R.</td>
<td>P</td>
<td>Estimate</td>
<td>S.E</td>
<td>C.R.</td>
</tr>
<tr>
<td><strong>Vividness camera</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear camera</td>
<td>1.235</td>
<td>.083</td>
<td>14.82</td>
<td>***</td>
<td>1.125</td>
<td>.053</td>
<td>21.26</td>
</tr>
<tr>
<td>Detailed camera</td>
<td>1.310</td>
<td>.083</td>
<td>15.72</td>
<td>***</td>
<td>1.201</td>
<td>.053</td>
<td>22.71</td>
</tr>
<tr>
<td>Vivid camera</td>
<td>.786</td>
<td>.090</td>
<td>8.72</td>
<td>***</td>
<td>1.114</td>
<td>.055</td>
<td>20.38</td>
</tr>
<tr>
<td>Sharp camera</td>
<td>1.263</td>
<td>.077</td>
<td>16.42</td>
<td>***</td>
<td>1.325</td>
<td>.050</td>
<td>26.61</td>
</tr>
<tr>
<td>Well defined camera</td>
<td>1.393</td>
<td>.081</td>
<td>17.29</td>
<td>***</td>
<td>1.368</td>
<td>.050</td>
<td>27.14</td>
</tr>
<tr>
<td><strong>Purchase Intentions camera</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would you like to try this camera?</td>
<td>1.170</td>
<td>.100</td>
<td>11.76</td>
<td>***</td>
<td>1.305</td>
<td>.062</td>
<td>20.92</td>
</tr>
<tr>
<td>Would you buy this camera if you happened to see it?</td>
<td>1.619</td>
<td>.090</td>
<td>18.05</td>
<td>***</td>
<td>1.339</td>
<td>.052</td>
<td>25.94</td>
</tr>
<tr>
<td>Would you actively seek out this camera in order to purchase it?</td>
<td>1.473</td>
<td>.106</td>
<td>13.92</td>
<td>***</td>
<td>.984</td>
<td>.056</td>
<td>17.57</td>
</tr>
<tr>
<td>Please indicate on the following scale, taking everything into account, what are the chances that you would buy the camera that you have been imagining in the next 12 months? 0- no chance to 11- definitely buy</td>
<td>1.254</td>
<td>.190</td>
<td>6.58</td>
<td>***</td>
<td>1.419</td>
<td>.124</td>
<td>11.40</td>
</tr>
</tbody>
</table>

*** indicate p-value = 0.00 at 0.001 % level
Table A.5: Measurement model for *Self-image Congruence* and *Social Comparison* (camera)

<table>
<thead>
<tr>
<th></th>
<th>Pilot Data</th>
<th></th>
<th></th>
<th></th>
<th>Full Data</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Estimate</td>
<td>S.E.</td>
<td>C.R.</td>
<td>P</td>
<td>Estimate</td>
<td>S.E.</td>
</tr>
<tr>
<td><strong>Self-image Congruence camera</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This camera is consistent with how I see myself</td>
<td>1.472</td>
<td>.079</td>
<td>18.63</td>
<td>***</td>
<td>.999</td>
<td>.062</td>
<td>16.04</td>
</tr>
<tr>
<td>This camera reflects who I am</td>
<td>1.548</td>
<td>.076</td>
<td>20.38</td>
<td>***</td>
<td>1.022</td>
<td>.063</td>
<td>16.30</td>
</tr>
<tr>
<td>People similar to me use this camera</td>
<td>.968</td>
<td>.087</td>
<td>11.18</td>
<td>***</td>
<td>1.366</td>
<td>.048</td>
<td>28.36</td>
</tr>
<tr>
<td>The kind of person who typically uses this kind of camera is very much like me</td>
<td>.992</td>
<td>.081</td>
<td>12.25</td>
<td>***</td>
<td>1.295</td>
<td>.049</td>
<td>26.47</td>
</tr>
<tr>
<td>This camera is the mirror image of my style</td>
<td>1.175</td>
<td>.082</td>
<td>14.32</td>
<td>***</td>
<td>1.033</td>
<td>.058</td>
<td>17.74</td>
</tr>
<tr>
<td><strong>Social Comparison camera</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I rarely purchase a new camera until I am sure my friends approve of them.</td>
<td>1.025</td>
<td>.080</td>
<td>12.82</td>
<td>***</td>
<td>1.165</td>
<td>.048</td>
<td>24.18</td>
</tr>
<tr>
<td>It is important that others like the camera brand I buy</td>
<td>1.192</td>
<td>.073</td>
<td>16.42</td>
<td>***</td>
<td>1.160</td>
<td>.055</td>
<td>21.26</td>
</tr>
<tr>
<td>When buying a camera I generally choose brands that I think others will approve of.</td>
<td>1.479</td>
<td>.085</td>
<td>17.44</td>
<td>***</td>
<td>1.148</td>
<td>.043</td>
<td>26.77</td>
</tr>
<tr>
<td>If other people can see me using the camera I often purchase the brand they expect me to buy.</td>
<td>1.387</td>
<td>.076</td>
<td>18.22</td>
<td>***</td>
<td>1.218</td>
<td>.056</td>
<td>21.87</td>
</tr>
<tr>
<td>I like to know what brands of cameras make good impressions on others.</td>
<td>1.347</td>
<td>.083</td>
<td>16.25</td>
<td>***</td>
<td>1.136</td>
<td>.044</td>
<td>25.80</td>
</tr>
<tr>
<td>I achieve a sense of belonging by purchasing the same camera that others purchase.</td>
<td>1.136</td>
<td>.070</td>
<td>16.19</td>
<td>***</td>
<td>1.123</td>
<td>.046</td>
<td>24.39</td>
</tr>
<tr>
<td>If I want to be like someone, I often try to buy the same camera that they buy.</td>
<td>1.150</td>
<td>.086</td>
<td>13.30</td>
<td>***</td>
<td>1.106</td>
<td>.050</td>
<td>22.21</td>
</tr>
<tr>
<td>I often identify with other people by purchasing the same camera they purchase.</td>
<td>1.134</td>
<td>.081</td>
<td>14.02</td>
<td>***</td>
<td>1.098</td>
<td>.050</td>
<td>22.013</td>
</tr>
</tbody>
</table>

