COGNITIVE LOCK-IN, MINDSET AND E-SHOPPING EXPERIENCE AS PREDICTORS OF ONLINE BEHAVIOURAL INTENTIONS

A DISSERTATION
SUBMITTED IN FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

BY
Anesshta Gunness

Department of Marketing
Faculty of Business and Economics
Monash University

December 2012

Copyright Notices

Abstract

This thesis makes three contributions. Firstly, it presents online lock-in as a situation specific variable that has the potential to impact on site choice and switching intentions for planned and unplanned purchases. Secondly, this thesis introduces mindset as a consumer and situation specific characteristic and investigates its impact on online purchase intentions, both planned and unplanned. Thirdly, this thesis uses stockout as a situational 'backdrop' to investigate the independent and joint impacts of lock-in and mindset on consumer emotions and behaviours.

Background and proposed hypotheses

Conventional wisdom dictates that it is more profitable to retain existing customers than acquire new ones, a notion that also extends to the Internet as a shopping platform. Given the multitude of online retailers and the availability of thousands and thousands of choices at the e-buyer's fingertips, retailers invest considerable effort in thriving for loyalty.

Lock-in, as a type of skill based loyalty, can offer a point of differentiation to lure consumers into developing preference for a site in the hope of successfully retaining these consumers. While, as stated, this thesis measures the impact of lock-in on intention to choose and stay at the high lock-in site, of further interest, it takes into account the evolving nature of an e-shopper and introduces e-shopping experience as a moderator to the proposed relationships. Based on annotated discussions, the thesis proposes and tests the following hypotheses:

$H_{1(a):}$ Consumers who have had more opportunity to practice and learn to navigate and operate a site are more likely to return to the site for a final purchase decision.

$H_{1(b):}$ Consumers who have had more opportunity to practice and learn to navigate and operate a site are less likely to switch to a competing site.

$H_{2(a)}$: Experienced consumers are less likely than inexperienced consumers to purchase from a site they have recently learned to navigate and operate.

$H_{2(b)}$: Experienced consumers are more likely than inexperienced consumers to switch to the competing site.

A significant portion of online purchase decisions is made during store visits, hence reflecting the unplanned nature of many purchases. However, there is a need to study the impact of high order variables on unplanned purchasing online. This thesis introduces mindset as a predominantly psychological concept which is used as a basis to model unplanned behavioural intentions. The proposition is that the task at hand dictates the type of mental state (deliberative or implemental) that consumers adopt prior to their site visits so that the nature of the mindset will incite actions that are congruent to the mindset formed at the onset of the visits. Discussions lead to the development of the following hypothesis:

H_3: The likelihood for unplanned purchasing will be higher for buyers who access a website in a deliberative than in an implemental mindset.

When a chosen item is out-of-stock (OOS hereafter), a consumer usually seeks to make a tradeoff amongst many costs so as to reach the best decision, of either defecting from the store, switching brand/item, cancelling or postponing the purchase. We propose that the level of lock-in felt with a site and the mindset adopted at pre-visit stages, will redefine the instrumental and non-instrumental elements of the shopping task, to shape the level of perceived costs involved in the decision processes, and ultimately behavioural reactions. We test the independent and joint effects of mindset and lock-in on emotional and behavioural reactions through the following hypotheses:

H_4: Buyers in an implemental mindset are more likely to demonstrate stronger negative emotions than those in a deliberative mindset.

H_5: Buyers who are in an implemental mindset and experience an OOS at a low lock-in site are more likely to switch to a high lock-in site and look for an item than stay at a low lock-in site.

H_6: Consumers will experience stronger negative emotions if OOS occurs at a low than high lock-in site.

H_7: Buyers in an implemental mindset will experience stronger negative emotions if OOS occurs at a low than when it occurs at a high lock-site, while the emotions of buyers in a deliberative mindset will not differ between an OOS encountered at a low and a high lock-in site.

H_8: Buyers are more likely to switch from a low lock-in site than a high lock-in site when an OOS is encountered.

H_9: Buyers in an implemental mindset are more likely to switch to a high lock-in site than those in a deliberative mindset.

Methodology – the online experiment

To test the hypotheses, we convened an online experiment embedded with a series of tasks designed to manipulate both lock-in and mindset. Lock-in served as the within subject variable, manipulated as high and low, while mindset, the between subject variable, was either deliberative or implemental. Low lock-in and absence of the mindset manipulation served as control conditions.

Respondents received an e-mail with one of 56 unique experimental links that were created to accommodate the conditions. The link introduced them to a hypothetical gift purchasing task in which they were requested to visit two Australian existing websites and make a few item selections.

As part of the lock-in manipulations, respondents selected either two items (low lock-in) or six items (high lock-in) from the first site (site A), and typed the items' descriptions/names into a specific answer box in the survey; these were automatically fed into the program to make a list of items. Pre-visit instructions for each site also contained mindset manipulations. Respondents then visited site B and again typed their selections to add to their lists of items, from which they were expected to make their final purchase

decision. It is to be noted that the order of each pair of sites was counterbalanced so that if respondents had selected six items at site A, they were to select only two items at site B for further consideration; those who had selected two items at site A were to select six items at site B.

Two control groups were formed. The 'semi' control group received identical instructions except that they were to select 2 items from each site. Therefore, their lists included 4 (and not 8) items. This was also the case for the baseline group whose respondents received no manipulations at all. In fact, they were simply directed to look for 2 items at each of the two sites.

Survey questions preceded visits to each of the sites that included, amongst others, measures for the success of the manipulations. Respondents were then asked to select an item (from the list) as their final purchase decision. They were later informed that the item was not in stock. A series of questions then captured their reactions, both emotional and behavioural.

Summary of pertinent findings

We find support for the positive effect of lock-in on intention to choose the high lock-in site; however, of further interest, experience level, as a shopper, moderates this relationship. Experienced buyers are more likely to defect from the high lock-in site while inexperienced buyers are more likely to be enticed to stay at a high lock-in site.

Mindset, independently, is not successful at predicting purchase intentions; however, when considered jointly with lock-in, the high lock-in site is found to incite both planned and unplanned purchase intentions. More precisely, in the high lock-in condition, the implemental mindset is more likely to purchase from the planned category while the deliberative mindset is more likely to purchase from the unplanned category. This is quite interesting in that it seems to contradict literature that high familiarity to a website primarily induces planned purchase intentions.

In terms of results related to OOS, we highlight the higher likelihood of buyers to switch to the high than low lock-in site when they face an OOS. This trend also applies to buyers entering the low lock-in site in an implemental mindset – they neglect to choose another item from their lists, or visit yet other online stores that they could be acquainted with, or the traditional shops and instead return to the high lock-in site.

Table of Contents

List of Tables

List of Figures

List of Graphs

Declaration

This thesis contains no material that has been accepted for the award of any other degree or diploma in an university or other institution, and to the best of my knowledge, contains no material previously published or written by another person, except where due reference is made in the test of this thesis.

Signed:_____

Acknowledgements

This PhD journey has been one of enduring challenges, spanning across the technical to the very personal intricacies. Now that this thesis draws to its end, upon reflection, this journey has been more of a blessing, one that, besides the obvious, has also molded who I am, as a person, today. However, whilst a very independent journey, I owe this successful completion to one and many who have stood by my side through what can be dubbed as 'the untraveled road'.

I am blessed to have met Prof. Harmen Oppewal for whom I have great admiration, both as my supervisor and as a person. His thirst to constantly strive for high quality research, has inspired me to persistently try my best. His influence will forever remain engraved in my professional career; he is my academic inspiration. Thank you for being such a tremendous support and guide; thank you for being patient and trusting of my abilities to accomplish this challenge. I feel privileged to have had the opportunity to mingle with some of the brightest minds during my years at Monash – for that, thank you for the opportunity that you have offered me.

On that note, I also extend a special thank you to Prof. Felix Mavondo. I have always valued our brief, but insightful, encounters.

My biggest supporter has been my husband – he has constantly and tirelessly reminded me that I could do this, always dragging me from the 'clouds of procrastination'. He has also been a critique of my work, very often lending an attentive ear to my ideas. He has so patiently put up with my nagging and mood swings, very often a direct result of my PhD's 'lifecycle'. This thesis would not have been possible without your support. You have been my pillar of strength and I am truly blessed to have you in my life. Thank you for your patience. Thank you for your love and support. Thank you for being such an understanding husband.

I make special mention of my parents, brothers and sister-in-law, who throughout this PhD journey have been armed with patience, positivity and understanding; their attitudes

have helped to alleviate the burden. I count myself extremely lucky to have parents who have played a pivotal role in instilling in me a strong sense of responsibility, moral obligations, discipline and perseverance; and allowed me to believe that I can reach for the stars. Thank you seems to be dwarfed by what you have done for me in every aspect of my life – I dedicate this thesis to you, Papa and Mama.

There are many more people that I have come across that I need to mention. To my family, thank you! My dear friend Rishi, who is also like a brother to me, thank you for your unconditional support. You have, once again, proven how wonderful of a person you are. My friend, Sean Sands, merits a special thank you for being good company and for the moral support. Dr. Madeleine Ogilvie – thank you for supporting and trusting in me. Dr. Martin MacCarthy – thank you for your kind reminders and words of wisdom. Prof. Hughes Wilkins, thank you for the discussions that we have had and the pointers that you shared so candidly. Thank you to all with whom I have conversed, whether for a few seconds or a few hours, and were kind enough to offer their support.

CHAPTER 1 — Introduction

Given the independent, yet interconnected theoretical facets involved in this research, this opening chapter takes a step by step approach in an endeavour to 'set the scene' for the rest of this thesis. It introduces the research background and identifies the various gaps that motivated this research project. This chapter also provides a broad overview of the experimental procedures convened for data collection. Finally, it concludes with an overview of the structure of the thesis.

> *"When it comes to shopping on the Internet, the good news for retailers is that consumers are only one click away from visiting their website. However, the bad news for retailers is that consumers are only one click away from visiting their competitors".*
>
> (Janoff, 2000, p. 61)

1.1 Background

1.1.1 Cognitive lock-in and experience

Successful customer retention and loyalty remain at the heart of the long term profitability of a business. This is even more so in the context of online retailing (Kumar & Shah, 2004; Smith, 2002). However, the opening statement offers a stark reminder of how really challenging this may just be with online competition only a mouse click away. In this increasingly competitive arena, it is in the retailer's interest to offer the right product at the right time, create efficient navigation schemes, integrate the cognitive and affect side into online processes, all for a successful service delivery, in the hope that this will translate into positive attitudes, positive word of mouth, satisfaction and emotional attachment with the website.

Cognitive lock-in is a key means to improve retention and has attracted the attention of a few researchers (Johnson, Moe, Fader, Bellman, & Lohse, 2004; Johnson, Bellman, & Lohse, 2003; Murray & Häubl, 2002; Zauberman, 2003; Shih, 2012). Cognitive lock-in is a type of skill based loyalty. It originates from the power law of practice and exists in that with greater practice individuals perform a task more efficiently (although beyond some point at a decreasing rate) because they gradually learn to weave out redundant methods associated with completing the task (Crossman, 1959; Niebel, 1972; Rosenbloom & Newell, 1987); also extending to hedonic efficiency, such as when playing video games (Murray & Bellman, 2011).

In the context of online retailing, one of the skills a consumer needs to develop when shopping online is how to use the retailer's website. As a first time visitor a consumer will have little knowledge of how to use or navigate the site but through practice and trial and error during the learning stage, efficiency is gained and the perceived benefits associated with shopping at the incumbent site (the site that 'participants use most frequently' relative to the alternative website (Murray & Häubl, 2011, p. 961)) can start to outweigh those of using another (Johnson et al., 2003). Cognitive lock-in pertains to a situation where familiarity and skills gained with one retailer's site are unique to this retailer and are not easily transferred to a competing retailer, hence creating a user benefit of staying with the high lock-in retailer (Shapiro & Varian, 1999; Johnson et al., 2003). The benefits of non-switching include reductions in psychological costs (such as time and effort invested into changing ingrained habits), thinking/cognitive costs (example being, for instance, cross site search when looking for another appropriate retailer) and learning costs (effort needed to attain the same level of comfort as with previous retailer) (adapted from Shapiro & Varian, 1999; Bo-Chiuan, 2008; Chen & Hitt, 2002).

Therefore, lock-in adds to a site's point of differentiation on the basis of the development of non readily transferrable skills and perception of switching costs (adapted from Klemperer, 1987), creating a type of loyalty even without the necessity of a positive attitude or an emotional attachment. To this effect, researchers have

demonstrated that cognitive lock-in induces preference for a site, stimulating purchase likelihood, while making it more challenging to defect (Johnson et al., 2003 and 2004; Murray & Häubl, 2002 and 2007; Shih, 2012).

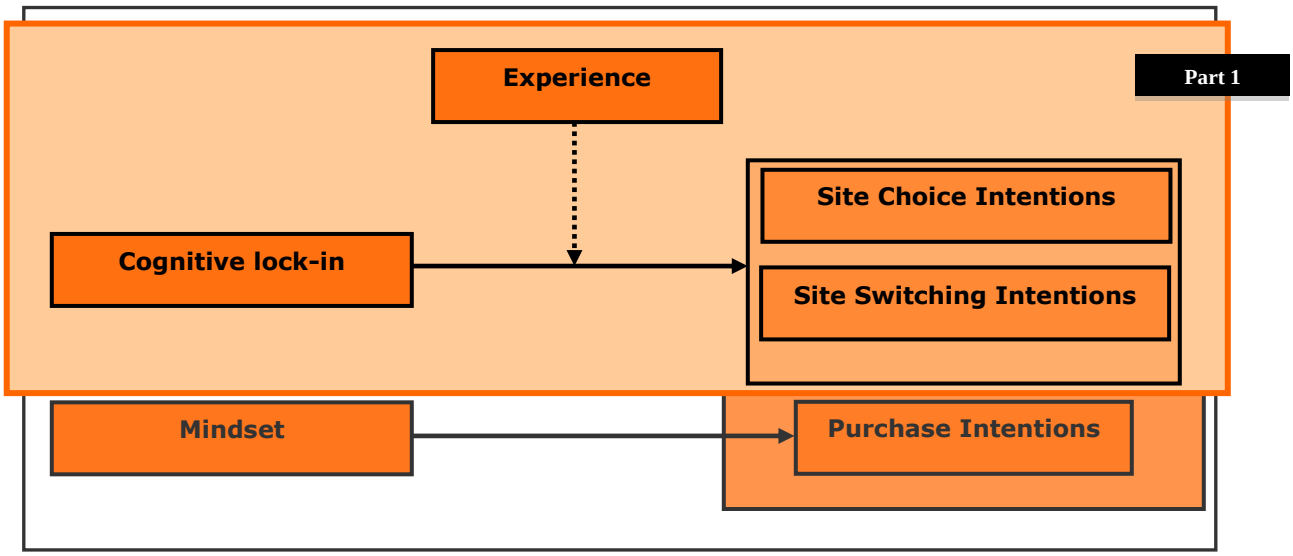
While costs and benefits of switching vary with lock-in, the scope of research into consumer lock-in seems to be limited to an understanding of its psychological dimensions (with the exception of Murray and Bellman (2011)) – and much remains descriptive in nature. A significant neglect is that with the dynamic and continuous influx of new buyers, consumers' perceptions, attitudes, skills, search behaviours and knowledge evolve (and do so unequally across online buyers), not only with a site, but with their general use of the Internet as a shopping channel (adapted from Darley, Blankson, & Luethge; 2010; Holloway, Wang, & Parish, 2005); for instance, consumers acquire new and more information relevant to purchasing activities (Hernández, Jiménez, & Martín, 2008), with time their perceptions evolve and they develop a reference point that helps to discern poor sites from those that are more trusting (Cheema & Papatla, 2010), all of which ultimately promote confidence. Therefore, cognitive efforts and costs are bound to vary with the level of experience (Johnson et al., 2003) that an individual has as an online *shopper*, ultimately shaping purchase processes and decisions[1].

Extending current cognitive lock-in literature, this thesis first introduces lock-in (LI) as a situation specific characteristic and offers an improved understanding of behavioural intentions towards a website, measured as site choice and site switching intentions, under low and high conditions of lock-in. As a variable that 'defines' the level of felt cognitive costs, buyers' e-shopping experience level is then introduced and tested as a moderator variable on the relationship between lock-in (LI) and website behavioural

[1] We note that many studies have used the terms *user* and *shopper* interchangeably whereas differences are bound to exist and should as such be taken into account (Hernández et al., 2008). For instance, shoppers would have gone through 'several shopping transactions and know how it works' whereas users can be expected to still be 'in the adoption process' (Hernández et al., 2008, p. 261) – implying that behaviours can be expected to alter accordingly.

intentions. This forms the basis for part 1 of the proposed conceptual framework as presented by figure 1.1.

Figure 1.1: Conceptual Framework – Part 1



1.1.2 How mindset affects purchase intentions

Significant numbers of consumers decide on their purchase only when present in the store (Advertising Age, 2009). This reflects the impulsive and unplanned nature of many consumer decisions. With the emergence of the online channel, online impulse buying has also been gaining impetus; for instance, an increase of 7%, equivalent to $5 billion, has been registered between 1999 and 2004 (U.S Department of Commerce, 2005, as cited in Jeffrey & Hodge, 2007). As a result, researchers have offered sophisticated approaches to the study of online impulse buying (Partobeeah, Valacich, & Wells, 2009; Park, Kim, Funches, & Foxx, 2011). However, there appear to be no online studies that document 'high order' constructs with the potential to impact unplanned buying, despite this channel's ability to generate both planned and unplanned buying.

A common criticism of the unplanned and impulse buying literature is that it is skewed towards taxonomical contributions. However, in the context of brick-and-mortar

retail settings, Bell, Corsten, and Knox (2011), introduce a fresh outlook on unplanned buying. One of their core contributions is that unplanned behaviours are also and, potentially, more likely to be influenced by person-to-person variance than simply the stimuli that emanate from the store environments. Of particular interest, the researchers demonstrate that goal abstractness as an out-of-store/pre-shopping factor, which they describe as one that is present before consumers step into the shop, impact on consumers' behaviours when they are *in-store*; they observe that abstract goals are more likely to induce unplanned buying, and that unplanned buying increases monotically with the level of abstractness. They also highlight that the effects of goal concreteness were over and above what was triggered by in store marketing stimuli.

Goals can be defined at different levels of abstractness, much of which can be attributed to the construal level theory. Individuals construe goals in abstract terms and venture into less effortful processing when they are to occur in the distant future; in contrast, events occurring at closer distal temporal points are described and processed in more concrete goal terms (Trope & Liberman, 2003; Liberman & Trope, 1998). However, our focus for goal formation and definition rests on the Rubicon model of action phases as a more direct reference. This model encompasses four different psychological transition points (reviewed next) transpiring from the moment an individual sets a goal until s/he achieves it (Heckausen, 1986; Heckausen & Gollwitzer, 1987; Gollwitzer, 1990). While an individual traverses through this continuous process, distinct mindsets are formed, (each characterized by distinct goal definitions), and these are congruent to the state of action that the individual is in (Heckausen, 1986; Heckausen & Gollwitzer, 1987; Gollwitzer, 1990). Given their immediate relevance to this thesis, our focus is on the first two mindsets, deliberative and implemental.

The predecisional/preactional stage induces a deliberative mindset, meaning that individuals are highly receptive to their environments and engage into impartial information processing to deliberate over the different competing options, evaluated on their associated desirability and feasibility (Gollwitzer & Kinney, 1989; Gollwitzer, 1990; Gollwitzer & Bayer, 1999). This 'fluid state of deliberation' induces a lack of

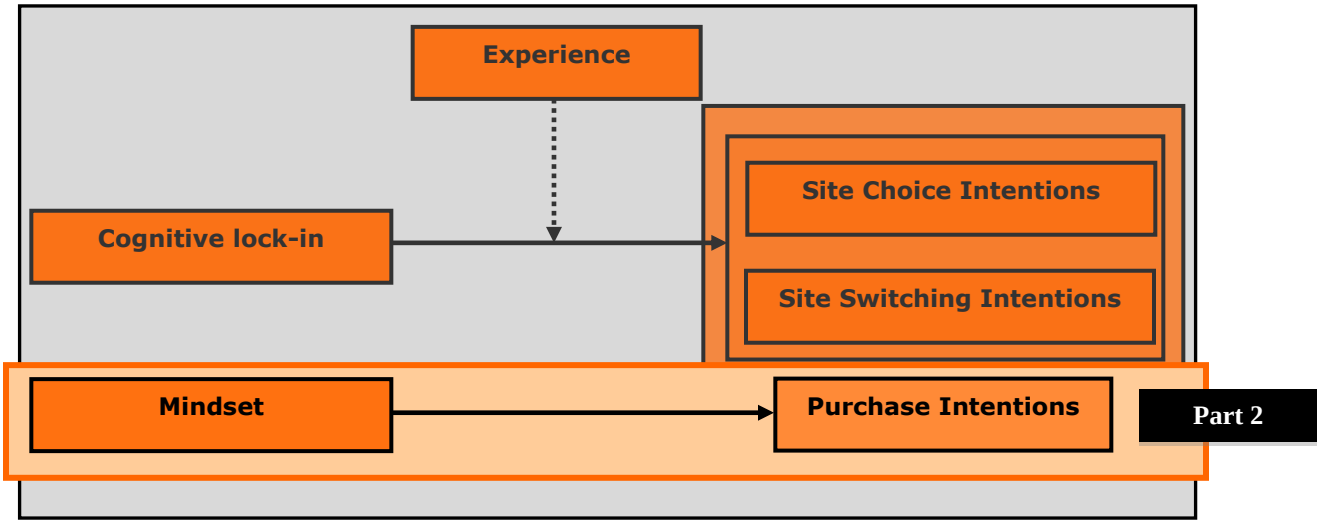
framing or concretization of one's intention, as a result of which goal definition remains quite abstract (Gollwitzer, 1990, as cited in Higgins & Sorentino, 1990, p. 57).

Once an individual selects a specific goal, s/he crosses to the postdecisional/preactional stage. Mere intentions are transformed into implemental intentions; a deep sense of obligation towards goal achievement sets in (Gollwitzer & Bayer, 1999; Kuhl, 1984; Chartrand & Bargh, 2002) and the individual seeks to maximize goal achievement. The individual concocts an if-then, defined by 'the when, where, and how of goal-directed responses', that s/he implements (Brandstätter, Küberger, & Schneider, 2002, p. 947). Therefore, this phase is characterized by concretely defined goals and an *implemental mindset* (Gollwitzer, 1990).

The actional stage is characterized by the *actional mindset* that only focuses on aspects of the environment that are tied to successful attainment of the goal. Finally, the postactional stage draws individuals into an *evaluative mindset* – typified by the individual critically considering the extent to which the goal has successfully been achieved (Gollwitzer, 1990).

Adapting the Rubicon model of action phases, this thesis introduces mindset (MS) as a consumer and situation specific characteristic that influences online purchase intentions, both planned and unplanned. We propose that buyers will be propelled into different thinking styles which lead them to adopt a mindset that is characteristic of the task at hand (adapted from Dholakia & Bagozzi, 2001; Hoffman & Novak, 1996); put simply, this thesis considers that the task at hand is inclined to vary by individuals, inciting either predominantly affect or cognitive thinking styles. Our main argument is that further to this, the different mindsets adopted before accessing a website will shape purchase intents differently when consumers are 'in store'. Because these mindsets are characterized by different levels of goal concreteness, we expect the mindsets to independently influence buyers' responses to the environment during website visits. This relationship is illustrated as part 2 of the conceptual framework – figure 1.2.

Figure 1.2: Conceptual Framework – Part 2



Our study offers quite a unique approach in that, in contrast to Bell et al. (2011), we measure the impact of the type of mental states, that an individual may find himself/herself in at the time the latter accesses the Internet, as opposed to their goal definitions only. Additionally, we do not seek to adopt a continuous process to the goal process; rather, we treat the deliberative and implemental states of mind as two independent entities.

1.1.3 How lock-in and mindset affect out-of-stock emotional and behavioural reactions

> *'The fast-paced, hectic lifestyle of today's affluent consumer makes distance buying via catalog or web site very attractive for an increasing number of shoppers. To assure the viability of distance shopping, these retailers need to assure that they can adequately meet the fulfillment requirements of their customers'.*
>
> (Taylor, Fawcett, & Jackson, 2004, p. 132)

Consumer response to product stockout, or temporary unavailability, has been formally studied since the early1960s (Peckham, 1963). Despite the fairly intense efforts to model and explore stockout causes and effects across the whole supply chain (Fitzsimons, 2000; Campo, Gijsbrechts, & Nisol, 2004; Zinn & Liu, 2008), its ampleur is still being manifested; for instance, typically, 8.3% of products can be found to be temporarily unavailable on a normal trading day (Gruen & Corsten, 2008).

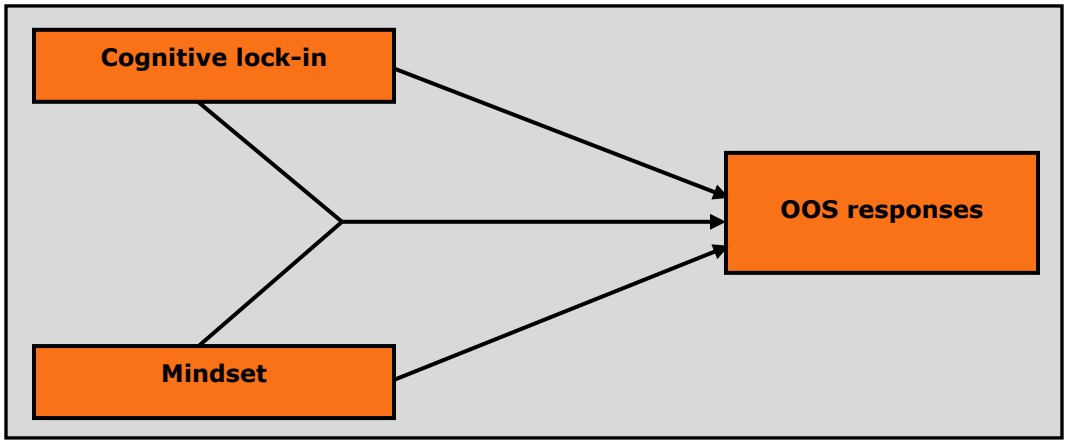
The OOS (acronym for out-of-stock) phenomenon also extends to the online shopping arena where the extent of its effects may be of more detrimental impact. Despite the implementation of ECR (Efficient Consumer Response) initiatives and strategies (Breugelmans, Campo, & Gijsbrechts, 2006; Verhoef & Sloot, 2005; Jing & Lewis, 2011), evidence highlights that online stockouts account for up to $25 billion in losses (Data Ventures, 2001, in Kim & Lennon, 2011). Of additional concern, in their study that uses as basis the theory of expectancy-disconfirmation to model the impacts of site characteristics, situational and consumer variables on stockout reactions, Dadzie and Winston (2007), conclude that OOS has a more pervasive negative impact on repurchasing and satisfaction.

Recently, researchers have underlined the need to independently assess online OOS because of the limited applicability that offline evidence may have. For instance, most offline OOS studies are centred around the purchase of grocery items – whereas popularly sold items online include (but are not limited to) books, CDs, consumer electronics, travel, amongst others. Secondly, the Internet in itself represents a unique shopping platform, with key distinguishing features being delayed gratification, limitations in sensory modality, and lack of social visibility (Kim & Lennon, 2011) – all of which lead to differences between online and offline shopping platforms on the basis of types of costs and utility derived from OOS episodes; as a result, one may expect wide variations in emotional and behavioural responses.

As an interruption on purchase processes, consumers are forced to readjust and reconsider their purchases; therefore, an OOS situation demands the investment of

additional cognitive efforts (Xia & Sudarshan, 2003; Coraggio, 1990). This thesis proposes that, as consumer specific variables, the level of lock-in vis-à-vis the site being visited and the mindset that is adopted at the pre-stage of the site visit will shape appraisals of an OOS situation. Mindset dictates different levels of prevalence for goal pursuit and achievement, as well as the degree of sensitivity towards affective and cognitive stimuli while lock-in dictates the extent of knowledge of the decision task and environment. Therefore, these constructs can 'redefine' instrumental[2] and non-instrumental elements of the shopping task and regulate the affective and cognitive costs associated with the OOS to shape both decision making processes and reactions. Using OOS as a situational variable, we test how lock-in and mindset, both independently and jointly, influence emotional and behavioural reactions. The proposed causal relationships guide conceptual framework 2, illustrated by figure 1.3.

Figure 1.3: Conceptual Framework 2



[2] Examples of instrumental elements can include having to invest further search efforts, compare offerings, amongst others (possibly extending across more than one site).

1.2 Purpose of thesis

1.2.1 Research purpose and questions

The previous discussions broadly identified various gaps in the interrelated fields of unplanned buying, lock-in, mindset, switching intentions and experience levels as an online buyer. Following such deliberations, the focal aim of this thesis is to contribute to a better understanding of online shopping behaviour, in particular how individual characteristics such as lock-in, mindset and shoppers' experience levels, influence purchase and switching behaviours, some of which we propose to analyze in light of an OOS situation. Using the online shopping arena as platform, we conduct an elaborate online experiment to seek answers to the following questions:

- How does lock-in influence intention to choose a site?
- To what extent does lock-in lead to website switching intentions?
- How do levels of online shopping experience moderate the relationships between lock-in and intentions to choose a site and switch sites?
- To what extent does mindset affect purchase intentions?
- How do lock-in and mindset influence strength of emotions and behavioural reactions in an online OOS situation?

1.3 Significance of study

This study contributes to the body of literature across various fields and in a number of ways. It also carries practical implications in that it offers fresh insights to managers and retailers. We address these in the discussions that follow.

1.3.1 Theoretical contributions

1. This is the first study that attempts to investigate mindset in an online shopping context. In so doing, we answer Dholakia and Bagozzi's (2001, p. 171) call that the theory of mindset is:

   '(…) extremely promising for consumer behaviour research in the digital environments (….) mind-sets play an important role in influencing key cognitive, affective and behavioural aspects of the consumer's activities in digital environments (…) [but] (…) relatively little research has been done in examining the role of mind-sets in either the consumer behaviour or the motivational psychology domains, and consequently much opportunity exists to advance knowledge'.

2. Much of lock-in related research has been devoted to comprehending the various psychological dimensions associated with how lock-in transpires. This study furthers the literature by measuring the joint impact of lock-in with (a) experience, and (b) mindset on consumer behaviour.

   Further, by integrating the theories of mindset, a predominantly psychological concept, and lock-in and assessing their possible interactions, as well as offering a more integrated understanding of online consumer behaviour, this study also advances knowledge across the marketing, psychology and information systems disciplines.

3. Online impulse buying has gained impetus with researchers reporting a 7% increase, which represents an increase of $5 billion, in online impulse purchases between 1999 and 2004 (Jeffrey & Hodge, 2007). This thesis offers a more sophisticated approach to the study of unplanned buying by exploring the impact of 'high order' constructs. Additionally, by addressing unplanned purchasing in

the context of hedonic products, this study builds on Partobeeah, Valacich, & Wells's (2009) research and improves understanding of consumers' unplanned buying online.

4. This is the first study that analyses OOS emotions and reactions when consumers, adopting different mindsets, access websites with which they experience varying levels of lock-in. In so doing, this study answers Kim and Lennon's (2011) call for the need to independently assess online OOS given that traditional OOS results may have limited applicability to OOS online.

1.3.2 Managerial contributions

1. The significance of e-commerce is on the rise; for instance, e-commerce is proving to be one of the fastest growing markets of the U.K, with sales representing 10.7%, which in actual fact is equivalent to $52 billion, of the country's total retail trade – this represents an increase of 16% as compared to the year 2008 (CRR, 2010); new evidence has revealed that online sales figures in Australia are also expected to hit $33 billion by 2015 (Noble, 2011). This study provides a better strategic foothold to retailers, managers and practicing marketers by offering insights into yet additional basis for segmentation across buyers' lock-in levels, mindset states and online shopping experience levels.

2. This study broadens managers' understanding associated with the need to avoid mitigating the importance of pre-shopping and individual variables, as has been the case in traditional studies of unplanned buying, where retailers have predominantly invested capital into refining in-store stimuli (Bell, Corsten, & Knox, 2008).

1.4 Overview and illustration of the online experiment

In this section, we present a succinct overview of the main online experimental procedure convened for the purpose of data collection process – an early holistic depiction of the experiment will promote readership and a better understanding of the experiment.

Members of an online panel participated in a hypothetical shopping task to visit two existing commercial websites, one after the other, to shop for a birthday gift. E-mail invites were sent with one of the 56 unique experimental links (detailed in chapter 6).

The experiment manipulated lock-in and mindset, each at 2 levels. Lock-in, the within subject variable, was treated as high (through the selection of 6 items) and low (selection of 2 items) and, mindset, the between subject variable, was either deliberative or implemental. Low lock-in and absence of the mindset manipulation served as control conditions. The experiment was divided into 4 main phases, as outlined next, and as depicted in figure 1.4.

1.4.1 The four phases of the experiment

As stated, the online experimental process was divided into 4 main phases:

1. Warm up exercise: In this phase, respondents visit site A to find an item that they would buy for themselves.
2. Respondents visit site A again, select gift items for someone special's birthday
3. They visit site B and select additional items – they make final purchase decision
4. Respondents are presented with an OOS scenario at the hosting site.

Following a few measures that captured experience levels and purchase patterns, we introduced the opening assignment. It was designed as a warm up exercise that introduced a hypothetical shopping task, where respondents visited the first preselected

Australian gift website (site A) with the intention of buying an item of up to $100 for their own use. Next, respondents visited the same site again, but were to consider purchasing a gift for a special person's birthday. This time item choices were restricted to hampers and flowers.

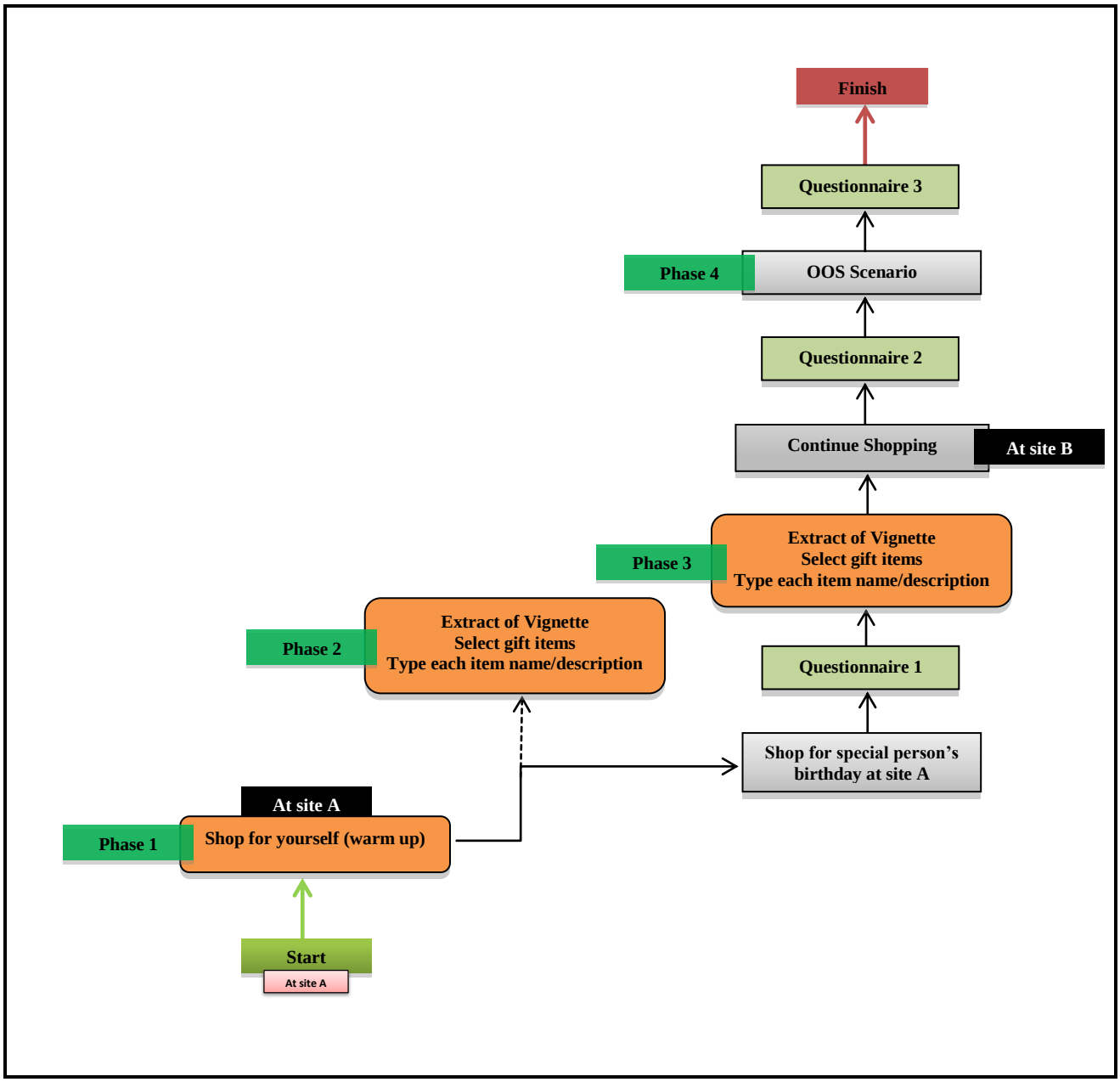
We initiated mindset and lock-in manipulations through pre-visit task instructions. Respondents selected either 6 items (if in the high lock-in condition) or 2 items (if in the low lock-in/control) from site A, as shown in figure 1.4. It is to be noted that the order of the lock-in manipulations and website presentations were counterbalanced; while further details are provided in chapter 6, for the purpose of clarity we focus on a succinct overview of the tasks as performed by respondents in the 6/2 group (representing high lock-in to first site visited and low lock-in to second site visited).

Respondents were then directed to visit another preselected Australian gift website (called here site B) and continue shopping for a suitable gift. Respondents who had selected six items at site A, had to select only two items at site B for further consideration; those who had selected two items at site A were to select six items (2/6 group: high lock-in to second site visited); finally, those in the semi-control (2/2 group) and control (baseline) groups selected 2 items from each site. The survey was programmed to produce a final list of eight or four items (if in either of the control groups). Following visits to each of the sites, respondents filled a questionnaire designed to assess the success of manipulations and gather behavioural responses.

The next and final phase introduced the hypothetical OOS situation that informed respondents that their chosen item was not available; a questionnaire then gathered reactions together with preference/comparison ratings and demographic questions. On a closing note, qualitative input was gathered with regards to what respondents thought the aim of the study was.

Appendix A presents the experimental procedures as experienced by the 6/2 group candidates assigned to the implemental mindset condition.

Figure 1.4: Conduct of online experiment, 6/2 group



1.5 Structure of this thesis

This thesis is divided into 11 chapters, each of which contributes to communicating the various dimensions of this research project. While the nature of this chapter restricts the researchers from painting a picture of the thesis in its entirety, each chapter serves as prologue to what the reader can expect to encounter at different stages of the thesis. Table 1.1 provides a summary of the chapters and their titles.

Table 1.1: Structure of this thesis

Chapters	Chapter titles	
Chapter 1	Introduction	
Chapter 2	How cognitive lock-in drives site choice and site switching intentions	
Chapter 3	An overview of impulse and unplanned purchase tendencies	Interdependent chapters
Chapter 4	How mindset drives unplanned purchase intentions	
Chapter 5	How lock-in and mindset affect emotional and behavioural OOS reactions	
Chapter 6	Research Methodology, the online experiment	
Chapter 7	Data preparation and scaling analysis	Analysis and Results
Chapter 8	Predicting site choice and website switching intentions, findings for $H_{1(a)}$ to $H_{2(b)}$	
Chapter 9	Predicting purchase intentions, findings for H_3 and beyond	
Chapter 10	Predicting the effects of lock-in and mindset on emotional and behavioural OOS reactions, findings for $H_4 – H_9$	
Chapter 11	General conclusions	

Chapter 1 – Introduction

Chapter 1 has broadly introduced the topics of interest, along with general key literature in order to provide a brief but clear overview of the justifications for and significance of this research project. Various contributions were also considered both from a theoretical and practical standpoint.

Chapter 2 –How cognitive lock-in drives unplanned buying, site choice and site switching intentions

Chapter 2 critically reviews the most pertinent interdisciplinary literature relevant to loyalty, lock-in, experience and expertise, both online and offline. Based on the annotated discussions, hypotheses $H_{1(a)}$, $H_{1(b)}$, $H_{2(a)}$ and $H_{2(b)}$ are developed. Part 1 of the conceptual framework is used to illustrate these relationships, as was presented in figure 1.1.

Chapter 3 – An overview of impulse and unplanned purchase tendencies

Chapter 4 – How mindset drives unplanned purchase intentions

Chapters 3 and 4 are interdependent. Chapter 3 is instrumental in introducing and discussing the most pertinent impulse and unplanned buying literature. Against this backdrop, chapter 4 debates mindset as a potential trigger to online unplanned purchasing. The literature review also leads to the development of a hypothesis (H_3) and part two of the conceptual model, as was presented in figure 1.2.

Chapter 5 – How lock-in and mindset affect emotional and behavioural OOS reactions

Chapter 5 discusses the most pertinent traditional and online OOS literature. It then advances these discussions by reviewing OOS as a situational variable for the purpose of proposing the impacts of lock-in and mindset, both independently and jointly, on consumers' emotional and behavioural reactions online. Various arguments lead to the development of a conceptual framework, as presented by figure 1.3, and hypotheses H_4 to H_9.

Chapter 6 – Research Methodology, the online experiment

In this chapter, the researcher provides a comprehensive account of the procedures that were followed for data collection. Data collection consisted of an online experiment that embedded a series of survey questions. This chapter also describes all variables and experimental controls for the successful manipulations of mindset, implemental and deliberative, as well as lock-in, high and low, performed through task-

related activities. Recognizing the many likely sources of bias when conducting an experiment, this chapter also debates the precautions that were observed to control and minimise their impacts.

Finally, where relevant, this chapter integrates observations based on the pilot test data, much of which helped to either consolidate or reassess and refine aspects of the experiment before launching the final experiment online. It is noted that a thorough account of the pretests and pilot test exercises, together with a review of ceiling effects, are presented as appendix B.

Chapter 7 – Data preparation and scaling analysis

Chapter 7 profiles the final sample that was subjected to data analyses. It also provides a detailed account of the preliminary analyses that assessed reliability and validity, as well as confounding checks and the success of lock-in and mindset manipulation checks.

Chapter 8 – Predicting site choice and website switching intentions, findings for $H_{1(a)}$ to $H_{2(b)}$

Chapter 8 offers preliminary and descriptive analyses relevant to site switching intentions. It also reviews the appropriateness of the analytical techniques used to test the proposed hypotheses, $H_{1(a)}$ to $H_{2(b)}$. This chapter also assesses various relationships of lock-in, mindset and e-shopping experience levels and their two way interacting effects on website switching intentions and includes a few variables control variables in the analysis: age, income and gender. Finally, results are debated in light of the existing research, by considering the extent of supporting, contradictory and fresh evidence.

Chapter 9 – Predicting purchase intentions, findings for H_3 and beyond

This chapter presents the empirical findings for the proposed hypothesis between mindset and purchase intentions, H_3. This chapter also assesses the significant interaction between lock-in and mindset (not hypothesized) while, similar to chapter 8, controlling

for the effects of age, income and gender. Results are used as basis to guide the discussions that are presented as the closing section.

Chapter 10 – Predicting the effects of lock-in and mindset on emotional and behavioural OOS reactions, findings for H_4 to H_9

Chapter 10 addresses results of the hypotheses H_4 to H_9 that were designed to test OOS emotional and behavioural reactions. It reviews the appropriateness of the techniques used and reviews the results for each of the hypotheses posed. Finally, the chapter discusses these findings in accordance with existing research.

Chapter 11 – General conclusions

This is the closing chapter of the thesis and concludes the reading. It offers a general overview of key findings which are linked back to the research agenda. This chapter also highlights the implications of this research to different stakeholders. Finally, it acknowledges the limitations of this study which are used as foothold for future studies.

CHAPTER 2 – How lock-in influences site choice and site switching intentions: theoretical underpinnings

This chapter first offers a critical appraisal of literature relevant to the construct of lock-in. Taking into account the multidimensionality of this construct, this chapter draws heavily from pertinent literature on familiarity, loyalty and experience to propose part 1 of the conceptual framework and develop hypotheses $H_{1(a)}$ to $H_{2(b)}$. This chapter also discusses a buyer's level of shopping experience as the moderator variable.

2.1 Background – The different facets and definitions of loyalty

Loyalty occupies a central presence in many, if not, most, aspects of an individual's day to day living, be it at home, socially, or at work. Defined as 'faithfulness to commitments or obligations' (Loyalty, 2011), loyalty revolves around intrinsically and consciously engaging into and committing oneself to a relationship (Augustin & Singh, 2005).

A vastly interdisciplinary area, loyalty has been studied in social psychology in relation to a company, a country, a group of friends, gender, romantic involvements (Melnyk, Osselaer, & Bijmolt, 2009; Rusbult, Zembrodt, & Gunn, 1982), amongst others, and described as a collective of 'emotive, cognitive as well as behavioural elements' (Van Vugt & Hart, 2004, p. 586). In consumer behaviour, loyalty has broadly been studied in relation to a brand, product/service and, somehow limitedly, the retailer (Corstjens & Lal, 2000).

In earlier consumer behaviour work, conceptualisations for loyalty have been limited to behavioural tendencies such as the probability of repeat purchase (Kahn, Kalwani, & Morrison, 1986), purchase frequency (Brody & Cunningham, 1968), as well as share of wallet (SOW) (Berger, Bolton, Bowmann, Briggs, Kumar, Parasuraman, &

Terry, 2002). However, these conceptualisations have been criticized for failing to distinguish true from spuriously loyal customers (Day, 1969; Jacoby & Chestnut, 1978).