*** indicate p-value = 0.00 at 0.001% level
Table A. 6: Measurement model for Problem solving for full data set

<table>
<thead>
<tr>
<th>Problem Solving</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>When faced with a difficult situation, I imagine that I have worked out the problem and try out the solution in my mind</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My mental images are always just sort of ways of passing time rather than attempts to actually solve my daily problems</td>
<td>.445</td>
<td>.105</td>
<td>4.224 ***</td>
<td></td>
</tr>
<tr>
<td>I can get a fresh approach to an old problem almost at once during what begins as an idle daydream</td>
<td>.986</td>
<td>.096</td>
<td>10.248 ***</td>
<td></td>
</tr>
<tr>
<td>My fantasies sometimes surprise me by suggesting an answer to a problem which I thought I could not work out</td>
<td>.960</td>
<td>.096</td>
<td>9.964 ***</td>
<td></td>
</tr>
<tr>
<td>Sometimes the answer to a difficult problem will come to me in a mental image</td>
<td>.965</td>
<td>.094</td>
<td>10.232 ***</td>
<td></td>
</tr>
<tr>
<td>My images offer me useful clues to tricky situations I face</td>
<td>.917</td>
<td>.095</td>
<td>9.702 ***</td>
<td></td>
</tr>
<tr>
<td>A really original idea can develop from a really fantastic mental image</td>
<td>.661</td>
<td>.080</td>
<td>8.232 ***</td>
<td></td>
</tr>
</tbody>
</table>

*** indicate p-value = 0.00 at 0.001 % level - this data was only collected at the main sample.

Structural Models for Pilot

Pilot data full model holiday

CMIN=1.658
CFI=.945
GFI=.844
RMSEA=.052
Alternative Structural Models

There are several alternative structural models. The purpose of the SEM is to test the hypothesised relationships and then draw conclusions based on the significance, size, strength and sign of those relationships. Thus, strong theoretical foundations are vital in the development of the model. However, theory can be seen from multiple perspectives and models may be developed with different hypothesised pathways. MacCallum and Austin (2000) argue that it is important to develop alternative structural models and evaluative the substantive meaningfulness of those models. Examining the alternative models also helps to explore the value of the theory and enables the researcher to develop reflections about the pathways they have tested. The following section is a review of the competing structural models and although these models were not adopted in the research project is it worthwhile to discuss the results.

The first set of alternatives review the model fit with the insignificant pathways removed. The purpose of these models is to examine if the model fit is improved significantly when the rejected pathways are removed. The second set of structural
models includes second order factors based on the correlations found in the literature on imagery. The final set of structural models is change the direction of the arrows between the constructs as there is theoretical support for the both directions as well as bi-directional models.

**Revised Models**

Figure A.1 and Figure A.2 show the relationships with the insignificant pathways removed to see if the model fit could be improved. However, even when these pathways were removed the model fit did not increase significantly. Moreover, one purpose of the thesis was to test the hypotheses that were developed in the literature and to determine if the pathways are significant.