While repeat purchase does serve as potential indication for loyalty, such action may merely be the consequence of lower prices, absence of alternatives, promotional activities, amongst others, and not that of the consumer's engagement into emotional attachments with the entity as such. What's more, such spurious loyalty causes the customers to readily defect at the first opportunity of a better alternative (Day, 1969; Jacoby & Chestnut, 1978), thereby jeopardising consumer retention, which is key in long term profitability.

As a consequence, researchers contend that true loyalty should extend beyond behavioural loyalty to also encompass attitudinal loyalty. An attitude represents 'a psychological tendency that is expressed by evaluating a particular entity with some degree of favour and disfavour' (Eagly & Chaiken, 1993, p. 1); attitudinal loyalty, therefore, takes into account both the cognitive as well as affective aspects of loyalty (Gremler & Brown, 1998), with, for instance, the degree of like and dislike as basis for predicting behavioural tendencies (Sheth & Park, 1974).

Following the latter reasoning, Oliver (1997) proposed a sequential loyalty framework which demonstrates that the consumer progresses through four phases. The cognitive stage, which is the first stage, is characterized by consumers' positive evaluations of the entity because it fares better than others; at the affective stage, the consumer has developed these positive evaluations into liking towards the entity, often resulting from satisfied use of and experience with the entity; at the conative stage, the consumer invests considerable effort to maintain future relations. Finally, the behavioural loyalty stage is popularly marked by actions such as (re)purchase (intentions) (Oliver, 1999).

Offering a simpler yet more practical definition for loyalty, Oliver (1999, p. 392) captured both dimensions of loyalty which he characterised as 'a deeply held commitment

to rebuy or repatronize a preferred product/service consistently in the future'. In a service setting, Dick and Basu (1994, p. 99) defined loyalty as 'the strength of the relationship between an individual's relative attitude and repeat patronage'; the latter operationalisation, nonetheless, has attracted criticisms from East, Gendall, Hammond, and Lomax (2005) for its limited applicability to different countries and industries.

Similar operationalisations extend to the Internet. In effect, Srinivasan, Anderson, and Ponnavolu (2002, p. 42) define e-loyalty as 'customer's favourable attitude toward the e-retailer that results in repeat buying behaviour'.

Whereas loyalty in the brick-and-mortar is also manifested through secondary behaviours such as word of mouth referrals, enhanced resistance in the face of competitive messages, a decrease in price sensitivity, continued patronage, amongst others (Dowling & Uncles, 1997; Rhee & Bell, 2002; Bowman & Narayandas, 2001), we note the presence of analogous behaviours online. For instance, Wallace, Giese, and Johnson (2004) sustain that "word of mouse" referrals have an amplified effect on online loyalty as compared to its traditional word of mouth counterpart, as the former spreads even faster; in fact, Reichheld (2003) qualifies customers' willingness to refer someone to a particular good or service as the strongest evidence of online customer loyalty.

The latter point is quite surprising – nowadays, since e-tailers are just a click away, one would tend to think that the Internet offers a variety of stores that consumers can choose to purchase from within the reach of just a click of the mouse. What's more, one would think that the Internet has simplified purchase related behaviours, making it easy to switch from one store to the other, given the reduced physical costs, which would, otherwise, be involved in driving to the venue or standing in long queues (Balabanis, Reynolds, & Simintiras, 2006; Chen & Hitt, 2002; Stigler & Becker, 1977; Bakos, 1997; Campo, Gijsbrechts, & Nisol, 2000).

Surprisingly though, consumers are doing just the opposite; it would seem that the dynamic nature of the Internet has put this 'rule' under new scrutiny, with recent findings

defying its applicability to the online shopping platform. Indeed, online customers reportedly tend to seal their purchases with one primary online store (Johnson et al., 2004). With time, they also perform less search, switch suppliers on a less regular basis, visit fewer sites (Johnson et al., 2003; Chen & Hitt, 2002; Reichheld & Schefter, 2000; Johnson et al., 2004); they are also proving to be more loyal than traditional consumers (Shankar, Smith, & Rangaswamy, 2003; Devaraj, Fan, & Kohli, 2002).

2.2 The online twist: cognitive lock-in

While these tendencies may potentially be the result of high switching costs, in the form of community building, high satisfaction levels, perceived value, amongst others (Balabanis, Reynolds, & Simintiras, 2006; Battacherjee, 2001), a few researchers have explained this phenomenon through cognitive lock-in (Johnson et al., 2003). Cognitive lock-in derives from the power law of practice. With its origins imprinted in human capital literature (Crossman, 1959; Niebel, 1972), the power law of practice is based on skill acquisition whereby as skills specific to a certain task are accumulated, associated task completion time gradually decreases. This efficiency is derived through trial and error while learning, and in so doing, redundant methods associated with task completion are gradually eliminated (although, with time, at a decreasing rate). As a consequence of this practice, one becomes more prone to stay with the task. This is called cognitive lock-in (Crossman, 1959; Niebel, 1972; Johnson et al., 2003).

Applied to the context of online shopping, one of the skills that consumers need to develop is to learn how to use a site. With increased practice and error during the learning stage, efficiency is gained and the perceived benefits associated with shopping at the high lock-in site start to outweigh those of using another (Johnson et al., 2003). These benefits may include reductions in psychological costs (such as time and effort invested into changing ingrained habits), thinking/cognitive costs (e.g, cross site search when looking for another appropriate retailer) and learning costs (effort needed to attain the same level

of comfort as with previous retailer) (adapted from Shapiro & Varian, 1999; Bo-Chiuan, 2008; Chen & Hitt, 2002). Therefore, lock-in induces preference for a site and creates a user benefit of staying with and shopping at the high lock-in retailer's site (Johnson et al., 2003; Murray & Häubl, 2002 and 2007; Shapiro & Varian, 1999; Zauberman, 2003), even though shopping at another may, in actual fact, represent a better, and even cheaper, alternative.

2.2.1 Lock-in: a multidimensional construct, $H_{1(a)}$ – $H_{1(b)}$

2.2.1.1 An economics approach

Conventionally, researchers have used an economics approach to explain lock-in, with the associated financial costs used to raise the perception of switching costs and essentially lock-in consumers. Such financial costs include, amongst others, incurring hefty liquidity or compensatory damages when a contract is broken or forfeiting accumulated points if the consumer defects, as is the case for loyalty programs such as frequent flyer points (Shapiro & Varian, 1999). Therefore, the potential of losing such monetary benefits deters consumers from switching, who, instead, choose to continue the relationship.

Directly relevant to the online arena, Zauberman (2003) also adopted a financial approach and manipulated initial investment at 2 levels, high and low, in order to induce lock-in. He found that high set up costs discourage online consumers' likelihood to switch to a new provider. In fact, when set up costs are low, regardless of the level of search efforts, he found that consumers deter 85.1% of the time, despite high ongoing costs, while high set up costs induced consumers to switch only 50.8% of the time. Therefore, the high level of financial 'investment' is more likely to induce consumers to commit themselves to the relationship, unmindful of the possible high ongoing costs.

2.2.1.2 Familiarity, ease of use and perceived ease of learning

A few researchers, offering a contemporary approach to lock-in that is modeled on the power law of practice, have demonstrated that lock-in develops as a result of

familiarity (Johnson et al., 2003; Murray & Häubl, 2002; Moreland & Zajonc, 1982, experiment 1). Familiarity, defined as 'specific activity-based cognizance based on previous experience or learning of how to use the particular interface' (Gefen, 2000, p. 727), has commonly been operationalised through the number of experiences/exposures with an entity. For instance, Moreland and Zajonc (1982) manipulated the level of familiarity through either viewing a photo once a week as opposed to everyday during the week (experiment 1). Similarly, Murray and Häubl (2002) operationalised familiarity through increased usage of and the number of experiences with the website (Alba & Hutchinson, 1987) by manipulating the number of practice trials at each of the 2 fictitious sites from 2 to 6 search activities (based on specific product attributes) – following which, respondents chose one site to make their final purchase from. They demonstrate that high lock-in induces preference for the high lock-in site.

While a key driver to lock-in, familiarity by itself restricts the development of lock-in. Research by Johnson et al. (2003) and Murray and Häubl (2007) support the notion that ease of use plays a key mediating role on the relationship between familiarity and preference for a site. Ease of use, which is synonymous to simplicity and clarity associated with the navigational scheme (adapted from Chen & Hitt, 2002), is expected to promote navigability of a site, that is, help the consumer develop the ability to easily self-manoeuvre and find his/her way (Dennis, Merrilees, & Jayawardhena 2009; Richard & Chandra, 2005; Novak & Hoffman, 1996). Researchers have demonstrated that ease of use is evidenced through steeper declining visit times during learning or a decrease in relative task completion time, defined as the difference between the time taken to complete the first task at the competitor and the last task at the high lock-in site (Johnson et al., 2003; Murray & Häubl, 2007). Better ease of use is also matched by increased likelihood of staying with and buying from the high lock-in site (Murray & Häubl, 2007).

The actual ease of use is also central to early stages of familiarisation, during learning. Although unfamiliar users are subjected to relatively extensive cognitive processing and are expected to make mistakes and face difficulties while learning to use a system, the perceived amount of effort invested into learning to use a site, more precisely,

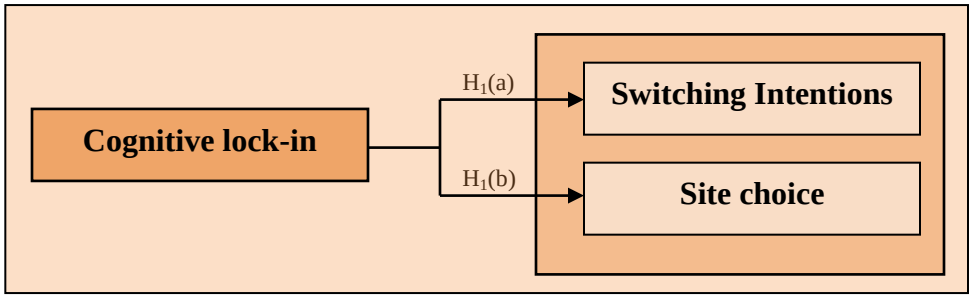
the perceived ease of learning needs to be favourable to positively affect the perceived ease of use, regardless of positive actual ease of use (adapted from Griffith, 2005; Venkatesh & Davis, 1996; Flemming, 1976). Difficulties with navigability such as broken links, error messages, amongst others, during learning cause irritation, increase the level of perceived difficulty in using the site, and, as a consequence, deter lock-in through poor ease of use. The opposite effect is expected when learning is made easy and pleasant (Murray & Häubl, 2007).

Finally, evidence strongly suggests that lock-in is influenced by the extent of difference/similarity between the high lock-in and competing sites – for the promotion of lock-in, websites have to offer a point of differentiation at least on a few attributes. Indeed, in an online experiment that used fictitious websites, Murray and Häubl (2002) demonstrate that lock-in was more acute when sites differed on the basis of colour and navigational schemes as well as placements of products' attributes. The reasoning is that, when sites are different, with repeated exposure and experience at one site, consumers develop skills that are specific to the usage/navigation of that site, implying that these skills are not readily applicable to other sites. Such non transferable skills decrease the attractiveness of other sites relative to the incumbent site because having to learn new skills implies more cognitive effort, thus reducing ease of transfer from the incumbent to the competing site, and preference for the competitor's site (Murray & Häubl, 2002; Johnson et al., 2003). As a result, we expect that high lock-in will also induce higher likelihood of choosing the incumbent site to purchase from. By the same token, loyal consumers tend to be insensitive to competitors' offerings and, as such, manifest lower switching tendencies (Oliver, 1999). Therefore, high lock-in should deter buyers from switching to and purchasing from the alternative site relative to the high lock-in site. Based on this section's discussions, we propose to test the main effects that (presented in figure 2.1):

> $H_{1(a)}$: Consumers who have had more opportunity to practice and learn to navigate and operate a site are more likely to return to the site for their final purchase decision.

$H_{1(b)}$: Consumers who have had more opportunity to practice and learn to navigate and operate a site are less likely to switch to the competing site.

Figure 2.1: Proposed main effects, H1(a) and H1(b)



2.3 E-shopping experience – a moderator of site choice and site switching intentions

Considerable evidence in the traditional literature supports the role of consumer experience in decision making processes (Hutchinson, 1983) as well as resulting behaviours (Bettman & Park, 1980). Reflective of the variations in the levels of acquired domain knowledge and familiarity, one of the key related findings is that the amount of cognitive processing and effort is higher for the inexperienced as compared to the more experienced buyers (Alba & Hutchinson, 1987).

A few researchers have advanced that as online buyers gain more experience with a site, they tend to visit fewer sites (Johnson et al., 2004; Devaraj et al., 2002). In effect, tracking actual behaviour for three product categories (CDs, Travel and books), Johnson et al. (2003) report that, while, overall, increased experience leads to higher level of purchasing, it also causes a decrease in the number of sites visited, leading the researchers to conclude that these buyers become more and more loyal to one site, as a consequence of which, they develop a limited consideration set of retailers that they choose to purchase from. While loyal customers visit a website regularly, as their number

of visits increases, they also tend to spend lesser and lesser time on that site, and are apt to overlook 'old', while keeping up to date with any new elements (Thorbjørnsen & Supphellen, 2004).

However, in the meantime, online buyers are also very likely to be exposed to and visit other sites. Through these various e-exchanges, they, therefore, develop skills and process knowledge, defined as 'proficiency and experience in using the [Internet] and managing various information formats' (Thorbjørnsen & Supphellen, 2004, p. 202), in their general use of the Internet as a shopping platform. Therefore, as a parallel to the brick-and-mortar, online consumers' ability to 'understand and represent Web-based information [is] structured and constrained according to their existing domain experience' (Moreau, Lehmann, & Markman, 2001, in Rodgers, Solomon, & Kwanho, 2005, p. 316); in other words, buyers vary in the levels of skills and knowledge developed in their general use of the Internet as a shopping platform so that the utility derived from (non) instrumental elements when purchasing online (Balasubramanian, Raghunathan, & Mahajan, 2005), defines the perception of the Internet as either a low or high costs shopping medium to ultimately shape purchase behaviours (adapted from Gupta, Su, & Walter, 2004).

2.3.1 Lock-in is dependent upon e-shopping experience to influence website choice intentions, $H_{2(a)}$

2.3.1.1 'Processing' loads

Experienced buyers, through their multiple purchase episodes, develop more established knowledge structures (Duncan & Olshavsky, 1982). During decision and purchase processes, these are consulted and if needed, re-organised and updated (Srull & Wyer, 1989; Krabuanrat & Phelps, 1998). Therefore, they should be in a better position to lend themselves to more efficient purchase tasks as compared to inexperienced buyers.

Indeed, inexperienced buyers feel the need to rely more heavily upon information, predominantly peripheral cues present in the environment, with the likes of normative

influences, online communities, and so on (Cheema & Papatla, 2010; Brucks, 1985). In fact, inexperienced buyers face heavier cognitive loads, which may arise because of knowledge uncertainty associated with their limited ability to understand and effectively process an overwhelming amount of information in the form of, for instance, a multitude of entries that searches can potentially return. What's more, since they are more apt to process what they perceive as 'easier' chunks of information, with, the possibility of limited use given that they are not necessarily the most relevant (Gefen, Karahanna, & Straub, 2003; Johnson & Russo, 1984), this means that the search and purchase process may take longer and require far more effort.

2.3.1.2 Trust, perceived risk and self efficacy

Increased experience positively influences trust formation (Jarvenpaa & Todd, 1997); trust implies that 'one believes in, and is willing to depend on, another party' (McKnight, Choudhury, & Kacmar, 2002, in Schumann & Thorston, 2007, p.126). Much of research in online retailing has delved into trust with a website, its security, amongst others (Bart, Shankar, Sultan, & Urban, 2005; Belanger, Hiller, & Smith, 2002). However, we refer here to the sense of trust that increased experience also induces in buyers' abilities to weigh the usefulness and relevance of the information (adapted from Jarvenpaa, 2000; Mitchell & Prince, 1993) as they learn to 'discern poor sources of information from more reliable and trustworthy ones' (Cheema & Papatla, 2010, p. 984). This confidence prevails even when visiting less familiar websites (Forsythe & Shi, 2003).

The latter state of motivation can also be explained through the theory of perceived self-efficacy (SEF) (Bandura 1982; Bandura and Schunk, 1981; Hernández, Jiménez, & Martín, 2010; Koufaris, Kambil, & LaBarbera, 2002) described as 'judgements of how well one can execute courses of action required to deal with prospective situations' (Bandura, 1982, p. 122; Bandura, 1986). High perceived self efficacy promotes a strong sense of confidence and higher level of perceived control over one's environment, and hence one's ability over goal attainment. Parallel to this, in an online context, self efficacy becomes even more important as buyers gain experience,

although a few researchers found that with time its implications in explaining buying behaviours may be limited (Venkatesh, Morris, & Davis, 2003; Taylor & Todd, 1995; Hernández et al., 2008).

Because goal achievement is central to shopping, experienced buyers become predominantly focused on task-relevant information (Gefen et al., 2003; Richard & Chandra, 2005; Biswas, 2004); hence, promoting the cognitive side of purchasing. This is paralleled with Donthu and Garcia (1999) who stipulate that Internet buyers do not necessarily look for the best deal, but rather to satisfy their need (although these researchers treat the sample as a 'general' group of online users). Therefore, it should be of no surprise that experienced buyers become more ingrained with the perceived usefulness of an entity, defined an individual's subjective probability that using a specific application system will increase his or her job performance (Gefen et al., 2003).

In contrast, limited by their knowledge and expertise, inexperienced buyers are generally less trusting of the Internet and perceive online shopping as a risky activity. They often face complexities that may arise because of their inabilities to judge the usefulness of information, effectively navigate a website, amongst others; these can be even more predominant when presented with the challenges of visiting an unfamiliar site because the task can demand skills and abilities that challenge their capabilities (adapted from Bart et al., 2005; Shiu, Walsh, Hassan, & Shaw, 2011; Cheema & Papatla, 2010).

So, when inexperienced buyers get well acquainted with a site, the familiarity and knowledge of the site, (through repeated interactions that enhance understanding of the site), alleviate the level of uncertainty associated with 'dealing with' the site because familiarity and knowledge boost confidence in their ability to locate information or the item that they are looking for. Therefore, they develop trust and a sense of comfort in knowing what to expect from that particular site (adapted from Inman, Winer, & Ferraro, 2009; Gefen, 2000) instead of having to tediously plough through the Internet. Logically, then, inexperienced buyers should be more inclined to return to and confine their purchases to the high lock-in site.

Drawing from these discussions, we propose that:

$H_{2\,(a)}$: Given their existing experience with shopping online, experienced consumers are less likely than inexperienced consumers to purchase from a site they have recently become acquainted to.

2.3.2 Lock-in is dependent upon e-shopping experience to influence website switching intentions, $H_{2(b)}$

As stated, knowledge about competition has been studied in the context of consumer defection, with reports that the loyal consumers are more likely to tune out to competitive activities and are, therefore, less likely to switch (Oliver, 1999). These results can be extended to Capraro, Broniarczyk, and Srivastava (2003) who examined health insurance choices, and found that inexperienced buyers have limited knowledge vis-à-vis alternative retailers and are, therefore, less likely to leave the high lock-in site and visit the competition. While inexperienced buyers would logically possess a very limited consideration set of retailers that they can purchase from, they also face a lack of reference point. Therefore, loyalty can discriminate between switchers and non-switchers (adapted from Seiders & Tigert, 1997).

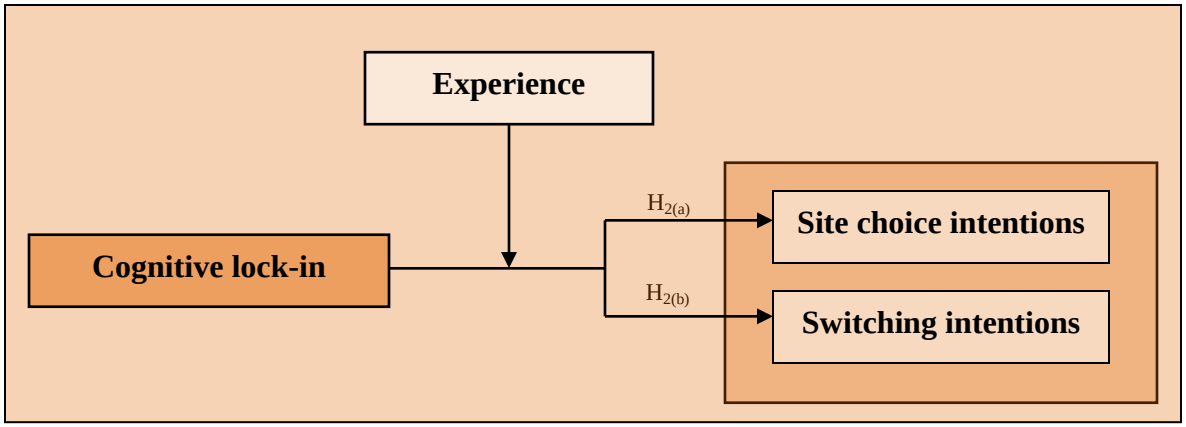
Online switching barriers/costs (both hard and soft) render the e-buyer's decision 'to swap or not to swap' more complicated. Applying Burnham, Frels, and Mahajan (2003) proposed cost structure, Balabanis et al. (2006) and Smith, Bailey, and Brynjolfsson (1999), demonstrate that the e-buyer, in a similar manner to the traditional buyer, is faced with procedural costs; for instance, when the latter needs to get accustomed to an online store, the associated hassle of having to re-familiarize oneself to the new site's layout, its hyperlinks and navigational scheme, lead to mounting switching costs.

Familiarity with the site's layout and hyperlink which usually saves time and effort may be translated into wasted time and effort should they opt to stop transacting

with the high lock-in e-tailer and turn to a different one (Johnson et al., 2003). Moreover, switching to a new site is very likely to be accompanied by frustration. These unintentional barriers boost the costs associated with switching and potentially render this act much harder so that high levels of perceived switching costs cause a reduction in the likelihood of switching. But, we propose that this is, specifically, relevant to the inexperienced buyer – poor knowledge of alternatives deters switching because of the high perception of risk. Integrating all of these discussions, we propose to test the following hypothesis (proposed interaction effects are presented in figure 2.2):

$H_{2\,(b)}$: Experienced consumers are more likely than inexperienced consumers to switch to the competing site.

Figure 2.2: Proposed interaction effects, H2(a) and H2(b)



CHAPTER 3: An overview of impulse and unplanned purchase tendencies

This chapter serves as a platform to introduce and critically review the most pertinent impulse and unplanned purchasing literature, both offline and online, with particular focus on their triggers. Whilst it provides a useful account of the theoretical underpinnings, it is also instrumental in forging the link between mindset and (un) planned purchase intentions which is debated in chapter 4.

3.1 Background

Impulsiveness is defined by Doob (1990) as the lack of reflection between an environmental stimulus and a person's response. Impulse reactions are dictated by primary mental processes which encourage inhibited impulse behaviour that can be referred to as irrational (Omar & Kent, 2001). This area has been widely studied by psychologists, economists, as well as criminologists in relation to various activities such as crimes, shopping, addiction, dieting, amongst others (Eysenck, Eysenck, & Barrett, 1985; Longshore, 1998; Cao, Su, Liu, & Gao, 2007; Vohs & Faber, 2007; Nederkoorn, Guerrieri, Havermans, Roefs, & Jansen, 2009).

Impulsiveness in shopping has aroused the interest of psychologists as early as the turn of the twentieth century and that of consumer researchers as early as the 1940's. Retailers, attempting to take advantage of this aspect of human behaviour, have formulated strategies in order to encourage these highly emotional and uncontrollable shoppers' behaviours and boost sales as well as profit margins – although criticized for being overly zealous with regards to investing their monies into environmental triggers (Bell et al., 2011 and 2008).

Much of the theory of impulse buying may be linked to the physical proximity of an encounter with a product. The closer one is to being able to enjoy a product, the harder it is to resist (Ainslie, 1975). Confrontation with an object induces desire and, therefore, little resistance on the part of the buyer to acquire the product. The buyer is aware of the immediate reward that s/he may experience; in other words, as desire is created s/he simply needs to acquire the product to experience the fulfillment, without much evaluation of consequences (Piron, 1991). Hoch and Loewenstein (1991) state that as a reward is imminent, the attraction felt by the individual is immense to the point that there may barely be any sort of control on the part of the individual. Interestingly, evidence suggests that the ability to control these urges is linked with personality traits, with individuals possessing an extrovert nature more prone to impulse purchases than those who are introverted (Youn & Faber, 2000; Verplanken & Herabadi, 2001). More recently, in a series of laboratory experiments (that suppressed participants' attention and thoughts), Vohs and Faber (2007, p. 538) found that exerting 'regulatory resources in an initial self-control task' generally led to a depletion of self regulatory resources, thus encouraging higher tendency towards impulsive spending – although more pronounced amongst participants that rated high on impulsivity trait.

Emotions such as 'excitement', 'thrill' and 'pleasure' (Rook, 1987; Verplanken & Herabadi, 2001), just to name a few, have commonly been used to relate to impulse purchasing – as a possible mood elevator, a self-esteem booster, or an act of self gift (Mick & Demoss, 1990). But, if the shopper fails to buy the product, not only s/he loses the forgone pleasure from acquiring an object, but will start feeling deprived. This deprivation represents a psychological state of need that is similar to other psychological states of need such as hunger, thirst, amongst others (Hoch & Loewenstein, 1991). To this end, impulsive buying has also been the subject for considerable criticism. Nouns and adjectives such as 'bad', 'neurotic', 'evil', 'irrational', 'uncontrollable', 'addiction' and 'guilt' (Rook, 1987; Dittmar, Beattie, & Friese, 1996; Bayley & Nancarrow, 1998; Rook & Hoch, 1985), have often been used to qualify impulse behaviours. Negative post-purchase consequences, such as dissatisfaction, regret and financial losses have also been associated with impulse purchasing. Chronic impulsive behaviours lead to compulsive

buying, a phenomenon which is treated as a psychological disorder, and one that is indirectly related to impulse buying (Verplanken & Sato, 2011).

Despite the 'despised' nature of impulse buying, it represents a sizable portion of store transactions; for instance, 70% of shoppers decide on their purchase when present in the store (Neff, 2008, as cited in Bell et al., 2011) and this compares quite equally to earlier studies where as many as nine out of ten shoppers buy on impulse (Welles, 1986, as cited in Madhavaram & Laverie, 2004; Rook & Fisher, 1995; Cobb & Hoyer, 1986).

Much of impulse purchasing is induced by external, or so called 'outside', factors such as store elements and atmosphere, the presence of the salesperson, amongst others, while personality types, pre-existing mood states, self-control, that represent innate and psychologically tilted elements, also regulate the variance in impulse buying (Verplanken & Herabadi, 2001; Vohs & Faber, 2007). More recently, Bell et al. (2011) and Lee and Ariely (2006) successfully demonstrated that goal definition can act as a trigger to unplanned and impulse buying, with the former researchers measuring the effects of goals as defined at the pre-visit stage, just before consumers enter a shop.

The Internet, given its unique characteristics, forms an environment that challenges the boundaries of what is considered conducive to impulse or unplanned buying in its original sense. But, interestingly, similar to its traditional counterparts, online impulse buying has also gained impetus, with researchers reporting a 7% increase in online impulse purchases between 1999 and 2004, which is calculated to represent an increase of $5 billion (Jeffrey & Hodge, 2007). Additionally (but of lesser interest to the immediate interest), evidence of dysfunctional buying amongst online buyers has also been noted (Dittmar, Long, & Bond, 2007, study 2). Such realization has instigated fresh interests from researchers who have offered more sophisticated approaches to the study of online impulse buying (Partobeeah et al., 2009; Park et al., 2011; Madhavaram & Laverie, 2004).

We particularly note the cognitive aspect of online shopping as a central influence in the lead up to impulse and unplanned buying. For instance, Verhagen and Dolen (2011), in their study of online purchasing of clothing, demonstrated that the size and attractiveness of assortments influenced positive and negative affect while enjoyment and website communication style had an influence on positive affect to ultimately dictate impulse tendencies – although, quite surprisingly, ease of use as a functional convenience factor, did not emerge as a significant variable. The latter observation is in contradiction with Partobeeah et al. (2009), who, however, used tote bags as vehicle for investigation.

3.1.1 Traditional definitions and controversies

Earlier literature, in a bid to define an impulse purchase, has invited much confusion. For instance, Cobb and Hoyer (1986), refer to purchases which have simply not been preplanned, as either unplanned or impulse; others refer to an impulse purchase as 'a sudden and immediate purchase with no pre-shopping intentions either to buy the specific product category or to fulfill a specific buying task' (Beatty & Ferrell, 1998, p. 171). These definitions have drawn criticisms from researchers who have referred to such characterizations as somewhat incomplete or even incompetent (Weinberg & Gottwald, 1982; Rook, 1987; Rook & Hoch, 1985; Kollat & Willet, 1967; Rook & Fisher, 1995).

Rook and Hoch (1985) state that remembering to buy a gallon of milk brought about by visual stimulation does not constitute an impulse purchase; rather, seeing it triggers a convenient cognitive reminder. So, besides being unplanned, an impulse purchase needs to be a fast and spontaneous act backed by emotion as well as little or no thinking; to this effect, the researchers make reference to a buyer who, upon visual confrontation with marinated artichoke hearts, feels a sudden urge and wants to go home and make a big antipasto. Therefore, the complex response triggered by the sight of the artichoke is different from the reaction on seeing the gallon of milk. Rook (1987) further developed existing theories and proposed a list of key elements that best characterize an impulse purchase:

- No preplanning
- A sudden confrontation with the product
- Feelings of excitement and even euphoria
- An overwhelming feeling that one has to buy the product
- No consideration for the negative outcomes from the purchase

Researchers have proposed yet additional dimensions, arguing that different situations may give rise to distinct categories of impulse buying behaviours (Stern, 1962; Bayley & Nancarrow, 1998). Stern (1962), who solely bases his analysis on the notion that the shopper is linked to the stimulus in the environment (Piron, 1991), presents a continuum of four types of impulse purchase types, each primarily differentiated on the basis of emotional appeal.

The first relates to planned impulse buying, which with strong similarities to Bayley and Nancarrow's (1998) suggested *accelerator type of impulse,* occurs when the buyer has an idea about the product and brand that he/she wants, but is ready to take advantage of promotional activities such as sale, coupon offers, etc., and shop opportunistically (Bucklin & Lattin, 1991). Very often in this case, the buyer aims to be a 'good economic manager' (Bayley & Nancarrow, 1998).

Other categories of impulse purchase described by Stern (1962) are: pure, suggestion and reminder. *Pure impulse* involves the 'novelty or escape of purchase [that] breaks a normal buying pattern' (Stern, 1962, p.59) and depicts what can be termed a 'true' impulse purchase – the buyer experiences an overpowering feeling for a certain product, irrespective of the cost.

Suggestion impulse buying (Stern, 1962), the third proposed classification, is created upon confrontation with the product, which the buyer has no prior knowledge of. This often induces the individual to weigh the quality, functionality, and so on, of the

product before the buying stage, implying that a degree of rationality, usually absent during an impulse purchase, influences the buyer's choice.

Finally, *reminder impulse buying* (Stern, 1962), refers to a situation where the shopper remembers to buy due to reasons such as exhaustion of stock at home, remembrance from an ad seen or heard, or even prior experience with the product. This simply implies that the purchase is one that had not been considered before entering the shop but arose because of confrontation with the product and, as mentioned earlier, should be classified as a convenient cognitive reminder.

3.2 An overview of the triggers of unplanned buying

Much of consumer behaviour research has concentrated on non economic reasons for impulse buying. Studies on internal triggers of unplanned buying demonstrate personality traits are correlated with buying impulses; as earlier stated, individuals possessing an extrovert nature more prone to impulse purchases than those who are introverted (Youn & Faber, 2000; Verplanken & Herabadi, 2001).

Impulse purchasing has also been found to be correlated with mood states. An individual's affect is also influenced by his/her pre-existing mood which molds reactions to current environmental atmospherics (Beatty & Ferrell, 1998). Research evidence is, however, poled. A few researchers report that the likelihood for impulse buying is more prominent when the buyer is in a bad and dispositional mood (Verplanken, Herabadi, Perry, & Silvera, 2005), with the rationale that the latter is looking to 'feel better' following an impulsive purchase (Gardner & Rook, 1988); in contrast, others suggest that a buyer in a good mood is more likely to engage in approach behaviour than avoidance behaviour. Positive mood states generated in store encourage people to feel that they have more freedom to purchase what they want and reward themselves more generously (Isen & Levin, 1972). To this end, further evidence suggests that pleasure is positively

associated with the likelihood of overspending in a shopping environment (Donovan & Rossiter, 1982).

Store characteristics also motivate impulse purchasing. Building on the former point, if a shopping environment is made more enjoyable, exciting and multisensory, it magnetizes the consumers' attention and stimulates desire – this increased level of arousal inhibits 'reasoning' abilities (Tice, Bratslavsky, & Baumeistrer, 2001). Environmental cues can include presence of salesperson, atmospheric stimuli with the likes of pleasant music, nice smell, beautiful colours, lighting, display of products, just to name a few (Holbrook & Hirschman, 1982; Verplanken & Herabadi, 2001; Kollat & Willet, 1967; Bowlbey, 1997; Stern 1962).

A salesperson's relaxed attitude and helpfulness have the potential to make browsers feel welcome and, in so doing, stimulate the prospect for impulse buying (Bloch & Richins, 1983; Baker, Levy, & Grewal, 1992); evidence also suggests that the latter's presence can create discomfort, leading to buyers feeling threatened/uneasy by an undesirable presence (Stern, 1962; Bloch & Richins, 1983). More recently, Mattila and Wirtz (2008) provided support for employee friendliness as a moderator that positively influences the relationship between perceived crowding and impulse buying.

A product category, 'de part' its hedonic or functional characteristic, can also define the extent of planned and unplanned purchasing. Products possessing hedonic properties are more likely to elicit affective responses and encourage impulse purchasing (Babin et al. 1994). On that note, contradictory findings have been recorded in the online arena with Madhavaram and Laverie's (2004) research demonstrating that impulse buying is not confined to product type while, others have supported the notion that the Internet, as a shopping environment, renders unplanned buying of certain products more favourable than others (Partobeeah et al., 2009).

Finally, situational factors both personal and environmental also motivate impulsive purchasing. Examples may include normative influences, perception of time

pressure and browsing activities, and of more immediate relevance to this study, loyalty (and familiarity) and the degree of goal abstractness.

Rook and Fisher (1995) propose that in the absence of normative influences, the consumer feels no constraints and the need to control his/her impulsive inclinations, because of the freedom to 'try on new things and styles and fantasise' (Bayley & Nancarrow, 1998, p. 102), whilst, if accompanied, the consumer feels bounded by social bonding and is more dependent on others' social roles. The anonymity offered by certain shopping environments such as the Internet, direct mail or even telemarketing which potentially encourage unplanned buying since they offer a very secure and socially invisible environment. Shopping alone, in the intimacy of the environment, lowers one's reticence. In contrast, Granbois (1968) posits that shoppers who shop in pairs or groups spend more time browsing and exploring the store. Consequently, they are highly liable to diversions in buying plans and end up spending more.

Traditionally store loyalty and familiarity/store knowledge have been found to guide the type of store interactions and influence purchase outcomes. For instance, consumers in an unfamiliar/low knowledge store are more likely to rely on the environment to formulate their purchase decisions, a significant portion of which results in higher likelihood for unplanned purchase and higher failure rates for intended purchases, and vice versa (Bucklin & Lattin, 1991; Bell et al., 2008 and 2011; Park, Iyer, & Smith, 1989). Interestingly, there is also support for the positive effect on unplanned purchasing even in a familiar store (Winer & Ferraro, 2008; Mattila & Wirtz, 2008), provided, however, that more time is available during the shopping trip in question (Bell et al., 2011).

Availability of time is positively associated with browsing activities and consideration for more alternatives in retail outlets (Punj & Moore, 2009); therefore, in-store browsing forms a central component in the unplanned buying process; the more the customer is exposed to the stimuli, the higher the likelihood of experiencing buying urges. Theories of unplanned buying state that the individual is exposed to affect-laden

cues, which attract him/her and lead to positive mood states. As such, it has been recognized that browsers are prone to accomplish more unplanned purchases than non-browsers (Jarboe & McDaniel, 1987).

However, when faced with time constraints, consumers' demand for additional information is considerably diminished (Bronner's, 1982; Iyer, 1989). The availability of little browsing time in a retail environment, also leads to frustration and negative reactions to the environment (Beatty & Ferrell, 1998). This idea is related to the non-attainment of one's goals, which has been found to be positively associated with negative affect (Babin et al., 1994; Dawson et al., 1990; Gardner & Rook, 1988). What's more, very often the 'time poor' (De Kare-Silver, 1998) shopper draws a script which has the role of facilitator, as a result of which, shoppers' behaviours become script driven and more efficient. The dependence of the shopper on the script leads to very low level of informational inputs from the external environment, constraining impulse purchasing (Iyer & Ahlawat, 1987).

3.3 An overview of unplanned purchasing online

Utilitarian shopping orientation (defined as the predisposition of a consumer's purchase) has been found to be an antecedent of consumers' penchant for purchasing online, thus matching early views of the Internet as a uniquely convenience based shopping channel which allows one to exert self control and regulate shopping decisions (Girard, Silverblatt, & Korgaonkar, 2002; Li, Kuo, & Russell, 1999). But, it is clear that this status quo has changed with emerging research demonstrating that online purchasing orientation also extends to being experiential or even a mixture of both (Partobeeah et al., 2009; Park et al., 2011; Adelaar, Chang, Lancendorfer, Byoungkwan, & Morimoto, 2003).

Recognizing that traditional store atmospherics are inappropriate to the online retail environment, reasons being, the Internet's ability to realistically reproduce only two

senses instead of five and the store environment being 'reduced to a computer screen', Eroglu et al. (2001) and Eroglu, Machleit, and Davis (2003) were the first to apply the Stimulus-Organism-Response (S-O-R) model (which postulates that the environment stimuli (S) causes primary emotional responses (O), which are at the root of a series of approach-avoidance behaviours (Mehrabian & Russell, 1974; Adelaar et al., 2003) to an online shopping context and propose that elements of the online store, apart from triggering the affect state of individuals, have a significant implication on buyers' cognitive processing stages, and influence the outcome of shopping in terms of approach and avoidance behaviours. Redefining environmental stimuli as 'the sum total of all cues that are visible and audible to the online shopper' (Eroglu et al., 2001, p. 179), they demonstrate that store atmospherics include high and low task relevant cues. They elicit a list of the low-task cues which have the ability to enhance the browsers' shopping experience (such as layout of the site such as the background, the use of colour, fonts, amongst others) and are not directly relevant to shopping goals. In opposition, the high task-involvement cues are directly relevant to shopping goals (such as information relevant to shopping goals as terms of delivery, price and payments) and encourage impulse buying (Mummalaneni, 2005).

Eroglu et al. (2003) confirmed the moderating effect of involvement and atmospheric responsiveness. The model states high involvement shoppers strongly rely on cognitive cues, such as informational content, website relevance, amongst others, because such users are only focused on satisfying their goals and will only pay attention to functional aspects to accomplish their purchase (Sanchez-Franco & Rondan-Cataluña, 2010). In contrast, low involvement shoppers are more captivated and attracted to the hedonic qualities and enjoyment of the shopping experience and do not need to satisfy any specified goal in spite of the fact that the outcome of this shopping activity may be an unexpected purchase (Holbrook & Hirschman, 1982). Two variables, involvement and atmospheric responsiveness, moderate the relationship between the perceived online store environment and online shoppers' affective and cognitive states

Drawing inspiration from such framework, Partobeeah et al. (2009) proposed an integrated model of perceived usefulness and enjoyment, and task relevant and mood relevant cues, to measure both cognitive and impulse reactions in light of the purchase of relatively lower involvement purchases (tote bags). They confirmed their central thesis: that the marriage of task relevant cues, which they refer to as characteristics, such as navigation, facilitate the buyer's task, and mood relevant cues, (reference made to pleasing visuals, for example that are not directly influential), is important in the study of impulse buying in that they concurrently influence the likelihood as well as the magnitude of impulse purchases.

But, within this observation, of further interest is that appraisals of cognitive cues form an important part of the process that leads to impulse buying behaviours. This idea can also be viewed as an extension of the study by Valacich, Parboteeah, and Wells (2007) where representational needs (example graphic design) did not heed a lot of attention amongst the online users that were surveyed; in fact, being the least desired need. Structural firmness (such as security) was the most basic and most desired need followed by functional convenience (example navigability/ease of use), only if, however, structural needs were satisfied.

In their exploratory study, Madhavaram and Laverie (2004) identified various stimulants of online impulse buying such as price, mood states, store image, types of advertisements, special offers, amongst others, although these results are in contradiction to Gunness et al. (2005) in that the latter, based on an online survey of online CD buyers, found that price did not constitute an important variable to online unplanned purchasing. Contradicting findings in the traditional literature, Madhavaram and Laverie (2004) further report that impulse buying was not confined to product type. Despite such valuable contributions, the Internet is recognized as an environment that renders unplanned buying of certain products more conducive than others; an area which, therefore, necessitates further exploration (Partobeeah et al., 2009).

Although it has been quite a popular practice for researchers to use impulse and unplanned buying interchangeably, such would be misleading in our study. Impulse buying is a subset of unplanned buying (Beatty & Ferrell, 1998; Rook, 1987) and this distinction is marked by clear demarcations that exist between unplanned and impulse buying; for instance, for a purchase to be qualified as impulsive, the need to buy a product has to be linked with fulfillment, expressed in terms of an immediate action (Burroughs, 1996; Cobb & Hoyer, 1986; Rook & Hoch, 1985). However, the Internet inhibits instant gratification with the exception of a very limited number of products such as digital music; additionally, there is a significant and mandatory degree of cognition that seems to dictate unexpected purchases online (Partobeeah et al., 2009; Gunness, Ogilvie, & Mizerski, 2005). Clearly, the link that ties physical proximity, browsing and impulse buying is disrupted on the Internet and the three elements do not seem to complement one another. Therefore, impulse buying, as defined traditionally, has limited applicability to an online impulse situation. Considering such limitations, we shall strictly abide to unplanned buying to denote these behaviours in our study.

A closing note

This chapter has mainly offered an account of the current impulse, unplanned and planned literature that is pertinent to our study. This chapter was instrumental in 'setting the scene' for what is to come in the next chapter as we further our discussions and address mindset as an out-of-store variable that has the potential to influence unplanned purchasing – a neglect of the online arena.

CHAPTER 4: How mindset drives unplanned purchase intentions

Borrowing from multiple fields of research, this chapter provides a critical appraisal of goal theory and, predominantly, the theory of mindset, using unplanned purchasing as backdrop. These discussions serve as basis to advance part two of the conceptual framework which presents the hypothesized causal relationship between mindset and online purchase intentions, H_3.

4.1 Goals, intentions and mindset

As per the psychology literature, a goal, however minute, is a desired/anticipated outcome or end-state (Gollwitzer & Moskowitz, 1996); it is a 'molar end-state whose attainment requires actions by the individual pursuing it' (Heckhausen & Kuhl, 1985, p.137-138). In a shopping context, researchers have referred to goals as objects/products/brands to acquire, own, or display (Bagozzi & Dholakia, 1999).

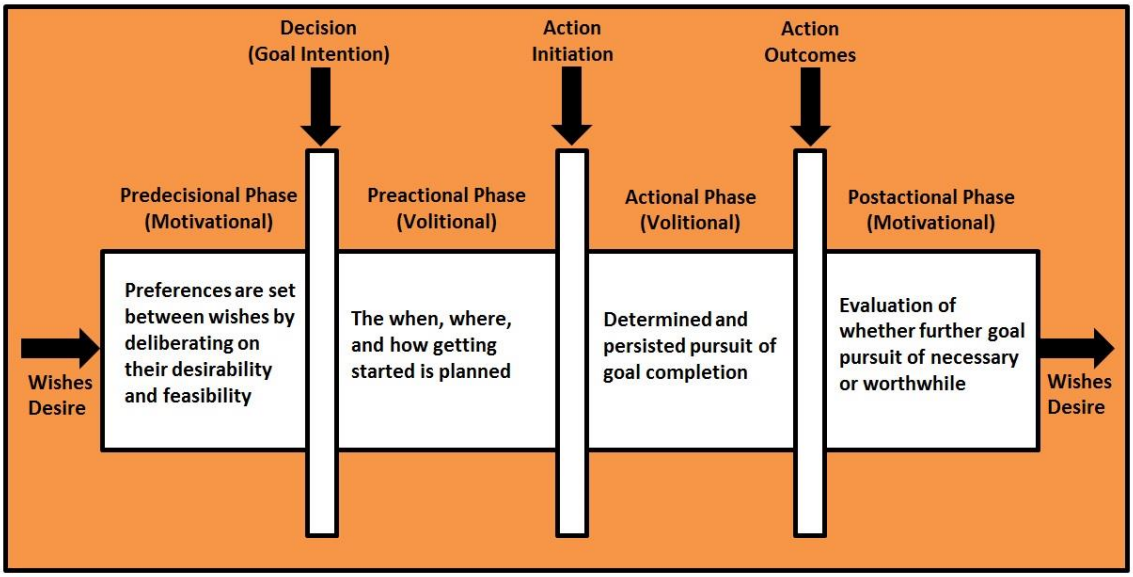
Goals are typically considered to be set in a hierarchy; according to Heckhausen and Kuhl (1985, p. 138) goals 'rest on three levels of end states with an ascending hierarchical order.' The first level (subordinate goals) constitutes of actions that need to be taken; these are typically focused on the operational aspects of the 'how to' of achieving a goal (Pieters, 1993). The second and third levels refer to the outcome of such actions and consequences of the outcome, respectively. These 'above basic levels' are characterized by reasons for following a course of action and answer the 'why' question (Pieters, 1993). Based on such considerations, it is clear goals are hierarchically arranged from basic/lower level to focal goals. The lower level acts are specific and concrete subgoals which need to be achieved in order to reach the focal and superordinate goals (Bandura, 1989; Vallacher & Wegner, 1987). It is interesting to note the rigidness (at least at the lower levels of the hierarchy) that depicts a very systematic order of affairs

and a distinct association with planning that seems crucial to the enactment and pursuit of goals (Bagozzi, 1993; Kuhl, 1984).