**Figure A.1: Revised Model: Camera**
Table A.6: Revised model Standardised Total Effects: Camera

<table>
<thead>
<tr>
<th></th>
<th>Control1</th>
<th>Vivid_C</th>
<th>SC</th>
<th>IM</th>
<th>SiC_c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vivid_C</td>
<td>.301</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Impressions Management (IM)</td>
<td>.228</td>
<td>.227</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Self-image Congruence (SiC)</td>
<td>.131</td>
<td>.315</td>
<td>.333</td>
<td>.222</td>
<td>.000</td>
</tr>
<tr>
<td>purchase_intentions</td>
<td>.179</td>
<td>.460</td>
<td>.069</td>
<td>.255</td>
<td>.206</td>
</tr>
</tbody>
</table>

Figure A.2: Revised Model: Holiday

First order factor revised model holiday

Table A.7: Revised Conceptual model Standardised Total Effects: Holiday

<table>
<thead>
<tr>
<th></th>
<th>Control1</th>
<th>Vivid_H</th>
<th>IM</th>
<th>SC</th>
<th>SiC_h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vivid_H</td>
<td>.197</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Impressions Management (IM)</td>
<td>.275</td>
<td>.235</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Social Comparison (SC)</td>
<td>.039</td>
<td>.033</td>
<td>.141</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Self-image Congruence (SiC)</td>
<td>.109</td>
<td>.257</td>
<td>.255</td>
<td>.142</td>
<td>.000</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>.145</td>
<td>.349</td>
<td>.333</td>
<td>.037</td>
<td>.264</td>
</tr>
</tbody>
</table>
Figure A.3 and Figure A.4 Show the second order factor results with the assumption that Vividness and Control form a second order factor of the consumers’ capability to form mental imagery. Hair et al. (2006) suggest that there are many conditions that need to be met to support a second order factor beginning with theoretical significance and strong evidence of nomological validity. The second order factor must meet identification conditions, have a better model fit and predict more accurately than a first order factor. Finally, there needs to be at least three first order factors forming the second order. However, although second order models although were statistically robust, they do not meet the criteria for the formation of second order factors (Hair et al. 2006). That is, there are only two factors (not the required three) making up the second order factor, and the model fit is not significantly better. The models are included here to show the more substantive impact on mental imagery of Vividness in contrast to Control which further explains the results discussed in Chapter Four. Second order factors were modelled as part of the analysis of the data and included in the appendix to demonstrate that this alternative approach was not appropriate.
Figure A.3 Second order factor model camera

Table A.8: Second Order factor Standardised Total Effects: Camera

<table>
<thead>
<tr>
<th></th>
<th>Mental Imagination</th>
<th>SIC</th>
<th>IM</th>
<th>SC</th>
<th>Vivid</th>
<th>PI</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-image Congruence (SIC) Impressions Management (IM)</td>
<td>.367</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Social Comparison (SC)</td>
<td>.306</td>
<td>.234</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Vividness (Vivid)</td>
<td>.051</td>
<td>.396</td>
<td>-.024</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Purchase Intentions (PI)</td>
<td>.521</td>
<td>.234</td>
<td>.188</td>
<td>-.018</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Control1</td>
<td>.327</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>
Figure A.4: Second Order factor Holiday

Table A.9: Second order factor model Standardised Total Effects: Holiday

<table>
<thead>
<tr>
<th></th>
<th>Mental Imagery</th>
<th>IM</th>
<th>SC</th>
<th>SIC</th>
<th>Vivid</th>
<th>PI</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-image Congruence (SIC)</td>
<td>.481</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Impressions Management (IM)</td>
<td>-.047</td>
<td>.141</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Social Comparison (SC)</td>
<td>.400</td>
<td>.126</td>
<td>.165</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Vividness (Vivid)</td>
<td>.662</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Purchase Intentions (PI)</td>
<td>.562</td>
<td>.175</td>
<td>.012</td>
<td>.204</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Control</td>
<td>.326</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>
**Direction of Arrows**

Direction of arrows between *Self-image Congruence* and *Impressions Management*

Prof. O’Cass (Personal Communication 2nd Dec 2009) discussed the direction of the arrows on a theoretical level. As stated in Chapter Four (see Section 4.4.4), it is essential to use theory to determine the direction of the arrows as AMOS can create statistically significant models that are conceptually meaningless. Prof.O’Cass argued that *Impressions Management* was a mediating variable between *Self-image Congruence* and *Purchase Intentions*. This implies that the arrow direction should be reversed from the direction presented in this thesis. Also relevant to this idea was the concept of interactive (Smith, 1982) rather than mediating variables. Through interactive variables, *Impressions Management* and *Self-image Congruence* can feedback on each other as changes in one invariably lead to changes in the other variable rather than in a single linear direction. This suggests that *Purchase Intentions* are developed as a response to the interaction between these social concepts. This has significant theoretical implications. Thus, models with reversed arrows were tested and developed to see which model was a better fit for the data.