The construal level theory also serves to account for the construction of goals at different levels of abstractness. This theory has originally used, as basis, temporal distance to explain individuals' mental representations of events; for instance, goals that are to be attained in the near future encourage more feasibility related thought processing while those that are to be achieved in the distant future seem to trigger more desirability related thoughts (Trope & Liberman, 2003 and 2000; Trope, Liberman, & Wakslak, 2007).

Goal concreteness has also been largely explored in the psychology literature through the Rubicon model of action phases, figure 4.1, and represents a more relevant reference for our research (Gollwitzer, 1990). Heavily geared towards conscious goal determination, the Rubicon model of action phases offers a deeper understanding of goal formation and the different transition points in terms of the psychological processes that transpire from the moment an individual sets a goal until s/he achieves it. These processes encompass the 'before' and 'after' stages of when a goal decision is reached and are segmented into four different and distinct action phases. Accordingly, distinct mindsets are formed and these are congruent to the state of action that individuals are in (Heckausen, 1986; Heckausen & Gollwitzer, 1987; Gollwitzer, 1990). These stages are reviewed next; it is to be noted that the first two stages are of more immediate relevance to our study as they represent the types of information that individuals are more likely to focus on (Gollwitzer & Kinney, 1989) during their purchase processes.

Figure 4.1: The Rubicon model of action phases



Source: **Adapted from Gollwitzer (1996, p. 289)**

At the predecisional stage, individuals deliberate over various competing options/desires/wants. Individuals then start forming preferences assessed on their associated desirability and feasibility, respectively defined as 'the valence of an action's end state' and 'the ease or difficulty of reaching the end state' of the goals (Liberman & Trope, 1998, p. 7). Individuals remain highly receptive to their environments and engage into impartial information processing (Gollwitzer & Kinney, 1989; Gollwitzer, 1990; Gollwitzer & Bayer, 1999). There is a lack of framing or concretization of one's intention, as a result of which goal definitions remain quite abstract: 'I feel like eating Italian food!'. This 'fluid state of deliberation' is characterized by a *deliberative mindset* (Gollwitzer 1990, as cited in Higgins & Sorentino, 1990, p. 57). An aspect of immediate interest to this study is that the more abstract mindset stimulates the processing of affective information (Critcher & Ferguson, 2011).

Once an individual selects a goal, s/he crosses to the preactional stage. The initial 'fluid state of deliberation' that was furnished with mere intentions (Gollwitzer, 1990, as cited in Higgins & Sorentino, 1990, p. 57) transforms into implemental intentions, triggering a sense of obligation towards completion of the set goal (Gollwitzer & Bayer,

1999; Kuhl, 1984). In order to gauge successful pursuit of this goal, an individual defines an if-then plan that addresses 'the when, where, and how of goal-directed responses' (Brandstätter, Lengfelder, & Gollwitzer, 2001, p. 947): "I will stop by the supermarket on my way home to purchase all ingredients for spaghetti Bolognese for tonight's dinner!" The individual is armed with volitional persistence to follow the planned course of action, even when faced with obstacles (adapted from Gollwitzer, 1990; Kreitler & Kreitler, 1976; Gollwitzer & Brandstätter, 1997). Therefore, this phase is characterized by goals that are described in more concrete terms and an *implemental mindset*.

The actional stage is typified by the pursuit of the 'action plan' geared towards goal completion. Goal commitment and volitional intentions remain central to this stage because their strengths will define the extent of successful goal pursuit. This stage is characterized by the *actional mindset* that only focuses on aspects of the environment that are tied to successful attainment of the goal (Gollwitzer, 1990).

As the final stage of this model, the postactional stage draws individuals into an *evaluative mindset* – typified by the individual considering the extent to which the goal has successfully been achieved. This is usually done by benchmarking the actual value of the outcome against the desired/expected value as set at the predecisional stage. This implies that if, for instance, expected benefits do not exceed or do not match actual benefits the individual needs to adjust expectations to a more realistic level to avoid disappointments, or re-adjust/correct plans to ensure better success rate. Failure to take necessary future action, will again result into failed goal or one that may never be pursued, edging here on procrastination arising from repeated failure to enact on the goal intention (Gollwitzer, 1990).

Interestingly, the Rubicon model suggests a continuous process to goal enactment where goal related activities are entirely conscious or predictable and *necessarily* entail careful planning and consideration – whereas not all goals are planned or are subject to intense scrutiny.

Goals can also be translated through automated actions such as driving one's car every morning to the local bakery to buy bread, where the goal is quite spontaneous and is achieved through minimal goal-directed activities. These unconscious goals are based on habits that form the foundation for the theory of automaticity (Bargh, Gollwitzer, Chai, Barndollar, & Trötschel, 2001; Bargh, 1990). Goals can also be triggered by biological needs and arise quite suddenly, with minimal conscious processing required; for instance, wanting to eat something quickly because one is hungry (Chartrand & Bargh, 1996). As debated in the previous chapter, non conscious goals are also triggered by environmental cues and internal mechanisms, such as mood states, that, in turn, drive impulsive behaviours.

Studies investigating mindset have also evoked the likelihood of an 'unconscious' predicament involved in goal determination and its execution (Ratneshwar, Barsalou, Pechmann, & Moore, 2001; Xu & Wyer, 2007; Dhar, Huber, & Khan, 2007; Lee & Ariely, 2006; Bell et al., 2011), which, we note, differs from automaticity, because we refer here to goals that do not arise out of habits. Dhar et al. (2007) drawing inspiration from Newton's first law, proposed the shopping momentum effect. Using the mindset theory as backdrop, they proposed that the shopping momentum theory is derived from the idea that there is a mental hurdle between browsing and buying; when this barrier is eliminated, the initial purchase of a driver item triggers a shift from the deliberative to the implemental mindset, within a person. This prompts the purchase of additional items which would have been unplanned or unrelated; put simply, this change to an implemental mindset is expected to drive subsequent purchases.

However, caution is warranted in interpreting this relationship as various factors, such as the initial purchase of a heavily discounted item which may be counteracting in that the buyer perceives the next purchase as inferior, salience of personal resources, amongst other factors, can cause disruptions in this chain of events (Dhar et al., 2007). Additionally, there is no indication of whether the initial purchase incites the purchase of one additional or more items as their experiment only offered one extra item as possible

purchase besides the driver item – but it does lead one to wonder whether an implemental mindset can induce unplanned buying and if so, to what extent?

Lee and Ariely (2006) use what they term shopping goals theory to demonstrate that respondents, with relatively less concrete goals who were intercepted just before they entered the store, are more likely to modify their shopping goals than those with more defined goals, intercepted when in the store, shopping. They also manifested different levels of susceptibility to the promotions. The researchers gathered a list of the items that the respondents were expected to buy prior to entering the store and reported that those with abstract goals were more likely to spend a higher dollar value on their shopping trip. This leads to the realization that the higher amount of dollar value spent is reflective of items that they did not intend to buy, although unfortunately the researchers do not record the items bought at the end for a more accurate comparison – regardless, it is interesting to note this nuance with unplanned buying.

Interestingly, unlike Dhar et al. (2007), Lee and Ariely (2006) did not seek to demonstrate a transition from a deliberative to an implemental mindset and relied on analyzing the two stages of shopping goal independently, thus highlighting the differences in behaviours that can emanate from these mindsets, independently.

More recently, distinguishing between abstract and relatively more concrete goals, Bell et al. (2011) demonstrate that unplanned behaviours are also and, potentially, more likely to be influenced by person-to-person variance than simply the stimuli that emanate from the store environments. Of particular interest, the researchers demonstrate that goal abstractness as an out-of-store/pre-shopping factor, which they describe as one that is present before consumers step into the shop, impact on consumers' behaviours when they are *in-store*. Distinguishing between abstract and relatively more concrete goals, they demonstrate that the activation of abstract goals is more likely to induce unplanned buying, and that unplanned buying increases monotically with the level of abstractness. Further, they highlight that the effects of goal concreteness was over and above what was triggered by in store marketing stimuli. These observations prevailed regardless of whether the store

was visited first or second, or whether it offered store specific convenience (one stop shopping) or general store convenience (the convenience of visiting other stores at the same time). Therefore, the degree of goal concreteness seems to have quite a pivotal role in modelling unplanned buying tendencies.

4.2 The role of mindset in this study

The act of turning on the computer and logging in to the Internet represents a conscious decision for many buyers. However, although implemental and deliberative mindsets can be triggered at different stages of a shopping episode (Xu & Wyer, 2007), our study builds on this approach but draws on the fact that this difference may lie in the type of mental state that an individual may find himself/herself in as the latter is accessing the Internet.

Drawing from Bell et al. (2011) our hypothesis is centred around the notion that the respective deliberative and implemental mindsets adopted before accessing a website, will have self-determining effects on purchase intents when consumers are 'in store'. Their study, despite various points of similarity, differs from ours in that while the varying levels of goal abstractness are reflective of thinking 'orientations' and, therefore, processing styles, our research focuses on the mindset rather than level of goal abstractness only.

We propose that while the subordinate goal of buying a gift may be fervently ingrained in both individuals (that is, one in an implemental mindset and the other in a deliberative mindset), they may differ at the operational levels, that is, the basic levels of goal – more precisely, the 'what', 'where' and 'how' (Verplanken & Faes, 1999). The deliberative buyer is expected to spend more time on the 'what' relative to the implemental mindset who will have a more concrete idea of the 'what' (we keep an open mind about the context of the purchase – intuitively, in general, gift purchasing (which is also respondents' goal for our experiment), for instance, will entail a 'degree of what' (although to a lesser extent, for the implemental mindset as well) and is quickly expected

to solve the 'how' and 'where' because this individual is focused on efficiently using the resources to lead him/her through goal enactment (adapted from Dewitte, Verguts, & Lens, 2003). In previous research, true to the Rubicon model of action phases and its hypotheses, mindsets have been defined as a 'heightened accessibility of cognitive operations' (Gollwitzer, 1990, as cited in Freitas, Trope, & Gollwitzer, 2004, p. 750); in this study, we define mindset as a mental state that is either deliberative or implemental.

4.3 Debating the implemental vs. deliberative mindset

Based on the Rubicon model of action phases, one of the fundamental differences, with great potential to magnetize behaviours of the deliberative and implemental mindsets, relates to the types of intention that they are each furnished with – mere intentions and implemental intentions, respectively. While it is a well known fact that goal intention needs to be present in order to motivate goal attainment (Fishbein, 1980; Fishbein & Ajzen, 1975; Ajzen, 1980, 1985 and 1991), intentions simply defined as 'motivational factors that have an impact on behaviour' (Ajzen, 1987, p.44) lack the 'drive' to propel individuals into an 'execution' state – the goal process is limited to one expressing *what* one wants to achieve (for example, 'I want to go fishing') (Sheeran, Webb, & Gollwitzer, 2005; Gollwitzer, 1993).

On the other hand, when characterized by a high degree of commitment (distinct from motivational tendencies), intentions trigger the starting point to planning which encourages enactment of appropriate and specific actions 'in order to attain end performances' (Bagozzi & Dholakia, 1999, p. 20). Individuals in an implemental mindset are automatically led into overestimating the amount of control (Wilson & Schooler, 1991). Defined as the perception that an individual possesses the personal experience and resources and abilities over the environment (White, 1959; Ajzen, 1985 and 1991), high level of perceived control tends to boost one's level of motivation to effectively use the available resources in view of goal attainment (Perlmutter & Monty, 1977). Clearly, these

implemental intentions expand beyond the descriptive nature of mere intentions and drive individuals to actively implement the action plan and achieve the desired outcome (Gollwitzer & Brandstätter, 1997).

Reflectively so, in a 1997 study, Gollwitzer and Brandstätter demonstrated the effectiveness of implemental intentions (as opposed to mere intentions) on goal achievement, reporting that 62% of respondents furnished with implemental intentions successfully reached their goals as opposed to only 22% of those in the control group (for easy to achieve goals; this difference was even higher when goals were difficult to achieve). This notion has been supported by various studies in different research contexts relating to healthy eating (Verplanken & Faes, 1999), self examination of breasts for cancer (Orbell, Hodgkins, & Sheeran, 1997), self-initiation for increased usage of public transport (Bamberg, 2000), amongst others, and more recently, consumer purchasing (Bayuk, Belyavsky, Janiszewski, & LeBoeuf, 2010).

In a bid to analyze how different types of pricing promotions moderate the relationship between perceived level of control and purchase intentions, Chandran and Morwitz (2005) compared purchase intent between fixed and participative pricing conditions. In the participative pricing condition, buyers had a tendency to readily activate implemental related information such as the dollar amount for the first offer and when to bid again; therefore, given the high associated level of perceived control, the likelihood of making a purchase was higher in the participative pricing condition.

Bayuk et al. (2010) also analyzed purchase behaviours of consumers, furnished with or without implemental intentions, and had either an abstract or a relatively more concrete goal of saving money. In order to gauge an out-of-plan behaviour, the researchers tempted the respondents with the unexpected opportunity of purchasing a candy using the cover story that the university's Marketing department was interested in selling snacks and was, therefore, pretesting types of snacks in a bid to find the more popular ones. Interestingly, whilst they listed limiting dining out, drinking out, ordering food that are cheaper from restaurants, as ways for them to save money, none of the

respondents in the implemental mindset mentioned ‘avoiding impulse purchasing’ as a device to save money, thus devaluing a very legitimate out-of-plan behaviour. In fact, these respondents were also more likely to make the impulse purchase in contrast to those in the control group, (with no prior implementation intentions), who incidentally also manifested higher likelihood of saving money.

One may argue, and rightly so, that the effects of an implemental mindset in this study seem to grossly contradict much of earlier and well grounded research findings. A few researchers have explained that these results may arise through the dual impact of implemental mindset and the concrete goal formation which reinforce planning and render an individual so plan-focused that the latter becomes oblivious to and devalues commonsensical, goal consistent, behaviours (Gollwitzer, Fujita, & Oettingen, 2004).

4.4 The proposed direct effect of mindset online, H_3

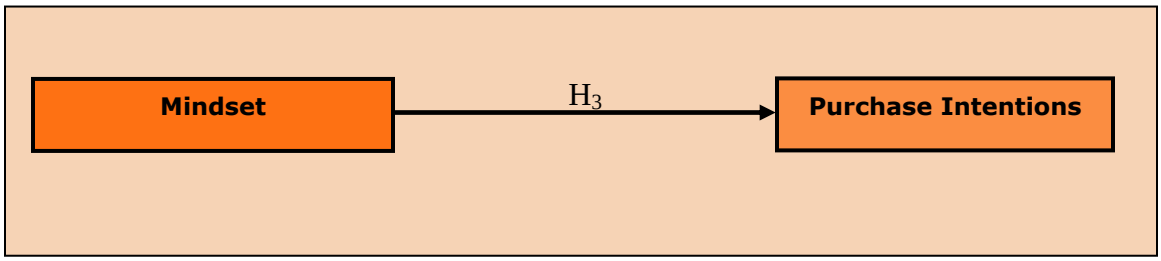
When shopping online, consumers feel more autonomous and in control of the shopping situation as compared to when they are shopping in a traditional retail outlet. This should be an element that is specially appreciated by individuals in an implemental mindset as they are automatically led into higher perceived levels of control. Therefore, as perceived control can act as motivation to promote goal attainment, we suggest that, in the context of online shopping, individuals in an implemental mindset will use website visits primarily for problem solving and consequently actively seek cognitive/informational stimulation (Perlmutter & Monty, 1977; Hirschman, 1980). Additionally, parallel to the concept of selective perceptual attention (Hauser & Wernerfelt, 1990), buyers in an implemental mindset can be expected to filter all undesired and irrelevant information so that further consideration is only given to the relevant alternatives that are, as a result, perceptually enhanced (Alba, Lynch, & Hutchinson, 1991). Thus, they will follow a ‘specified’ action plan and efficiently use the

available resources to lead them through goal enactment (Bargh & Gollwitzer, 1994); the combined effects of which should trigger higher likelihood of planned purchasing.

In contrast, we expect consumers who are in a deliberative mindset to be more receptive to and exert more flexibility towards their environment. Given the lack of 'motivation' for goal framing, they are more likely to perform unconscious processing and implicit learning and develop preferences for items in a less conscious manner (Fred & Ye, 2005; Evans 2008). Therefore, because of their exploratory penchant which is reflective of their state of mind, individuals in a deliberative mindset will manifest greater readiness to make changes in their decisions so that the rate of changed decisions during this stage can be expected to be high (Gollwitzer, Heckausen, & Ratajczak, 1990). We propose to test the following hypothesis (presented in figure 4.3),

H_3: The likelihood for unplanned purchasing will be higher for buyers who access a website in a deliberative than for those in an implemental mindset.

Figure 4.2: Proposed hypothesis, H_3



CHAPTER 5: How lock-in and mindset affect emotional and behavioural OOS reactions

---

This chapter presents stockout as a situational variable to analyze the impacts of lock-in and mindset, both independently and jointly, on consumers' emotional and behavioural reactions. With this goal in mind, it discusses the most pertinent traditional and online OOS literature, much of which is grounded in the implications of costs associated with a stockout in different lock-in and mindset conditions. Finally, this chapter advances several arguments that lead to the formulation of hypotheses H_4 to H_9.

On a recent Sunday, Gary Jones, 54, logged onto JCPenny.com …to order Star Wars pajamas for his grandchildren in the U.S. He tossed the pj's and other gifts worth several hundred dollars into his electronic shopping cart-and then spent an hour trying to find the delete button to spike unwanted items. He clawed his way back to the main menu and endured a tedious checkout process, only to learn the stuff he wanted was out-of-stock.

Simmering with frustration, he killed the entire order. "I just threw my hands in the air and said, "Enough is enough," he says.

(Forbes, 1999, p. 1)

5.1 Background

5.1.1 Out-of-stock (OOS): A costly interruption

Out-of-stock (OOS) or stockout, defined as the temporary unavailability of products/brands (Verbeke, Thurik, & Farris, 1998; Schary & Christopher, 1979), is a phenomenon that has incited researchers' attention as early as the 1960s (Peckham, 1963). With its impact extending onto the whole supply chain, its prevalence is still being noted. For instance, research based on U.S supermarkets purport that on any given day, 15% of promotional grocery products are OOS (Grocery Manufacturers of America, Roland Berger, & Direct Store Delivery Committee, GMA, 2002), while a 2003 study conducted on European FMCG retailers revealed that 7% - 10% of items were OOS (Roland Berger); a more recent report has highlighted that a global average of 8.3% of items is typically OOS (Gruen & Corsten, 2008).

While OOS represents a phenomenon for which total eradication is not expected, it induces varying levels of both long and short term tangible, such as revenue losses to retailers and category sales losses to manufacturers, as well as intangible losses, manifested through dissatisfaction, unhappiness, frustrations, complaining behaviours and negative word of mouth. These often translate into reduced store patronage amongst both existing and potential customers, resulting, therefore, into loss of consumers (even those loyal) to competition (Vergin & Barr, 1999; Sloot, Verhoef, & Franses, 2005; Zinn & Liu, 2001; Karakaya, 2000; Campo et al., 2000; Westbrook, 1987; Schary & Christopher, 1979).

The OOS phenomenon also extends to the online shopping arena, as noted by the opening quote from Forbes magazine (1999). While an earlier study by Talaga and Tucci (2001), identified a 'movement' with consumers choosing to visit the online store because of perceptions as a potential source of inventory, this observation does not seem to be a constant, or may simply be limited to such items as books and CDs given the

Internet's ability to hold thousands of entries/titles. Regardless, online OOS incites both tangible and intangible costs. Firstly, on the financial side, online OOS can account for up to $25 billion in losses (Data Ventures, 2001, in Kim & Lennon, 2011). On the intangible front, Jing and Lewis (2011) highlighted the negative effect that cumulative stockouts have on customer retention, while a study by Dadzie and Winston (2007) led the researchers to conclude that OOS has a more pervasive negative impact on repurchasing or satisfaction online than offline. In fact, e-buyers' patience when confronted with OOS seems to be short lived in that 68% of buyers defect after the third OOS episode only (E-tailing, 2007) – we are, however, limited in our discussions as the latter report did not measure the possible effects of loyalty whereas evidence suggests that loyals are more tolerant of OOS than non-loyals (Shankar et al., 2003; Jing & Lewis, 2011).

Reflectively so, online related OOS literature, as of recently, seems to be experiencing a 'mini surge' of OOS studies (Kim & Lennon, 2011; Kim, Kim, & Lennon, 2006; Breugelmans et al., 2006; Dadzie & Winston, 2007; Jing & Lewis, 2011), some of which have proposed fresh ECR (Efficient Consumer Reactions) strategies to mitigate and control the negative impacts of OOS. These include replenishment policies, more 'visible' stockout announcements, the provision for financial compensations, a reduction in levels of OOS to increase customer equity, suggestions or replacement items, amongst others (Breugelmans et al., 2006; Verhoef & Sloot, 2005; Jing & Lewis, 2011; Majumder & Groenevelt, 2002).

As an interruption on individuals' goal attainment activities, a stockout situation holds the power to offset consumers' emotional states and behaviours because of the frustrations of delays and the need to readjust and re-evaluate cognitive processes associated with task completion (Xia & Sudarshan, 2003). Therefore, an out-of-stock situation, as an interruption and barrier on buyers' decision and purchase process (Clee & Wicklund, 1980), brings, in its wake, different costs to be considered, implying that a buyer's emotional and behavioural reactions (that can also defined by the severity of

emotional responses) are often the result of a tradeoff amongst these associated costs (Campo et al., 2000).

In effect, traditional OOS information may be constrained in its applicability to the Internet (Kim & Lennon, 2011). For one, the purchase of grocery items has been the focus of traditional research which, however, is not popularly traded for online; although results based on Breugelmans et al.'s (2006) online study for grocery purchase paralleled offline observations (Kim & Lennon, 2006). Additionally, given the nature of the Internet, OOS related costs are bound to be confined to instrumental elements of buyers' purchase episode, examples of which can include having to invest further search efforts, compare offerings (possibly extending across more than one site), amongst others (adapted from Balasubramanian et al., 2005), whereas costs, otherwise associated with OOS in the brick-and-mortar, such as mobility, become quite irrelevant to online buyers. As well, although the Internet possesses the power to incite affective and cognitive sides, a significant portion of purchases online occurs predominantly for the convenience that it offers (Yoh, Damhorst, Sapp, & Laczniak, 2003), such as quick ordering of items, ability to quickly locate items, and so on (Dadzie, Chelariu, & Winston, 2005). Finally, with the advent of the Internet, it is important to acknowledge the additional and different behavioural reactions that the Internet entails such as switching websites and even shopping channels, more commonly to the brick-and-mortar (Dadzie & Winston, 2007) – although there is evidence that experienced online consumers utilize the Internet primarily as an information source to guide their purchases in the brick-and-mortar (Cheema & Papatla, 2010). Therefore, it is quite clear that the Internet is unique at least on the basis of costs and utility derived from OOS episodes, as a result of which one should expect wide variations in responses.

As personally related variables that are bound to vary in the level of costs when faced with OOS, the literature boasts of fragmented evidence in support of the possible impacts of lock-in and mindset – although, we found no research that explicitly explored these relationships in an online OOS context. For instance, Dadzie and Winston (2007) and Breugelmans et al. (2006) have demonstrated that loyalty and website familiarity

have a negative effect on consumers' switching intentions when faced with an OOS, although Dadzie and Winston (2007) acknowledge that this relationship is very likely to alter with urgency of purchase. We extend this notion; given the relative prevalence of goal pursuit and goal achievement in the context of mindsets, we predict that mindset will affect decision making in the context of an OOS. We also explore the combined effects of mindset and lock-in and debate the possible directions for their influences on emotional as well as behavioural reactions.

5.2 A glimpse into traditional OOS and the layers of costs

Stockouts potentially induce 15 different types of reactions that are typically adopted by consumers; these can be broadly classified under five generalized primary lines of reactions that include (Sloot et al., 2005; Campo et al., 2000):

1. Item substitution: the purchase of the same brand, however of an alternative SKU (stock keeping unit)
2. Brand switching: the purchase of the same item but of a different brand
3. Store switching: Buying the item at a different store
4. Cancellation of purchase: not purchasing the item at all
5. Delay of purchase: buying the item at the same store, but at a later date

Contradictory reports have been drawn with relevance to the most prevalent reaction. A few researchers purport that item switching represents the most common reaction adopted by consumers in the event of a stockout situation (Emmelhainz, Emmelhainz, & Stock, 1991; Walter & Grabner, 1975; Corstjens & Corstjens, 1995) while others report that brand switching is the most frequently registered reaction (Schary & Christopher, 1975). Researchers explain that such variations are context specific and can be attributed to methodological differences (Kim & Lennon, 2011), or the type of good under investigation (Dadzie & Winston, 2007), as well as consumer, situational and

store characteristics associated with a purchase episode (Collacchio, Tikhonova, & Kisis, 2003).

In any case, the consumer weighs the different costs before either of the decisions listed above may be taken; the latter's judgment is often based on a trade-off amongst these associated costs, with the buyer aiming to choose the option that maximizes utility and entails the lowest level of costs (Campo et al., 2000).

Using economic theory, Campo et al. (2000) propose a costs-based approach to comprehend and explain the interaction of different costs and shopping behaviours in an out-of-stock situation. They divide these costs into opportunity, substitution, and transaction costs. For the purpose of clarity, these will be referred to here as the 'primary level' costs. In turn, these are mediated by a different set of factors/costs emanating from product-, consumer-, situation- and store characteristics, referred to as 'secondary level' costs. These are discussed next and presented as part of figure 5.1 (adapted from Sloot et al., 2005) together with traditional OOS behavioural reactions (reviewed shortly).

5.2.1 Costs involved at a primary level

- Opportunity costs

  These are defined in terms of the loss in utility of not being able to consume the good and/or if consumption is reduced. When the opportunity costs of consuming an item immediately are high, consumers either substitute the item or look for it in another store; opting to purchase another item of a different brand or size, enables individuals to acquire products as per planned. Therefore, opportunity losses are avoided. On the other hand, low opportunity cost may see the consumer either delaying or cancelling the purchase because the level of utility to be derived from the unconsumed item is low; therefore, not consuming the item as per planned (Campo et al., 2000).

- Substitution costs

  According to Jones, Mothersbaugh, and Beatty (2002, p. 441) substitution costs are ‘the perceived economic and psychographic costs associated with changing from one alternative to another’; simply put, substitution costs refer to the difference in usefulness between a favourite item and the substitute item, store, brand, size and service provider. This usually stems from the extrinsic and intrinsic appeal represented by the missing and the substitution item. When the substitution costs of acquiring a less preferred brand are high, the consumer will either postpone or cancel the shopping trip or even purchase from another store, but he/she will not substitute the brand because of the effort one will have to invest into learning, re-familiarizing oneself with the new product/brand/retailer; higher level of performance risk is also associated with using the untried brand. Finally, the ‘comfort’ experienced with the incumbent retailer is lost.

- Transaction costs

  Transaction costs relate to those costs incurred in acquiring the substitute item and comprise of search, holding and shopping costs (time, effort and transportation costs). These encompass expenses involved in setting up a new account, terminating an existing relationship with the retailer, informing others of such changes, amongst others. If transaction costs are high the consumer will either opt to substitute the item/brand or cancel the purchase (Klemperer, 1987).

5.2.2 Costs involved at a secondary level

The magnitude of the aforementioned associated costs is, in turn, dependent upon a multitude of factors tied to product-, consumer-, situation- and store- characteristics which cause reactions to diverge from case to case. They shape SDL (acronym for substitute-delay-leave) behaviours (Zinn & Liu, 2001) as well as the level of satisfaction and likelihood to return to a store (Fitzsimons, 2000; Winston & Dadzie, 2007).

Product-related variables can be defined by the degree of involvement with the product in question, availability of alternatives and item loyalty (Campo et al., 2000 and 2004; Emmelhainz et al., 1991; Desjardins, 2002). For instance, Corsten & Gruen (2003) reported that products regarded as personal items create less willingness to switch demonstrating, therefore, that category involvement dictates decisions. Similarly, extended to an online retail setting, Jing and Lewis (2011) report that niche products (such as baby products) have negative repercussions in the long term whilst in the short run, consumers may resort to stockpiling strategies. We are, however, limited in furthering this discussion as the study was predominantly focused on uncovering the more positive repercussions of a stockout. Switching behaviours are also positively related to the acceptability of alternatives, in that substitution costs at the item level tend to be lower when the store assortment contains substitutes that are considered acceptable to the buyer whereas item substitution amongst those loyal entails higher psychological costs and search costs as a result of their limited experience with alternative items (Hoyer, 1984).

Consumer variables are reflective of the consumers' attributes: lifestyles/traits, demographic backgrounds, preferences in general and general time constraints (Zinn & Liu, 2008). As per traditional literature, the consumer with a more positive attitude towards shopping will not perceive investing more time on this activity as a burden – in the event of an OOS, store switching is then a very attractive option (Babin, Griffin, & Darden, 1994; Campo et al., 2000). Interestingly, Zinn & Liu (2001), testing the short term consumer responses vis-à-vis stockouts, report that demographic variables are not significant correlates of SDL behaviours whilst Peckham (1963) reports lower substitution rates amongst older consumers who have more time to spare and can, therefore, look for the preferred brand or item at another store.

The extent of OOS costs also extends to situational variables and these are dependent upon the time and occasion peculiarities of a purchase experience, and may not necessarily be related to specific products in question (Zinn & Liu, 2001). If urgency is associated with the purchase, the consumer will substitute the item or switch to another

store, but are less likely to delay the purchase. In so doing, the latter avoids negative repercussions, such as the frustration and maybe even the embarrassment of, for instance, not having enough candles on one's son's birthday cake for the party organized that same night (Campo et al., 2000; Zinn & Liu, 2001).

Finally, store characteristics relate to the characteristics of the store as perceived by the consumer. These characteristics include the perception of the level of prices as compared to other competing stores, the level of OOS in the shop, and loyalty vis-à-vis the store (Zinn & Liu, 2001). If consumers perceive the store as one that offers low prices, when faced with an OOS, they are more likely to delay the purchase and avoid having to pay more for the same item elsewhere (Zinn & Liu, 2001), unless presented with the availability of (relatively) inexpensive substitutes. In larger stores, promotions are more likely to facilitate substitutions (Kucuk, 2004). While loyalty to a store implies likelihood to switch to another product brand on offer at the same store, OOS episodes can negatively alter customers' perceptions of the store, as a result of which customers may be permanently lost to another store (Fitzsimons, 2000). Such trend has also been reported by Jing and Lewis (2011) in an online shopping context, however, amongst less loyal e-shoppers in the immediate term; site switching was a more common option amongst the more loyal buyers who experience OOS in the longer run.

5.2.3 The interplay of various costs and their impacts on substitution reactions

5.2.3.1 Product switching

If a consumer contemplates substituting the missing product, at first glance, associated transactions costs may prove to be very high, because of extra time and effort to be invested in trying to find a substitute item, whether at the same store or at a different one. Therefore, the consumer becomes less susceptible to substituting the OOS item, opting instead to either postpone or cancel the purchase (Sloot et al., 2005). However, the interplay of additional influential elements renders this decision more complex, with transactions costs, in fact, representing only a fraction of the equation.

The decision to switch is moderated by the urgency and usage of the product being sought after. If opportunity costs of acquiring the product are high, the probability for substitution is high as well; therefore, as mentioned, the more urgent the purchase, the higher the chances for substitution. In effect, Emmelhainz et al. (1991) reported that 85.5% of surveyed customers substituted the unavailable item because it represented a pressing need in that it was needed the day of the shopping trip.

Transaction and acquisition utility have often been tied to the purchase of a product. The former is related to being able to acquire the product-need characteristics at a given price while the latter is tied to the satisfaction (psychological payoff) derived from acquiring a product at a lesser price than normally paid for (Monroe, 1990; Monroe & Chapman, 1987). The latter point implies that changes in prices should most definitely affect utility derived from purchasing the product. In the event of the preferred item being out-of-stock, it has been reported that customers are more sensitive to price increases, succumbing more easily to purchasing a lower priced item (Blattberg, Eppen, & Lieberman, 1981; Gupta, 1988).

However, this observation was further explored by Krishnamurthy, Mazumdar, and Raj (1992) who report that setting the prices at a lower level does not necessarily lend a competitive edge and does not automatically imply an immediate purchase on the part of consumers. Prices also need to be favourable to the consumers' internal standards. Further, brand loyals are not affected by price cuts as much as switchers are. The rationale is that brand loyals are mostly seeking to maximize acquisition utility (Krishnamurthy et al., 1992).

5.2.3.2 Size and Brand switching

Campo et al. (2000) declare that opting to purchase another item of a different brand or size enables individuals to acquire products as per planned, thereby avoiding opportunity losses. In case a consumer is faced with an incomplete selection of SKUs (stock keeping unit: one brand in different flavours, sizes, etc.), the latter may decide to look for an alternative such as switching to a different package size.

Previous studies are in agreement that when confronted with an OOS of the desired brand, if both a larger and a smaller size of the same brand are available, the greater tendency is to select the smaller size (Campo et al., 2000; Gruen, Corsten, & Bharadwaj, 2002; Blattberg, Peacock, Buesing, & Sen, 1978). When another brand is substituted, the tendency is to select a cheaper substitute. Such reaction is consistent with a general risk-averse tendency of the consumer. A smaller and/or cheaper substitute lowers the economic and total usage risk of an unknown substitute (Gruen et al., 2002).

Deals encourage consumers to switch brands in the short term. For instance, Gupta (1988), Bell, Chiang, & Padmanabhan (1999) and Pauwels, Hanssens, and Siddarth (2002) respectively report that 85%, 75% and 73% of brand switching occurred as a result of price promotions in the immediate term. It is to be noted though that the different reactions vary with deal types (Dodson, Tybout, & Sternthal, 1978) while deals or other kinds of purchase incentives do not necessarily result in the long run repurchase of a product. This effect has been attributed to the theory of self perception whereby the reason for purchase, when a product is discounted, is not clear to the consumer. It is interesting to add that brand loyalty 'is usually a matter of degree' (Corstjens & Corstjens, 1995, p. 198). In fact, Laurent & Kapferer (1989) classify brand choice behaviour under 3 categories: the brand loyal, the repertoire and promiscuous. The brand loyal customers always stick to the same brand; the second category of loyal buyers switches amongst a range of brands which they deem acceptable; the last category relates to buyers who are open to any brand and demonstrate a relatively lower, and maybe close to zero, level of loyalty. Logically, the latter are more readily influenced by promotions, deals, amongst others.

Corstjens and Corstjens (1995) stipulate that the cost of switching brands (CSB) is dependent upon the marginal satisfaction; more explicitly, the more the brand is preferred as compared to the available alternative, a higher level of satisfaction is given up. Therefore, the level of substitution costs is very significant. Additionally, brand switching entails brand relationship loss costs that are incurred in the form of broken bond losses and include the lost meanings which were derived from associations with a brand

(McCracken, 1986). When the substitution costs involved in using a less preferred brand are high, the consumer will substitute the product, go to another shop, but will not substitute the brand.

5.2.3.3 Store switching

Cited as a line of action that is less popularly adopted by consumers, store switching, nevertheless, warrants attention as it represents losses to the retailers and, potentially, the manufacturers if consumers decide to defect to another brand/item. Store switching decisions are primarily based on cost-benefit tradeoffs (Corstjens & Corstjens, 1995). For instance, travelling to another store is dependent upon the mobility of the consumer and the location of the store stocking the sought after item; a consumer may not be prepared to invest extra time travelling to another store because of other higher prioritized activities, such as spending time with the family. Campo et al. (2000) discovered quite an opposite picture and report that store distance, mobility and the importance represented by the product do not significantly affect stockout decisions. They attribute this lack of influence to the context surrounding their study such as the products under analysis (magarine and cereals) as well as the store environment.

Having to switch stores can encompass substitution costs when the substitute store does not offer the item sought for, causing a loss in variable shopping utility. Such would be even higher for big shopping trips as compared to fill-in trips, although those on a large shopping trip, in general, prefer to switch items because dropping a purchase implies lower opportunity costs (Bell, Ho, & Tang, 1998).

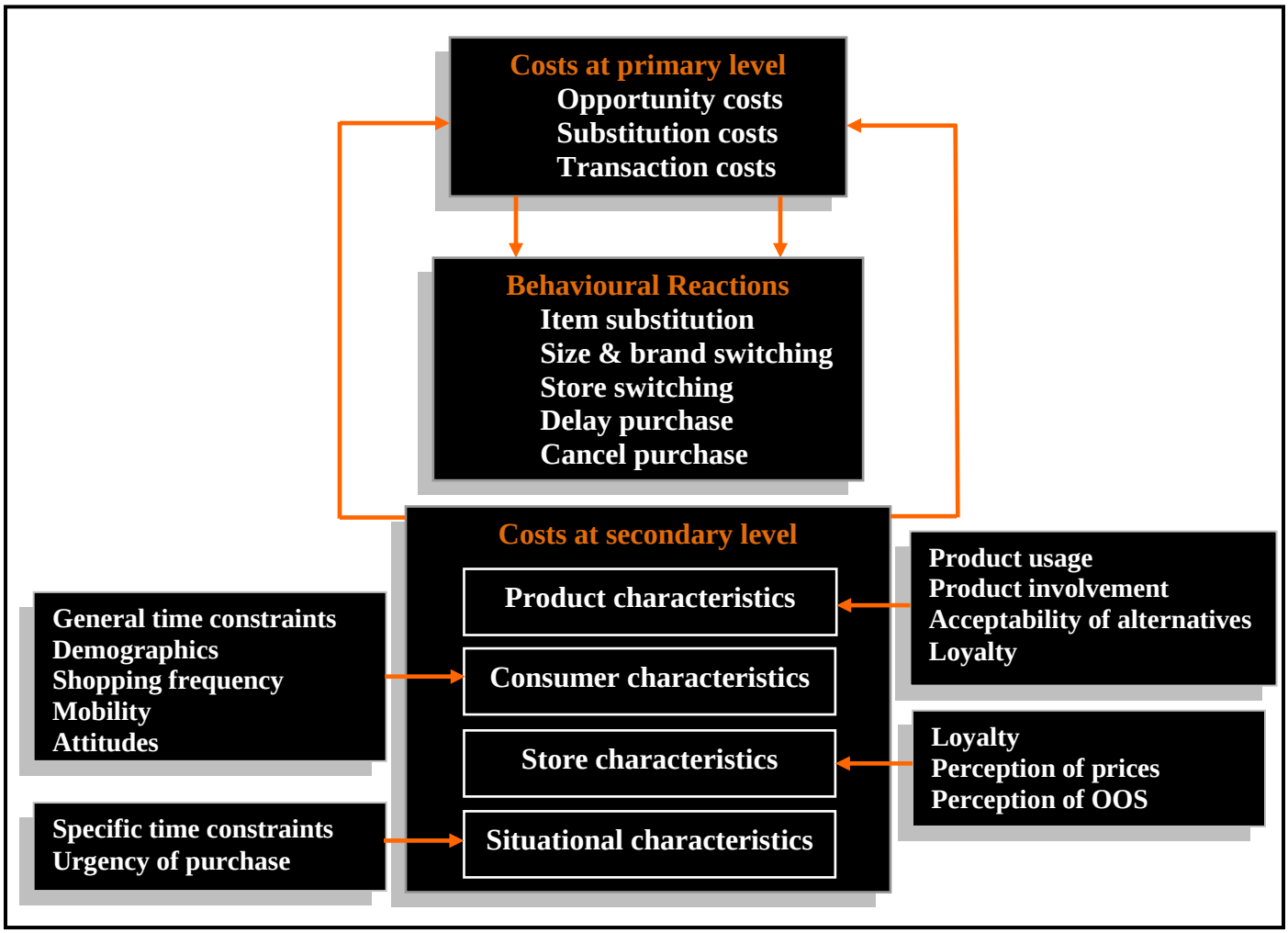
Bell et al. (1998) who investigated the fixed components (dependent on in store assortments, service offered and the store image) and variable components (the price and quality of products offered) components of such utility, report that the fewer the alternatives available to the consumer, the higher is the fixed shopping utility costs. Bell et al. (1998, p. 365) state that basically, a shopper on a large shopping trip will prefer higher fixed as opposed to variable costs since the fixed cost is ‘divided across more

items'. Store switching also entails high variable costs when the consumer is mainly a purchaser of private label products (Schary & Christopher, 1979).

Loyalty towards the store induces customers to delay shopping trips (Emmelhainz et al., 1991). In the short run, store loyals postpone their purchases and come back at a later date. Interestingly, in the long run, researchers state that these store loyal customers will be more inclined to switch brands if they view the perceived costs associated with finding their preferred brand in another store as high (Reynolds et al., 1975). More specifically, if a consumer is faced with a stockout situation the more the latter is loyal to the store, the higher the fixed utility of shopping in another store (Schary & Christopher, 1979; Emmelhainz et al., 1991; Corstjens & Corstjens, 1995; Bell et al., 1998).

Postponement of a purchase can signal a greater tendency to switch stores in the long run (Corstjens & Corstjens, 1995; Campo et al., 2000; Campo et al., 2002). Indeed, while in the short run irritated customers opt for a different brand, if the cost of switching brand outweighs that of substituting the store, probably arising from permanent assortment reactions (PAR) and lengthy periods of product unavailability, consumers may reconsider/modify their shopping habits and switch to a more appealing store which stocks their preferred brand.

Figure 5.1: Typology of different levels of OOS related costs and behavioural reactions



5.3 Insights into OOS emotional responses

5.3.1 Theoretical underpinnings: Psychological reactance and discrepancy-evaluation theory

Literature in psychology advances that cognitive appraisals, commonly measured along the dimensions of control, certainty, pleasantness and anticipated effort of an organism's environment, impact on emotions which, in turn, dictate behavioural reactions. As mentioned, emotions aroused in store dictate approach and avoidance behaviours so that positive mood states generated in the store encourage people to feel that they have more freedom to purchase what they want (Isen & Levin, 1972). On the other hand, an OOS is bound to incite feelings of non-attainment of one's goals, and this negative affect (adapted from Babin et al., 1994; Dawson et al., 1990; Gardner & Rook, 1988) can manifest itself in the form of complaining behaviours, negative word of mouth, dissatisfaction and failure to revisit the store (Westbrook, 1987).

Essentially, based on the notion that emotional responses are the result of cognitive appraisals of a situation, the discrepancy-evaluation theory of emotion postulates that individuals construct mental structures of abstract components based on their knowledge and experiences; these structures are known as schemas (Wyer, 1980). Using these schemas as references, individuals develop expectations of 'what should be' (Mandler, 1984). Therefore, when exposed to an environment, new information is processed and arranged to fit the schema. However, information that is not fitting tends to create distortions between expectations and actuality, thereby creating discrepancies. This is also manifested through interruptions such as broken links, error messages (discussed in the context of lock-in, chapter 2), and encountering a stockout when shopping, all of which cause irritation and frustration. Consumers develop expectations of being able to buy their item of choice. Therefore, a stockout falls short of these expectations; this discrepancy leads to visceral arousal which 'sets the stage for cognitive evaluation and subsequently evokes negative emotion' (Kim & Lennon, 2011, p. 120). Consistent with

OOS findings that were modeled on the theory of reactance (discussed shortly), Kim et al. (2011) found that late notifications of a stockout lead to stronger emotions, further amplified if the item is one of higher preference. Similarly, the negative emotions evoked by the stockout mediate the effects on store image and satisfaction.

A considerable portion of emotions related OOS behaviours has also been investigated through the theory of reactance (Fitzsimons, 2000; Min, 2003); such is manifest of reactance being relevant to situations where the element of freedom is central (Clee & Wicklund, 1980), as extended to research to increased pricing and product attractiveness, retail advertisements, promotional rewards (Kivetz, 2005), unsolicited recommendations (Fitzsimons & Lehmann, 2004), interface preferences (Murray & Häubl, 2011), amongst others.

Reactance theory, originally developed by Brehm (1966), postulates that if an individual's expected freedom of choice is taken away or threatened, this constrained freedom will spark motivation to re-establish that freedom and regain control. This motivational state is referred to as psychological reactance. In addition, an individual's 'magnitude of reactance is a direct function of the relative importance of the eliminated/threatened behavioural freedom compared to other freedom of the moment' (Brehm, 1972, p. 5); simply put, reactance is positively correlated with the level of attractiveness that the individual feels towards the perceived or actual loss of freedom.

Psychological reactance is displayed through such feelings as frustration, irritation, anger, aggression, amongst others. As a manifest of aggressive reactions, the retailing literature boasts of considerable evidence that demonstrates how consumers 'punish' retailers through such actions as swapping shops/websites, spreading negative word of mouth, amongst others (Sloot, Verhoef, & Franses, 2005; Zinn & Liu, 2001; Karakaya, 2000; Campo et al., 2000; Westbrook, 1987; Jing & Lewis, 2011). To this end, Fitzsimons (2000) tested the impact of an out-of-stock situation and the influence of available alternatives on consumers' purchase patterns. Besides an overall decreased satisfaction level when products were not available, the author reports that consumers exposed to a stockout demonstrated significantly higher rates of store switching as

compared to those who were not exposed to a stockout. These results were specially applicable to consumers' preferred alternative not being in stock. In fact, the unavailability of items rating first on their consideration set saw an increase of 53% in the consumers' likelihood to switch to another store in their second visit. When the OOS item was the last alternative, the increase in store switching likelihood was considerably reduced to 24%; a study by Doyle (2006) found that most people were also irritated by an OOS situation that led them to switch to the competing site.

Reactance is also more severe if an individual feels that the freedom was taken away in a manner that was personally targeted (Clee & Wicklund, 1980). Brehm (1966) argues that when people believe they will be able to choose freely between options, having that freedom taken away in a manner that is perceived as personally directed is much more likely to lead to high levels of experienced reactance – in this instance, anger can be a very powerful emotion, distinct from other negative emotions as one believes to have been intentionally wronged (Lazarus, 1991; Averill, 1982).

In the OOS literature, the extent of the effects of personally targeted messages has been evidenced through the phrasing of the stockout notification. Fitzsimons (2000, p. 256) manipulated the perceived personalization of a message with the OOS announcement as either personally or impersonally targeted ('due to limitations in the number of samples prepared by the manufacturer, Formulation C is unavailable to you at this time', 'due to limitations in the number of samples prepared by the manufacturer, Formulation C is unavailable at this time', respectively). While in general, the announcement of the OOS generated dissatisfaction, the effect was more pronounced when OOS announcement had a more personal connotation.

In effect, psychology researchers have observed that interruptions that occur in the middle of a process are more deterious than if they were to occur at the beginning or at the end of a primary task (Carragio, 1990; Schuh, 1978). In a retail setting, an OOS message usually causes buyers to react strongly and announcing OOS late in the purchase experience has a negative and even stronger bearing on customers (Fitzsimons, 2000).

Hence, to those consumers who were prepared to engage into a purchase, learning that the product is OOS would lead the latter to experiencing psychological reactance and cause consumers to defect or cancel, amongst the most popular reactions. In contrast, psychological reactance is minimized if consumers learn of the choice constraint prior to making a selection (Fitzsimons, 2000).

5.4 Proposing independent and joint effects of mindset and lock-in on OOS reactions, H_4 to H_9

5.4.1 Mindset, perceived control and OOS

As mentioned earlier, when shopping online it is important to take into account that consumers feel more autonomous and in control of the shopping situation as compared to when they are shopping in a traditional retail outlet. However, such control may decrease in instances where the browser is unable to download a page, or when the page takes time to load because of the high level of online traffic (which may be matched with crowding effects in the traditional retail outlet) (Eroglu et al., 2001), or when facing an OOS situation. Therefore, perceived control, also used as an alternative label for dominance (Russell & Mehrabian, 1976; Seligman, 1975), represents a significant dimension in the context of Internet retailing (Eroglu et al., 2001; Menon & Kahn, 2002), being specifically important for utilitarian buyers (Kidwell & Jewell, 2003). Given their rational aptitude to shopping, in a stockout situation, these buyers will seek to avoid losses in utility (and avoid opportunity costs in terms of time and convenience, for instance) and, expectedly so, choose the next best alternative on offer (Campo et al., 2000). Therefore, a logical expectation would be for buyers who are in an implemental mindset to follow suit and select the next best alternative.

However, studies investigating the boundary conditions of the implemental mindset and the extent of its effectiveness, have reported that while a high level of control promotes goal attainment, it also carries the risk of poor performance. Substantiated further, when an individual overestimates his/her level of control, achievement of a goal induces high concerns for self presentation, implying increased pressure to perform well. Such pressure gives rise to heightened consciousness over one's performance process; the individual succumbs to such pressure which then causes the latter to under perform (Baumeister, 1984; Burger, 1987 and 1989) – although such pressure can also prove to be more positive, but, at lower degrees (Burger, 1988).

As stated earlier (chapter 4), once individuals progress to the second stage of the Rubicon model, the implemental mindset tends to lead individuals into overestimating the amount of control that they have over their environment; because they have a specific goal to pursue, they engage into conscious information processing, where predominantly cognitive information, and only information which is incidental to the goal at hand receives further attention. Because of its limited processing ability (Wilson & Schooler, 1991), the implemental mindset is more apt to perform poorly as compared to the deliberative mindset. Such has been proven in relation to information recall; for instance, in a study by Heckausen and Gollwitzer (1987), interruptions were made on individuals and recall was better amongst deliberative people, with the deliberative mindset successfully retaining a large amount of general information. Therefore, because their periphery for information intake is wider (hence, a broader working memory span), a buyer in a deliberative mindset is in a better position to integrate this information into his/her decision making and make better decisions than the implemental mindset whose narrow focus on information acts as a barrier to better opportunities and more efficient goal related decisions (Gollwitzer & Kinney, 1989; adapted from Dijksterhuis, Nordgren, & Baaren, 2006).

As discussed in chapter 4, Bayuk et al.'s research (2010) showed that consumers furnished with implemental intentions tended to overestimate their task performance. In chapter 4, we argued for the dual impact of implemental mindset and the concrete goal

formation which reinforce planning and render an individual plan-focused, increasing, therefore, the likelihood for planned behaviours. However, because of the higher initial sense of perceived control, when faced with an OOS situation the implemental mindset will feel a greater loss in control over the situation and, therefore, a more immediate need to re-establish this 'expected' freedom (Chadee, 2011). While buyers in an implemental mindset are expected to manifest stronger negative emotions, analogous to Bayuk et al. (2010) who found the implemental mindset to remain oblivious to and devalue commonsensical and goal consistent behaviours, we expect the implemental mindset to resort to more drastic reactions such as restart their purchase process, presumably at the high lock-in site, rather than choose the next best alternative, for instance, which, by the same token, would, otherwise, satisfy their need to maximize utility. In contrast, the deliberative mindset, for whom the utility lost from not being able to acquire the selected item is not great, given their more accurate and realistic judgments, should choose to purchase the next best alternative.

Knowledge of the decision environment can dictate the efficiency level with which an OOS situation is handled (Xia & Sudharshan, 2002). Indeed, those who are in an unfamiliar environment may feel limited in their options when a website does not carry the product that they opt for. As a consequence, it becomes cognitively more effortful to look for another item so that their task is rendered more difficult; therefore, we can expect more severe emotional reactions from those facing an OOS at a low lock-in site.

In contrast, newer customers (at the merchant's site) tend to be less forgiving of an OOS situation (Jing & Lewis, 2011). We expect this observation to extend to the level of lock-in felt at a site. Therefore, given the 'expected' freedom and the higher level of acquaintance with a more familiar site, consumers will seek to regain control by returning to the high lock-in site when faced with an OOS at a low lock-in site. However, this effect is expected to be dampened among those in the deliberative mindset. While they do not face high opportunity costs relative to those in an implemental mindset, brought about by a situation of 'near urgency', we, nevertheless, expect that adaption to a low lock-in

site will represent a challenge and a loss in utility, both for the deliberative and implemental mindset. Therefore, we posit that those whose goal is abstract, instead of cancelling the purchase or shifting to a high lock-in site, may simply choose the next best item. Based on the aforementioned discussions, we propose to test the following hypotheses, all of which are portrayed in figure 5.2.

H_4: When facing an OOS, buyers in an implemental mindset are more likely to demonstrate strong negative emotions than those in a deliberative mindset.

H_5: Buyers who are in an implemental mindset and experience an OOS at a low lock-in site are more likely to switch to a high lock-in site and look for an item than stay at a low lock-in site.

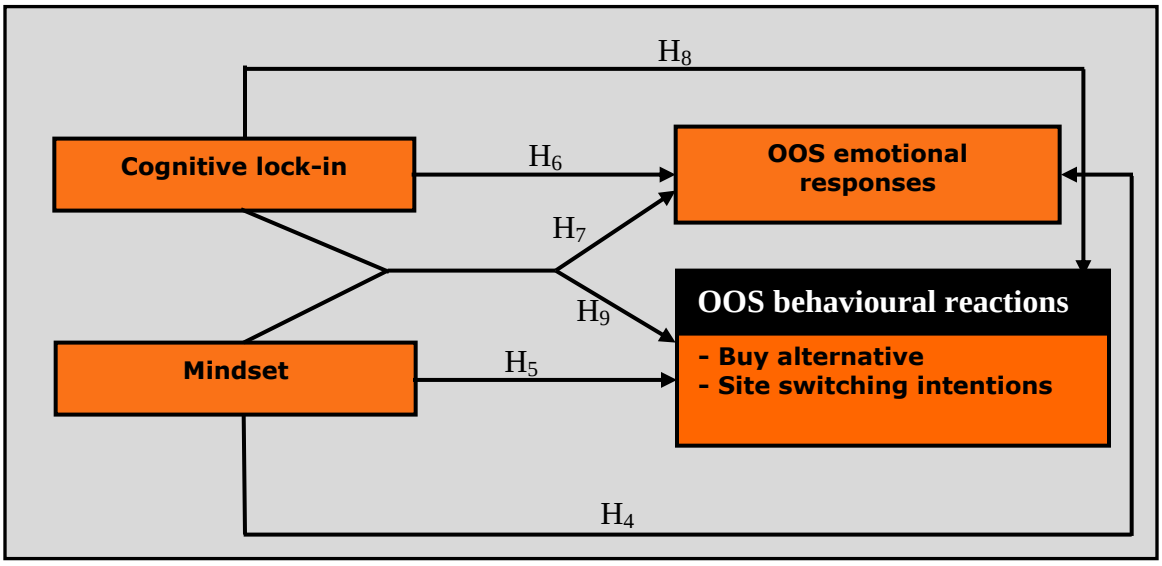
H_6: Consumers will experience stronger negative emotions if OOS occurs at a low than high lock-in site.

H_7: Buyers in an implemental mindset will experience stronger negative emotions if OOS occurs at a low than when it occurs at a high lock-site, while the emotions of buyers in a deliberative mindset will not differ between an OOS encountered at a low and a high lock-in site.

H_8: Buyers are more likely to switch from a low lock-in site than a high lock-in site when an OOS is encountered

H_9: Buyers in an implemental mindset are more likely to switch to a high lock-in site than those in a deliberative mindset

Figure 5.2: Proposed hypotheses, H_4 to H_9



CHAPTER 6 – Research Methodology, the online experiment

In this chapter, we critically review the procedures and issues related to the conduct of the online experiment designed to answer the research hypotheses. This chapter also provides an account of the operationalisations for all dependent and independent constructs, as well as the various manipulations for lock-in and mindset. Finally, this chapter reviews the potential sources of bias inherent to this experiment and debates the precautions that were observed to control their impacts. The reader will note that the first 3 phases of the experiment were designed to tease out reactions for proposed hypotheses in chapters 2 and 4, $H_{1(a)}$ to H_3; phase 4 focused on the OOS scenario designed to tackle the hypothesized effects proposed in chapter 5, H_4 to H_9.

6.1 General overview – experimental procedures

We conducted a 2x2 mixed factorial experiment to test all proposed effects. The use of the experimental approach enabled the researchers to control the manipulations of lock-in and mindset. Additionally, given the use of a factorial design, through the conduct of a single experiment, we concurrently tested (a) the main effects of mindset and lock-in, (b) their joint effects on behavioural intentions and OOS emotional and behavioural reactions, and (c) the degree to which the causal relationships between experience and behavioural intentions varied in strength under conditions of high vs. low lock-in (Zikmund, 2003; Cox, 1958; Aaker, Kumar, & George, 1998; Hair, Anderson, Tatham & Black, 1998; Kuehl, 1999).

The online experiment manipulated the extent of lock-in at 2 levels, high and low, and mindset to be either deliberative or implemental. Low lock-in and no mindset manipulation served as control conditions.

Members of an online panel (recruited via Research Now, a research based Australian company) participated in the experiment after receiving an e-mail invite with a link to one of the 56 experimental URLs (further explained in the next section). All conditions guided respondents to 2 Australian commercial websites, with the hypothetical task of ultimately selecting a birthday gift to purchase for someone special.

6.1.1 The derived experimental and control groups: (3x2) +1 design

To induce the lock-in conditions, we varied the number of items to be selected from each site. Under the high lock-in condition, respondents selected 6 items, 3 from each category (hampers and flowers), and under the low lock-in condition (also the control condition), they selected 2 items, one from the each category (hampers and flowers). These made up their lists of items from which they were later to choose their final selection.

Whilst each participant visited 2 sites, a total of 4 sites[3] (the choice of which is further discussed in section 6.2.2) was selected for this experiment in order to avoid being too dependent on the singularities of any individual website and to (somewhat) spread the risks that any site would malfunction as, in contrast to the popular use of fictitious websites in studies of lock-in (Murray & Häubl, 2002 and 2007), these were commercial websites over which the researcher had no control. The use of existing sites also added to the realism of respondents' task because it allowed the researcher to integrate the Internet's ubiquitous nature and the individual decision-making process of shopping online into one experiment (McKnight et al., 2002). On that note, it was only fitting to select online vendors that were trading Australia wide for the reason that panel members were sought across Australia and issues would otherwise arise with delivery time and costs.

[3] These were www. giftsaustralia.com.au, www.flowers.com.au, www.7daysflorist.com.au, www.dstore.com.au

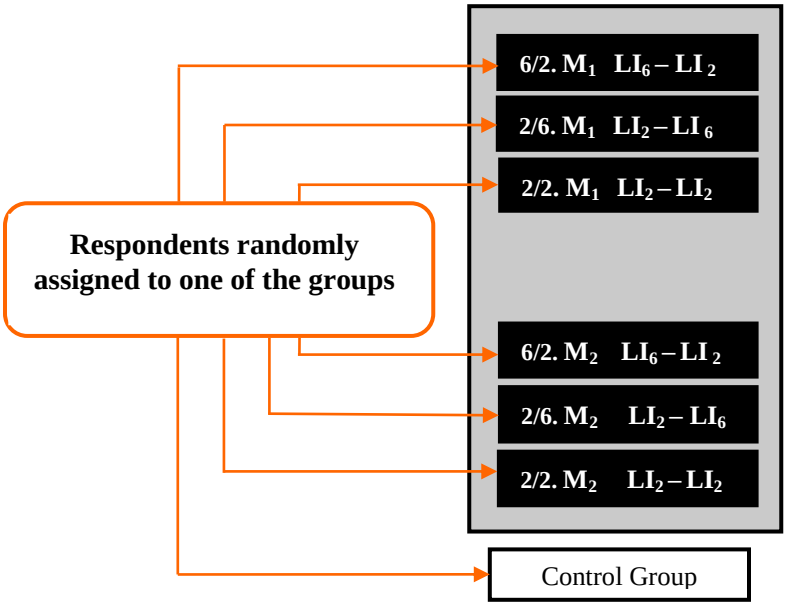
A website's content, cues, presentation, depth of information, amongst others, can potentially influence consumers' experiences and ultimately their purchase decisions (Constantinides, 2004; Kwon & Lennon, 2009; Shankar et al., 2003). Because lock-in was a within subject variable, to control for the effects of website content on preference as well as to ensure that lock-in manipulations were independent of the order of site exposure, all pairs of websites and lock-in conditions were presented in a balanced way. The number of items to be selected from each site was altered to be either 6 and 2 *or* 2 and 6.

Under each website combination, 7 groups were formed, labeled as 6/2, 2/6, 2/2 and the baseline group (no manipulations); these numbers reflect the number of items searched and selected at each site and represent the associated lock-in conditions. For example, 6/2 represents an initial search for 6 items (at site A), creating high lock-in, followed by a search for only 2 items at site B, creating a low level of lock-in to this site. Each of these groups received treatment for either the implement mindset, represented by M_1 or the deliberative condition, indicated as M_2. Combined, all 7 groups formed one block. These are depicted in figure 6.1.

Holding all treatments constant for each block, we rotated the order of each possible pairs of sites to form block 2, 3, and so on. So, for instance, assuming that in block 1 respondents visited sites www.giftsaustralia.com.au and www.flowers.com.au, those in block 2 would visit the same sites, but in the reversed order.

Ultimately, the (6 x 2) +2 experimental design was administered for each of the 4 *original* combinations of sites; therefore, respondents were randomly allocated to one of 56 conditions. A unique survey link was created for each condition. It is to be noted that site A always referred to the first site visited and site B, the second.

Figure 6.1 – Experimental and control groups



Legend:

M_1 is Implemental mindset

M_2 is Deliberative mindset

LI_2 is low lock-in/control

LI_6 is high lock-in

6.2 Lock-in manipulations

The degree (high and low) to which respondents were locked in to the site was manipulated as a within subject variable because it was important to incite preference for one site over the other. Of the standard elements that previous studies have used for the successful manipulation of lock-in, the researcher adopted number of practice trials to initialize lock-in. This manipulation was reinforced by using sites that were different and unique enough so as to develop skills that would not be readily transferrable to the other/competing site (Murray & Häubl, 2007). It is to be noted that since we reviewed the various manipulations for lock-in chapter 2, to avoid repetition, we focus on an appraisal of the manipulations more pertinent to this study's context.

6.2.1 Number of practice trials

As stated, a higher number of practice trials/experience culminates into familiarity (Alba & Hutchinson, 1987). In their 2002 study, Murray and Häubl manipulated the number of practice trials from 1 to 6 product search tasks requesting respondents to look for a product, with attributes specified. They demonstrated that mean task completion time was at its lowest at the 6^{th} trial, which they explain is the point where the respondents were the most efficient having acquired higher levels of skills.

We adapt Murray and Häubl's (2002) operationalisation for practice trials and manipulate the number of products to be searched for at each site. While these researchers manipulated the number of practice trials *from* 1 *to* 6, we manipulate the number of practice trials by asking respondents to search for either 2 *and* 6, or 6 *and* 2, or 2 *and* 2 products, following their visits at each site respectively. Naturally, the higher number of products reflects the higher number of practice trials, hence the high lock-in condition; on the other hand, a search for two products was designed to induce the low lock-in condition. As previously mentioned, 6 items in the high lock-in represented a selection of 3 items from each category; the use of 2 items denotes a condition where participants had to select 1 item from each category. Respondents' choices were typed and represented each respondent's individual list of eight or four items (further explained in section 6.4.2).

It is of importance to mention that the choice for two product categories rests on the rationale that the researcher was not aiming at creating lock-in to either product category per se, but rather to the websites. Additionally, breadth of a category can potentially impact on information processing and in so doing confound manipulations (Ülkümen, Chakravarti, & Morwitz, 2010). As a result, respondents were expected to select equal numbers of items from both categories, irrespective of the condition (s) that they were in.

6.2.2 Extent of similarity – selected websites

As mentioned earlier, Murray and Häubl's (2002) study showed that only in the condition that skills acquired at the incumbent were non transferrable, did higher exposure lead to a positive impact on the development of preference, and, therefore, higher lock-in. This observation was particularly relevant when website interfaces differed for the simple reason that, in this case, customers cannot readily and easily adapt the skills learnt to other sites, making the option of having to learn new skills as rather unattractive. Therefore, to successfully induce high lock-in manipulations, there need to be differences between the incumbent and the competing site, at least on certain attributes.

In their 2002 study, Murray and Häubl manipulated the similarity between the incumbent and competing interfaces. Sites that were similar only differed on colour scheme. To create dissimilar sites, besides different colour schemes, either radio buttons or drop down menus were used as screening tools; finally, the locations of product related attributes were altered.

In the immediate study, the task of selecting commercial websites based on the same characteristics, proved to be close to impossible. This was because although most of the sites that were of relevance to this study seemed quite unique in their use of colour scheme and would, at first glance, appear to differ, they, however, had very similar layouts, with for instance, the menu bar placed on the left hand corner of the interfaces; additionally, within each site, the categories of hamper and flowers had similar types of product organisations. Such similarities beg for the observation that many have learnt of the value of intuitive navigation designs which they have reproduced, making it more challenging to create a point of differentiation (Johnson et al., 2003).

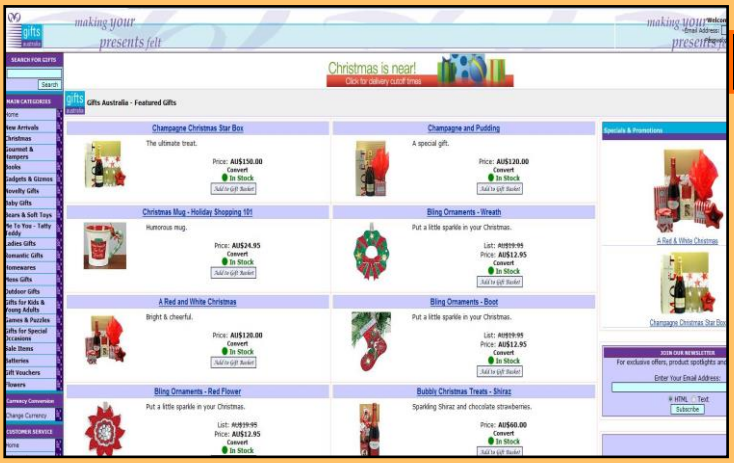
In a bid to make up for this lacuna, besides selecting sites that had a unique colour scheme, motivated by feedback gathered from pretest exercises, the researcher chose sites that differed on other functional attributes such as product descriptions and the range of

products on offer. Some of the sites contained more detailed descriptions about each product. Two of the four sites offered additional categories besides hampers and flowers; theses included books, DVDs, amongst others, with the rest of the sites only specializing in the sale of hampers and flowers. They are depicted in figure 6.2.

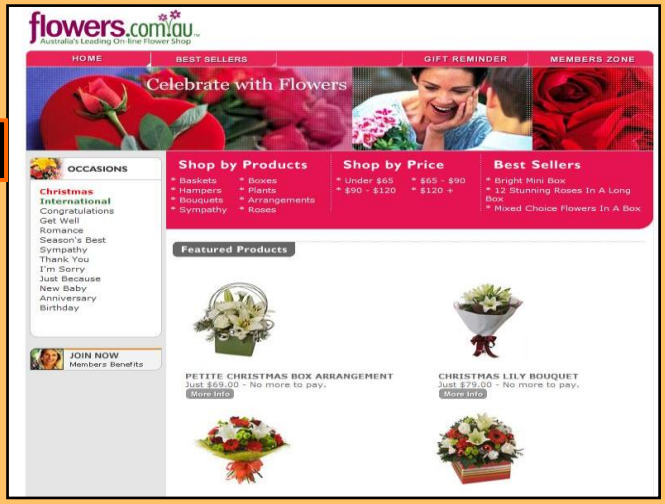
We acknowledge that visiting sites that offer fewer product categories could have confounded the lock-in manipulation because such would have meant decreased experience at these sites. Equally, visiting sites that carried extra range of items, could have diverted respondents away from the task at hand. If it did, logically, respondents should invest more time at these sites. To control for this, the experiment specifically directed the respondents to purchase either flowers or hampers. Additionally, time taken for completion of the experimental tasks was compared across all groups and combinations of websites. Results are discussed in chapter 7.

Note needs to be taken that the final sample did not include respondents that had visited either of the selected websites prior to their participation in the experiment. This was ensured by screening out those who had visited either site prior to the experiment. By so doing, the researcher ensured that none of the respondents experienced familiarity to either website before the actual lock-in manipulation in a bid to avoid inflating the level of acquaintance to any of the two sites.

Figure 6.2: The selected websites



www.giftsaustralia.com.au



www.flowers.com.au

www.dstore.com.au

www.7daysflorist.com.au

6.3 Mindset manipulations

We treated mindset as a between subject variable because the effects of mindset on thought processing do not dissipate easily and may persist during subsequent activities. Indeed, in a 1990 study, Gollwitzer, Steller, and Heckhausen placed respondents in either of the mindset conditions (implemental or deliberative). When asked to perform a subsequent exercise, they continued to manifest thoughts/characteristics that were congruent to their initial frames of mind. Given the experiment's string of successive activities/steps, it was important to promote carry over effects of the related mindset in order to measure their independent effects. Therefore, respondents were randomly placed in either of the two mind conditions, not both.

In the lead up to creating the implemental and deliberative mind frames, while retaining the core of what both mindsets entail, the researcher steps outside the traditional and grounded characterizations for mindset to offer an alternative that is more tailored to the online user. In the case of the implemental mindset, the researcher's main aim was to ignite 'search directed visits' (Janiszewski, 1998), and motivate a 'which to buy' attitude (adapted from Xu & Wyer, 2007) at the very onset of website visits. In contrast, to ignite the deliberative mindset, the researcher aimed at engaging candidates into more exploratory search behaviours that were expected to promote dependence on the environment for decision making.

Next, we review several ingredients, adapted from the current marketing as well as psychology literature that we used to manipulate mindset.

6.3.1 Ingredient 1: Temporal distance – 3 days vs. a few weeks

To induce the different mindsets, we manipulated temporal distance by setting two different time frames until the birthday event. Implemental mindset candidates were

to imagine that they only had 3 days until the birthday as opposed to those in the deliberative mindset whose event was in a few weeks' time.

This initiative is based on prior research on construal level theory (reviewed earlier). We expected the near future time perspective to create a 'near urgency' situation and enhance the necessity of acquiring an item, thereby inducing concrete lower level goals that would strengthen the implemental mindset. Respondents would, therefore, enter the sites with an immediate focus on forming a purchase decision, that is, 'which to buy' (Xu & Wyer, 2007). Consequently, they should be more inclined towards processing information that would include delivery time and costs, for instance – this is a transition into the utilitarian side of their purchase tasks which we review in the next section ('ingredient 2').

On the other hand, those in the deliberative mindset condition were to imagine that the birthday was in a few weeks. The idea was that respondents would start their visits in a 'leisurely' manner and focus on 'looking at' (deliberating over) various the possible choices. Consequently, this was expected to encourage 'loosely defined' lower level goals and dampen the importance of 'what to buy' in the early stages of their visits.

6.3.2 Ingredient 2: Functional vs. hedonic benefits

The implemental mindset was expected to be focused on using the website visits primarily for problem solving and actively seek cognitive/informational stimulation (adapted from Hirschman, 1980). We channelled implemental candidates towards the functional aspects of their purchases; first, they were instructed to pay attention to delivery time and costs. This was reinforced by presenting them with a list of reasons, in the form of a multichotomous scale, that they would associate with choosing the items (adapted from Bhatnagar & Ghose, 2004). The list included 'good value for money', 'within budget', 'on time delivery', 'good price' and 'good quality', of which respondents could highlight as many as they found relevant.

In contrast, we encouraged the deliberative candidates to concentrate on the hedonic benefits of the items selected (adapted from Critcher & Ferguson, 2011). While there was no mention of delivery time and costs, they were to think about and highlight the feature(s) that they liked best about their selections. The list included 'beautiful', 'nice packaging/presentation', 'person will like', 'will make person happy', 'looks fresh and expensive' where, again, they highlighted as many as they thought relevant. It is to be noted that in both cases the lists (of reasons and features) were guided by feedback generated from pretest interviews.

6.3.3 Ingredient 3: 'Directed search' vs. 'exploratory search' visits

While all respondents were to visit 2 sites and draw up a list of 2 and 6 items (or 6 and 2, or 2 and 2 – depending on the conditions they were in), for implemental mindset candidates, the list had to include items that they *would* definitely consider purchasing one from. Used in auxiliary, 'would' was expected to ignite a strong desire towards purchase possibilities, simultaneously reiterating goal- and search-directed attitudes during website visits (adapted from Moe, 2003).

In contrast, the instructions were modified and read as *could* consider purchasing for those in the deliberative mindset in order to dampen the certainty level associated with purchase possibilities (Lee & Ariely, 2006). In so doing, the researcher aimed at reinforcing a state of open mindedness during purchase activities.

6.3.4 A note on product categories: Hampers and flowers

Firstly, the researcher controlled for product type by offering choices across 2 similar product categories – flowers and hampers, both of which represent experience products that cannot be sampled prior to purchasing (Bhatnagar & Ghose, 2004). This initiative was expected to gauge the success of mindset manipulations, although not directly. Not constraining the product category to one implied that those in the

deliberative mindset condition would not feel compelled to choose from only one category, with options encouraging browsing. The reverse impact was expected for the implemental mindset who should, consequently, engage into selective processing. This initiative also allowed the researchers to observe choices across categories, items and sites, and measure switching behaviours and (un) planned purchase intentions, as discussed more extensively in section 6.5.1.2.

6.4 Procedure for main experiment

6.4.1 Sampling issues

As stated, all respondents were recruited via an existing online panel (Murray & Bellman, 2011; Mandel & Johnson, 2002; Burke, 2002), offered by Research Now – a leading permission-based panel provision service for marketing researchers in Australia. E-mail invites to one of the 56 experimental links were randomly sent out to approximately 5000 panel members, requesting their participation in completing a survey (Burke, 2002). This data gathering process was randomised so that each participant had an equal probability of being assigned to either of the experimental or control groups. In so doing, the researcher was also to control for differential influences so that the distribution of the respondents' characteristics across all groups was unbiased.

6.4.1.1 Sample justification

Researchers have highlighted the continuous entry of first time shoppers on the Internet. This reflects the varied experience levels in terms of shopping, thus drawing attention to the different subgroups of (potential) online buyers (Reibstein, 2002; Holloway et al., 2005; Bo-Chiuan, 2008). Therefore, the study aimed at gathering a pool of panel members with diverse profiles in order to allow for the effects of individual differences to be tested.

The sample of completes consisted of online buyers and non buyers; however, the final sample was precluded of those who were not first time merchant buyers (Reibstein, 2002), because these respondents could confound the lock-in manipulation in that, quite logically, they would feel more attracted to the site that they were already familiar with. All respondents were aged 18 and above, firstly, for ethical reasons; secondly, they were more likely to purchase (Johnson et al., 2003).

6.4.1.2 Sample size

Sample size if too high may artificially increase effect size (Pedhazur, 1997), but, if too small may decrease effect size and hamper the detection of experimental effects (Xia & Sudhrashan, 2002 – study 4). Observing the general rule of thumb, the researcher should aim at gathering a minimum of 30 responses for each cell (Finn & Kayande, 1997). Therefore, given the use of a 2x2 mixed design, a sample of 120 respondents was the minimum required to yield satisfactory statistical power and detect differential effects. This threshold was met as, although unequal, each cell far exceeded the minimum number of 30 legitimate cases per treatment, after data cleaning.

Nevertheless, a series of analyses were run and the rule of thumb for sample size varies in accordance with the number of parameters and multivariate analyses being used. Therefore, the appropriateness of sample sizes is reviewed accordingly under the relevant section (s).

6.4.2 Conducting the experiment

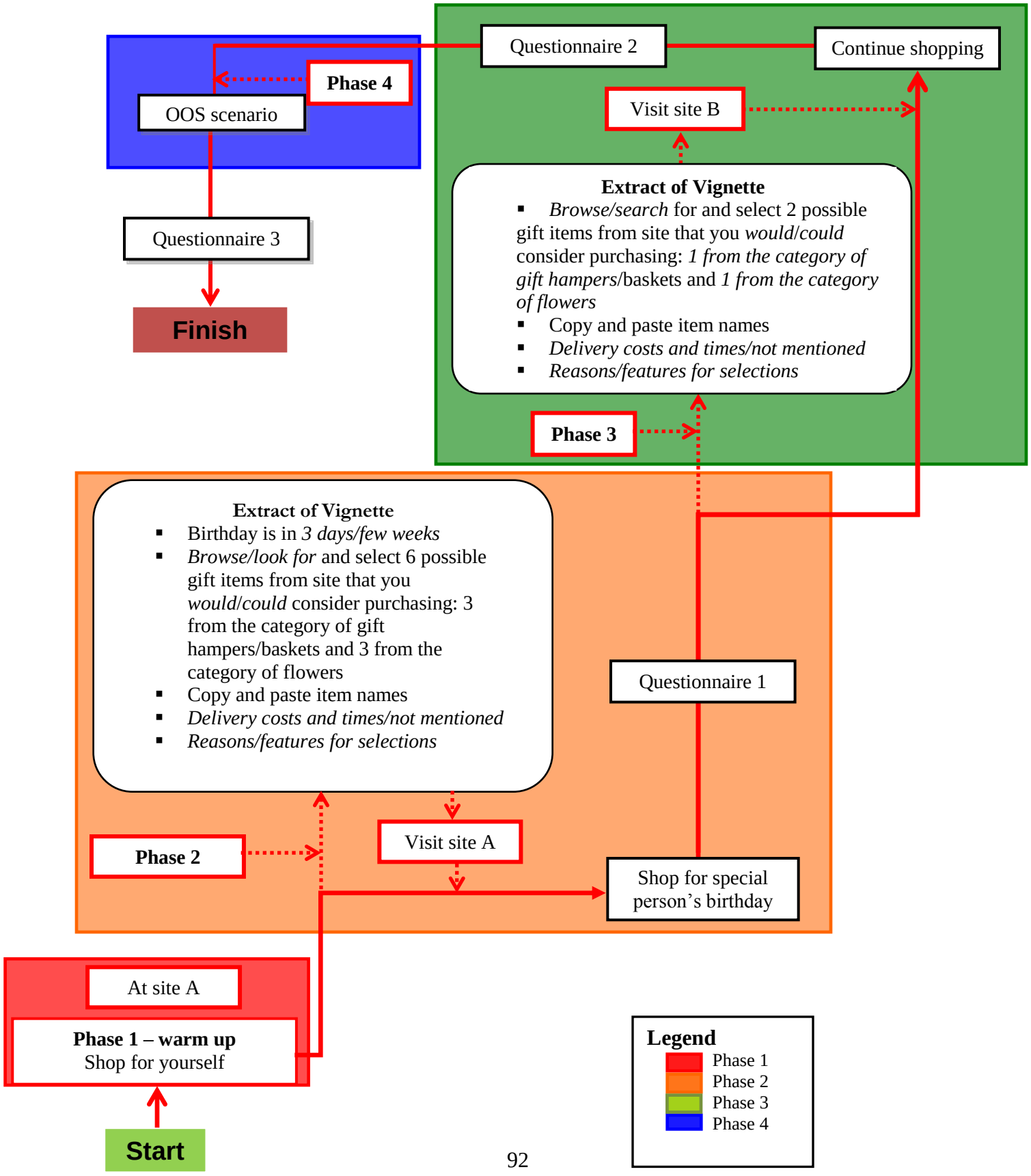
The Explanatory Statement (appendix C), also the opening page, served to solicit participation (Dillman, 2000). It communicated brief details of the study's background and the importance associated with carrying out the experiment. To reduce socially desirable responses, the explanatory statement did not communicate the real purpose of the experiment. Instead, a cover story was used, stipulating that the study aimed to understand online gift purchasing amongst the Australian population. Confidentiality was also stressed.

As agreement to participate, participants could click on the 'proceed' button located at the bottom of the statement, hyperlinked to the survey hosting site where respondents could then start the experiment. To encourage voluntary participation, they could also choose to cancel participation at any time during the experiment, with the 'cancel' button located on every page. The experimental process was divided into 4 main phases, as listed next.

1. Warm up exercise: In this phase, respondents visit site A to find an item that they would buy for themselves.
2. Respondents visit site A again and select gift items for someone special's birthday.
3. Respondents visit site B and select additional items – respondents make their final purchase decisions.
4. Respondents are presented with an OOS scenario at the hosting site.

These phases are diagrammatically presented in figure 6.3 and explained thereafter. To promote understanding, figure 6.3 depicts procedures as per the 6/2 group, randomly assigned to visit one of the pairs of websites.

Figure 6.3: 'Roadmap' for online experiment



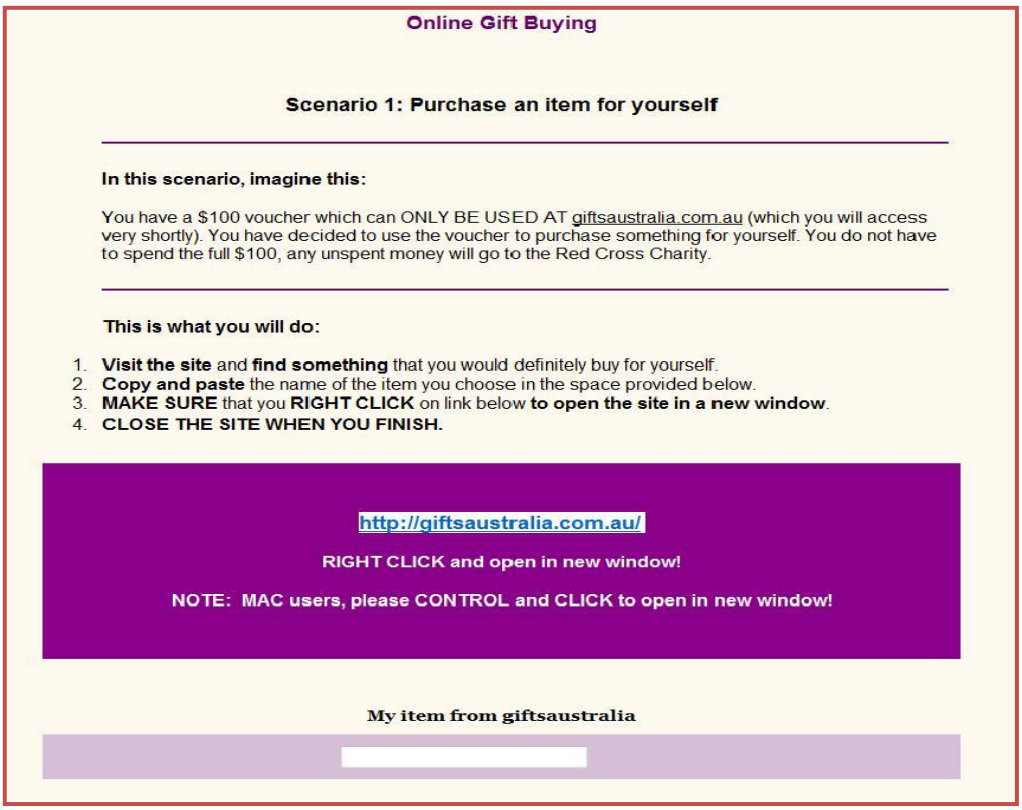
6.4.2.1 Phase 1: Warm up – 'visit site A, find an item that you would buy for yourself'

As opening assignment (depicted by the first box in figure 6.3), respondents spent some time looking for an item that they would buy for themselves at site A. We acknowledge that this initiative implied that the respondents would potentially become more acquainted to and, hence, feel more highly locked in to the first site visited. However, we made a tradeoff and utilized this as a warm up exercise to create an 'ambience' of purchasing and naturally ease respondents into the flow of the subsequent set of activities (Senecal & Nantel, 2004). Additionally, given that in the pilot test, we registered a drop out rate during website visits, this technique also encouraged those who were likely to drop out to do so prior to the real experiment (Reips, 2000). Further details are offered in section 6.6.1 in support for the warm up exercise.

Tasks and goals vary widely in a normal shopping situation, the researcher restricted the amount of money to be spent to $100 – respondents imagined that they were using a gift voucher of $100 to make the purchase and should the purchase be under $100, the leftover money was to be donated to the Red Cross (Morrison, Wang, Oppewal, & Waller, 2005). Figure 6.4 shows the warm up exercise.

As noted in figure 6.4, the hyperlink to the external website was strategically placed so that respondents could click on it and instantly visit the site. The website opened in a new window and could be closed at any time. This technique was used every time respondents visited an external site.

Figure 6.4: Screenshot for warm up exercise



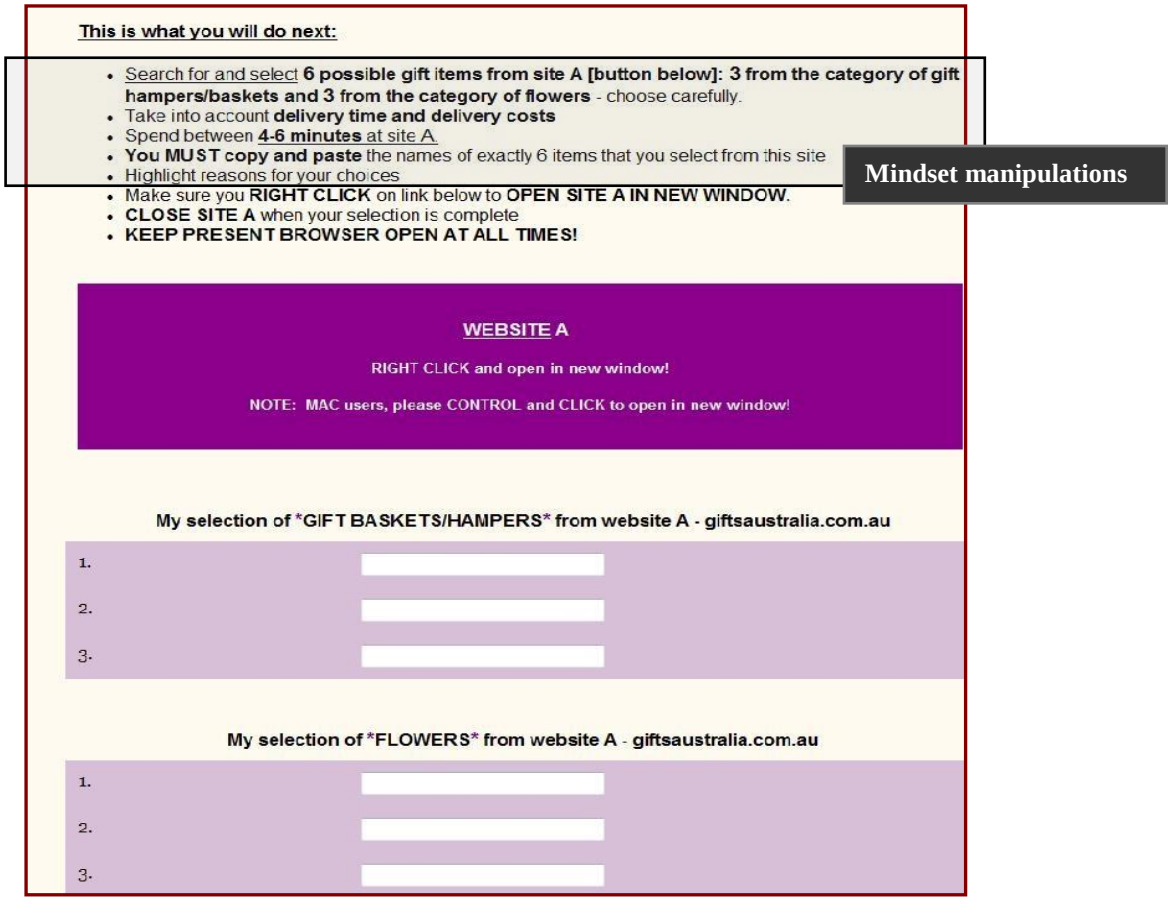
6.4.2.2 Phase 2: Respondents Visit site A again, select gift items for someone special's birthday

In this phase, participants returned to site A. The opening vignette, depicted by figure 6.5, served as the demarcation line for lock-in manipulations. Respondents received instructions to select 6 items (or 2, if in the low lock-in or control conditions) for further consideration. Each selection was not to exceed $100 and any unspent money was to be donated to the Red Cross. However, this time, the purchase was for a special person's birthday. By choosing a special one as recipient for the gift meant that the purchase decision was more personally relevant, as compared to, for instance, choosing a colleague (as suggested and supported by pretest candidates).

The opening vignette also contained the first elements for mindset manipulation:

1. Candidates assigned to the implemental condition received instructions that the birthday was in *only 3 days'* time. In contrast, those in the deliberative mindset viewed the same screen except that the number of days was changed to *a few weeks.*
2. Instructions also directed implemental respondents to *search for* 6 items (or 2) that they *would* consider buying for the birthday; in contrast, deliberative candidates were to *browse for* 6 items that they *could* consider buying.
3. The implemental mindset candidates needed to carefully consider *delivery time and costs*, with *no such specification* for those in the deliberative mindset condition.

Figure 6.5: Screenshot for opening vignette

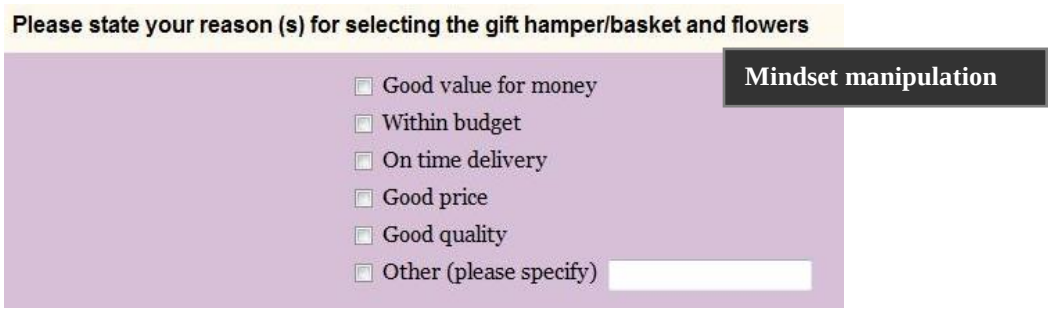


Respondents moved back and forth between the commercial and hosting sites to copy and paste the names of each of their selections. All 6 item names were automatically fed into the survey program as part of their individual lists of 8 (or 4) items [from which they were later requested to choose one for purchase]. This exercise also served to verify whether the respondents had completed the task's goals appropriately since item names could be cross checked against those being offered at the time the experiment was being carried out.

Next, and also as the last element to the mindset manipulation, implemental mindset candidates highlighted reasons for their selections, as depicted by figure 6.6, while deliberative mindset candidates highlighted features that they liked best about the

items listed. These lists were presented in the form of multichotomous scales and, as mentioned earlier, included items that emerged from the pretests.