For both the reversed arrow models and the bi-directional model the model fit meets all the acceptable criteria. Figures A.5 and A.6 show the effects of reversing arrows; the relationship between *Self-image Congruence* and *Impressions Management* is still significant and positive, but it has reduced in size for both products. With the bi-directional arrows, as seen in Figure A.7 and Figure A.8, the relationship is still significant, but there are other major differences. First, the link between *Self-image Congruence* to *Impressions Management* becomes negative for both products. This suggests that as *Self-image Congruence* increase *Impressions Management* decreases. The next difference is the change in size: when the arrow leads from *Impressions Management* to *Self-image Congruence* the relationship has a moderate effect, but the reverse direction is small.
Figure A.5: Reversed arrow model: Camera

Table A.10: Standardised total effects reversed arrow model: Camera

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Vivid_C</th>
<th>SiC_c</th>
<th>IM</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vivid_C</td>
<td>.302</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Self-image Congruence (SiC)</td>
<td>.163</td>
<td>.316</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Impressions Management (IM)</td>
<td>.233</td>
<td>.225</td>
<td>.241</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Social Comparison (SC)</td>
<td>.075</td>
<td>.020</td>
<td>.382</td>
<td>-.034</td>
<td>.000</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>.129</td>
<td>.491</td>
<td>.263</td>
<td>.216</td>
<td>-.018</td>
</tr>
</tbody>
</table>
Figure A.6: Reversed Arrow model: holiday

Table A.11: Standardised total effects reversed arrow model: Holiday

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Vivid_H</th>
<th>SiC_h</th>
<th>IM</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vivid_H</td>
<td>.195</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Self-image Congruence (SiC)</td>
<td>.142</td>
<td>.228</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Impressions Management (IM)</td>
<td>.270</td>
<td>.243</td>
<td>.236</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Social Comparison (SC)</td>
<td>.071</td>
<td>-.134</td>
<td>.190</td>
<td>.168</td>
<td>.000</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>.151</td>
<td>.351</td>
<td>.331</td>
<td>.276</td>
<td>-.063</td>
</tr>
</tbody>
</table>
**Figure A.7:** Bi-directional Model: Holiday

![Bi-directional Model Diagram](image)

**Table A.12:** Standardised Total effect Bi-directional model: Holiday

<table>
<thead>
<tr>
<th></th>
<th>Control1</th>
<th>Vivid_H</th>
<th>SiC_h</th>
<th>IM</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vivid_H</td>
<td>.195</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Self-image Congruence (SiC)</td>
<td>.142</td>
<td>.228</td>
<td>-.96</td>
<td>.423</td>
<td>.000</td>
</tr>
<tr>
<td>Impressions Management (IM)</td>
<td>.270</td>
<td>.243</td>
<td>-.205</td>
<td>-.096</td>
<td>.000</td>
</tr>
<tr>
<td>Social Comparison (SC)</td>
<td>.071</td>
<td>-.134</td>
<td>.102</td>
<td>.215</td>
<td>.000</td>
</tr>
<tr>
<td>Purchase Intentions</td>
<td>.151</td>
<td>.351</td>
<td>.184</td>
<td>.362</td>
<td>-.063</td>
</tr>
</tbody>
</table>
In summary, the results suggest that these alternative models are statistically sound. The models also have theoretical support. However, the reversed arrow model did not increase the model fit and the weight of the theoretical evidence as indicated in Section 2.4.2 suggests that the arrows lead from Impressions Management to Self-image Congruence. That is, the consumer’s ability to control their impressions management helps them to the match products to self-image rather than their congruence with products helping them to develop an ability to present a controlled image. The Imaginative Interpretative Processing (IIP) model (Section 2.5 in Chapter
Two) shows that the social relationships processes have feedback loops suggesting that social experiences and self-image are in cyclical relationship which is consistent with the bi-directional model. However, the bi-directional model does not improve the model fit. In addition, under Occum’s razer the simpler model is preferred. For this thesis, the model was founded on the symbolic interactionist’s perspective that argued it is through social interactions that the individual understand self-image. Thus, the model with the arrows leading from social interactions to self-image was adopted.
Appendix Two: Survey Instrument

Questionnaire

A copy of the questionnaire is presented on the following pages. The questionnaire was for the online survey.