Figure 6.6: Screenshot for reasons for selections



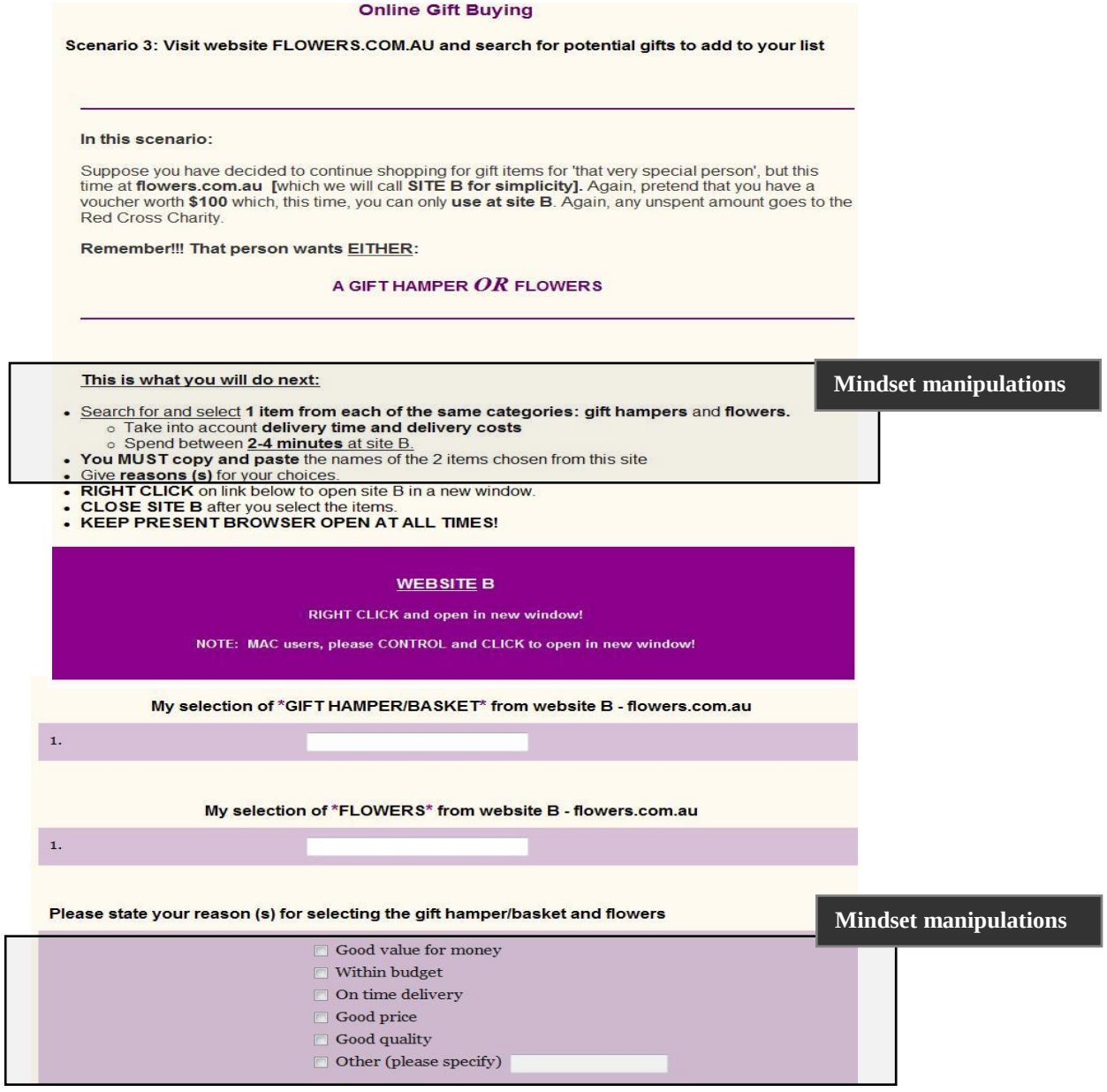
After registering all 6 item names, respondents were instructed to close site A and return to the hosting site to answer a few questions, which were in fact designed to measure the success of lock-in manipulations at site A. Adapted from previous research (Gefen et al., 2003; Salisbury, Pearson, Pearson, & Miller, 2001; Murray & Häubl, 2007 and 2002; Chen & Hitt, 2002), these scales, further reviewed in section 6.5.2.1, measured:

- how accustomed respondents felt with the site
- how easy they felt it was to find their way around the site, and
- how unique they felt the site was

6.4.2.3 Phase 3: Respondents visit site B and select additional items – they make final purchase decision

As shown in figure 6.7, phase 3 was similar to phase 2, with identical procedures and instructions; however, all respondents now visited site B. Because participants gathered 6 items at site A, they now selected only 2 items from site B [vice versa if in the 2/6 group].

Figure 6.7: Screenshot for vignette preceding site B



Again, respondents typed their selections (each not to exceed $100) based on their visits at site B. This phase marked the end of all website visits. We note that respondents were given an estimated length of time that they were expected to spend at each site; these varied between 2-4 minutes (when choosing 2 items) and 4-6 minutes (when choosing 6 items). While we acknowledge that such initiative may have confounded the

lock-in manipulations, it was important to control the time that was expected to be spent at each site to avoid ‘over or under staying’ the visits.

Next, respondents filled in another electronic questionnaire. The same set of questions as that used after visiting site A was administered and it was expected that for successful lock-in manipulations, scores would be higher after 6 as opposed to 2 practice trials. A few mindset check measures ensued:

- How decided they felt about what to purchase
- How certain they were about what to purchase

Soon after, two measures captured the site and category of items that respondents felt they were more certain/likely to purchase from, before respondents indicated the item they felt they were more likely to purchase at that stage (for the purpose of clarity, we will refer to this as interval 1).

Unanimously presented to all respondents, a few distractor questions ensued, which were, in fact, additional measures for measuring the success of mindset manipulations. These included (and are explained in section 6.5.2.2):

- How strongly they intended to buy the selected item
- How important it was to be able to buy the selected item

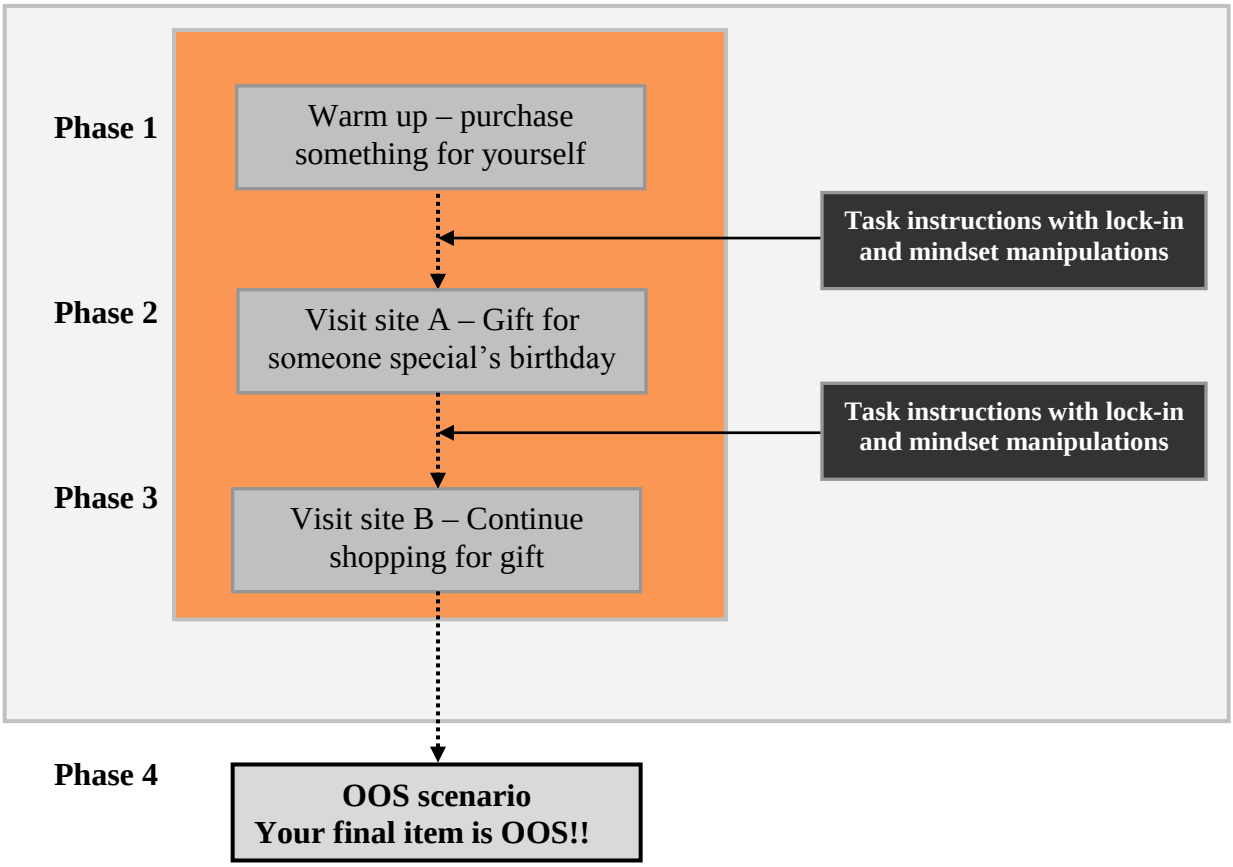
Soon after, respondents were asked to imagine that all other conditions were held constant and that they were now to use the $100 and make a final purchase decision (referred to as interval 2). The experiment was designed such that this final item choice automatically indicated the category and site that the item was from, allowing the researcher to keep track of changes in site, item or category choices. This marked the end of phase 3.

6.4.2.4 Phase 4: 'Your final item is out-of-stock!'

In this section we delve into the last phase of the experiment that was the OOS situation. In contrast to prior OOS research (Boatwright & Nunes, 2001; Broniarczyk, Hoyer, & McAlister, 1998; Borle, Boatwright, Kadane, Nunes, & Shmueli, 2005; Fitzsimons, 2000; Kim & Lennon, 2011), we did not manipulate the OOS situation directly, but instead presented respondents with a hypothetical scenario. This is largely because of the reduced feasibility associated with using existing sites instead of fictitious ones over which we would, otherwise, have had more control.

The rest of this section focuses on discussing the procedures and pertinent methodological issues associated with phase 4. We present figure 6.8 as a recap of the order of all 4 experimental phases.

Figure 6.8: Recap of all 4 experimental phases



Phase 4 opened with an OOS scenario, depicted by figure 6.9, informing all respondents that their selected item (purchase decision at phase 3, interval 2) was not available. The vignette read as follows:

Figure 6.9: Vignette announcing the OOS

Now, imagine this:

You are at the website to purchase the item that you have selected. As you start ordering the item, you think to yourself **'I will soon be finished with this purchase. Mission almost complete!'**

In the process, you suddenly discover that the item is not currently available because it is out-of-stock!

Following the scenario, the researcher measured the extent of negative emotions caused by the OOS situation through 4 items: 'annoyed', 'angry', 'disappointed' and 'irritated' – further reviewed in section 6.5.1.2. Thereafter, the researcher recorded their likely behaviours based on a multichotomous scale that included 5 items (listed below) as well as a text field for 'other' as answer option for additional responses not captured by the scale:

- Continue looking for items at the same store
- Continue looking for items but at the other store
- Purchase another item on your final list
- Go to yet other online stores
- Go to a physical store

The researcher concluded the experiment with site reference/comparison rating scales that were also additional dependent measures for assessing lock-in, as well as one additional measure for mindset manipulation (all reviewed in section 6.5.2.2). These were followed by a few demographic questions. On a closing note, qualitative input was gathered with regards to what respondents thought the aim of the study was.

It is to be noted that given the flow of the experiment, it was intuitive to announce the stockout item following all 3 phases of the experiment. Although not the core focus of this research, the researcher was able to add to the existing literature on OOS announcements of the preferred item that follow purchase decisions.

A word on the control groups

The 2/2 group (semi control group) received identical instructions except that they were to select 2 items from each of the sites. Therefore, their lists included 4 (and not 8) items.

This was also the case for the 7th (baseline) group except that they received no mindset manipulation either. In fact, they were simply directed to look for 2 items (1 from each category) at each of the two sites.

6.5 Development of measurement scales

6.5.1 Dependent and independent variables

In this section, we first offer a succinct review in support for the use of single versus multiple item scales, considering that this study predominantly used single item scales as measures for dependent and independent variables (summarised in table 6.1). We then proceed to discuss the pertinent constructs and their measures as used in this study.

6.5.1.1 Single vs. multiple item measures

The use of multiple as opposed to single item measures is a highly disputed paradigm and one that has received mixed support amongst behavioural researchers (Rossiter & Eagleson, 1994; Drolet & Morrison, 2001; Spears & Singh, 2004; Lwin &Williams, 2006; Chandran &Morwitz, 2005, study 1; Sloot & Verhoef, 2008). Many

advocate the superiority of multiple over single item measures on the basis that, firstly, a single item measure limits the amount of information that a researcher can collect; added to this, the degree of reliability and validity cannot be tested (Churchill, 1979; Nunnally, 1978). Secondly, a single item cannot 'fully represent a complex theoretical concept or any specific attribute' (McIver & Carmines, p. 15, 1981; Nunnally, 1978), implying that degrees of differences between levels of an attribute cannot be assessed (Nunnally, 1978).

However, from a practical standpoint, the use of single item scales in this research was preferred because the dependent measures were relatively simplistic and unambiguous in nature (Wanous, Reichers, & Hudy, 1997). Additionally, since site choice, switching and purchase intent all represent concrete objects, where 'only one, or holistically one, characteristic' is referred 'to when the attribute is posed' (Rossiter, 2002, p.313), the use of multiple item scales was not a necessary requirement. In fact, Bergkivist and Rossiter (2007) demonstrate that to the extent that the objects being measured are concrete, both single item and multiple item measures are expected to yield equally high predictive validity, meaning that 'theory tests and empirical findings [s]hould be the same' in both cases (Bergkivist & Rossiter, 2007, p.175).

6.5.1.2 Descriptions of constructs and their measures

Site choice intention (SCI)

SCI was defined as the likelihood of choosing the high lock-in site to make the final purchase from (Sloot & Verhoef, 2008). It was assessed through a four point bipolar scale, where respondents indicated the site that they were more likely to purchase from, with 1= 'very likely site A' and 4='very likely site B'. As mentioned, in this study, we define the high lock-in site as the site that participants have had more practice with relative to the alternative website.

While the use of 5 points seems to be the preferred referendum, the presence of a midpoint, however, could have encouraged socially desirable answers where respondents choose to be neutral (Worcester & Burns, 1975). Based on this study's empirical setting, all respondents were expected to have formed an intention, whether strong or weak, at the

time this question was posed. Therefore, quite logically, they could not take a 'mid stance', rendering the use of 5 points quite redundant.

Store Switching Intention (SSI)

SSI was defined as the degree to which respondents were likely to make the purchase at the alternative site relative to the high lock-in site (adapted from Sloot & Verhoef, 2008).

To operationalise consumers' switching intentions, we compared the site with which respondents had more practice with site choice at interval 2, where respondents highlighted their final purchase decision. A difference in choices signified switching intentions whereas no difference in choice signified intention to stay at the high lock-in site. SSI was 0 if intention was to switch and 1, otherwise, based on which a binary site switching variable was coded as yes=0 and no=1.

Purchase Intent (PI)

Purchase intent was defined as respondents' inclination to buy the originally specified item and/or category, with planned purchase=0 and unplanned purchase=1.

To operationalise purchase intent for an item, we contrasted item choices at intervals 1 (when respondents indicated the item they were more likely to buy – at interval 1) and 2 (when respondents indicated their final purchase decisions). We note that all registered items were automatically coded as items 1 to 8 (groups 6/2 and 2/6) or items 1 to 4 (group 2/2 and control group), allowing the researcher to contrast all choices between intervals 1 and 2. A difference between both choices signified intention to "move away" from the initial choice (at interval 1); therefore, this change in intention qualified as intent to purchase an item that was not originally planned (or unplanned). Consistency in choices qualified as planned purchase intent. This procedure was adapted from Heilman, Nakamoto, and Rao (2002) who recorded items that subjects intended to purchase and what they actually purchased, and any item that fell outside the purchase list, qualified as an unplanned purchase.

Purchase intention for category followed the same procedure. Although we did not directly measure the final category that respondents purchased from, as stated earlier, the survey was programmed such that indicating choice of item (at interval 2) automatically allowed the researcher to track the category that the item belonged to. Again, the researcher contrasted category selections at both intervals, with a difference and consistency in choices, qualifying as unplanned and planned intentions, respectively.

Online shopping experience

First, it is important to stress that, despite being used interchangeably, experience and expertise are, according to Jacoby, Troutman, Kuss, and Mazursky (1986), two orthogonal constructs and should be treated as such. By this, the researchers mean that a person may be experienced without necessarily having the knowledge or skill to be considered an expert. On the other hand, the latter may have the expertise without necessarily being experienced. Therefore, expertise should be measured on the dimensions of knowledge and/or skill while experience should be assessed via personal encounters in terms of frequency (adapted from Alba & Hutchinson, 1987).

In effect, Internet shopping experience has been operationalised as the number of purchases made in the past 12 months (Shim, Eastlick, Lotz, & Warrington, 2001; Hernández et al., 2008), an indication of the year in which respondents first started using the Internet (Cheema & Papatla, 2010), or an indication of the length of time that respondents have been using the internet (Balabanis et al., 2006). While these studies used objective measures of experience, the immediate research classified respondents based on their own perceptions of online shopping experience (Wagner, Klein, & Keith, 2003; Flavián, Guinaliu, & Gurea, 2006), with points ranging from very experienced =1 to very inexperienced=5.

Demographics

Finally, as per common practice, single items were used to measure self reported information for age, income and gender. Eight categories, ranging from ‘18-20’ to ‘60 and above’ measured age while gender was either male or female. Four categories

measured income and ranged from 'lower' to 'prefer not to say' – classification data can be sensitive and a source of non-response; therefore, respondents were free to choose whether or not they were comfortable to provide answers to this question (Grossnickle & Raskin, 2001).

Table 6.1: Descriptions of constructs and their measures

Constructs	Descriptions/Measures
Dependent measures	
Site choice intentions (SCI)	The likelihood of choosing the high lock-in site over the alternative site – 4 point scale, 1=very likely site A to 4= very likely site B
Store switching intentions (SSI)	The degree to which a consumer is likely to purchase at the alternative (low lock-in site) relative to the high lock-in site – dummy variable, yes=0 and No=1
Purchase intentions (PI)	Inclination to purchase the (un)planned item/category– dummy variable, planned=0 and unplanned=1. Unplanned item/category is a change in intention at interval 2
Independent Variables	
Prior online shopping experience	Self rated scale that reflects respondents' stance on how they perceive themselves as online buyers – five-point scale, 1=very inexperienced to 5=very experienced
Demographics: Gender	Gender of respondents – dummy variable, male=0 and female=1
Age	Respondents' age – Eight-point scale, 1=18-20 and 8=60 years or older
Income	Respondents' income levels – Four-point scale, 1='lower', 2='middle', 3='upper', 4= prefer not to say

6.5.1.2.1 Dependent measures for OOS

Survey measures were used to capture respondents' emotional and behavioural responses to the OOS situation. Whilst criticized for being limited in its ability to gather behavioural data, the survey, nevertheless, allowed the researcher to obtain a direct measure of all reactions (Campo et al., 2000). This section reviews the scales that were developed and used to measure emotional and behavioural reactions as a result of the stockout.

Emotional response scales – OOS

In prior psychology and retailing research, negative emotions arising from OOS have predominantly been measured through summated scales to include combinations of the following emotions: agitated, angry, annoyed, anxious, disappointed, discouraged, frustrated, irritated, mad, sad, unhappy, unpleasant, and upset (Mano & Oliver, 1993; Pham, Cohen, Pracejus, & Hughes, 2001; Zeitlin & Westwood, 1986; Kim & Lennon, 2011). A few of the popularly manifested emotions, more specifically 'annoyed', 'angry', 'unhappy', disappointed' and 'irritated', were initially selected and pilot tested. 'Unhappy' had a relatively low score (M=3.56, SD=.997) and was, therefore, dropped. 'Angry' also had a low score (M=3.31, SD=3.31) compared to 'disappointed' (M=4.23, SD=.766), 'irritated' (M=3.71, SD=1.13) and 'annoyed' (M=4.27, SD=1.03), but was kept to capture a sufficiently wide range of emotional responses.

Respondents run the risk of being influenced by the polarity of items which encourage '"yea-" or "nay-" saying tendencies' (Churchill, 1979, p. 68), thereby inviting affirmation and agreement bias (Smith & Albaum, 2005). In order to overcome such bias, the researcher negatively reversed the polarity of the items when measuring 'disappointed' and 'irritated', as depicted in table 6.2; all items were measured as independent 5 point Likert scales with responses ranging from 1=totally disagree to 5=totally agree.

Table 6.2: Items to measure emotional responses

Variables	Descriptions	
Annoyed	This would annoy me	1. Totally Disagree 2. Somewhat disagree 3. Not agree/Not disagree 4. Somewhat agree 5. Totally agree
Angry	I would feel angry	
Disappointed	I would NOT feel disappointed	
Irritated	This would NOT irritate me	

Behavioural response scales - OOS

Although item and brand switching have (arguably) been cited amongst the most popular dependent categories of OOS responses studied traditionally (Emmelhainz, & Stock, 1991; Walter & Grabner, 1975; Corstjens & Corstjens, 1995; Schary & Christopher, 1975), based on the nature of the study, we initially reformulated 8 items (listed in table 6.3) to adapt to this study's online context (Dadzie & Winston, 2007; Kim & Lennon, 2011), all of which were pilot tested (please refer to appendix B for more details).

Based on frequency distributions for the pilot test (table 6.3), choosing to 'purchase another item on the list' was the most popular reaction. This situation is defined as the respondents' likelihood of using their individual lists to choose another item, regardless of whether the OOS occurred at the low or high lock-in site. The second most popular reaction was to swap shopping channels and visit a physical store.

The above two options were retained for the main experiment. However, we did not include items that are accompanied with an asterix (table 6.3) for the obvious reason that they were the least popular. Instead, to refine the choices and more effectively capture the essence of these items, they were recoded and formed new variables: 'continue looking for items at the same store' and 'continue looking for items but at the other site' – the researcher was interested in measuring website switching and not choice of item or category of item. 'Continue looking for items at the same store' is defined as the propensity to stay at the same site (where the OOS occurred) and to look for an item to purchase and 'continue looking for items at the other site' is defined as the propensity to switch to the other site, where the OOS was not experienced, and find an item to purchase at the site.

'Go to yet other online stores' and 'go to a physical store' were retained for the main study. 'Go to yet other online stores' is defined as the likelihood of not visiting either the low lock-in or high lock-in site but switch to other e-vendors to find an item to

purchase. ‘Go to a physical store’ is defined as the propensity to switch from the online shopping platform and go to a physical store to look for an item to purchase.

We also included a field text to capture additional information, if any. All items for assessing OOS reactions (as also used in the main study) are summarized table 6.3. We note that respondents could only select one of the OOS response options.

Table 6.3: OOS behavioural responses – pilot test and main experiment

Behavioural responses	Frequency (%)
Items for pilot test	
Purchase another item on the list	36.9
Go to a physical store	24.2
Purchase a gift hamper or flowers at the same site	12.9
Go to yet other websites	11.3
Purchase a gift hamper or flowers at the other site	6.5
*Purchase neither a gift hamper nor flowers, but a different item	2.4
*Purchase flowers instead of a gift hamper at the same site	1.6
*Purchase flowers instead of a gift hamper at the other site	1.6
Other	.8
Final items for main study	
Continue looking for items at the same store	
Continue looking for items but at the other store	
Purchase another item on the list	
Go to yet other online stores	
Go to a physical store	
Other	

6.5.2 Manipulation check measures

6.5.2.1 Lock-in

A review of the most pertinent literature search revealed seven studies that are closely relevant to our study, all listed in table 6.4. However, most of these studies did not report their manipulation checks. Therefore, items for lock-in manipulation checks were all extracted from related dimensions used in the literature, and tailored to suit our study’s context.

Table 6.4: Pertinent empirical studies – lock-in manipulations

Study	Dimensions
Wernerfelt (1985)	▪ (Non) Transferable skills
Murray and Häubl (2002)	▪ Number of trials ▪ Similarity/difference between sites
Murray et al. (2003)	▪ Transferable/non transferable skills ▪ Preference for interface ▪ Ease of learning ▪ Time spent at incumbent website
Johnson et al. (2003)	▪ Costs of learning ▪ Ease of use ▪ Site stickiness
Zauberman (2003)	▪ Set up costs ▪ Usage costs
Murray and Häubl (2007)	▪ Perceived ease of learning ▪ Ease of using site ▪ Goal congruence ▪ Error during initial usage
Kim and Kim (2005)	▪ Cost of swapping to a new online retailer ▪ Hassle of switching to new retailer ▪ Ease of maintaining service continuity

Keeping in line with lock-in as a multidimensional construct, initially, we used 3 items to verify the success of lock-in manipulations. These are outlined next.

Item 1: 'I have definitely learnt to find my way around this site'

This scale allowed the researcher to indirectly measure the respondents' level of familiarity with each site, after having manoeuvered around (adapted from Gefen et al., 2003). Based on the 5 point Likert scale, with 1= totally disagree to 5=totally agree, scores on the high end signified higher lock-in.

Item 2: 'I feel very much accustomed to this site'

As an extension of item 1, we measured respondents' perceived ability to find their 'way around a site and keep track of where [they were]' (Dennis et al., 2009, p. 1128). Successfully locked in respondents should perceive navigation around the website as relatively free of effort (Salisbury et al., 2001). Respondents highlighted their positions, with 1= Totally disagree, to 5=Totally agree.

Item 3: 'To me, this site is quite unique'

This item measured respondents' perception that the site can be allocated a unique 'identity' and that it stands out, at least from the competing site. This item was measured on a 5 point Likert scale of 1= totally disagree to 5=totally agree; high scores signified that the site was perceived as unique. Following reliability assessments, 'unique' was dropped from the final analysis, as reviewed in the next chapter (section 7.3.1.1).

Dependent measures for lock-in manipulations: Site preference and site return

As additional measures for testing the success of lock-in manipulations, we incorporated dependent measures for lock-in that asked respondents to indicate the site that they had developed a preference for and the one they would feel more comfortable to look for items in the future (Johnson et al., 2003). These respectively assessed the site that was liked more, and the site that incites the higher level of comfort, respectively, with higher scores for the high lock-in site. Each was measured on a 5 point scale that ranged from 1= totally disagree to 5=totally agree. Table 6.5 summarizes all lock-in manipulation check measures.

Table 6.5: A summary of items measuring lock-in manipulations

Measures	Responses
I have definitely learnt to find my way around this site	Totally disagree, somewhat disagree, Not agree/not disagree, somewhat agree, totally agree (5 points)
To me, this site is quite unique	Totally disagree, somewhat disagree, Not agree/not disagree, somewhat agree, totally agree (5 points)
I feel very much accustomed to this site	Totally disagree, somewhat disagree, Not agree/not disagree, somewhat agree, totally agree (5 points)
Dependent measures	
Which website have you developed a preference for?	Prefer site A, somewhat prefer site A, prefer site B, somewhat prefer site B (4 points)
At which website would you feel more comfortable to look for items in the near future?	Very likely site A, somewhat likely site A, somewhat likely site B, very likely site B (4 points)

6.5.2.2 Mindset

Based on extent literature search for articles in marketing, retailing and psychology journals, we identified 8 studies that closely guided the development of mindset manipulation scales, as adapted in this study. These are summarized in table 6.6.

Table 6.6: Studies using mindset manipulations

Study	Dimensions
Chandran & Morwitz (2005)	▪ How determined do you feel at the moment with respect to the decision on hand? ▪ How committed do you feel to a certain course of action? ▪ How prepared do you feel to use specific occasions or opportunities to act?
Armor & Taylor (2003)	▪ How determined they felt at the moment ▪ How strongly they felt they had committed themselves to the scavenger hunt ▪ How curious they were about the other game ▪ How much they thought they would prefer the other game on top of the scavenger game
Gollwitzer & Kinney (1989)	▪ Commitment ▪ Determination ▪ Likelihood of changed decision
Bayer & Gollwitzer (2005)	▪ Likelihood & importance of goal attainment ▪ Feasibility ▪ Desirability
Gollwitzer & Brandstätter (1997) – those most relevant listed	▪ Importance of goal ▪ Closeness to goal completion
Gollwitzer, Heckausen & Steller (1990)	▪ Distance from the act of change decision ▪ How determined do you feel at this moment ▪ Committed to a certain implementation course of action ▪ Committed to make use of a certain occasion or opportunity to act
Lee and Ariely (2006)	▪ Goal concreteness ▪ Level of certainty
Brandstätter et al., 2003	▪ Strength of goal intention ▪ Extent of determination ▪ Committed

Initially, 7 items were generated to measure the success of mindset manipulation, all tailored to fit the study's online context. However, following pilot testing, 4 of the 7 scales were utilized for the main study (as detailed in section 6.7 and appendix B).

The success of mindset manipulation was tested as a function of (1) how *decided* respondents felt about what to buy, (2) the extent to which they felt *certain* about what to buy, (3) how strongly they *intended*, and (4) how *important* respondents felt it was to purchase the selected gift item. These items are summarized in table 6.7 and reviewed more explicitly next.

Item 1: Closeness to goal attainment – decided

Previous research has assessed the success of mindset manipulations by measuring the proximity to making a change decision (Gollwitzer et al., 1990; Gollwitzer & Kinney, 1989); for instance, Gollwitzer et al. (1990) asked respondents to indicate the point that best described the distance from the act of changing their decisions on a 13cm continuum, with starting point, 'far from having made a change decision', middle point, 'act of change decision', and the end point 'past having made a change decision'. Results indicated that 92% of those in the deliberative mindset had yet to make a decision while 96% of implemental mindset candidates had already decided about their goal.

Adapting this notion, we expected implemental mindset candidates to feel closer to the act of having made a decision in terms of what to purchase. A 4-point item scale asked respondents to rate the following: "have you yet decided what you will purchase?", with 1=definitely undecided, 4=definitely decided.

Item 2: Level of certainty

In a purchase context, Lee & Ariely (2006) report that respondents with a less concrete goal expressed lower levels of certainty about what to buy. Drawing from this operationalisation, the second item assessed the level of certainty with regards to the selected gift item. On a 4-point scale, respondents indicated how far they agreed or

disagreed with the statement “How certain are you about what you will purchase?”, with 1=Very uncertain, to 4=Very certain.

Item 3: Strength of intention

‘Strength of goal intention’ is the determinant to goal achievement and depicts the strength of commitment that individuals have towards implementing actions to reach set goals (Perugini & Conner, 2000; Brandstätter, Heimbeck, Malzacher, & Frese, 2003). To measure the extent to which respondents had formed an intention with regards to purchasing the selected gift item (adapted from Brandstätter et al., 2003), respondents rated their stance on the following: “I strongly intend to buy this item”, on a 5-point Likert scale, with 1=Totally disagree, 5=Totally agree.

Items 4: Importance of purchase

According to Gollwitzer and Brandstätter (1997), the level of importance ascribed to a goal dictates the level of motivation that will propel individuals towards the relevant actions for goal attainment; in other words, significance of the goals should drive intensity of motivations and determine willpower to achieve the goal (Gollwitzer, 1990). First, we assessed the importance ascribed to the goal, which should rate higher for the implemental mindset.

This item was measured using a 5-point Likert scale where respondents indicated the extent to which they agreed or disagreed with the statement: “It is very important to be able to buy this item”, with 1=Totally disagree, to 5=Totally agree.

Dependent measure – price recall

Finally, we requested that respondents think about the prices of the items that they had included on the list and rate how well they remembered the general price range. It was expected that for those in an implemental condition, ratings would be higher since they should demonstrate greater ability to recall cognitive information as opposed to those in the deliberative mindset condition (adapted from Gollwitzer et al., 1990). Price recall was measured on a 5 point Likert scale, with 1=totally agree, to 5=totally disagree.

Table 6.7: Descriptions of items used to measure mindset manipulations

Descriptions	Responses
Have you yet decided what you will purchase?	Definitely undecided, somewhat undecided, somewhat decided, definitely decided (4 points)
How certain are you about what you will purchase?	Very uncertain, somewhat uncertain, somewhat certain, very certain (4 points)
I strongly intend to buy this item	Totally disagree, somewhat disagree, Not agree/not disagree, somewhat agree, totally agree (5 points)
It is very important for me to be able to buy this item	Totally disagree, somewhat disagree, Not agree/not disagree, somewhat agree, totally agree (5 points)
Dependent measure	
I am confident that I can recall the price range of the items on my list of selections	Totally agree, somewhat agree, not agree/not disagree, somewhat disagree, totally disagree (5 points)

6.6 Dealing with threats to the experiment

6.6.1 Threats to Internal validity of the experiment

Internal validity 'refers to whether the manipulation of the independent variables or treatments actually caused the observed effects on the dependent variables' (Malhotra, Hall, Shaw, & Oppenheim, 2004, p. 166). The extent of internal validity is questionable when causes other than the treatments are potentially responsible for the causal relationships.

Because of the significantly reduced level of control that the researcher has over the web environment as compared to a laboratory setting, the internal validity of web based experiments is often questioned (Musch & Reips, 2000). Therefore, it is crucial to discuss the techniques that the researcher used to address and control the risks of threats that arise from selection bias, mortality, history, maturation, learning/testing effect and instrumentation decay (Campbell & Stanley, 1963; Shadish, Cook, & Campbell, 2002; Patzer, 1996).

Control: Despite support for the equally, if not, more valid results of the web as compared to laboratory experiments (Musch & Reips, 2000), the researcher acknowledged that by asking that respondents visit commercial websites, control over their activities was considerably reduced once they left the hosting site. Therefore, various control strategies were adopted in order to keep the influence of 'other factors' as constant as possible (Oppewal, 2010). These are discussed next:

- Design control

  Time log

  Ideally a time log would have enabled the researcher to match and compare the length of time spent at specific pages and the two websites in general. Unfortunately, the software used to design the experiment was limited in this ability. Instead, the researcher was able to calculate the length of time spent on the experiment as a whole since the software recorded entry and exit times. This served as the best indication of the time that was spent on the experiment; thus, mean values were recorded and compared across the groups/conditions, allowing the researchers to detect outliers. Results and implications are thoroughly revised in chapter 7.

  Prior experience at site

  Because existing websites were used, in order to avoid that familiarity with either of the websites acts as a potential cause of confound to the experiment, all respondents were to indicate, on a dichotomous response scales of 'yes' and 'no' as possible answers, whether they had visited any of the two websites prior to their participation in the survey. Should the answer to the question be positive, respondents were excluded from further analysis. This is further detailed chapter 7.

  Site visits

  In order to ensure that respondents indeed visited the assigned sites and produced a list of 8 items (or 4), the items in their lists were compared to those available at

the site at the time the experiment was being conducted. Should these not be reflected at the sites, or should the same item be recorded more than once or be an item outside the categories of flowers and gift hampers, the associated cases were removed from further analysis. These are further outlined in chapter 7.

Control over product type and cost

In a normal purchase situation, goals and tasks are expected to vary widely. To control for this, respondents chose flowers or hampers, as opposed to any item of their choice. Additionally, cost of the item (s) was limited to $100.

The use of control groups

As mentioned at the onset of this chapter, the research design contained several control groups where the candidates were given alternate treatments, but that were consistent with the procedure of the experiment. These enabled comparisons on the effects of the independent variables and rule out the influence of 'third variables' (Oppewal, 2010).

True experimental design

While the use of control groups allows differences in treatment effects to be confidently inferred (if any), other variables may be responsible for the cause and effect relationship. The use of a true experimental design allowed the researchers to control for this through the random allocation of the subjects to all conditions (extended across the experimental and control groups); therefore, differences in the outcome variables could only be the result of the manipulations (Oppewal, 2010). The randomisation process also 'takes care' of other threats, as seen next.

Selection bias: Selection bias occurs because of difficulties from obtaining a truly representative sample of the population being observed. To control for selection bias, the researcher ensured that assignment of participants to all experimental conditions followed a random process (Cook & Campbell, 1979). This implied that differences amongst respondents as well as their characteristics were spread out in an unsystematic manner.

This practice simultaneously enabled the random distribution of extraneous factors and their influences, which consequently, is expected to have been about the same across the various groups (Christensen, 1994).

Mortality: Attrition may be attributed to subjects deciding to quit the study and, thus, may result in lost cases or cases which only offer partial information (Campbell & Stanley, 1963). In order to cope with this problem, firstly, the researcher checked for systematic errors during pretests and pilot test so that, for instance long, boring and unclear parts of the experiment were appropriately modified to encourage motivated responses (Wade & Tingling, 2005).

In laboratory experiments, it is common for respondents to participate because they have to not because they want to, thereby inviting volunteer bias and motivational confounding (Reips, 2000). In contrast, in Internet experiments, respondents are free to drop out at any time. In our online experiment, respondents were being paid for their participation, which was also voluntary having been selected from a list of panelists; therefore, the threat of motivational confounding was contained (Rosenthal & Rosnow, 1969).

Drop outs: While as mentioned earlier, high dropout rate is very common in online research (Birnbaum, 2004), it became even more of a concern since it was related to the manipulation of lock-in, as noted in the pilot test. We note that despite the positive aspect of voluntary participation and the freedom to withdraw which help to control for motivational confounding, drop outs can be a problem if a systematic trend is detected. A pattern was noted in the pilot test whereby many respondents decided to drop out following the website visits, probably from being tired, looking for 12 items at one site (as part of the initial manipulation for the high lock-in condition, please refer to appendix B for more details). To cope with this issue, the number of items they needed to look for was reduced to 6 for the main experiment (instead of 12). Additionally, the researcher introduced a warm up exercise also designed as a familiarisation activity. As per Reips (2001, p. 249), the warm up can be used for building up ‘behavioural routines and

assurance that participants are complying with instructions'. It offers respondents an 'orientation period' whereby they can make a final decision with regards to their participation. Hence, it offers a more natural progression of drop out. In the main experiment, most drop outs were noted at the warm up exercise, with only a few after the website visits and a negligible number towards the end of the experiment. Hence, it can safely be stated that the drop outs did not interfere with the lock-in manipulation. These results are further reviewed in the next chapter.

History: 'By history is meant the specific event series other than *X*, that is, the extra experimental uncontrolled stimuli' (Campbell, 1957, p. 298), which can, however, affect the experiment's result. History usually becomes more of a concern the longer the time lapse between $O_1 - O_2$; this did not represent an immediate concern in the present study.

Maturation: Maturation reflects changes over time within the respondents as the experiment progresses such as tired, bored, hungry, very often arising from a lengthy experimental process. This may be specially more pronounced in the context of a within subject variable (Cook & Campbell, 1979). Hence, the dependent variable measure then becomes a reflection of maturation rather than effects brought about by the independent variables. Whereas commonly, maturation manifests a stronger impact when the experiment is run over a long period of time, even though the experiment only lasted on average for about 30 minutes, lock-in can be viewed as a kind of maturation given the nature of the website visits. More precisely, it was important for respondents to 'evolve' differently and feel more attached to the sites from which they gathered 6 items.

Instrument decay, Learning/testing effect: This is a concern when the measuring instrument is liable for an $O_1 - O_2$ difference (Campbell & Stanley, 1963) and usually arises because respondents have gained more experience and have adapted to the experiment, are aware of the purpose of the experiment or even the hypotheses being tested, amongst others (Campbell, 1957). To address this threat, firstly, precaution was taken to conceal the real aim of the research. As is common practice in this case (Senecal

& Nantel, 2004), a cover story was used so that respondents remained unaware of the study's real aims. This was adequately implemented as none of the respondents correctly guessed the real purpose of the experiment.

Secondly, to avoid that subjects' performance be confounded by the sequence of events and to hold their influence constant (Girden, 1992; Tabachnick & Fidell, 1996), the researcher counterbalanced the presentation order of the pairs of websites and lock-in treatments. For instance, within the first combination, respondents received lock-in treatment in the orders of high/low and site presentation A then B, followed by low/high lock-in at site A then B, then high/low, at the same sites, but in the reversed order, and so on. A within subject ANOVA was conducted to check for any order effect. Results are presented in the next chapter.

6.6.2 External validity of the experiment

External validity is the ability to generalize observations across times, settings, people and measures (Campbell and Stanley 1963). External validity has been referred to as being perhaps the largest weakness of laboratory experimentation because many factors limit generalization of observations (Cook & Campbell, 1979).

This study essentially represents an experimental test of the effects of mindset and lock-in, implying that precision is maximized at the expense of generalizability and realism (Dennis & Valacich, 2001). Nevertheless, we attempted to, as much as possible, promote external validity; subject selection, time and realism of experimental environment relevant to the conduct of this experiment, are critically assessed.

Subject selection: Compared to the lab experiment, sample selection was made from a larger pool of participants. While normally, students are used in experiments in laboratories, the use of panel members enabled the researcher to gather a diverse pool of demographic characteristics (Kannan, Chang, & Whinston, 1998). Hence, given such

diversity, there was a higher chance that the respondents were more representative of the population's characteristics.

Representative circumstances – ecological validity: It is a widely accepted paradigm when evaluating the external validity of an experiment, that the more realistic the experimental setting, task and stimuli employed, the higher the ecological validity (Reis and Judd, 2000).

Commonly, in the behavioural sciences, computer experiments have been used for the very reason that simple choice heuristics that are associated with shopping can easily be replicated by the computer. Unfortunately, because of the highly artificial setting of such experiments, external validity is under threat. Manipulations are not reflective of real life conditions, forcing participants to act in a way that is inconsistent with their normal reactions, than if they had been put in a natural purchase situation (Burke, 1996).

In the present study, in order to offer a more 'powerful' representation of reality, firstly, although respondents were not expected to make a purchase per se, they were required to visit existing commercial websites instead of fictitious ones. Secondly, the experiment was 'brought to the subject, rather than the other way around' (Wade & Tingling, 2005, p. 75) so that the experiment was completed 'in the latter's environment'. The researcher was also able to incite mundane realism by providing an experimental setting that closely resembles one that the typical Internet buyer would operate in in real life. Although not necessarily mutually inclusive, this also helped to enhance psychological realism because it triggered psychological processes that occur during Internet purchase experiences (Aronson, Wilson, & Brewer, 1998). Therefore, effects on the dependent variable could not be attributed to respondents being in an unfamiliar/unrealistic setting (Reips, 2002).

6.7 An overview of the pilot test

Given the use of an experimental design, it was imperative to conduct pre- and pilot tests at the onset of the study to detect problems and determine whether the treatments were successful at causing changes in behaviours (Perdue & Summers, 1986; Christensen, 1994). Pretests and pilot test are even more essential than if a lab experiment was conducted, given that concerns cannot be clarified, because of the absence of the experimenter (Wade & Winding, 2005).

The rest of this section offers an outline of the pilot test that preceded data collection for the main experiment (a more detailed overview of the pretests and pilot test is presented in appendix B).

6.7.1 The Pilot test

Similar to the main experiment, the sampling frame was provided by Research Now. Respondents were randomly sent invitation e-mails containing the link to the experiment, with a request to participate. Experimental procedures were also similar, with, however, a few exceptions:

- One pair of websites was used (www.dstore.com.au and www.completebasketcase.com.au)
- Respondents received both levels of lock-in, but chose 12 and 2 or 2 and 12 items from each site, respectively.

Unfortunately, a systematic dropout point was noted – approximately, 50% of respondents dropped out during website visits. This pattern was detected based on the abandoned lists where respondents were expected to type the name of each of their selections.

While high dropout rate is very common in online research (Birnbaum, 2004), it became even more of a concern since it was related to the manipulation of the independent variable. It was plausible that the long list of items could have invited the high level of dropout – therefore, the number of items had to be reduced. While the pilot test was well underway, it was decided that 6 instead of 12 items would suffice for the main experience to create the high lock-in condition; this reasoning was based on Murray and Häubl (2003) who reported that at the sixth trial, the time taken to perform the task had the smallest fall.

6.7.2 Pilot test results

In total, 124 cases were viable for further analysis, 47 and 77 of which were in the implemental and deliberative mindset condition, respectively. Females were more highly represented than males. Most of the respondents had more than a year's experience in online shopping. Interestingly, age was quite varied, with those aged 60 forming the second biggest group.

Similar to the procedure adopted in the main study, the pair of websites was balanced in their order of presentation. The site that was presented first, based on the original pair was referred to as A, and the second as B. When counterbalanced, they were still called sites A and B. Additionally, within each pair of sites viewed, participants were assigned to either of the mindset conditions. Therefore, 4 different experimental links were created.

To denote the 2 different orders for website presentation, the new variable (as in the main study) 'siteorder' was created and used to assess the possibility of confounding effects. Results are discussed next.

6.7.2.1 Analyzing the possibility of confounds in the pilot test

To assess whether the order of site presentation interfered with lock-in manipulations, a mixed subject ANOVA was conducted with 'LI' as the within subject

factor, described as ‘LIfirst’ and ‘LIsecond’ and portraying lock-in scores at their respective intervals; ‘siteorder’ was the between subject variable.

The ANOVA test revealed an insignificant interaction between ‘LI’ and ‘siteorder’, F (1,122) =.304, p=.583, partial eta squared=.002. Therefore, irrespective of the order in which the sites were presented, it did not confound the lock-in manipulations.

6.7.2.2 Manipulation checks: Lock-in and mindset

6.7.2.2.1 Lock-in manipulations

While the ANOVA results were quite promising in that no order effect was detected, to our great disappointment, none of the analysis relating to the lock-in scores could be reliably assessed. Unfortunately, due to human error, the lock-in manipulation measures, although presented at different intervals, were not adequately administered; both sets of treatments were placed at the concluding stages of the experiment, whereas they should have followed each set of treatments, thereby inviting treatment decay (Shadish et al., 2002). As a result, appropriate modifications were made to the experiment’s structure to cater for the proper location for the lock-in manipulation measures for the main experiment.

Site preference

As an independent ‘entity’ (since it was not part of the lock-in manipulation scores), also observed for the main experiment, the dependent measure for site preference offered some bearing on the lock-in manipulation. Between sites A and B, for successful manipulation, respondents should manifest higher preference for the high lock-in site. This was statistically supported.

6.7.2.2.2 Mindset manipulations

To assess the effectiveness of the manipulations, a series of independent sample t-test were conducted between implemental and deliberative mindset groups on the 7 different measures (most of which have been outlined in chapter 6) which asked

respondents to evaluate the extent to which they felt that they had decided what to purchase (Gollwitzer et al., 1990; Gollwitzer & Kinney, 1989); the extent to which they felt certain (Lee & Ariely, 2006) about what they intended to purchase; how determined and committed (Chandran & Morwitz (2005) they felt in terms of purchasing the selected item; how important (Gollwitzer & Brandstätter (1997) they felt it was to be able to purchase the selected item. Ratings for desirability (Perugini & Conner, 2000) and strength of intention (Brandstätter et al., 2003) vis-à-vis purchasing the selected item were also recorded.

Results were in line with existing literature (Gollwitzer et al., 1990; Armor & Taylor, 2003; Sheeran et al., 2005) with, however, a few exceptions. For instance, the 2-tailed tests revealed significance values above the desired level of 0.05 for desire, strength of goal intention, determined and committed.

When respondents were asked the extent to which they felt that they had reached a decision as to what to buy, implemental mindset candidates scored higher ($M = 3.50$ vs. 3.20; $p = 0.010$). Deliberative mindset subjects felt less certain about the item that they intended to purchase ($p = 0.018$). Deliberative mindset respondents also felt that it was not as important to be able to buy the selection as opposed to the subjects in the implemental group ($M = 3.76$ vs. 3.32; $p = 0.016$).

Item elimination

Factor analysis was conducted to reduce the number of items for mindset manipulation and include only those that explained most of the variability.

'Decided' and 'certain' loaded strongly and positively on both components. 'Important' loaded the highest on component 1 (.905), but quite low on component 2. These variables were therefore retained as part of the 4 factor solution.

The items 'committed', 'desire' and 'determined' were eliminated because when the factor analysis was run again with Varimax rotation, they still showed the lowest

loadings on both components (Hair et al., 1998). In fact, 'committed' and 'determined' registered the lowest factor loadings on component 2 (.069 and .163).

'Strength of goal intention' was retained as the fourth variable; the varimax rotation showed considerable improvement on component 2. Additionally, 'strength of goal intention' is the determinant to goal achievement and depicts the strength of commitment that individuals have towards implementing actions to reach set goals (Perugini & Conner, 2000; Henderson et al, 2000). Therefore, the use of both items ('committed' and 'strength of goal') would have, anyway, been redundant.

6.7.2.3 Assessing the effects of mindset on purchase intentions

6.7.2.3.1 Binary Logistic regression – Purchase intentions

We conducted a binary logistic regression analysis to assess the causal effects of mindset on purchase intents. The analysis revealed mindset as a significant predictor of purchase intent, Wald=3.895, Exp(b)=2.118, p=.048; those in the implemental mindset (as opposed to those in the deliberative mindset condition) were 2 times more likely to buy the planned item.

6.7.3 Changes to the main experiment

Based on these findings (further details included in appendix B), a few modifications were made before 'going live' for the final and main experiment. These are outlined next.

- Number of items to be used for high lock-in manipulations was reduced to 6; obviously, this meant that 8 items were to be chosen – 6 and 2 or 2 and 6. The experimental design included control groups and respondents chose 2 and 2 items.

- Extensive modifications were made to the lock-in scales to include the following items: ‘learnt to find my way’, ‘accustomed’ and ‘unique’. As well as ‘site preference’ as dependent measure, we also include ‘comfort to return to site’.

- The number of scales for mindset manipulation was reduced to 4.

- The experiment’s structure was changed and redundant questions/scenarios were dropped.

- Four sites were used instead of 2 for the main experiment.

6.8 Ethical considerations

Since the research procedure employed human beings, prior to the execution of the data collection processes, care was taken to obtain the necessary ethics clearance from Monash University’s standing committee on Ethics in Research involving Humans (SCERH) for the conduct of this study. The identity of all respondents in the study was kept anonymous. Successful completion of the research did not require personal information (such as name, address, nationality) – only simple demographic information was gathered. The participants were also briefed that the research was part of the requirements for the completion of a Doctoral study at Monash University. Monash University’s Faculty of Business was also to take possession of all relevant data for a period according to policy.

CHAPTER 7: Data preparation and scaling Analyses

This chapter provides a detailed profile of the final sample used for data analysis, following data cleaning. It also discusses the preliminary data analyses designed to assess reliability and validity, before disclosing of the success of manipulations and confounding checks.

7.1 Cleaning the data

E-mail invites, containing one of the 56 experimental links, were randomly sent to approximately 5000 panel members, following which 560 completes were successfully gathered, that is, an average of 10 per link. However, upon close scrutiny, for reasons that are detailed below (and summarized in table 7.1), 216 cases were deleted, with the remaining 344 considered fit for further analysis.

1. **Copied and pasted URLs or product codes instead of product names (n=41)**

   As previously mentioned, it was important for respondents to copy and paste the names/descriptions of each of the 8 or 4 items (depending on the conditions they were allocated to) of their choice as these were automatically uploaded to reflect their personalized lists of preferred items.

   However, **41** respondents either copied the corresponding URL or product order code (for instance, product code FL 406) instead. As a result, it would have logically been almost impossible for a respondent to identify/recall the items by simply consulting the corresponding URLs and

codes, amidst others. Because this could potentially compromise observations, these cases were removed.

2. **Falsified answers (n=33)**

   Next, 36 cases were eliminated because of deliberate or unconscious falsification of responses, such as listing the same item more than once or highlighting inconsistent answers (for example, aged 18-20 and wanting to buy a gift for son/grandson). The researcher acknowledges that this may have resulted from mood congruent bias or fatigue amongst respondents who could have become overly sensitive to the task of moving back and forth between the websites.

3. **Prior visits (n=55)**

   Respondents needed to be 'neutral' to both sites, in terms of not having visited either site prior to the experiment, as existing familiarity could confound the lock-in manipulation. Therefore, 55 more cases were removed because they had visited at least one of the two sites prior to the experiment.

4. **Time spans (n=46)**

   Length of time spent on the experiment served as a guide to identify outliers. Although it would have been ideal to record time spent at the websites and at the hosting site as two separate entities, the software was unfortunately limited in this ability; rather, we relied on the time spent on the experiment as a whole since, given that at the time of use, the software provided by www.instantsurvey.com could only record the entry (time the site became active) and exit times (time the survey was submitted).

   Based on initial inspection, **29** cases were deleted because they registered time that was either unrealistically long (>2 hours), possibly arising from

respondents being involved in other activities or leaving the computer unattended, for instance, or, unrealistically short (<=11 minutes).

The mean time score served as additional basis to further identify outliers following the logic that respondents in the 2/2 and control groups would have invested relatively less time gathering their selections for the obvious reason of having to choose 4 as opposed to 8 items. Midpoints for respondents in the experimental groups was approximately 31 minutes, and almost 25 minutes for the control and semi-control groups combined, with a mode time of approximately 17 minutes. Using 15 minutes as the cutoff mark, a further **14** and **3** cases, were deleted from the experimental and control groups, respectively – their associated mean scores fell below the cutoff point and were, therefore, too short to promote successful manipulations.

Based on Mandel and Johnson (2002), the remaining data was 'Winsorized' in order to define an outlier cutoff point but this time to delete cases that still reported large time frames. The cutoff value was obtained by adding the mean and 3 times the standard deviation. Therefore, the cutoff value was 30.6 + (3x16.84), that is, 81.3 minutes. Of the remaining cases, 5 registered times above 81.3 minutes but were retained as part of the dataset because they were only a few minutes from the cutoff value of 81.3 minutes.

5. Univariate and multivariate outliers

The researcher ran preliminary inspections of the remaining cases in order to determine univariate and multivariate outliers. Three cases depicted z scores that fell outside the threshold of ±3.3 at the 0.01 level and, therefore, warranted further exploration. These respondents indicated that they had purchased online more than 10 times over the last 3 months prior to the experiment and as a contradictory response, rated themselves as

very inexperienced e-buyers. Because these responses were clearly inconsistent, they were not retained as part of the final dataset.

When conducting MANOVA (chapter 10), assessment for multivariate outliers revealed 8 cases that registered residual statistics above the cut off value of 13.82 (since 2 independent variables were used) (Pallant, 2007). Therefore, these cases were deleted from further analysis (this is reviewed in greater detail in chapter 10).

6. Missing data

The data contained 6 cases with missing values on the mindset manipulation measure, 'I feel determined to buy this item' (later removed for reasons discussed in a later part of this chapter). This systematic pattern of missing cases could only be allocated to technical errors in data entry since the experiment was programmed such that all questions had to be answered before respondents could move to the question or submit the completed experiment. Additionally, the information was fed directly to SPSS making it impossible for data to go missing.

Because these missing values pertained to a dependent measure for mindset manipulation, they could artificially inflate 'the explanatory power of the analysis' (Hair et al., 1998, p.52). Therefore, it was only fitting to delete these cases.

Table 7.1: Deleted cases

Cases deleted	Reasons
n=49	Copied and pasted URLs/product codes instead of product names
n=49	Falsified/unrealistic responses
n=55	Had visited site (s) prior to the experiment
n=49	Insufficient/too much time spent on experiment
n=8	Outliers
n=6	Missing answers

7.2 Characteristics of the final sample

Table 7.2 summarizes the demographic profile of the 344 respondents that formed the final sample. Respondents formed a highly diverse sample, in terms of gender, age, and income. By the same token, such variation is bound to promote heterogeneity of preferences and likings as in the context of flowers and hampers, preferences cannot be expected to be explicit (adapted from Kim & Lennon, 2011).

Table 7.2: Demographic profile of final sample

Variable	Category	Experiment Sample	
		N	(%)
Gender	Male	146	42.4
	Female	198	57.6
Age	18-20	16	4.7
	21-30	80	22.2
	31-40	61	17.7
	41-50	68	19.8
	51-60	70	20.4
	Over 60	49	14.2
Income	Lower	106	30.8
	Middle	182	52.9
	Upper	26	7.6
	Prefer not to say	30	8.7

Dissected further, the data revealed that, of the 344 respondents, females were more highly represented than males. Additionally, in a sample whereby age distribution was quite evenly spread out, there was a marginally higher representation of respondents in the age range of 21-30 (22.2%) when compared to the second most popular group, that is, those aged 51-60 (20.4%). Predominantly, respondents were middle income earners, with the second highest group being the low income earners.

Of the 344 respondents, 53.8 % rated themselves as fairly to very experienced online buyers while 26.4% of candidates considered themselves as fairly to very inexperienced online shoppers. Of the experienced candidates, most were in the age

category of 21-30, with, not surprisingly, the largest portion of those inexperienced in the age range of 50 and above.

Table 7.3: Contingency table – Groups by Gender and experience levels

Groups			Gender		Total
			Male	Female	
6/2	Experience	Experienced	24	20	44
		Not experienced	16	31	47
	Total		40	51	91
2/6	Experience	Experienced	20	40	60
		Not experienced	17	24	41
	Total		37	64	101
2/2 (semi control)	Experience	Experienced	24	26	50
		Not experienced	19	29	48
	Total		43	55	98
Control	Experience	Experienced	16	15	31
		Not experienced	10	13	23
	Total		26	28	54

Overall, as per table 7.3, there was a slight over representation of experienced buyers in the 2/6 group as well as the control group. On the basis of gender, a higher proportion of females were experienced as compared to the males in the 2/6 group, and vice versa, that is, a higher proportion of males were experienced as compared to females, but this time, amongst the 6/2 candidates.

As summarized in table 7.4, the 2x2 design resulted in slightly unbalanced cell sizes, with the 6/2 group comprising of 91 candidates of whom 42 were in the implemental and the rest in the deliberative condition. All 91 candidates were allocated to the high and low lock-in manipulations.

With the largest number of legitimate candidates (n=101), the 2/6 group registered an almost equal distribution of cell sizes – 51 and 50 in the implemental and deliberative conditions, respectively. Again, all of the 101 respondents experienced both lock-in conditions.

Of the 98 candidates in the 2/2 group, all experienced the control condition for lock-in (low), with 50 cases being in the implemental and 48 in the deliberative mindset. The baseline group (control group) contained 54 cases.

Table 7.4: Contingency table – Groups by Mindset

		Mindset			Total
		Implemental	Deliberative	No mind manipulation	
Groups	6/2	42	49	0	91
	2/6	51	50	0	101
	*2/2	50	48	0	98
	*Control	0	0	54	54
Total		143	147	54	344

*Placed in the low lock-in condition

7.3 Assessing the data for reliability and validity

Reliability and validity are concurrently associated. However, before achieving validity, a measuring instrument must first prove that it is reliable; put simply, a measuring instrument cannot be valid without being reliable (Oosterhof, 1994).

7.3.1 Reliability of measures

Reliability, as defined by Carmines and Zeller (1979, p. 11), is 'the extent to which an experiment, test or any measuring procedure yields the same results on repeated trials'; for this consistency to be achieved, the measures need to be free of random error (McDaniel & Gates, 2002), or at least, realistically, the extent of random error needs to be limited (Carmines & Zeller, 1979). Commonly, 3 principle components are associated with reliability estimations (amongst which reflects the alternative form reliability), of which only 2 are further considered: the test-retest (relevant to lock-in scales) and internal consistency (Carmines & Zeller, 1979).

- Test-retest

  The test-retest method, as the name implies, involves applying the same scale to the same subjects, under identical conditions (as far as possible) at two different times, with no treatments administered between the 2 intervals. High correlations between the scores from both administrations signal high reliability (Neuman, 1994; Peter, 1979).

  A major criticism of the test retest is that respondents tend to rely on memory and react in the same manner across both intervals (Churchill, 1979). Hence, an instrument may perform poorly, but, because of the respondents' consistent behaviour, high correlations are registered between the scores of the test and retest. This, in turn, depicts a very small error between the two measures whereas in fact the items correlate poorly (Churchill, 1979).

  Regardless, this measure was not applicable to the immediate research for the technical reasons that, firstly, measures were administered within the same experiment, but with only a short delay between the 2 intervals. Secondly and more importantly, manipulations which preceded each interval were expected to lead to different lock-in scores as a result of the treatments. Therefore, since the researcher was not testing consistency across reactions, the use of the test retest was redundant.

- Internal consistency methods

  Internal consistency tests the extent to which all items of a scale are in reality measuring the same construct (Carmines & Zeller, 1979). Assessments for internal consistency are reviewed next.

Split halves

This measure allows the researcher to randomly divide the group into two and test how the questions answered in one group are correlated with those answered in

the second group. While not restricted to, commonly, the group is split in terms of odd and even numbered items (Carmines & Zeller, 1979).

However, the downside to the split half method is that the manner in which the group is split will affect the 'estimate of the coefficient of reliability' and cause it to be different (McDaniel & Gates, 2002, p. 298), when ideally correlations yielded should remain consistent. Because of such limitation, the split half method of reliability measure was not pursued further.

Cronbach alpha, inter item and item-to-total correlations

The most common method for assessing internal consistency is the Cronbach (1951) alpha which provides an overall assessment of the scale reliability. Its relevance is particularly warranted for multi item scales (Carmines & Zeller, 1979), as is the case for all manipulation checks in this study. A threshold of .7 is often observed, with higher alpha coefficients being more desirable, and correlations much higher than .9 potentially signaling redundancy (Cronbach, 1951).

Cronbach estimates are reliant upon the number of items in a scale and while the use of a larger number of items increases reliability, coefficient alpha may be artificially inflated, thereby causing the items to appear reliable when in fact they are not correlated. Conversely, coefficient alpha tends to get smaller when the number of items is less than 10 (Pallant, 2007). Therefore, in such case, for more accurate evaluations of reliability, it becomes appropriate to also rely on additional statistical assessments, such as the mean inter-item correlations (Pallant, 2007).

7.3.1.1 Lock-in measures

Because measures for lock-in were administered at two intervals, therefore, duly so, they were assessed separately for internal consistency. As all members were measured

across the 2 different lock-in conditions, the average scores on each set of questions were calculated so that each respondent had 2 scores. These were recoded as 'LIfirst' and 'LIsecond', respectively

'LIfirst'

Measures for 'LIfirst' yielded an alpha value below the recommended level of .7 (Cronbach, 1951), which was expected given the use of only 3 items (α=.630). So, the next step was to check the inter-item and item to total correlations. The summary item statistics table revealed positive values, with mean inter item correlation of .368, and a range of .28, much in accordance with Briggs and Cheek (1986), who recommend inter item correlation in the range of .2 to .4.

As additional support for consistency of the scale, the corrected item to total correlation for each indicator registered acceptable correlates of above .3, as recommended by Nurosis (1993), with all items exhibiting values in the range of .31 and .53. However, despite the acceptable inter item correlation, the removal of 'unique' would improve reliability to a more acceptable threshold of .69.

'LIsecond'

The 3-item scale for 'LIsecond' yielded a very acceptable overall reliability coefficient alpha of .77, despite the use of only 3 items. Statistics for inter item correlations depicted a mean of .524 and range of .319, with the lowest item to total correlation of .484. However, yet again, despite the satisfactory correlations, deletion of 'unique' would result in an increase in alpha, from .769 to a more desirable level of .813 (Pallant, 2007).

Given the results for 'unique' across both cases, the researcher dropped the item from further analysis, improving Cronbach alpha as well mean inter-item correlations. Therefore, only 'accustomed' and 'learnt to find my way' were retained.

7.3.1.2 Mindset measures

The four items for deliberative mindset manipulation scored a highly acceptable alpha level of .75 (Cronbach, 1951). None of the items, if deleted, would improve alpha drastically although deletion of 'certain' led to an improvement of .01 in the alpha score. Because well-validated scales should only be removed if they are under .7 (Pallant, 2007), 'certain' was retained for further analysis.

Item to total correlations were adequately met and depicted values that were all above .3, the lowest and highest being .44 and .61, respectively. These were matched with satisfactory inter item correlation of .35, depicting a strong relationship among the 4 selected items.

On a final note, given that all items measuring mindset manipulation demonstrated good internal consistency, they were all retained for further analysis.

7.3.1.3 OOS emotional measures

When assessed for reliability, 'annoyed', 'angry', 'disappointed' and 'irritated' recorded a very acceptable alpha level of .76. Results indicated that all items should be retained as alpha level would drop if any of the items was to be excluded. The inter item correlations also performed very well (.53). All item-to-total correlations exceeded the .3 cutoff criteria, with the lowest value of .49 and highest of .64. Therefore, the four items measuring OOS emotional reactions demonstrated good internal consistency.

7.3.2 Unidimensionality

Unidimensionality needs to be assessed adequately because, firstly, it is an important prerequisite for establishing construct validity (Gerbing & Anderson, 1988). Secondly, despite the tendency to rely on reliability estimates for viability of scales, reliability and unidimensionality differ in their functions (Gerbing &Anderson, 1988).

In order to confirm unidimensionality of the scales, each set of indicators was expected to reflect the corresponding underlying factor, and not more than one (Carmines & Zeller, 1979). Following Churchill (1979), unidimensionality was established by conducting exploratory factor analyses for mindset and lock-in manipulation checks and OOS emotional scales.

As summarized by table 7.5, in all cases, only one factor scored an Eigen value above 1. All factor loadings were above the .5 point (Hair et al., 1998). What's more, the dimensions accounted for between 58% and 86% of the variance in the measuring scales. Therefore, these reports successfully confirm that constructs for lock-in, mindset and OOS were indeed unidimensional and captured a very large portion of the variance in the corresponding measuring scales.

Table 7.5: Summary of unidimensional statistics for independent EFAs

		Factor Analysis		
	Dimensions	**Loadings**	**Eigenvalue**	**% AVE**
LIfirst	Accustomed	.76	1.53	76.35
	Comfortable	.76		
LIsecond	Accustomed	.85	1.70	85.13
	Comfortable	.85		
Mindset	Decided	.64	2.34	58.50
	Certain	.49		
	Important	.59		
	Strength of intention	.61		
OOS emotions	Annoyed	.72	2.38	59.50
	Disappointed	.84		
	Irritated	.82		
	Angry	.70		

7.3.3 Validity of measures

Although reliability, which also represents an important prerequisite to construct validity, has been established, further tests were conducted to confidently infer that the measuring instruments were indeed measuring what they intended to measure and

confirm their acceptability (Churchill, 1979; Carmines & Zeller, 1979, p.17). As such, the researcher evaluates content, face and construct validity, each of which is addressed next.

7.3.3.1 Content and face validity

It is important to achieve content validity, specially when dealing with more abstract constructs (Carmines & Zeller, 1979). However, if measures are unable to exhibit a high degree of content validity, 'determined primarily through logical analysis, they cannot have a high degree of construct validity even if they meet empirical standards' (Peter, 1981, p. 143). Therefore, to ensure content validity, Peter (1981) emphasized that constructs need to, primarily, be theoretically sound.

As such, the researcher, through careful appraisal of the existing theory in literature, neatly defined the conceptual constructs and dimensions of the constructs. Additionally, these concepts were modified to suit the online shopping arena and truly reflect the dimensions being measured (Cook & Campbell, 1979).

To promote face validity, the researcher needed to ensure that the scales indeed measured what they appeared to be measuring (Hair et al., 1998). While there are no rigorous checks that can confirm or assess face validity, the researcher included a few academic staff at Monash University as part of the pretest sample. As mentioned in chapter 6, follow up interviews helped to gather their opinions with regards to the appropriateness of the items which were revised, refined or deleted, accordingly.

7.3.3.2 Construct validity

According to Warner (2008, p. 866) construct validity is achieved when a measure 'really measures what the test developer says it measures, and it predicts the behaviours and group memberships that it should be able to predict'. Therefore, construct validity can only be inferred once both convergent and discriminant validity have been established (Christensen, 1994). Given that the purpose of the study was to detect causal relationships, it became even more imperative to ensure construct validity (Bickman &

Rog, 1998) – the researcher needed to confidently infer that, as well as the measures, the manipulations also performed adequately.

7.3.3.2.1 Convergent validity

Convergent validity seeks to assess the extent to which measures of a theoretical construct that are theoretically related do, indeed, correlate (Cook & Campbell, 1979; Hair et al., 1998). If constructs denote high correlations on the same factor, then it can be deduced that the scale is adequately representing a characteristic or variable (Aaker et al., 1998; Mentzer & Flint, 1997).

Correlations assessed whether the variables were in fact related to the variables that they were expected to correlate with (Campbell & Fiske, 1959). As per the exploratory data analysis, all items correlated significantly at the p=.01 level, the weakest being between 'important' and 'decided'. Therefore, all items converged on each respective construct. It is to be noted that as additional measure for convergent validity, the success of the mindset and lock-in manipulations is discussed shortly.

7.3.3.2.2 Discriminant validity

In contrast to convergent validity, the discriminant validity test should reveal a lack of (or low) correlation among constructs that are expected to be different (McDaniel & Gates, 2002); in other words, scores obtained for variables that are predicted to be uncorrelated need to be empirically found to be so in order to appropriately estimate the strength of relationship between the constructs that are being investigated (Campbell & Fiske, 1959).

When conducting an experiment, a 'special type of manipulation check, which serves to assess discriminant validity, is referred to as a confounding check' (Wetzel 1977, as cited in Perdue & Summers, 1986, p. 318). Discriminant validity for lock-in (as a within subject variable) was assessed via confounding checks. Results are reported in the next section.

7.4 Confounding and manipulation checks

By definition, a confounding variable is one that is not on the causal pathway between the manipulated and dependent variables, but rather one that is associated with the independent variable and dependent variable, thereby causing type 1 errors and challenging the validity of interpretations (Mook, 2001). Although the research design controlled for these known and unknown confounds through various techniques discussed throughout the relevant sections, this does not imply a total shield against confounds, thus necessitating further testing (Wetzel, 1977).

7.4.1 Results for known possible confounds

As previously mentioned, the researcher controlled the effects of potential known confounds on lock-in scores by altering the pairs/combinations of sites (coded 'site pairs') as well as the sequence in which the lock-in conditions (coded 'site order') were presented. If they serve as rival variables, then experimental effects cannot be confidently attributed to manipulations of lock-in alone, thus putting in doubt the validity of the manipulations (Wetzel, 1977; Purdue & Summers, 1986).

Using mixed design ANOVA, the researcher measured the interaction effects of 'site pairs' and 'site order' on lock-in scores. Before reporting the results, we point out that generally because of unequal sample sizes in ANOVA, statistical computations may become oversensitive to violations of assumptions, and this is specially relevant to the homogeneity of variance (Hair et al., 1998). However, unequal sample size was not a concern as ANOVA was only run for the within subject variable (lock-in) whereby all respondents were exposed to two lock-in treatments.

7.4.1.1 Interaction effect: Lock-in x 'site pairs'

To demonstrate that the different combinations of websites did not contaminate lock-in manipulations, ANOVA should yield an insignificant interaction effect between

'site pairs' and lock-in scores. Additionally, this should be supported by an insignificant main effect of 'site pairs'.

Results: Based on the ANOVA results of candidates in both experimental groups 6/2 and 2/6 (n=192) combined, the registered significance level of .269 at F (3, 188) =1.427, partial eta squared= .022, demonstrating that there was a lack of interaction between lock-in scores and 'combinations of sites'. This insignificant interaction was supported by an insignificant main effect at F (3,188) =3.722, partial eta squared=.019.

7.4.1.2 Interaction effect: Lock-in x 'site order'

Similar directional effects were expected for the order in which the sites were viewed on lock-in manipulations. In other words, 'site order' was expected not to have an effect on lock-in scores, neither was it expected to interact with lock-in scores.

Results: Lock-in x order interaction was > 0.05 at F (1,190) =3.805. Despite the weak associated partial eta squared values of 0.020 results still provide evidence that the sequence in which the sites were displayed did not confound the lock-in manipulation.

In sum, neither 'site pairs' nor 'site order' contaminated the lock-in manipulation, therefore, favourably contributing to the convergent validity of the lock-in manipulation and making the data valid for further scrutiny (Perdue & Summers, 1986).

7.4.2 Manipulation checks for lock-in

7.4.2.1 Check 1: ANOVA

Because lock-in was a within subject variable where the each respondent was exposed to both conditions of lock-in, a repeated measures ANOVA was conducted to assess the differences in lock-in scores following visits to the sites (as stated, lock-in scores were coded as 'LIfirst' and 'LIsecond') (Pallant, 2007). The repeated measures ANOVA with lock-in as the within subject variable and 'experimental groups' as the between subject variable revealed that respondents in the 6/2 group manifested a higher

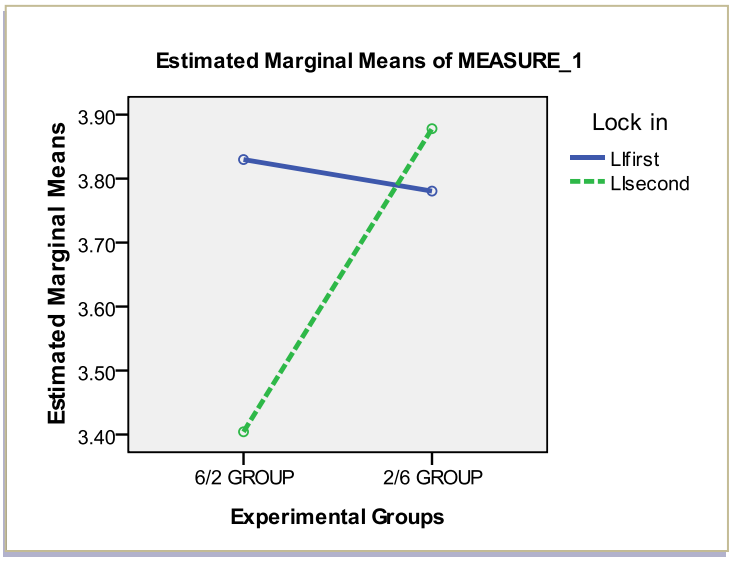
sense of being locked in to the site with which they had more practice (M=3.96 and M=3.71, respectively); however, mean values for LIfirst (3.85) and LIsecond (M=3.84) were almost equivalent amongst respondents in the 2/6 group. The interaction between the experimental groups and lock-in ratings was marginally supported (p=0.05, F(1,190)=3.80).

The repeated measures ANOVA with lock-in as the within subject variable and 'experimental groups' as the between subject variable was run again by splitting the analysis on the basis of experience (buyers who scored 3 and less on the original 'experience scale' were classified as experienced buyers and those who scored more than 3 on original 'experience scale' were classified as inexperienced). The 2x2 ANOVA for the inexperienced group found a significant interaction (pictured in graph 7.1) effect between the levels at which all inexperienced respondents viewed each site and their lock-in ratings (p=0.002, F(1, 86)=10.389). Results revealed that inexperienced respondents of the 6/2 group developed a higher sense of lock-in to the first site, M=3.82. In contrast, a lower mean value was registered for the second site (M=3.40). This trend also extended to the 2/6 group where the mean value was higher for 'LIsecond' (3.87) as compared to 'LIfirst' (3.78). Experienced buyers in the 6/2 group scored higher after their visits to the first site, and in contrast to expectations so did those in the 2/6 group (3.90). The partial eta squared value of 0.108 means that a higher than average effect size can be attributed to the manipulations (Cohen, 1988). These results are summarized in table 7.6.

Table 7.6: Mean values across experimental groups on experience*lock-in scores

	Mean
Experienced buyers	
6/2 group (n=44): LIfirst	4.11
LIsecond	4.05
2/6 group (n=60): LIfirst	3.90
LIsecond	3.81
Inexperienced buyers	
6/2 group (n=47): LIfirst	3.82
LIsecond	3.40
2/6 group (n=41): LIfirst	3.78
LIsecond	3.87

Graph 7.1: Lock-in scores for inexperienced respondents across 6/2 and 2/6 groups



None of the conditions created statistically significant different levels of lock-in amongst the experienced buyers. This may be justified by experienced buyers having higher levels of online shopping skills at the time they entered the experimental task.

Although it was anticipated that the semi-control group (2/2 groups) candidates would not discriminate (or at least on a very marginal scale) against the sites, irrespective of the website combinations, all candidates felt more locked in to site A (the one that was viewed first in all instances). This could well be proof of primacy effect which was also fuelled by the warm up exercise at the onset of the experiment. This would have transgressed into more practice trials and, hence, higher lock-in scores at the first site.

The relatively lower difference between 'LIfirst' scores between groups 6/2 and 2/6 groups should also be noted. Indeed, it is quite evident by simply consulting graph 7.1 that there was a relatively lower difference between the mean values for 'LIfirst' while a markedly larger difference was registered between the average values of 'LIsecond', reinforcing the plausibility of increased practice exercise at site A as proof of primacy effect. Nevertheless, lock-in scores for the control were at their lowest when

contrasted with those of the experimental groups, regardless of whether experience level was controlled for or not.

7.4.2.2 Checks 2: Dependent measures for lock-in – Site preference and comfort to return to

For lock-in manipulation to be successful, the high lock-in site should be preferred over the competing one. The high lock-in site should also be the one where they feel more comfortable to go back to. We conducted a series of chi square tests to test these.

Table 7.7: Contingency table – Experimental groups * Site Preference and site return

	Preferred site A	**Total**
6/2 group	56	91
2/6 group	44	101
	Site return - A	**Total**
6/2 group	55	91
2/6 group	43	101

Indeed, as depicted by table 7.7, respondents behaved as expected with more than half of them preferring site A in the 6/2 group (56%) and 56.1% declaring that they would feel more comfortable to go back to site A. In contrast, in the 2/6 group, more than half of the respondents preferred the second site (site B), with an almost equal percentage choosing site B as the one where they would be comfortable. These results were also statistically supported as summarized in table 7.8.

Table 7.8: Chi square results – Lock-in* site preference and site return

LI with:	
Site preference	χ^2 (1, n=192)=6.197, *p*=.01, phi=.18
Site return	χ^2 (1, n=192)=6.114, *p*=.02, phi=.18

For further insights, we controlled for experience levels and re-ran the analysis by splitting the data file by experience (experienced and inexperienced). Contingency table 7.9 shows the distribution for 'preference' and 'site comfort' at each level of experience and across groups 6/2 and 2/6.

As depicted in table 7.9, of the inexperienced buyers, 70.2% preferred the first site. Consistent with such results, an equal number of the inexperienced buyers felt that that they would be more willing to return to the first site. However, such trend was not mirrored amongst the experienced buyers. In fact, an equal number of experienced buyers in the 2/6 group selected site A or B as their preferred site while 22 out of these 44 respondents chose site A as the site that they would be more comfortable at.

Therefore, inexperienced respondents shared the tendency to prefer the site to which they felt more highly locked in; overall, they also chose the high lock-in site as the one where they would feel more comfortable.

Table 7.9: Contingency table – Site comfort and site return by groups and experience

	Groups	Preferred site A	Total
Experienced buyers	**6/2**	23	44
	2/6	30	60
Inexperienced buyers	**6/2**	33	47
	2/6	14	41
		Site return - A	**Total**
Experienced buyers	**6/2**	22	44
	2/6	28	60
Inexperienced buyers	**6/2**	33	47
	2/6	15	41

As depicted by table 7.10, observations were also statistically supported at $p<0.05$, however only amongst the less experienced buyers. Therefore, all null hypotheses that the observed pattern was due to chance, could confidently be rejected.

Representing above average effect sizes (Cohen, 1988), 36% and almost 34% of the variance in 'site preference' and 'site return' could confidently be attributed to differing lock-in conditions.

Table 7.10: Chi-square results – Lock-in by site preference and site return across experienced and inexperienced buyers

LI with:	Inexperienced buyers	Experienced buyers
Site preference	χ^2 (1, n=88)=11.44, *p*=.001, phi=.36	χ^2 (1, n=104)=.052, *p*=.81, phi=.033
Site return	χ^2 (1, n=88)=9.98, *p*=.002, phi=.34	χ^2 (1, n=104)=.114, *p*=.33, phi=.033

Finally, regardless of their experience levels, all control group candidates preferred site A. Incidentally, this site was also more popular in terms of the site that they felt more comfortable to return to.

7.4.3 Manipulation checks for mindset

As mentioned earlier, at the pilot testing stage, as initial tests for the success of mindset manipulations, t-tests computed the differences in mean scores and their significance between implemental and deliberative mindsets on 7 different measures, all depicted in table 7.11.

As expected, when respondents were asked how decided they felt towards what to buy, implemental mindset candidates scored higher (M = 3.50 vs. 3.20; p = 0.010). Additionally, deliberative mindset subjects felt less certain about the item that they intended to purchase (p = 0.018). Deliberative mindset respondents also felt that it was not as important to be able to buy the selection as opposed to the subjects in the implemental group (M = 3.76 vs. 3.32; p = 0.016). The rest of the measures were not supported and following results from the pilot test, 4 of these measured were retained as part of the main study (please refer to appendix B for further details).

Table 7.11: Mindset manipulation checks – pilot test

Mindset manipulations	Implemental mindset (*n* = 47)		Deliberative Mindset (*n* = 77)		T-Test	
	M	SD	M	SD	*t*	*p*
Decided (what to buy)	3.50	.87	3.20	.96	2.62	.01
Certain (to buy item)	3.51	.85	3.11	.90	2.40	.02
Determined (to buy item)	3.42	1.03	3.25	1.14	.81	.42
Committed (to buy item)	3.36	1.09	3.05	1.13	1.49	.13
Important (to buy item)	3.76	.86	3.32	1.03	2.43	.02
Desire (to buy item)	3.80	.79	3.76	.93	.25	.79
Intention (strength of)	3.80	.79	3.71	.88	.55	.55

For the main experiment, the effectiveness of the manipulations was again assessed through a series of independent sample t-tests. As summarised in table 7.12, in contrast with pilot test results, overall, the mean values led to observe that the manipulations did not perform as expected for the main experiment – this was also the case when the experimental groups were analysed separately (6/2, 2/6 and 2/2).

Table 7.12: Mindset manipulation checks for main study

Scales	Mindsets (n=290)	Mean
Important (to buy item)	0	.51
	1	.49
Certain (to buy item)	0	.54
	1	.56
Decided (what to buy)	0	.53
	1	.54
Intention (strength of)	0	.59
	1	.57

*0 denotes the implemental mindset and 1 denotes the deliberative mindset

The analysis was run again by splitting the sample on the basis of experience. As shown in table 7.13, there was a significant (although quite marginal) difference in scores between the implemental (M=.53, SD=.22) and deliberative mindset (M=.46, SD=.21; t(136)=1.91; p=.05 (two-tailed)) for experienced buyers on 'important to buy item'. Experienced and inexperienced buyers in the implemental mindset condition also scored higher on 'strength of intention'; however, statistically, this difference was not supported.

Table 7.13: Mindset scores for experimental groups across experienced and inexperienced buyers

	Mindset	Experienced buyers	Inexperienced buyers
Important (to buy item)	0	.42	.53**
	1	.51	.46
Certain (to buy item)	0	.53	.52
	1	.54	.55
Decided (what to buy)	0	.53	.51
	1	.53	.52
Intention (strength of)	0	.56	.56
	1	.58	.54

*0 denotes the implemental mindset and 1 denotes the deliberative mindset
** p=.05

7.4.3.1 Price recall as dependent measure

Next, we assess directional effects of price recall on mindset amongst candidates in the experimental groups. Price recall should be more prominent amongst the implemental mindset candidates since the latter were expected to be more focused on the functional and performance related aspects of their shopping experience (Gollwitzer et al., 1987). An independent sample t-test assessed the significance of mean scores between the two mindsets.

T-test results: As expected, mean for implemental (M=.30, SD=.75) and deliberative (M=.10, SD=.82; t(288)=-2.142; p=.033) mindsets were significantly different on price recall. Given the statistically sound results, a chi square test measured the strength of association between mindset and price recall.

Based on contingency table 7.14, 47.6% of candidates in the implemental mindset condition stated that they were confident in being able to recall the prices of the items that were on their lists against more than 50% of those in the deliberative mindset who could not or were not sure about their abilities in recalling the prices of the items on their lists. These results were also statistically (although quite marginally) supported, χ^2 = (1, 290) =5.671, p=.059, phi=.14).

Table 7.14: Contingency table, Mindset by price recall

Price recall	Mindset	
	Implemental	Deliberative
Yes	68 (47.6%)	58 (39.5%)
No	25 (17.5%)	43 (29.3%)
Not sure	50 (35%)	46 (31.3%)
Total	100%	100%

Therefore, the association between the proportion of implemental mindset who could confidently recall prices was significantly (although relatively) different from that of the deliberative mindset. The phi coefficient of 0.164 showed there was a large effect size (Cohen, 1988) where 16.4% of the variance in price recall confidence was attributed to the different mindsets.

On a final note, we acknowledge that, overall, manipulation check results for mindset are in sharp contrast to those of the pilot test, (with the exception of the dependent measure – price recall). Although manipulation measures have strongly been validated in prior psychology studies (Dholakia & Bagozzi 2002; Gollwitzer & Kinney, 1989; Perugini & Conner, 2000), the lack of support can be attributed to manipulations being too subtle and, therefore, may have needed further adjustments in order to capture more substantial differences. Another plausible explanation for this lack of support may be that the larger sample (final study) may have acted as a source of heterogeneity. Therefore (as seen in chapters 8 and 9), we statistically control for consumer characteristics, namely age, gender and income (through a series of regression analyses), that can cause reactions to differ.

CHAPTER 8: Predicting site choice and website switching intentions, findings for $H_{1(a)}$ to $H_{2(b)}$

This chapter provides the empirical results for hypotheses $H_{1(a)}$ to $H_{2(b)}$ (presented below to aid recall). It also reviews the appropriateness of the techniques for data analysis and their related assumptions. Finally, these results are discussed in light of the existing research.

$H_{1(a)}$: Consumers who have had more opportunity to practice and learn to navigate and operate a site are more likely to return to the site for a final purchase decision.

$H_{1(b)}$: Consumers who have had more opportunity to practice and learn to navigate and operate a site are less likely to switch to a competing site.

$H_{2\,(a)}$: Given their existing experience with shopping online, experienced consumers are less likely than inexperienced consumers to purchase from a site they have recently become acquainted to.

$H_{2\,(b)}$: Experienced consumers are more likely than inexperienced consumers to switch to the competing site.

8.1 Predicting site choice, $H_{1(a)}$ and $H_{2(a)}$

8.1.1 Descriptive statistics

We split the sample on the basis of experience and ran a chi square test to assess the association between site choice (as explained in chapter 7, measured as the likelihood of choosing the high lock-in site to make the final purchase from) and the experimental groups. The analysis revealed that respondents of the 2/6 group behaved as expected, with 53.4% of experienced buyers and almost 61% of inexperienced buyers opting to go to site B (the high lock-in site) to make their final purchase. However, in the 6/2 group,

only 43.2% of the experienced buyers would choose site A (high lock-in) while almost 66% of the inexperienced buyers declared that they would choose site A. Chi square tests also support the relationship between lock-in and site choice, however only amongst the less experienced buyers at χ^2 (1, n=88)=11.477, *p*=.001, phi=.361.

Amongst respondents of the 2/2 group (who only experienced the low lock-in condition), regardless of experience levels, almost equal numbers of respondents would choose site A and B. Amongst candidates in the baseline group, site A was generally the more preferred choice (although negligible amongst experienced buyers). Results are summarised in table 8.1.

Table 8.1: Contingency table – Site choice by groups and experience levels

		Groups			
		6/2	**2/6**	**2/2**	**Baseline**
Experienced	Very likely site A	9 (20.5%)	10 (16.7%)	9 (18.8%)	6 (26.1%)
	Somewhat more likely site A	10 (22.7%)	18 (30.0%)	15 (31.3%)	6 (26.1%)
	Somewhat more likely site B	13 (29.5%)	19 (31.7%)	11 (22.9%)	4 (17.4%)
	Very likely site B	12 (27.3%)	13 (21.7%)	13 (27.1%)	7 (30.4%)
Inexperienced	Very likely site A	15 (31.9%)	8 (19.5%)	12 (24.0%)	12 (38.7%)
	Somewhat more likely site A	16 (34.0%)	8 (19.8%)	13 (26.0%)	6 (19.4%)
	Somewhat more likely site B	10 (21.3%)	11 (26.8%)	13 (26.0%)	7 (22.6%)
	Very likely site B	6 (12.8%)	14 (34.1%)	12 (24.0%)	6 (19.4%)

While the chi square assessed the conditional effects at each level of the moderator variable as well as their odds, the statistically sound association signals that this relationship warrants further investigation. Because chi square is limited in that it cannot assess the direction or nature of these effects, we could not rely on its causal

predictive effect and conducted an ordinal logistic regression which is discussed next (Hatfield, Faunce, & Soames, 2006).

8.1.2 Predicting site choice using Polytomous universal model (Plum)

While ordinal and binary regression share the common purpose of analyzing categorical dependent variables, ordinal regression, implemented in SPSS as Plum, was the preferred analysis method because of the nature of site choice (the dependent variable) as stated earlier was measured as an ordered categorical variable, with 4 categories: 1=most likely site A, 2=somewhat more likely site A, 3=somewhat more likely site B, and 4=very likely site B. Recoding of data inherent in the ordered variable into binary data can result in loss of information and statistical power; therefore, when analyzing ordinal data, ordinal regression provides more reliable estimates (Norusis, 2012 and 2005).

When performing Plum, a choice has to be made between a probit or logit link. It was appropriate to select the logit link because the ordered categorical outcome variable exhibited points that were quite evenly and closely distributed amongst the respondents (Norusis, 2012).

8.1.2.1 Parameter estimates – site choice

The Plum analysis as well as the main effect for lock-in and the interaction term between lock-in and experience levels on site choice, also assessed the main effect of experience.

Lock-in was a within subject variable. Therefore, lock-in to site A and lock-in to site B were recoded as two separate categorical variables for the purpose of this analysis. While directional effects were consistent when the analysis was run separately using lock-in to sites A and B as independent variables, this section details the results for site A (please see appendix D for a summary of the results for site B). We highlight the stability of the contributing variables across both analyses.

Experience was originally recorded as 1=very inexperienced, 2=fairly inexperienced, 3=neither inexperienced nor experienced, 4=fairly experienced, 5=very experienced; however, when conducting the Plum analysis, it was centred and included as a continuous interacting variable (Wuensch, 2009). To centre experience, we calculated its mean, which we then subtracted from the data point; the mean was 2.9 but it was rounded to 3. Centering aids in reducing collinearity, but of even more relevance, when tested as part of an interaction, it facilitates interpretation (Cronbach, 1987).

As depicted in table 8.2, all significant parameters recorded odds ratios (OR) below 1. Calculated by the probability that an event will happen divided by the probability that the event will not happen, odds ratios below 1 imply that changes in the independent variable lead to a decrease in the odds of the dependent variable occurring (O'Connell, 2006) – in this case, intention to switch. Conversely, odds greater than 1 imply an increase in the probability of switching intentions while odds close to or equal to 1 signal a lack of influence of the predictor variables on switching intention (O'Connell, 2006).

Table 8.2: Parameter Estimates – intentions to choose site

		Estimate	Std Error	Wald	df	Sig.
Threshold	[Site Choice= 1.00]	-.988	.220	20.200	1	.000
	[Site choice = 2.00]	.295	.207	2.029	1	.154
	[Site choice = 3.00]	1.568	.235	44.689	1	.000
Location	LI	.623	.272	5.237	1	.022
	LI x Experience	-.623	.236	6.956	1	.008
	Experience	.419	.168	6.253	1	.012

The first parameter, "LI" is the test for $H_{1(a)}$, that respondents are more likely to choose to buy from the high lock-in site. The table depicts a positive estimate, implying that increased values in the predictor variables contributed to high values for the dependent variable (O'Connell, 2006). With very likely site B=4 and using LI =0 (low lock-in) as reference categories, the parameter indicates that the odds of purchasing from the high lock-in site increase when respondents are in the low lock-in condition. We

conclude that with greater practice, which creates greater lock-in, consumers are more likely to return to a site to make their final purchase. $H_{1(a)}$ is, therefore, supported.

The third term, which was not hypothesized, as well as being significant, denotes a positive estimate, with Wald=6.253, b=.419; p=.012. This test supports the notion that experienced buyers are more likely to choose the second site to purchase from regardless of whether it is the low or high lock-in site.

However, these results need to be interpreted with caution; the interaction term between lock-in and experience, which is the second parameter, recorded the highest Wald statistics, Wald=6.956, b=-.623; p=.008. The test reveals that the experienced buyers are less influenced by the number of practice trials they receive in the tasks, with inexperienced buyers being more likely to choose the high lock-in site to purchase from; put simply, lock-in seems to have a more influential effect amongst the inexperienced buyers. Therefore, $H_{2(a)}$ is also supported.

8.1.2.2 Satisfying the assumptions of Plum

8.1.2.2.1 Adequate cell count

According to Cochran (1977), 80% of the cells must have 5 or more expected counts and none of the cells should have less than 1 count for adequate cell size and reliable chi-square test. Commonly, to assess this condition, the 'cellinfo' table is consulted; however, despite satisfactory output, this option was more viable for the categorical predictor variables such as lock-in.

Because experience and its interaction with lock-in, was depicted as a new variable, cross tabs were also conducted. None of the resulting cells were empty or exhibited cell sizes that were too small, thereby satisfying the assumption of adequate cell count and confirming the appropriateness of Plum to this dataset (Agresti, 1990; McCullagh, 1980).

8.1.2.2.2 Test of parallel lines

The test of parallel lines, which has drawn criticism for being too rigorous, needs to be insignificant to certify that the 'relationships between the independent variables and the logits are the same for all logits', implying that there is no (or little) difference between the -2LL for the 'null' and 'general' hypothesis (Norusis, 2005, p.74). Failure to satisfy the assumption of parallel lines signals inaccurate analysis and conclusions in which case it is advisable to combine categories until the assumption is satisfied or simply shift to multinomial regression, however at the risk of diminished statistical power (McCullagh, 1980).

The test for parallel lines was successfully met in that it was not statistically significant (χ^2 =98.562, d.f=6, p=.997).

8.1.2.2.3 Adequacy of model

The strength of association serves as a measure of the adequacy of the model in explaining the variations in the dependent variable. This was assessed through the Nagelkerke R^2, McFadden and Cox and Snell statistics (Norusis, 2005). Large pseudo R square values are indicative of better model fit. Unfortunately, the pseudo R^2 for McFadden (.020), Cox and Snell (.054), and Nagelkerke (.058) were poor, leading to the observation that the model does not perform that well.

However, researchers warn that the Cox and Snell and the Nagelkerke coefficients should only be used as supplementary measure for goodness of fit following the argument that these R^2 indices are limited in their ability to efficiently assess the variability explained in the dependent variable when conducting logistic regression (Menard, 2000). As a result, these estimates may be higher or lower than they ought to be. Therefore, we also consult the chi square test for Pearson.

To support the hypothesis that the data fits the model well, this test should not be significant. This criteria was satisfied given the insignificant chi square test (χ^2 =20.584, df=24 and p=.663).

8.1.2.2.4 Overall Model Test

To demonstrate good overall model fit, the researcher must reject the null hypothesis that the model that contains the predictor variables is as good as the one without the predictors (Norusis, 2005). The 'overall model test' revealed a significant difference between the two likelihoods, recording χ^2=93.098, d.f= 3; p= .013. These denote good overall model appropriateness, causing the researcher to confidently reject the null hypothesis.

8.2 Predicting switching intentions, $H_{1(b)}$ and $H_{2(b)}$

This section presents the analysis in guise of testing the following hypotheses, which are presented to aid recall. We also note that intentions to switch sites was measured as the degree to which the respondents were likely to make the purchase at the alternative site relative to the high lock-in site.

$H_{1(b)}$: Consumers who have had more opportunity to practice and learn to navigate and operate the site are less likely to switch to the competing site.

$H_{2\,(b)}$: Experienced consumers are more likely than inexperienced consumers to switch to a competing site.

8.2.1 Preliminary analyses: Switchers and non switchers

As preliminary analyses, the researcher assessed the frequency of switching across lock-in, the different levels of experience as well as gender, age and income levels. Summarized in contingency table 8.3, these results revealed that:

- A higher number of candidates present in the low lock-in condition (as compared to the high lock-in condition) were willing to switch.
- Experienced buyers were more willing to switch than those who were inexperienced – this is in line with prior results, that inexperienced buyers are more likely to stay with the high lock-in site.

- Females were more likely to switch than males.
- Most switchers belonged to the middle income group; incidentally, this group was also more highly represented when profiling the sample.
- Most switchers were aged 31-45.

Table 8.3: Contingency table – Switching rates by lock-in and experience levels

Characteristics	Switching rates (%)
Lock-in	
Low	51.8
High	48.2
Experience levels	
Experienced	62.4
Inexperienced	37.6

Chi square tests further explored these associations. Experience emerged as the only factor significantly associated with switching intentions, χ^2 (1, n=192) =4.117, *p*=.042, phi=.146. To more accurately assess the causal relationships of the variables, we perform a binary regression, as reported next.

8.2.2 Binary logistic regression: predicting switching intentions

The choice for binary regression analysis rests on the rationales that the dependent variable, site switch, coded as 0 and 1, with 0 = Yes, and 1= No, was binary in nature, implying that implied that binary regression is particularly suited for this analysis; additionally, binary logistic regression is more robust than, for instance, ordinary least squares regression in tackling binary dependent variables as it appropriately handles variance inequalities (Hair et al., 1998).

8.2.2.1 Conduct of main analyses

8.2.2.1.1 The significant relationships

To test $H_{1(b)}$ and $H_{2(b)}$, the initial model included the main effects for lock-in (coded low=0; high=1) as well as the interaction term, LI*experience. The Wald statistic and its corresponding significance level tested the significance of each covariate and dummy independents in the logistic model. At the conventional .05 criterion for the Wald statistic, the model revealed that both parameters significantly predicted switching intentions (table 8.4).

Table 8.4: Parameter estimates – Site switching intentions

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	LI(1)	-1.220	.605	4.069	1	.044	.295
	LIxExperience	-.426	.197	4.686	1	.030	.653
	Constant	.259	.201	1.664	1	.197	1.295

a. Variable(s) entered on step 1: LI, LI x experience.

The effect for lock-in represents the test of $H_{1(b)}$, that with greater practice, which creates greater lock-in, consumers are less likely to switch to the competing site. This parameter is significant and in the expected direction (b=-1.220, Wald = 4.069, p=.044); hence, $H_{1(b)}$ is supported.

Lock-in * Experience

This parameter contributed the most to the model, yielding odds ratio of .653, b=-.426, Wald=4.686, at p=.030. The negative b value denotes a negative relationship with switching intentions.

For high lock-in respondents, the odds of switching to the other site as opposed to staying at the high lock-in site are reduced by a factor of .653 as experience decreases. Put simply, inexperienced respondents who are in the high lock-in condition are 1.53 times more likely to stay at the high lock-in site (instead of switching) than those who are experienced; therefore, $H_{2(b)}$ is also supported.

8.2.2.1.2 Goodness of fit and overall model evaluation

Having derived the final model, we now measure its effectiveness through the following evaluations. These results are summarized in table 8.6.

- R^2 measures

Strength of association was measured through the R^2 statistic, more precisely, pseudo R^2 indices – Cox and Snell and Nagelkerke. Naturally, higher values are indicative of better model fit. The model only accounted for between 2.6% and 3.5% of the variability explained in the dependent variable, representing a very poor fit.

As discussed earlier, researchers have warned against the reliability of the pseudo R^2 values for assessing model fit. Therefore, for a fairer model fit evaluation, we rely on the overall model evaluation as well as additional indices for goodness-of-fit (Menard, 2000), all of which are outlined next.

- Classification accuracy

The 2x2 'Classification table' (depicted by table 8.5) which gives an indication of how well the regression model is able to (in) correctly predict switching intentions for all cases (Pallant, 2007) showed that the model correctly classified 29.4% of the respondents who switched sites and 82.2% of those who did not switch sites. This means that that the prediction for those who did not switch sites was more accurate that those who intended to switch sites. Overall, the model accurately predicted 60.9% of the outcome, that is, overall predictions were correct 111 out of 192 times. Because random guessing produces 50% of correct guessing, despite marginal, the regression model is, nevertheless, 8.9% more reliable at predicting switching intentions.

Table 8.5: Classification table – Site switching intentions

Observed		Predicted		
		Switch	No switch	% Correct
Switch site	**Switch**	25	60	29.4
	No switch	19	88	82.2
Overall Correctly Classified				58.9

- Hosmer-Lemeshow chi square test

The Hosmer-Lemeshow chi square test measures overall fit and is usually preferred over the classification table. To confirm that the model fits the data at an acceptable level, the chi square needs to be insignificant. This was confirmed at χ^2 (N=192) =1.513; p=.679, and the null hypothesis that the model is good, is not rejected; the test offers empirical validity by predicting switching intentions more accurately than random guessing over 99% of the time (Lussier, 1995).

By the same token, as part of the Hosmer-Lemeshow chi square test, the researcher also assessed the observed and predicted frequencies; the observed counts in each of the 10 groups of subjects closely correspond to those that were predicted, providing further evidence of the overall fit across the range of predicted probabilities.

- Omnibus test

As an alternative/additional measure for model fit, the Omnibus chi square test is also reported; this test assesses the capability of all predictor variables to jointly predict switching intentions (Garson, 2009) so that the researcher can confidently infer that the derived model is significantly better than the model with intercept only. Based on the Omnibus test, the model is marginally supported, χ^2 (N=192) =5.066, p= 0.079. Therefore, the model is not very adequate.

Table 8.6: Overall model fit – site switching intentions

Goodness of fit measures	Values		
Final model			
-2 log likelihood (-2LL)	258.576		
Cox and Snell R^2	0.026		
Nagelkerke R^2	0.035		
	Chi square	**Df**	**Sig.**
Hosmer and Lemeshow	1.513	3	0.679
Omnibus tests of model coefficients *(=change in -2 LL)*	5.066	2	0.079

8.2.2.1.3 Assumption testing

As mentioned, comparatively fewer and less rigid assumptions are needed for logistic regression as opposed to linear or general linear regression; for instance, homogeneity of variance, homoscedasticity and normality of errors are not assumed. However, logistic regression is very sensitive to multicollinearity, the presence of outliers and adequacy of sample size (Rawlings, Pantula, & Dickey, 1998). Therefore, these were all thoroughly accounted for.

8.2.2.1.3.1 Absence of multicollinearity

Multicollinearity is a high degree of correlation (linear dependency) among independent variables. This is potentially harmful as strong correlations can inflate the variances of the parameter estimates. Additionally, multicollinearity results in wrong signs of the regression coefficient estimates which in turn cause unreliable conclusions about the relationships between dependent and independent variables (Farrar & Glauber, 1967).

In a bid to ensure reliable interpretation of results, we examined tolerance (TOL) and Variance Inflation Factors (VIF) values for experience, age, income and gender. Tolerance values of less than 0.1 indicate high correlation with other variables in the model (Afifi & Clark, 1996). In contrast, VIF that exceed 10 are indicative of the presence of multicollinearity. All TOL scores were substantially far from the desired

threshold of .1 (lowest TOL = .949) while all VIF values were less than 10 (highest VIF=1.054), indicating an absence of collinearity.

8.2.2.1.3.2 Detecting Outliers

In regression analysis, outliers are usually assessed through inspection of standardized residuals and, as the norm, those falling outside 2.58 at the .01 level, are considered outliers and should either be removed or modeled separately (Garson, 2008). While further outliers' checks were conducted when performing MANOVA resulting into a few cases being removed (as reviewed in chapters 7 and 11), none of the cases, when conducting the binary logistic regression, registered standardized residuals that warranted further attention.

8.2.2.1.3.3 Assessing sample size and sampling adequacy

Logistic regression needs larger sample sizes than linear regression, especially in the case whereby predictor variables are many. This is because maximum likelihood (being used here due to the dependent variable not being normally distributed), is considered less powerful than ordinary least squares (Pedhazur, 1997). It has been proposed that 30 times as many cases as parameters be estimated in order to ensure accurate testing of hypotheses (Pedhazur, 1997). Given that the number of parameters for the final model was equal to 6 (*df*=6) and N=192, the ratio of cases to parameter estimates met the desired threshold.

Additionally, as is a requirement for model fit, it was important to check that all cells formed by the categorical independents had frequencies of >=1 and that no more than 20% of the cells were < 5. To ensure that this requirement was satisfied, cross tabs were run for lock-in, mindset and gender. The assumption of minimum cell expectancy was met as the expected cell sizes were > 5, more precisely, greater than 42.18, 43.11 and 35.69, respectively (Pallant, 2007).

8.3 Unhypothesized relationships: Joint effects of lock-in, mindset and experience levels on site switching intentions

In a bid for further exploration, we reran the binary regression analysis and assessed the effects of lock-in, mindset and e-shopping experience levels and their two way interactions on website switching intentions; it is to be noted that these relationships were not hypothesized at the onset of the thesis. Additionally, the regression model included age, gender and income as control variables, the rationales for which are offered in the next section.

8.3.1 Controlling for age, income and gender

Consumer characteristics are reflective of lifestyles/traits, demographic backgrounds and preferences in general and represent an important source for homogeneity, affecting emotions, cognition, perceptions and behaviour. Specifically, we recognize the pivotal roles of gender, age and income on consumer behaviour in the virtual shopping platform (Donthu & Garcia, 1999; Mathwick, Malhotra, & Rigdon, 2002; Brown et al., 2003; Solomon, Dann, Dann, & Russell-Bennett, 2007) and, therefore, conduct subsequent logistic regression analysis to rule out the possible impact of age, income and gender on switching as well as purchase intentions.

Gender researchers have drawn upon differences in men and women and their susceptibility to cognitive and affective environmental processing, fundamentally, on the basis that both genders experience life differently (Harriman, 1985). Relevant to consumer behaviour literature, researchers have highlighted that males tend to be quick shoppers, much of which is attributed to the difference in navigational styles of both parties. Extended to the use of systems, men are more influenced by perceived usefulness whereas women's decision to use a computer system is more influenced by ease of use (Venkatesh & Morris, 2000). What's more women are drawn to the 'fun' side of

shopping online while males are more task oriented (Hansen & Jensen, 2009), as a result of which, women have been found to make more in-store decisions as opposed to men (Inman et al., 2009). Therefore, gender may serve as influence over the type of mindset that is more readily adopted when accessing a website.

While conventional wisdom has referred to females as the more loyal 'kind', emerging research also supports this notion, however, only to the extent that loyalty is towards an individual as opposed to a group; a group incites higher level of loyalty from males (Melnyk et al., 2009). Males, nevertheless, manifest lower levels of susceptibility towards trusting websites (Brown et al., 2003). Therefore, it is possible that gender will have a direct influence over the level of felt lock-in.

Age also plays a key role in shopping behaviours. Traditional literature has suggested that with age, the cost of thinking increases; the older consumer is less willing to seek new information and becomes, therefore, less motivated to process in store stimuli (Wells & Gubar, 1966). In fact, older consumers rely on few criteria for decision making and demonstrate low accuracy in recall (Zeithaml & Fuerst, 2008). Age may, therefore, artificially induce higher levels of lock-in to one site and regulate planned and unplanned purchasing.

Finally, income affects purchase behaviours in that low income renders respondents more price sensitive (Shankar et al., 2003). In contrast, higher income earners, given their general time constraints, tend to be loyal to one site and make more in-store decisions (Inman & Winer, 1998; Shankar et al., 2003). Therefore, income may act as a discriminatory variable on switching intentions, with high income earners perceiving switching as a high costs activity, for instance.

8.3.2 'Extended' binary logistic regression – website switching intentions

The full model, depicted by table 8.7, for the purpose of the regression analysis, included the main effects for mindset, lock-in and experience, and their two-way interaction terms, as well as the control variables, namely, age, income and gender. However, none of the parameters were found to be significant in the initial model. This was also the case when the covariates income, age and gender were removed from the model.

Table 8.7: Parameter estimates – site switching intentions

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	LI(1) by Mindset(1)	-1.033	.631	2.685	1	.101	.356
	Mindset(1) by Experience	-.219	.284	.596	1	.440	.803
	LI(1) by Experience	-.259	.282	.838	1	.360	.772
	Age	.048	.057	.728	1	.394	1.050
	Income	.315	.184	2.945	1	.086	1.371
	Gender(1)	-.509	.325	2.450	1	.118	.601
	Mindset(1)	-.027	.847	.001	1	.975	.973
	LI(1)	-.304	.892	.116	1	.733	.738
	Experience	-.115	.242	.227	1	.634	.891
	Constant	-.864	.911	.901	1	.343	.421

a. Variable(s) entered on step 1: LI * Mindset, Gender, Mindset * Experience, Age, Income, LI * Experience, Mindset, LI, Experience

8.4 Discussions and conclusions, $H_{1(a)}$ to $H_{2(b)}$

Having detailed the results of all tests and analysis for $H_{1(a)}$ to $H_{2(b)}$ in the previous sections, we now critically ground these findings within the existing literature. The reader will note that, to avoid ambiguity, each section discloses of discussion in parallel to the order of hypothesis formations. To aid recall, we also present the related section (part 1) of the framework holistically portrayed in figure 8.1 and summarise results of the hypotheses, as presented in table 8.8.

Figure 8.1: Recap of framework – part 1

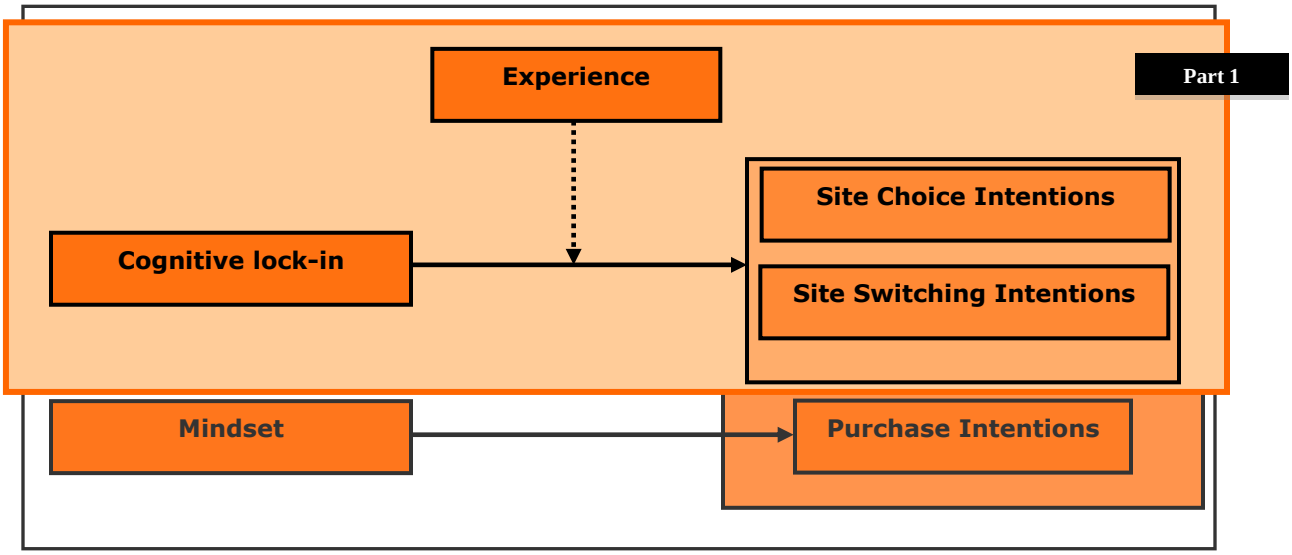


Table 8.8: Summary of hypotheses and results, $H_{1(a)}$ to $H_{2(b)}$

Hypothesis	Results
$H_{1(a)}$: Consumers who have had more opportunity to practice and learn to navigate and operate a site are more likely to return to the site for a final purchase decision.	Supported
$H_{1(b)}$: Consumers who have had more opportunity to practice and learn to navigate and operate a site are less likely to switch to a competing site.	Supported
$H_{2\ (a)}$: Given their existing experience with shopping online, experienced consumers are less likely than inexperienced consumers to purchase from a site they have recently become acquainted to.	Supported
$H_{2\ (b)}$: Experienced consumers are more likely than inexperienced consumers to switch to the competing site.	Supported

8.4.1 Direct effects of lock-in on site choice and site switching intentions – $H_{1(a)}$ and $H_{1(b)}$

Studies on the direct effects of lock-in on preference for a site have demonstrated that higher lock-in induces increased likelihood to stay and purchase from the high lock-in site as compared to a competing one (Murray & Häubl, 2002 and 2007). While we use preference, together with site comfort, as dependent measures to test lock-in manipulations, we assess the role of lock-in on the probabilities of choosing to stay at the

high lock-in site and purchasing from it. In line with predictions, and as further confirmation for existing literature (Johnson et al., 2003; Murray & Häubl, 2002 and 2007; Bo-Chiuan, 2008; Shih, 2012), we find that high lock-in leads to increased probability of visiting and purchasing from the high lock-in site and decreased probability of switching to the competing site.

8.4.2 Experience as a moderator of lock-in and site choice, $H_{2(a)}$

In shopping platforms that experience continuous influxes of first time buyers matched by evolving perceptions and behaviours (Holloway, Wang and Parish, 2005), we can expect consumers to differ in their decision making processes and behaviours. The present study showed that, independently, experience impacts on website choice intentions, with experienced buyers less constrained to one site, and conversely, inexperienced buyers choosing the site they are relatively more acquainted with. Given the significant interaction term for LI*experience, it is redundant to further discussions for the direct effect of experience as well as lock-in; instead, we focus on the interaction effect.

As predicted, experienced and inexperienced buyers manifested different responses to lock-in situations when choosing between the high lock-in and competing site to purchase from, with the less experienced buyers being more likely to react to the practice effects at a site, by demonstrating a higher likelihood of purchasing from the high lock-in site. We also found experienced buyers to be less constrained to either site, remaining relatively oblivious to the practice effects at a website. In fact, they opted to stay with the second site visited, irrespective of whether it was the high lock-in or competing one. Put simply, relative to the inexperienced buyers, they were less likely to choose the high lock-in site to purchase from.

Our findings support the contention that inexperienced buyers may simply be limited in their ability to cope with wider search spaces. To the inexperienced buyers,

purchasing from a site other than the one that they know of seems to be perceived as more risqué. Therefore, as suggested, inexperienced buyers may simply prefer to purchase from the high lock-in site, very possibly because the decision process is simplified in that knowledge of the site may incite comfort where the buyer feels more confident in knowing what to expect of the site (Inman et al., 2009). This claim is limited to our sample because results may differ based also on the individual being an experienced *user* – which is the measure of experience that most studies seem to have adopted. Therefore, future studies should analyze this relationship.

One may argue that previous online purchases of hampers and flowers may have influenced these findings due to previous experience with buying such items. We assessed our data and found that approximately 77.3% and 67% of experienced buyers had not bought hampers and flowers at all online (respectively). Therefore, results from this study may simply serve as indication of how readily experienced buyers adapt to the online shopping environment in view of satisfying a need.

8.4.3 Experience as a moderator of lock-in and switching intentions, $H_{2(b)}$

As an automatic extension to the previous findings, we find that experience strongly influences switching intentions, with the inexperienced being less likely to switch from the high lock-in site, and expectedly, the more experienced being more likely to visit the competing site. The high lock-in generally incited lower intention to switch; however, this effect was slightly less pronounced amongst experienced buyers.

Our findings are in line with Capraro et al. (2003) who in their study that examined health insurance choices, argued that inexperienced buyers, because they have limited consideration sets which, in turn, limit their knowledge of alternative retailers, are less likely to leave the high lock-in site and visit the competition. Our study's findings are also partially in line with Seiders & Tigert (1997) whose research demonstrated that

familiarity discriminates between switchers and non-switchers and deters switchers; however, we find that this is more so amongst the inexperienced buyers.

We note that this study's findings are in contradiction with earlier literature studying the impact of knowledge about competition in the context of consumer defection, with reports that loyal consumers are more likely to tune out to competitive activities and are, as a result, less likely to switch to other stores (Oliver, 1999); by the same token, more experienced buyers are more loyal. As a type of loyalty, higher lock-in did not encourage retention of the experienced buyers.

Overall, our findings add to the general notion that shopping experience levels contribute to different levels of tangible and intangible costs when searching as well as purchasing. This can be explicated through the investment of cognitive efforts that tend to evolve with experience, not only with a site or as an Internet user (adapted from Johnson et al., 2003), but as an online shopper too.

CHAPTER 9: Predicting purchase intentions

This chapter presents the empirical findings for the proposed hypothesis H_3: The likelihood for unplanned purchasing will be higher for buyers who access a website in deliberative than an implemental mindset. This chapter also acknowledges the possible effects of lock-in, experience, gender, income and age which are tested through a series of regression analyses. Results then guide the discussions that are presented as the closing section.

9.1 Predicting purchase intentions

9.1.1 Descriptive analyses

First, we assess the frequency of planned and unplanned purchasing amongst the experimental candidates. It is important to recall that purchase intent was defined as respondents' inclination to buy the specified item or category; final purchase choices were assessed at two intervals where a difference in choices signified intent to purchase an item or a category that was not originally planned (unplanned) while consistent choices implied planned purchase intent.

Contingency table 9.1 summarizes the percentages of respondents who manifested intent to buy an unplanned as compared to the planned item and category. In line with expectations, a higher percentage of those in the deliberative mindset demonstrated intention to purchase an unplanned item and from an unplanned category than those in the implemental mindset condition. Similarly, a higher percentage of those in an implemental mindset would purchase a planned item and from an unplanned category (although these percentages were marginal).

Table 9.1: Purchase intent by mindset

	Mindset (%)	
	Implemental	**Deliberative**
Purchase Intent (category)		
Unplanned	30.1	36.4
Planned	69.9	63.6
Purchase Intent (item)		
Unplanned	15.1	17.2
Planned	84.9	82.8

The associations between mindset and purchase intents at the item and category levels did not yield statistical support. Chi square results are summarized in table 9.2.

Table 9.2: Chi square results for mindset with purchase intent (PI)

	Mindset
Purchase intent (category)	χ^2 (1, n=192)=.84, *p*=.35, phi=-.06
Purchase intent (item)	χ^2 (1, n=192)=.15, *p*=.69, phi=.03

9.1.2 Direct effect of mindset on purchase intent, H_3

To assess the main effect of mindset on purchase intention, we conducted 2 consecutive binary logistic analyses (given the nature of the dependent variable); the first logistic regression used purchase intent at the item level and the second at the category level, both treating mindset as the predictor variable. Results were in sharp contrast to those of the pilot test study. Mindset did not emerge as a significant contributor to the prediction of purchase intent neither at the item nor category level. In addition, none of the criteria proposed by Menard (1995) for assessing model fit was satisfactorily met. Therefore, H_3 is rejected. We refrain from extensive reports of this analysis and instead focus on reviewing the impacts of experience and lock-in on purchase intent, when added as predictor variables.

9.1.3 Descriptive analyses (with the inclusion of lock-in)

9.1.3.1 Lock-in and purchase intents

Given the prevalence of lock-in so far in the thesis, we explore its (predictive) effects on purchase intentions through a series of crosstabulations.

Table 9.3: Contingency table – Purchase intentions by lock-in

	Lock-in (%)	
	Low	**High**
Purchase Intent (category)		
Unplanned	50.5	14.3
Planned	49.5	85.7
Purchase Intent (item)		
Unplanned	15.8	16.5
Planned	84.2	83.5

As summarised in table 9.3, a higher percentage of respondents in the low lock-in condition would buy an unplanned category; we recorded almost equal percentages amongst respondents in the high and low lock-in who would buy the planned item and from and unplanned category. The association between lock-in and purchase intent was strongly supported, although only at the category level, $\chi 2$ (1, n=192) =28.243, p=.000, phi=.384. These results are summarised in table 9.4.

Table 9.4: Chi square results for lock-in with purchase intent

	Lock-in
Purchase intent (category)	χ^2 (1, n=192)=28.243, *p*=.000, phi=.384
Purchase intent (item)	χ^2 (1, n=192)=.01, *p*=.904, phi=.009

*9.1.3.2 Mindset * lock-in on purchase intents*

A two way crosstabulation was run to assess the possible interaction between lock-in and mindset on purchase intent (at both item and category level). Our analysis showed counterintuitive results, with almost equal percentages of implemental and

deliberative mindset candidates being likely to buy the planned item and category, regardless of the lock-in condition. Additionally, in either lock-in condition, both deliberative mindset candidates manifested greater inhibition towards intents to purchase the planned item. Interestingly though, at the category level, 97.6% of candidates in the implemental mindset condition, declared that they would buy from the planned category. Table 9.5 depicts these results.

Table 9.5: Contingency table – Purchase intents by mindset and lock-in

Lock-in			Mindset	
			Implemental	**Deliberative**
Low	**Category intent**	**Unplanned**	27 (52.9%)	24 (48.0%)
		Planned	24 (47.1%)	26 (52.0%)
High	**Category intent**	**Unplanned**	1 (2.4%)	12 (24.5%)
		Planned	41 (97.6%)	37 (75.5%)
Low	**Item intent**	**Unplanned**	8 (15.7%)	8 (16.0%)
		Planned	43 (84.3%)	42 (84.0%)
High	**Item intent**	**Unplanned**	6 (14.3%)	9 (18.4%)
		Planned	36 (85.7%)	40 (81.6%)

The χ^2 showed a significant association between lock-in and mindset on purchase intent, but only at the category level and in the high lock-in condition. None of the tests for the relationship between mindset and lock-in on purchase intent at the item level, was significant. Chi square results are summarized in table 9.6.

Table 9.6: Chi square results for lock-in and mindset with purchase intent

	High lock-in	Low lock-in
Purchase intent (category)	χ^2 (1, n=192)=9.02, *p*=.003, phi=.-31	χ^2 (1, n=192)=.24, *p*=.003, phi=.04
Purchase intent (item)	χ^2 (1, n=192)=.274, *p*=.601, phi=.004	χ^2 (1, n=192)=.002, *p*=.966, phi=.055

9.1.4 Main Analyses – Unhypothesized effects on purchase intentions

As in the initial analysis, we estimated a full model that, as well as mindset, also included the main effects for experience and lock- in, together with all combinations of their two way interactions, to measure their predictive effects on purchase intentions (coded as 0=intention to purchase the planned item/category, and 1=intention to purchase the unplanned item/category). Similarly to previous analyses, we controlled for the effects of age, gender and income in a series of regression analysis, reviewed next.

9.1.4.1 Predicting purchase intentions at the category level

As presented in table 9.7, LI and the interaction term LIxMindset contributed the most to the model, with Wald statistics of 12.69 and 5.938, respectively. In contrast, based on poor Wald statistics, the interaction term for LIxexperience, experience and gender, contributed the least to the model. Yet again, we note the poor contribution of mindset, yielding a Wald static of .507, p=.477.

Table 9.7: Significant parameters – purchase intentions

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	**LI(1)**	**4.318**	**1.173**	**13.550**	**1**	**.000**	**75.029**
	Mindset(1)	.262	.412	.404	1	.525	1.299
	LI by experience	-.385	.790	.238	1	.626	.680
	Experience(1)	.259	.418	.385	1	.535	1.296
	LI(1) by mindset(1)	**-3.014**	**1.158**	**6.779**	**1**	**.009**	**.049**
	Gender(1)	.190	.368	.268	1	.605	1.210
	Age	.074	.063	1.369	1	.242	1.077
	Income	-.248	.204	1.478	1	.224	.781
	Constant	-.407	.690	.348	1	.555	.665

a. Variable(s) entered on step 1: LI, Mindset, LIxexperience, experience, LI * Mindset, Gender, Age, Income.

9.1.4.1.1 The significant relationships

9.1.4.1.1.1 The main effect for lock-in

As seen in table 10.7, lock-in still emerges as a significant contributor – in fact, it was the strongest contributor, b=3.73, Wald=13.10, OR=75.02, at p=.000, with consistency in the effect direction. The positive b value denotes a positive relationship with purchase intentions; using 1=planned purchase, as the reference category, the likelihood of buying from the planned category was approximately 75 times higher in the high as compared to the low lock-in condition. However, its significant interaction between mindset and purchase intent implies that the results should be interpreted with caution.

9.1.4.1.1.2 Lock-in*Mindset

This interaction term resulted in Wald=6.77, OR=.049, b=-3.01, at p=.009. The negative b implied a negative relationship between this parameter and the probability to purchase from the planned category. As also illustrated by the graphed probabilities for purchase intentions (graph 9.1), the implemental mindset candidates were 1/.049=20.4 times more likely than the deliberative candidates to buy from the planned category when in the high lock-in condition.

Graph 9.1 Predicted probabilities for purchase intent – LI*MS

Both the implemental and deliberative mindset candidates when in the low lock-in condition were almost equally likely to not purchase from the planned category – although this effect was slightly more pronounced amongst the deliberative mindset.

9.1.5 Goodness of fit and overall model evaluation

This section presents an assessment of the effectiveness of this model, the results of which are summarized in table 9.8. We note that issues relevant to each criterion were extensively reviewed in chapter 8. Therefore, we limit related discussions to avoid regurgitating this information.

- R^2 measures

  Once again, both the pseudo R^2 statistics and Cox and Snell and Nagelkerke served as indication for the amount of variability explained by the variables in the model. Results indicate that the model explained between 19% and 26.4% of the variability in purchase intent, thereby representing quite a good fit.

- Classification accuracy

  The 2x2 ‘Classification table’ indicated how well the regression model (in) correctly predicted purchase intentions (category). The model correctly classified 60.9% and 79.7% of the cases in the planned and unplanned conditions, respectively. Overall the model correctly predicted 67.2% of the outcome, with an

improvement over random guessing. Therefore, the model reliably predicts purchase intentions.

- Hosmer-Lemeshow chi square test

  The Hosmer-Lemeshow chi square test was not statistically significant χ^2 (N=192) =.000; p=1.000; in fact, the model seems to be an excellent fit for the data, with almost identical observed and predicted frequencies. Therefore, the null hypothesis that the model is good is not rejected.

- Omnibus test

  The Omnibus test was highly significant at χ^2 (n=192)=40.41, p=.000. We, therefore, confidently conclude that the model fits the data adequately and is better than the model with intercept only.

Table 9.8: Overall model fit – purchase intentions

Goodness of fit measures	**Values**		
Final model			
-2 log likelihood (-2LL)	204.01		
Cox and Snell R^2	0.190		
Nagelkerke R^2	0.264		
	Chi square	**Df**	**Sig.**
Hosmer and Lemeshow	.000	1	1.000
Omnibus tests of model coefficients *(=change in -2 LL)*	40.41	2	0.000

9.1.5.1 Purchase intentions at the item level

To predict purchase intention at the item level, we conducted a series of binary regression analysis, by mirroring the parameters measured at the category level. We note that none of the parameters contributed to significantly predict purchase intentions despite running various regression analysis with the deletion and inclusion of parameters in order to derive the significant ones.

9.2 Discussions and conclusions

9.2.1 Mindset and purchase intentions, H_3

We predicted the independent effects of mindset in that implemental mindset would demonstrate higher likelihood for planned purchasing and the deliberative mindset for unplanned buying. These represented intuitive predictions that the implemental mindset because of more concrete goals and higher motivation to service goal directed behaviours were more likely to purchase the planned item as compared to the deliberative mindset (Lee & Ariely, 2006; Bell et al., 2008 and 2011; Kollat & Willett, 1967). However, candidates in the implemental and deliberative mindset conditions did not behave as expected, leading to the rejection of H_3. Nevertheless, the role of mindset becomes one of impact when combined with lock-in. Hypothesized and unhypothesized relationships are summarized in table 9.9.

Table 9.9: Summary of results – purchase intentions

Hypothesis	Results
H_3: The likelihood for unplanned purchasing will be higher for buyers who access a website in a deliberative than an implemental mindset.	Not supported
Unhypothesized relationships	
High levels of lock-in increase the likelihood of unplanned purchase intents (at the category level).	
In the high lock-in condition, those in an implemental mindset are more likely to purchase from the planned category; in contrast, those in the deliberative mindset are more likely to purchase from the unplanned category.	

9.2.2 Unhypothesized relationships on purchase intentions

9.2.2.1 The effect of lock-in on purchase intentions

Our study shows that lock-in had a very strong effect on purchase intent. Buyers were more likely to stick to the planned category when visiting a site that they feel highly locked in to, and vice versa; that is, when buyers visit a site with which they experience low lock-in, they are more likely to purchase from an unplanned category.

Such observations do not delineate from traditional literature, where reports have predominantly shown that shoppers with low levels of store familiarity and loyalty have the highest failure rates for intended purchases (Bucklin & Lattin, 1991; Park et al., 1989; Bell et al., 2008 and 2011) – although, it is important to highlight that Bell et al.'s (2008 and 2011) research may have induced an 'artificially inflated' influence of the unfamiliar environment by using promotional activities to incite purchases.

In general (until recently), researchers have focused on online buyers as predominantly convenience seekers. However, Gunness, Ogilvie, & McManus (2004) reported that 'efficiency of services' discriminate between planned and unplanned purchasing online, with a more positive impact on the former. While there is no analysis of the impact of familiarity level with a site, these findings can be substantiated through Bell et al. (2008) who found that shoppers who were fast and efficient made fewer unplanned purchasing. Conversely, those who were more heavily reliant upon environmental and category cues to guide their purchase processes and decisions, and in so doing encourage a higher likelihood for changed behaviours.

With direct relevance to the lock-in literature, it has been found that as users learn about a site (evidenced through steeper learning curves) there is higher likelihood of purchasing from that site (Johnson et al., 2003), although the latter researchers do not, however, account for the possibility of planned and unplanned purchasing, when it should be recognized that higher levels of lock-in entail increased efficiency.

Given the differences in findings when the implemental and deliberative mindsets are introduced as part of this relationship, we reserve further discussions for the following section.

*9.2.2.2 Lock-in*Mindset on purchase intentions*

Based on this study's findings, we find strong evidence in support of a mutually reinforcing effect between high lock-in and implemental mindset on intention to purchase from the planned category. We offer plausible explanations for such findings by using temporal distance vis-à-vis goal attainment as backdrop. For the implemental mindset, the near future time perspective enhances the necessity of acquiring an item. While Dhar et al. (2007) demonstrated how this mindset can propel one into a shopping momentum so that after the initial purchase, the implemental mindset persists and incites a subsequent unrelated and even unplanned purchase, our aim was not to delve into the chain of reactions, but rather the moderator effect of lock-in. Our findings lead to suggest that the high lock-in encourages efficiency of task because the buyer is well acquainted with and has learnt of efficient skills to navigate the site. Therefore, extrapolating from this logic, the implemental mindset incites planned purchasing, further reinforced by the familiar environment.

The contrasting finding amongst deliberative mindset candidates is explained through the mirror effect of temporal distance, that is, the lower level of perceived immediacy and urgency of goal achievement. The high lock-in invites further exploration of the site and increased likelihood of unplanned purchasing. It is possible that fusion of the deliberative and high lock-in may encourage a state of flow, although we did not exclusively measure this link.

Although fairly marginal, we found counterintuitive effects between the low lock-in condition and the deliberative mindset. The deliberative mindset was more likely to purchase from the planned category, as compared to the implemental mindset. However, the simple fact may be that while the latter is still learning how to use the site and remains unsure about whether the site can satisfy his/her need (Richard & Chandra,

2005), the combined influence of distant time perspective and a more realistic estimation of task completion, lead to the deliberative mindset's preference towards further 'exploration' of the category that was planned a priori.

On the other hand, the implemental mindset, when faced with the challenge of visiting an unfamiliar site, may tend to overestimate the level of control and miscalculate activities surrounding task completion. Therefore, such buyers will shift categories; although in the low lock-in site they may be basing their decisions upon incomplete category information. These results are quite inline with the control theory as popularly applied in mindset and goal-related studies.

CHAPTER 10: Results and discussions – OOS emotional and behavioural reactions

This chapter delves into a few preliminary as well as main analysis that were conducted for the purpose of answering hypotheses H_4 to H_9 (listed below), designed to assess the strength of negative emotions and behavioural reactions induced by the OOS.

H_4: When facing an OOS, buyers in an implemental mindset are more likely to demonstrate strong negative emotions than those in a deliberative mindset.

H_5: Buyers who are in an implemental mindset and experience an OOS at a low lock-in site are more likely to switch to a high lock-in site and look for an item than stay at a low lock-in site.

H_6: Consumers will experience stronger negative emotions if OOS occurs at a low than high lock-in site.

H_7: Buyers in an implemental mindset will experience stronger negative emotions if OOS occurs at a low than when it occurs at a high lock-site, while the emotions of buyers in a deliberative mindset will not differ between an OOS encountered at a low and a high lock-in site.

H_8: Buyers are more likely to switch from a low lock-in site than a high lock-in site when an OOS is encountered

H_9: Buyers in an implemental mindset are more likely to switch to a high lock-in site than those in a deliberative mindset

This chapter also reviews the appropriateness of MANOVA and multinomial regression analysis that were used as techniques for data analysis. Finally, it concludes with a discussion of the findings which are grounded in existing research.

10.1 Main Analyses – OOS emotional responses

10.1.1 Descriptive observations

In guise of preliminary exploration, we ran a series of frequency analysis for all emotions. Consistent with the pilot test, 'annoyed' emerged as the most frequent emotion (n=171), and 'angry', as the least popular emotion (n=92). The second most popular emotion was 'disappointed'; annotated frequencies are summarized in table 10.1. It is to be noted that the emotions were measured as continuous variables, but were recoded into categorical variables with 3 levels for the purpose of the frequency analysis.

Table 10.1: Frequency of negative emotions

	Frequency			
Negative emotions	**Yes**	**No**	**Maybe**	**N**
Annoyed	171	8	13	192
Disappointed	141	20	31	192
Irritated	130	24	38	192
Angry	92	24	66	192

Given that mindset and lock-in served as independent variables for the purpose of measuring strength of emotional reactions, we further explored their prevalence on 'annoyed', 'irritated', 'disappointed' and 'angry'. Annotated findings, summarized in table 10.2, demonstrate that respondents manifested stronger negative reactions when an OOS occurred in the low lock-in condition; overall, those in the implemental mindset manifested stronger feelings of being 'annoyed' and 'angry' (although marginally), but they were less irritated and angry than candidates in the deliberative mindset (again, very marginal).

We also note that, overall, higher mean values were recorded amongst the baseline group, as compared to experimental groups 1 and 2, combined.

Table 10.2: Means and standard deviations of negative emotions across LI and MS

Experimental Conditions	Disappointed		Irritated		Annoyed		Angry	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Lock-in: High	.83	.96	.71	1.01	1.13	.89	.31	1.02
Low	.93	.96	.80	1.01	1.31	.65	.41	.99
Mindset: Implemental	.88	.95	.74	1.06	1.27	.76	.38	.95
Deliberative	.88	.98	.76	.97	1.19	.80	.35	1.05
Control/Baseline group	.86	1.08	.82	1.02	1.34	.68	.55	1.07

The next step was to assess the significance of the association between (a) lock-in on emotional reactions, and (b) mindset on emotional reactions. Chi square tests significantly supported the association between lock-in and 'irritated' (χ^2 (2, n=192) =6.45, *p*=.04, phi=.18), suggesting a possible main effect of lock-in on how irritated respondents felt. However, none of the associations between mindset and 'annoyed', 'angry', 'irritated' and 'disappointed' was significant.

We also ran a chi square test to assess the possibility for the significance of lock-in within each mindset condition on the extent to which respondents felt irritated, angry, disappointed and annoyed. Results revealed a significant interaction between deliberative mindset and lock-in on the extent to which respondents felt irritated, χ^2 (2, n=99) =8.32, *p*=.01, phi=.29; results were not statistically supported between implemental mindset and lock-in, χ^2 (2, n=93) =.97, p=.61, phi=.10. We found no significant associations on 'annoyed', 'angry' and 'disappointed'. Therefore, this implies that lock-in has an effect amongst those in the deliberative mindset on how irritated they felt.

While these results are quite promising in that they provide some support for effect of mindset and lock-in on strength of emotional reposes, all proposed associations were further investigated through a MANOVA analysis. This is discussed next.

10.1.2 The MANOVA analysis: Impacts of lock-in and mindset on emotional reactions – H_4, H_6, and H_7

To test hypotheses H_4, H_6, and H_7 and evaluate the impacts of lock-in and mindset on the differences in the mean scores of 'irritated', 'angry', 'disappointed' and 'annoyed', we conducted a two way mixed multivariate analysis (MANOVA) where the full factorial (model) option assessed all main effects and the 2 way interaction term. The appropriateness of this analysis technique is discussed next.

10.1.2.1 Appropriateness of MANOVA

While also an extension of ANOVA, owing largely to their shared purpose of detecting group differences, the choice for MANOVA as the preferred analysis technique rests on the rationale that if employing ANOVA, separate univariate ANOVAs need to be run for each dependent variable. However, running a series of ANOVAs leads to the risk of increased type I error, caused by inflated alpha levels that ANOVA does not control for. Consequently, results may be misleading in that differences between groups could appear to be significant, simply because the same test was repeated a number of times, when, in reality, they are not (Pallant, 2007).

Further, because ANOVA only allows for independent computation of the effects of the dependent variables, that is, one at a time, it 'ignores the possibility that some composite (linear combination) of the dependent variables may provide evidence of an overall group difference' (Hair et al., 1998, p. 339). On the other hand, MANOVA enables the simultaneous examination of a combination of outcome variables in a single analysis, while addressing each of them individually (Hand & Taylor, 1987; Hair et al., 1998) and isolating those that 'contribute the most to group separation' (Bray & Maxwell, 1985, p.11). Our aim was to assess the extent of emotional reactions based on the different groups of lock-in and mindset, and this was achieved by running a full factorial (model) option, MANOVA that allowed for the assessment of all main effects and the 2 way interaction term.

10.1.2.1.1 Test of independence for 'irritated', 'annoyed', 'disappointed' and 'angry'

For the conduct of MANOVA, while the dependent variables were conceptually related and formed a series of factors that portrayed negative emotions (Garbarino & Strahilevitz, 2004) the dependent variables need to be modestly and significantly correlated to satisfy the test of independence. Therefore, while also an assumption of MANOVA, we discuss the test of independence at the very onset of this section, to determine the appropriateness of all 4 emotions to this dataset.

We used bivariate correlations to assess the relations of all pairs of the dependent variables: 'irritated', 'angry', 'annoyed' and 'disappointed'. As shown in table 10.3, all pairs of the variables were positive and represented significant correlates at the .01 level. At .628, the correlation between 'annoyed' and 'irritated' was neither quite high nor too close to zero. None of correlations registered values of equal to or above .8 (Pallant, 2007), but we noted relatively high coefficients between 'disappointed' and 'irritated' (.721).

Table 10.3: Correlations for 'annoyed', 'angry', 'disappointed' and 'irritated'

		Annoyed	Angry	Disappointed	Irritated
Annoyed	Pearson Correlation	1	.385**	.572**	.519**
	Sig. (2-tailed)		.000	.000	.000
Angry	Pearson Correlation	.385**	1	.424**	.404**
	Sig. (2-tailed)	.000		.000	.000
	N	186	186	186	186
Disappointed	Pearson Correlation	.572**	.424**	1	.721**
	Sig. (2-tailed)	.000	.000		.000
	N	186	186	186	186
Irritated	Pearson Correlation	.519**	.404**	.721**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	186	186	186	186

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

10.1.2.2 Reporting the MANOVA results

As mentioned. the initial full factorial MANOVA gauged the significance of all possible main effects and the interaction between mindset and lock-in. Based on the Multivariate test table, all main effects recorded a significance level above .05 associated

with Wilks' Lambda. Therefore, no significant difference was noted within groups for levels of (1) lock-in and (2) mindset on how irritated, angry, disappointed and annoyed respondents felt following the OOS.

In contrast to our predictions, these results suggest that the strength of emotions, following a stockout encounter, did not vary across the levels of lock-in and mindset, or across the levels of lock-in and mindset combined. Therefore, based on these results, reported in appendix E, we reject H_4, H_6, and H_7.

10.1.2.2.1 Assumption testing for MANOVA analysis

10.1.2.2.1.1 Test of outliers

To detect multivariate outliers, the researcher assessed the Mahalanobis distances before running MANOVA. Since 2 dependent variables were used for the MANOVA process, the critical cutoff value was 13.82 (Tabachnick & Fidell, 1996). The Residual statistics revealed 8 cases above this value, the highest being 23.48 (Pallant, 2007). As mentioned in chapter 7, they were deleted from the analysis.

10.1.2.2.1.2 Sample size

MANOVA is very sensitive to unequal cell sizes which, when markedly different, can negatively impact on statistical power and the sensitivity of the assumption of homogeneity. As a bare minimum, when using MANOVA, researchers have advised that the cell number should be twice the number of dependent variables as cell sizes tend to drop easily when performing MANOVA, due to multiple relationships when running factorial models. While the cell sizes varied in number of respondents, different cell sizes do not represent a problem provided that the 'largest group size divided by the smallest group size is less than 1.5', in which case violating the assumption of homogeneity of variance may also have minimal impact (Hair et al., 1998, p. 348). Cell sizes were considered approximately equal as the largest group divided by the smallest group (51/42) equated 1.21 (Hair et al., 1998).

Researchers have also recommended the threshold to be a minimum of 20 responses for every cell (Hair et al., 1998). In this 2x2 mixed design MANOVA, *n* equated to more than 20 for each cell, exceeding the minimum recommended sample size. Therefore, based on these criteria, sample size was adequate.

10.1.2.2.1.3 Assessing normality

For this assumption to be satisfied, the scores on 'angry', 'irritated', 'disappointed' and 'annoyed' need to be systematically distributed around their respective mean estimates; in case of nonnormality, the tests for significance and confidence intervals are affected (Tabachnick & Fidell, 2001). The following tests were observed:

- Skewness and Kurtosis

  Whereas a value of 0 connotes a perfectly normal distribution, if parameters for either skewness or kurtosis are greater than +1 or smaller than -1, the data set is considered to be nonnormally distributed, introducing the possibility to overestimate chi square (Mardia, 1985). Therefore, skewness or kurtosis ranging between +1 and -1 is considered adequate for establishing symmetry. As depicted in table 10.4, 'annoyed' recorded skewness values outside the +1 and -1 range, implying that these values did not fit the 'assumed' normal distribution (Mardia, 1985). Thus, the assumption of normality for 'annoyed' was violated.

  Overall, the Kurtosis was quite satisfactory; values recorded were more or less within the acceptable range for 'angry' and 'irritated' and 'disappointed', with a slight peak for 'annoyed'.

Table 10.4: Parameters for skewness and kurtosis – 'angry', 'annoyed', 'irritated' and 'disappointed'

	'Annoyed'	'Angry'	'Disappointed'	'Irritated'
Skewness	-1.33	-.38	-.813	-.716
Kurtosis	2.71	-.18	.257	.027

- Graphical representation – the normal probability plot

  We also consulted the normal probability plot as additional source for normality assessment (Tabachnick & Fidell, 1989; Pallant, 2007). Under perfect normality, the points should fall along the diagonal and form a 45-degree line. This condition implies that 100% of the variance is explained in the linear relationship, suggesting that the model is very reliable.

  The Q-Q plots, presented appendix F, show values falling along the diagonal, but with departures that are relatively extreme, specifically for 'disappointed', 'irritated' and 'angry'. The cluster of cases around the lower end may be attributed to values with positive skewness, probably because of the nature of the construct; more specifically, the scores for negative emotions are bound to be high in an OOS situation (adapted from Pallant, 2007).

10.1.2.2.1.4 Assumption of linearity

This assumption assumes that the relationships between independent variables and each pair of the dependent variables are linear; thus, data points need to be randomly scattered around 0. Failure to meet this assumption does not represent cause for worry if the variables have balanced distributions. In the opposite case, the power of the analysis is compromised, thereby probably necessitating transformation of the variable in question (Tabachnick & Fidell, 2007; Pallant, 2007).

We tested the presence of linearity diagrammatically via scatterplots for each group of dependent and independent variables. The plots revealed that, overall, the distribution of 'irritated' , 'disappointed', 'angry' and 'annoyed' were quite balanced within each group; we, however, note a mild tendency towards non linearity for the low lock-in group on 'irritated' and the high lock-in group on 'annoyed' (Tabachnick & Fidell, 2007; Pallant, 2007; Hair et al., 1998).

10.1.2.2.1.5 Homoscedasticity/Homogeneity of variance-covariance matrices

Homoscedasticity is very desirable since it implies that variance explained is not concentrated in a limited range of independent values. On the other hand,

heteroscedasticity is caused by the presence of unequal variances, with patterns detected in the variances of residuals. Heteroscedasticity, if slight, does not have a major impact on significance tests. However, similar to the assumption of linearity, pronounced heteroscedasticity carries the potential to critically distort findings and weaken analysis, thereby increasing the possibility of a Type I error (Berry & Feldman, 1985; Tabachnick & Fidell, 1996).

Statistically, Box M has commonly been used to assess homoscedasticity (Pallant, 2007; Tabachnick & Fidell, 2007). The researcher draws on the fact that as core requirement for satisfying this assumption, Box M test needs to be insignificant, that is >0.001. Box's test for equality of covariance matrices showed that model covariance matrices was inadequate at .010 (Pallant, 2007). Therefore, we cannot assume homogeneity of covariance.

To meet the assumption of homogeneity of variance, the Levene's test needs to be insignificant; more precisely, all values for the dependent variables need to be above the 0.05 threshold. This reiterates that there is no difference in the amount of population variances for both groups (Hair et al., 1998). Results for all emotions were supported while this assumption failed for 'irritated'. However, because overall cell sizes were approximately equal and the standard deviations for 'irritated' were only about 2 times larger than the smaller SD, violation of this assumption was not a major concern (Gaskination, 2011).

10.2 Main analyses – OOS behavioural responses

10.2.1 Preliminary analyses

Respondents were to indicate their reaction following OOS announcement of their selected item. Options were to (1) continue looking for items at the same store, (2)

continue looking for items but at the other store, (3) purchase another item on the list, (4) go to yet other online stores, (5) go to a physical store, and (6) other. Of the 5 behavioural responses, the least popular option across the experimental groups (N=186, after removing 6 cases with 'other' as highlighted option) was to switch shopping channel and visit a physical store. The most popular behaviour was to continue looking for items at the same store.

We further investigated OOS reactions across all conditions of the lock-in and mindset. As summarized in table 10.5, when the OOS occurred during visits at the low lock-in site, intriguingly, respondents were generally more likely to either rely on their lists or stay at the same site (low lock-in) to continue looking for items. A relatively smaller portion of respondents stated that they would return to the high lock-in site than remain at the low lock-in site to continue looking for items (n=17 vs. 14). Intriguingly, a higher portion of respondents in the high lock-in condition, would visit a physical store.

Table 10.5: Frequency of OOS behavioural responses by LI and MS

Experimental conditions	Purchase another item on list	Look for another item at same site	Look for another item at other site	Go to a physical store	Go to yet other online stores
Lock-in:					
High	19	20	14	25	15
Low	27	32	17	15	6
Mindset:					
Implemental	16	25	20	17	12
Deliberative	15	27	26	19	9
Control group	10	18	9	11	4

Interestingly, in both the implemental and deliberative mindset conditions, respondents were almost equally likely to choose to purchase another item on the list, remain at the same site to continue looking for items, and go to a physical store. However, those in the deliberative condition manifested preponderance towards switching to the other site to continue looking for items, probably consistent with the deliberative mindset's zeal for exploration. Interestingly, a larger number of respondents

in the high lock-in condition stated that they would visit a physical store as compared to those in the low lock-in condition (25 vs. 15).

In the baseline group, clearer demarcations were recorded amongst the options. Respondents manifested a penchant towards staying at the same site as opposed to visiting the other site to continue looking for items (n=18 vs. 9).

For additional insights we assessed the associations between mindset and lock-in on OOS reactions through a three-way cross tabulation, with OOS reactions by LI and MS. We found significant statistical support for the relationship between (implemental) mindset and lock-in, $\chi 2$ (3, n=186) =9.877, p=.020, phi=.331, suggesting a possible significant interaction term. Again, the chi square test highlights that overall there are differences between categories of mindset and lock-in. We proceed with a multinomial regression analysis (MNL) to test how lock-in and mindset, independently and jointly, cause OOS reactions to vary. These are discussed next.

10.2.2 Conduct of multinomial regression, impacts of lock-in and mindset on behavioural intentions – H_5, H_8 and H_9

10.2.2.1 Appropriateness of MNL to this dataset

It was appropriate to use Multinomial regression (MNL) because OOS reactions were measured as a discrete variable with more than 2 unordered categories/levels: continue looking for items at the same site=1, continue looking for items but at other sites=2, purchase another item from the list=3, go to yet other online stores=4, and 5= go to a physical store, where respondents chose one of the options (Zinn & Liu, 2001; Dadzie & Winston, 2007; Agresti, 1996; Campo et al., 2003; Sloot et al., 2005).

One may argue that, on such basis, discriminant analysis becomes a useful analysis technique too. However, while MNL ignores normality, discriminant analysis tends to be highly sensitive to this assumption which, if not met, can lead to distortions in estimating the discriminant function. Exploration of the data showed signs of skewness,

which although not an immediate concern for MNL given the adequate sample size, renders the use of discriminant analysis less favourable (Pallant, 2007; Hair et al., 1998).

While the appropriateness of MNL as analysis technique has been established, we review the main results next.

10.2.2.2 The significant parameters

Our initial and full MNL factorial model included the main effects of mindset, lock-in as well as their interaction term, designed to assess H_5, H_8, and H_9. As portrayed in table 10.6, using category 2 as reference, that is, 'continue looking for items but at the other site', in line with the descriptive results, lock-in, as well as the interaction term between mindset (0=implemental mindset; 1=deliberative mindset) and lock-in (0=low lock-in; 1=high lock-in), emerged as useful predictors for OOS reactions.

The predictors did not show any significance for staying at the same site as compared to going to the other site, although the effects were in the expected directions; more precisely, when experiencing an OOS at the low lock-in site, respondents were more likely to switch to the other site (high lock-in). Additionally, as expected, when the OOS occurred at the low lock-in site, respondents who were in an implemental mindset were more likely than those in a deliberative mindset to go back to the other (high lock-in) site to continue looking for an item as compared to those who presently were at the high lock-in site. Although the effects are in the expected direction they are, as mentioned, not statistically significant; therefore, H_5 is rejected.

As for the test for H_8, the effect of lock-in was highly significant and emerged as the second most influential parameter when distinguishing between 'purchasing an item on the list' and 'continue looking for items at the other site', b=1.504, Wald=4.7080, p=.030. The positive B value suggests that, all else held constant, respondents were more likely to rely on their lists when the OOS occurred during visits at the low lock-in site than when they occurred during a visit to a high lock-in site. H_8 therefore appears to have support.

This relationship, however, changes when mindset is introduced, suggesting that mindset also plays a strong role in shaping OOS related behaviours. In effect, the interaction term LI*mindset was the strongest parameter, and therefore, the most useful in distinguishing between the reference category, 'continue looking for items but at the other site' and category 3, 'purchase another item on the list', b=-2.803, Wald=7.736, p=.005. The negative B value denotes that respondents were less likely to buy an item on the list when they were in the implemental mindset condition and visiting a low lock-in site than if they were in a deliberative mindset. Hence, H_9 is partially supported.

Although marginally, the interaction term LI*mindset also proved significant in distinguishing between 'going to yet other online stores' and 'continue looking for items at the same site', b=-1.830, Wald=3.066, p=.080. When faced with an OOS during their visits at the low lock-in site, candidates in an implemental mindset manifested higher willingness to switch to the high lock-in site (the one they were more familiar with) to look for an item than switch to other online stores that they may never have visited – we reiterate that none of these sites had been visited prior to the experiment and acknowledge that experience, if introduced, could potentially alter outcomes. We reserve further exploration for future studies.

Finally, this model also distinguished between 'going to a physical store' and 'continue looking for items at the other site', with effects, although marginally supported, in the same direction; that is, when faced with OOS in the low lock-in condition, candidates in the implemental mindset manifested higher likelihood of returning to the high lock-in site than switch shopping channels, b=-2.197, Wald=3.060, p=.080.

Table 10.6: Parameter estimates – OOS behavioural reactions

OOS Reactions[a]		B	S.E.	Wald	df	Sig.	Exp(B)
Continue looking for items at the same site	Intercept	.182	.428	.181	1	.670	
	[LI=.0]	.916	.671	1.866	1	.172	2.500
	[LI=1.0]	0[b]	.	.	0	.	.
	[Mindset=.00]	.511	.747	.467	1	.494	1.667
	[Mindset=1.00]	0[b]	.	.	0	.	.
	[LI=.0] * [Mindset=.00]	-1.261	.983	1.644	1	.200	.283
	[LI=.0] * [Mindset=1.00]	0[b]	.	.	0	.	.
	[LI=1.0] * [Mindset=.00]	0[b]	.	.	0	.	.
	[LI=1.0] * [Mindset=1.00]	0[b]	.	.	0	.	.
Purchase another item on the list	Intercept	-.223	.474	.221	1	.638	
	[LI=.0]	**1.504**	**.693**	**4.708**	**1**	**.030**	**4.500**
	[LI=1.0]	0[b]	.	.	0	.	.
	[Mindset=.00]	1.235	.752	2.694	1	.101	3.437
	[Mindset=1.00]	0[b]	.	.	0	.	.
	[LI=.0] * [Mindset=.00]	**-2.803**	**1.008**	**7.736**	**1**	**.005**	**.061**
	[LI=.0] * [Mindset=1.00]	0[b]	.	.	0	.	.
	[LI=1.0] * [Mindset=.00]	0[b]	.	.	0	.	.
	[LI=1.0] * [Mindset=1.00]	0[b]	.	.	0	.	.
Go to yet other online stores	Intercept	.095	.437	.048	1	.827	
	[LI=.0]	.375	.718	.272	1	.602	1.455
	[LI=1.0]	0[b]	.	.	0	.	.
	[Mindset=.00]	.821	.735	1.246	1	.264	2.273
	[Mindset=1.00]	0[b]	.	.	0	.	.
	[LI=.0] * [Mindset=.00]	-1.830	1.045	3.066	1	.080	.160
	[LI=.0] * [Mindset=1.00]	0[b]	.	.	0	.	.
	[LI=1.0] * [Mindset=.00]	0[b]	.	.	0	.	.
	[LI=1.0] * [Mindset=1.00]	0[b]	.	.	0	.	.
Go to a physical store	Intercept	-.511	.516	.979	1	.323	
	[LI=.0]	.000	.894	.000	1	1.000	1.000
	[LI=1.0]	0[b]	.	.	0	.	.
	[Mindset=.00]	1.322	.792	2.783	1	.095	3.750
	[Mindset=1.00]	0[b]	.	.	0	.	.
	[LI=.0] * [Mindset=.00]	-2.197	1.256	3.060	1	.080	.111
	[LI=.0] * [Mindset=1.00]	0[b]	.	.	0	.	.
	[LI=1.0] * [Mindset=.00]	0[b]	.	.	0	.	.
	[LI=1.0] * [Mindset=1.00]	0[b]	.	.	0	.	.

a. The reference category is: Continue looking for items but at the other site
b. One or both parameter estimates are redundant.

Having discussed the significant parameters, we now report on the strength of the relationships, the overall logistic model and the contribution of each variable.

10.2.2.3 Model fitting information

10.2.2.3.1 Goodness of fit and overall model evaluation

To test the strength of relationships between the predictor variables and outcome variable, we consulted first Pseudo R^2 statistics. As shown in table 10.7, the low values registered for the Nagelkerke R^2, McFadden and Cox and Snell statistics (Norusis, 2005), indicated quite a poor fit, suggesting that the model does not perform well.

Table 10.7: Pseudo R-Square

Cox and Snell	.100
Nagelkerke	.105
McFadden	.034

However, as mentioned in chapter 7, Pseudo R^2 statistics should be used as a supplementary measure for the goodness of fit; therefore, we also assess the utility of the model through classification accuracy, discussed in the next section.

10.2.2.3.2 Overall Model Test

To demonstrate good overall model fit, the researcher must reject the null hypothesis that the model that contains the predictor variables is as good as the one without the predictors (Norusis, 2005). As per table 10.9, results showed an improvement over the 'intercept only' model; the 'overall model test' revealed a marginally significant difference between the two likelihoods, χ^2=19.647, d.f= 12; p= .074. These denote a marginally significant overall model; thus, the researcher can reject the null hypothesis.

Table 10.8: Model Fitting Information

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	76.512			
Final	58.865	19.647	12	.074

Caution is warranted in the interpretation of these results as although the Model fitting information table shows that the current model is a better one, it is not a 'good'

model when predicting ‘continue looking for items but at the other site’ and ‘go to a physical store’. However, it does well at ‘buy another item on list’, with 63% correct prediction, and fairly well at ‘continue looking for items at the same site’, with 55.8% correct prediction.

10.2.2.3.3 Likelihood ratio test

We refer to the Likelihood ratio test for an assessment of each variable’s contribution to the model. There is a statistically (although marginally) significant relationship between lock-in and mindset on OOS reactions at p=.058. The relationships between lock-in and OOS behavioural reactions, and mindset and OOS behavioural reactions convey no significance.

10.2.2.4 Assumption testing

As stated, MNL is less strict in that it does not assume normal distribution of the dependent variable; it also ignores homoscedasticity for each level of the independent variables. However, sample size needs to be large – larger than what is required for linear and ordinal regression, in order to produce reliable estimates. Additionally, collinearity needs to be absent (Agresti, 1990).

10.2.2.4.1 Adequate sample size

Because multinomial regression uses multiple equations, for reliable estimates, the sample size needs to be large. The rule for minimum threshold is 10 events per parameter, where all variable terms and intercepts, are accounted for (Hosmer & Lemeshow, 2000; Peduzzi, Concato, Kemper, Holford, & Feinstein, 1996).

The final sample for the MNL was 186 (includes the experimental groups 6/2 and 2/6), after removing six cases that highlighted ‘other’ as option. Including all terms and intercepts, the number of parameters for the regression analysis totalled 16, implying that a sample of 160 would have been quite adequate to meet the minimum threshold. Given that the sample size was larger than this number, we conclude that the sample size was appropriate for the purpose of this analysis.

10.2.2.4.2 Multicollinearity

This has been examined in section 8.2.2.1.1.3 and the absence of collinearity was discussed. To avoid redundancy of discussions, we refer the reader to section 8.2.2.1.1.3.

10.2.2.4.3 Adequate cell count

While the issues relevant to adequate cell size have been addressed in section 8.1.2.1.2.1, the researcher simply draws on the fact that to assess this condition, a series of crosstabs between categorical predictors and the outcome variable was conducted. None of the resulting cells was empty or exhibited cell sizes that were too small, thereby satisfying the assumption of adequate cell count and offering confirmation for the appropriateness of multinomial regression to this dataset (Agresti, 1990; McCullagh, 1980).

10.3 Discussions and conclusions, H_4 to H_9

In the previous sections of this chapter, we detailed results from the MANOVA and multinomial regression analysis for the hypothesized individual effects of mindset and lock-in as well as their interaction term, on emotional and behavioural responses OOS reactions, as denoted by $H_4 – H_9$. A few unhypothesized relationships, with marginal significance, were also reviewed. In this section, we use pertinent literature to discuss our interpretations of these results, all of which are summarized in table 10.9.

Table 10.9: Summary of results – OOS emotional and behavioural reactions

Hypothesis	Findings
H_4: When facing an OOS, buyers in an implemental mindset are more likely to demonstrate strong negative emotions than those in a deliberative mindset.	Not supported
H_5: Buyers who are in an implemental mindset and experience an OOS at the low lock-in site are more likely to switch to the high lock-in site and look for an item than stay at the low lock-in site.	Not supported
H_6: Consumers will experience stronger negative emotions if OOS occurs at a low than high lock-in site.	Not supported
H_7: Buyers in an implemental mindset will experience stronger negative emotions if OOS occurs at a low than when it occurs at a high lock-site, while the emotions of buyers in a deliberative mindset will not differ between an OOS encountered at a low and a high lock-in site.	Not supported
H_8: Buyers are more likely to switch from a low lock-in site than a high lock-in site when an OOS is encountered	Supported
H_9: Buyers in an implemental mindset are more likely to switch to a high lock-in site than those in a deliberative mindset	Partially supported
Unhypothesized relationships	
When respondents experience OOS during their visit at a low lock-in site, they are more likely to return to the high lock-in site than visit other online stores	
When respondents experience OOS during their visit at a low lock-in site, they are more likely to return to the high lock-in site than swap shopping channels and visit a physical store.	

10.3.1 OOS emotional responses – H_4, H_6, and H_7

Previous studies have called upon research into negative emotional reactions to OOS, with more theoretically motivated propositions *and* in an online context (Kim & Lennon, 2011). While much of OOS related research has studied the mediating effects of emotions on behavioural reactions, satisfaction, and store image, our research, using mindset and lock-in as situation and consumer specific characteristics, respectively, proposed that respondents were more likely to elicit stronger negative emotional responses if OOS occurred when they were (a) in an implemental mindset, (b) at a site with which they felt a low level of lock-in, and finally, (c) when the OOS was experienced at a low lock-in site while shoppers were in an implemental state of mind. We did not find support for any of the proposed relationships.

10.3.2 OOS behavioural responses – H_5, H_8 and H_9

Our research carried an empirical investigation of the effects that OOS can cause on the likelihood to switch sites and purchase another item on one's consideration list. Owing to its structure, the experiment guided the inclusion of additional responses that were not proposed as part of the conceptual framework: 'go to yet other online stores' and 'go to a physical store'.

Interestingly, the 'pull effect' that the high lock-in site can have in an OOS situation is quite evident. Buyers, in general, seemed to be significantly drawn to the high lock-in site to look for another item, when they could instead visit yet other online stores or switch to the traditional shopping platform. Our study seems to support Dadzie & Winston (2005) and Jing & Lewis (2011) in that these researchers demonstrated that loyalty to a website encourages consumers to 'stick' to the high lock-in website (at least through a few OOS episodes) whereas newer (merchant) buyers are less forgiving and more readily defect to another store. Based on our study, it would seem that an OOS experienced at a low lock-in site draws drastic reactions in that buyers in our study 'punished' the retailer by, indeed, defecting from the site.

We also note that a low lock-in site encouraged item substitution, with respondents choosing to buy an alternative from their list instead of returning to the high lock-in site; this contradicts prior research which supports that item substitution is more common when an OOS occurs at a loyal store or if the item is urgently needed; following on the latter point, our study found no relationship between implemental mindset and likelihood of buying a substitute from the list.

In fact, our study found that an implemental mindset and lock-in, strongly and positively predict likelihood of switching to the high lock-in site, instead. It is probable that the deliberative mindset adopted at the onset promotes an 'unplanned nature' to the purchase activity, entailing, therefore, low and even, negligible, costs of stockout. However, this is in contradiction with previous research that has supported the notion that

when a purchase has been planned, buyers switch to another store to find the item. The purchase of the planned item constitutes one that the implemental mindset feels personally committed to; quite in line with Fitszimons (2000), those in an implemental mindset were more likely to leave the store; given the nature of the purchase incidence, the implemental mindset buyers were probably more willing to visit the high lock-in site which they were more acquainted with and expect to seal a purchase, as a mechanism to also counter the higher loss in utility from being unable to acquire that item – although potentially miscalculated. Indeed, based on our earlier discussions, given its boundary conditions, the implemental mindset, despite the lower costs that purchasing another item on the list should entail, resorts to more drastic measures to restart the shopping exercise and may fail in *actually* promoting efficiency of the task.

CHAPTER 11: General conclusions

This is the closing chapter of the thesis and it concludes the reading. It presents a brief overview of the pertinent findings which are linked back to the research agenda. The chapter also highlights and discusses various implications, both managerial and theoretical. As is common to any study, this study also carries a few limitations which we outline and critically review. We use these limitations to guide propositions for future research.

11.1 Summary of findings

The significance of this thesis remains predominantly grounded within the retailing and consumer behaviour disciplines; however, to foster more accurate arguments, it borrowed from various disciplines as evidenced, predominantly, through discussions contained in chapters 2 to 5. Within a single online experiment that was convened for data gathering, we integrated independent, yet interrelated, elements in a quest to explore the following research questions:

- How does lock-in influence intentions to choose a site?
- To what extent does lock-in lead to website switching intentions?
- How do levels of online shopping experience moderate the relationships between lock-in and intentions to choose a site and switch sites?
- To what extent can mindset affect purchase intents?
- How do lock-in and mindset influence strength of emotions and behavioural reactions in an online OOS situation?

The study spewed out an assortment of findings, based on hypothesized and unhypothesized relationships. To aid recall, table 11.1 provides a summary of these pertinent findings.

Table 11.1: Summary of findings

Hypothesis	Results
$H_{1(a)}$: Consumers who have had more opportunity to practice and learn to navigate and operate a site are more likely to return to the site for a final purchase decision.	Supported
$H_{1(b)}$: Consumers who have had more opportunity to practice and learn to navigate and operate a site are less likely to switch to the competing site.	Supported
$H_{2(a)}$: Given their existing experience with shopping online, experienced consumers are less likely than inexperienced consumers to purchase from a site they have recently become acquainted to.	Supported
$H_{2(b)}$: Experienced consumers are more likely than inexperienced consumers to switch to the competing site.	Supported
H_3: The likelihood for unplanned purchasing will be higher for buyers who access a website in deliberative than an implemental mindset.	Not supported
OOS related hypothesis	
H_4: When facing an OOS, buyers in an implemental are more likely to demonstrate strong negative emotions than those in a deliberative mindset.	Not supported
H_5: Buyers who are in an implemental mindset and experience an OOS at the low lock-in site are more likely to switch to a high lock-in site and look for an item than stay at the low lock-in site.	Not supported
H_6: Consumers will experience stronger negative emotions if OOS occurs at a low than high lock-in site.	Not supported
H_7: Buyers in an implemental mindset will experience stronger negative emotions if OOS occurs at a low than when it occurs at a high lock-site, while the emotions of buyers in a deliberative mindset will not differ between an OOS encountered at a low and a high lock-in site.	Not supported
H8: Buyers are more likely to switch from a low lock-in site than a high lock-in site when an OOS is encountered	Supported
H_9: Buyers in an implemental mindset are more likely to switch to a high lock-in site than those in a deliberative mindset	Partially supported
Unhypothesized relationships	
High levels of lock-in increase the likelihood of unplanned purchase intents (at the category level).	
In the high lock-in condition, those in an implemental mindset are more likely to purchase from the planned category; in contrast, those in the deliberative mindset are more likely to purchase from the unplanned category.	
When respondents experience OOS during their visit at a low lock-in site, they are more likely to return to the high lock-in site than visit other online stores.	
When respondents experience OOS during their visit at a low lock-in site, they are more likely to return to the high lock-in site than swap shopping channels and visit a physical store.	

11.1.1 The effects of lock-in and experience on intentions to choose a site and site switching intentions

Lock-in, as a type of loyalty that is skill-based, does not necessarily entail an emotional attachment or the most positive attitude for a site. Regardless, because of the ease offered through one click of a mouse to switch and visit a competitor's website, it is intuitive to assume that online buyers are less loyal and switch site (s) easily. However, such seems to be quite contradictory, with studies demonstrating that loyalty is more acute online, with a general reduced tendency to switch as compared to the brick-and-mortar. Directly relevant to lock-in, buyers as they become highly locked in to a site manifest preference towards that site, from which they also purchase, as a result, reducing the likelihood to switch (Murray & Häubl, 2002; Johnson et al., 2003).

Although buyers in our sample successfully confirmed that they were more likely to choose to buy from the lock-in site, the high lock-in seems to be limited in its ability to independently explain reactions, when the level of shopping experience is introduced as a moderator of this relationship. Experienced buyers, regardless of their levels of lock-in, were less likely to purchase from the high lock-in site as compared to those who were inexperienced. Such trends extended to switching behaviours as well.

Evidence jointly investigating experience and consideration set is quite fuzzy; while a few researchers have demonstrated that experienced buyers have a larger consideration set of retailers (Gupta et al., 2004; Balabanis et al., 2006), others claim that experienced buyers 'actively' only visit a few sites, which they rely on for their purchases, thereby constraining this consideration set (Johnson et al., 2004; Thorbjørnsen & Supphellen, 2004). Our findings point to experienced buyers possibly relying on an expanded consideration set of e-tailers; alternatively, our findings may simply imply that the development of more general skills to navigate the web, probably acts as a catalyst to decreasing perceived level of risk so that experienced buyers, in their quest for goal attainment, become more confident in navigating the web and purchasing from sites that they may not be particularly familiar with.

11.1.2 The effects of lock-in and mindset on purchase intentions

An implemental mindset, mainly characterised by the formation of concretely defined goals, implemental intentions, and higher levels of perceived control that boost the level of motivation towards goal achievement, should encourage focused attention where only (cognitive) information that is incidental to goal satisfaction is further processed (Gollwitzer & Brandstätter, 1997; Verplanken & Faes, 1999; Bayuk et al., 2010); thus, expectedly so, promote planned behaviours. In contrast, a deliberative mindset is characterized by a less well formulated goal and a penchant for affect related information and changes in decisions (Gollwitzer & Brandstätter, 1997; Verplanken & Faes, 1999; Bayuk et al., 2010; Critcher & Ferguson, 2011); therefore, a deliberative mindset should encourage unplanned purchasing. Introducing and proposing this notion in an online context, our study fails in providing support for the independent effects of mindset on purchase intents. However, our study successfully furthers exploration of this relationship and provides supporting evidence for the joint impact of lock-in and mindset on purchase intents.

Conventional wisdom dictates that an unfamiliar setting is bound to promote unplanned buying because buyers rely on their environments to guide their purchase decisions. Additionally, researchers have reported on the positive effect of familiar settings on unplanned purchasing, however provided that buyers do not feel constrained in terms of the time that they have to shop (Winer & Ferraro, 2008; Bell et al., 2011). Our study adds to this line of research, however, at the category level.

Of particular interest, our study shows that the high lock-in site and implemental mindset have a reinforcing effect on the likelihood to purchase from the planned category. The high lock-in site encourages a state of exploration amongst the deliberative mindset, increasing, by the same token, the likelihood for unplanned purchasing. Higher knowledge and experience with a site seems to encourage further exploration from the deliberative mindset while the implemental mindset, focused on information that will lead to goal attainment, is probably more inclined to search for the site that can satisfy the

goal. Regardless, the high lock-in to a website successfully generates both planned and unplanned buying.

11.1.3 The effects of lock-in and mindset in an OOS situation

It is a proven fact that the impact of an OOS extends onto the whole supply chain, affecting customers, retailers and manufacturers; to the consumer, an OOS usually entails a tradeoff amongst various associated costs, with, however, deterring effects on sales, satisfaction, WOM, store patronage, amongst others (Vergin & Barr, 1999; Sloot, Verhoef, & Franses, 2005; Zinn & Liu, 2001; Karakaya, 2000; Campo et al., 2000; Westbrook, 1987; Schary & Christopher, 1979). We proposed that stronger negative emotions should be generated when buyers are in an implemental mindset. Whilst we did not measure the mediating effect of negative emotions, but rather the strength of negative emotions that OOS can generate when consumers are at different levels of lock-in and mindset conditions, our research found no impact of OOS on the strength of emotions.

With relevance to behavioural reactions, there was an obvious tendency to return to the high lock-in site and look for an item. More specifically, buyers were more likely to switch to the high lock-in site rather than consult the list of items, or switch to yet other online stores or the traditional retail channel. This was particularly pronounced amongst those in an implemental mindset. While we argued in favour of the boundary conditions of an implemental mindset to explain this effect, thus, contributing to this line of study, we also suggested that it is possible that newer (merchant) buyers are not enticed if they face OOS; they seem, on the contrary, to react more strongly and switch to the site that they know – it is very probable that a stockout encounter at a low lock-in site can cause buyers to become mistrusting of the site, and are less confident in expectations being met.

11.2 Theoretical and Managerial implications

Based on this study's findings, we offer fresh theoretical and managerial contributions that should expand researchers' and managers' scope of thoughts and strategic reactions, respectively. These theoretical and managerial implications are detailed next.

11.2.1 Managerial implications

1. **'Address' the inexperienced buyer**

   Based on our findings, it would seem easier to attract and lock-in inexperienced buyers than to attract and retain those who are more experienced. Therefore, managers should concentrate on gaining trial from new and inexperienced online buyers as a way of generating new sales – provided, of course, that initial encounters positively disconfirm expectations. Indeed, perceived control is very important to inexperienced buyers as it determines intention to return to the site (Koufaris, 2002). Therefore, it is important for retailers to 'nurture' consumers' online encounters; levels of perceived control could be reinforced by the provision of vendor recommendations, ease of communication, visuals, amongst others (Cheema & Papatla, 2010).

2. **How the experienced buyer may possibly be retained?**

   Experienced users tend to 'click away' more readily. The opportunity to be exposed to and learn about other alternatives and offerings lurks around. Management needs to actively 'get to know' (through regular profiling) experienced buyers so that they can more effectively match their preferences and encourage purchases at the high lock-in site. At this stage, we recommend focusing, besides task relevant and mood relevant cues (Partobeeah et al., 2009), on product offerings which seems to be the focus of experienced buyers – the

notion that they are primarily focused on goal attainment seems to be supported in this study.

3. **OOS: managing customers**

Our research reveals that much of the burden of the OOS seems to rest within the retailer in terms of (potential) loss in sales when buyers are visiting a site towards which they do not feel highly locked in; they are more likely to defect to the high lock-in site. So, it seems that the provision of items may represent a key aspect in positively disconfirming expectations at the early stage of the customer life cycle, encouraging, thus, repeat visits.

4. **'Getting into the mindset'**

Both the levels of lock-in and mental states that buyers are in at the time they access an e-tailer's store need to be considered concurrently to promote effective prediction of consumers' purchase intent. Although retailers have no control over mindsets, they can nevertheless, cater for their differing needs and expectations. More specifically, our research reveals that managers can satisfy different mindsets at least in the type of information they seek. The implemental mindset faces a situation of near 'urgency' where consumers seek cognitive information to maximize utility while the deliberative mindset has a penchant for affective information. Therefore, managers need to cater to both in order to satisfy the different mental states and successfully generate both planned and unplanned purchases – this study offers evidence that a high lock-in site seems to have the ability to promote both planned and unplanned purchasing at the high lock-in site, a win-win situation!

11.2.2 Theoretical contributions

- This study extends prior research and offers a more comprehensive account of the causal effects of lock-in. While it establishes that consumers will prefer and purchase from a high lock-in site, lock-in does not independently contribute to

predicting purchase or switching intentions; in fact, we demonstrate that such observations only extend to the inexperienced buyers. In the same vein, our study highlights the unexpectedly robust influence of experience levels, beyond the hypothesized relationships – an under-researched aspect of online purchasing, despite several calls for further research (Dennis et al., 2009)

- With strong roots in the psychology literature, mindset, of which the deliberative and implemental have predominantly been studied, has caught the interest of researchers in retailing as of recently (Dhar et al., 2007; Lee & Ariely, 2006; Bayuk et al., 2010; Xu & Wyer, 2007). However, most of these studies, with the exception of Lee and Ariely (2006), have treated goal setting as a continuous process. What's more, almost no study has addressed the impact of mindset; rather, the norm has been to analyse the differences in behaviours when goals are described in concrete and abstract terms. Despite the cognitive and affective aspects being key to an online shopping context, and despite the mindset's ability to influence these aspects, online related insights into mindset exist in fragments only. Therefore, this study is the first to directly address Dholakia and Bagozzi's (2001) call to explore the implications of adopting different mindsets when in an online shopping context.

  Additionally, we provide evidence that the deliberative and implemental mindset, measured as two independent entities, act as strong predictors of switching, unplanned and OOS behaviours.

- Our study addresses unplanned purchasing in the context of hedonic items, as are flowers and hampers. In so doing, this study builds on Partobeeah et al.'s (2009) research and offers improved insights into the prediction of unplanned buying online.

- This study answers Kim and Lennon's (2011) call for the need to independently assess online OOS given that traditional OOS results may have limited

applicability to OOS online as a 'unique' shopping platform. Further, this is the first study that analyses OOS emotions and reactions when consumers, adopting different mindsets characterized by varying degrees of goal concreteness, enter websites with which they would have experienced different levels of lock-in.

- By integrating the theories of mindset, a predominantly psychological concept, and lock-in and assessing their possible interactions in an online setting this study is able to offer a more integrated understanding of online consumer behaviour while advancing knowledge across the psychology, consumer behaviour and information systems disciplines.

11.3 Limitations and future directions

In this closing section, we highlight and discuss methodological lacunas, generalisability issues and rival hypotheses that this study could not account for; based on these limitations, we propose a few additional avenues for future research that we mesh in the discussions.

11.3.1 Methodological and operational perspectives – ineffective mindset manipulations

Unfortunately, mindset manipulations in the main study were not as effective as intended. We discuss possible rationales for this inadequate manipulation effect.

Despite using the purchase of a birthday gift for someone special to make the purchase task more involving (based on recommendations gathered from pretest candidates), this vehicle may have served as a double edged sword. Search activities as well as purchase decisions have been found to be different when buying for oneself as opposed to buying for someone close because involvement and motivation levels may

vary according to who the recipient is (Mattson, 1982). Given the importance that is associated with buying a gift for someone special, on time delivery, for instance, becomes an important factor when buying a gift online (Reibstein, 2002). However, the latter represents a cognitive characteristic which is inherent to the implemental and not the deliberative mindset. Therefore, there is possible contamination of mindset manipulations with the task itself so that characteristics of the implemental mindset may have dominated the manipulation, as proven by the very close mean scores for both mindset manipulations (chapter 7).

Otherwise, it could simply mean that the respondents neglected to fully immerse themselves in the tasks and it may, therefore, have been difficult to really experience the effects of the mindset manipulations. The absence of the experimenter, given this was an online task, makes it even more challenging in that we cannot assess the seriousness with which the activities were performed.

One may pinpoint to the, otherwise, successful mindset manipulation in the pilot test; we attribute such differences to the higher level of heterogeneity when a larger sample is involved, despite using the same subject type, apparatus and experiment. On a positive note, the lack of support for the control variables across the results is also proof that our findings are not confounded by the heterogeneity across respondents in the sample.

Lack of manipulation effects for mindset could also have been due to the nature of the goal; more precisely the goal was easier to achieve than, for instance, choosing an apartment to rent (Gollwitzer & Brandstätter, 1997), although Dewitte et al. (2003) offered supporting evidence that mindset manipulations work equally well in a situation whereby the goal is considered easy; for generalisability purposes, further exploration may be needed – at least in a retail setting.

11.3.2 Time

The researcher had no information about Internet connection speed; therefore, time spent on the experiment (recorded as the difference between entry and exit time) may not have served as a very reliable basis for exclusion and/or inclusion of respondents in the final sample.

11.3.3 Intent to purchase and not actual purchase

The study is limited in its dependent measures in that they capture actions in terms of intents rather than actual behaviours. Whereas, as reviewed earlier, there is considerable support for intent as a reliable indication of actual behaviours, at least when examining concrete attributes, to confirm that results are not overstated, this study should be replicated to measure actual behaviours.

11.3.4 Generalisability

The researcher is often confronted with the compromise of maximizing internal validity at the expense of external validity when conducting experiments (Aronson & Carlsmith, 1968). The use of an online experiment promoted external validity through the provision of real time shopping episodes, as respondents shopped in a 'more natural' shopping environment. Nevertheless, while a valuable contribution, our study still offers limited generalisability. This is discussed next.

- The use of an Australian sample
  Given the time and resources constraints, this study analysed an Australian sample. By the same token, it was also a natural choice to use Australian websites in order to promote realistic delivery times, for instance.

The use of an Australian population is timely given that a steady yearly increase of 1% in online buyers has been noted since 2009. Additionally, the influx of new users in Australia is also on the rise, with a stable 1% to 2% increase every year (Noble, 2011).

On the other hand, the use of this sample limits the generalisability of our findings to the online population. The Internet is a global medium with Internet usage and purchasing extending to people from the four corners of the world. Therefore, while our results extend to other Western cultures, we need to consider the impact of Eastern and Western-based cultural differences on online behaviours (Lee & Kacen, 2008). As a result, while acknowledging the practical difficulties associated with modelling various dimensions of purchase behaviours in a single study, this study's findings offer limited applicability.

- The purchase of a gift

  While we have discussed the purchase of a gift as a possible limitation to the mindset manipulations, the researcher also points to the specificity of the purchase. More precisely, the purchase was specific to gift purchasing and not to general purchase situations; therefore, to confirm these observations, this research should be replicated to more general purchase situations, such as the purchase of books, groceries, amongst others.

- Heterogeneity of product

  This research fails to account for the role of different product types on consumers' behaviours – including OOS situations (Kim & Lennon, 2011). Previous research has demonstrated that different product categories impact on online purchase intentions and as such the different characteristics of products should not be neglected; for instance, hedonic products are more conducive to unplanned buying (Brown et al., 2003; Peterson, Balasubramanian, & Bronnenberg, 1997). Cheema and Papatla (2010) reveal that there are differences in information search and processing for experienced and inexperienced buyers between choosing a

utilitarian and hedonic item. The use of utilitarian products may demonstrate stronger or weaker effects of lock-in and mindset, on behavioural intentions. Through comparisons, product differences should help in drawing significant and more generalizable conclusions.

11.3.5 Rival Hypotheses

This study could not account for the high order interaction between mindset, lock-in and experience because of cell size limitations when convening logistic regression analysis and MANOVA. If successfully tested, results could have altered the direction of observations, and offered richer and more advanced insights into online behaviours. Therefore, this research could be expanded to further explore such relationship.

In general, customers tend to be loyal to one site (Johnson et al., 2002); loyalty is more pronounced amongst the experienced users (Rodgers et al., 2005). With 35% and 44% of experienced buyers having, respectively, bought hampers and flowers at all online, this raises questions as to the influence of lock-in felt vis-à-vis other sites as an antecedent to present behaviours – although we skew towards the possibility that there may be less left to explore when the buyer is experienced, at least from this study's perspective.

Even though lock-in seemingly plays a more important role when it comes to the inexperienced buyers, we do not include other variables that should be accounted for and which could, again, have altered results. The role of past experiences online has not been taken into account in this study (Zauberman, 2003). A thriving area of researcher rests on the theory of positive disconfirmation where satisfaction and future relationships are examined. Therefore, future studies should consider these aspects that we were unable to account for in our study.

11.3.6 Additional future directions

- We also highlight the need for a longitudinal study to confirm findings and/or offer additional insights. Observations are based on high and low lock-in as well as inexperienced and experienced buyers. Future studies could observe inexperienced and experienced buyers as they become locked in and compare the impacts of these variables on purchase behaviours.

- This study ignores first time buyers in that they were classified as inexperienced buyers whereas we could have segmented the into first time buyers, mid and highly experienced buyers. This initiative would have allowed additional insight into potential customers, those who have never purchased, the less experienced and more experienced.

A final word

Buying on the Internet has gained ampleur and is slowly making its transition towards 'mainstream', possibly this situation further molded by the current economic climate. We tapped into a few largely influential areas of consumer research and the resulting fresh and more sophisticated insights provide evidence of the importance that needs to be associated with understanding this phenomenon in its entirety.

We invite practitioners to actively revisit their strategic positions in order to match the evolving online consumers' profiles, segments, perceptions, attitudes and behaviours – from our study, it is clear that the degree of lock-in is responsible for how consumers behave, even in an OOS situation. While online store visits are indeed an important part of the story, the other part, into which we still have limited insights, lies within the consumers, and not necessarily within the confinements of the store!

List of References

Aaker, D., Kumar, A. V., & Day, G. S. (1998). *Marketing Research* (6th ed.). John Wiley & Sons: New York.

Adelaar, T., Chang, S., Lancendorfer, K. M., Byoungkwan, L., & Morimoto, M. (2003). Effects of media formats on emotions and impulse buying intent. *Journal of information technology, 18*(4), 247-266.

Agresti, A. (1990). *Categorical Data Analysis*. New York: John Wiley & Sons, Inc.

Agresti, A. (1996). *An Introduction to Categorical Data Analysis*. New York: Wiley & Sons.

Ainslie, G. (1975). Specious reward: A behavioural theory of impulsiveness and impulse control. *Psychological bulletin, 82*(4), 463-509.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Englewood Cliffs, NJ: Prentice-Hall.

Ajzen, I. (1985). *From Intentions to Actions: A Theory of Planned Behaviour*. Berlin, New York: Springer-Verlag.

Ajzen, I. (1987). Attitudes, traits, and actions: Dispositional prediction of behaviour in personality and social psychology. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 1-63). New York: Academic Press.

Ajzen, I. (1991). The Theory of Planned Behaviour. *Organizational Behaviour and Human Decision Processes, 50*(2), 179-211.

Alba J. W., & Hutchinson J.W. (1987). Dimensions of consumer expertise. *Journal of Consumer Research, 13*(4), 411-454.

Alba, J. W., Hutchinson, W. J., & Lynch, J, G. (1991). Memory and Decision Making. In T. S. Robertson & H. H. Kassarjian (Eds.), *Handbook of Consumer Behaviour* (pp. 1-49).

Englewood Cliffs, NJ: Prentice Hall.

Armor, D.A., & Taylor, S.E. (2003). The effects of mindset on behaviour: Self-regulation in deliberative and implemental frames of mind. *Personality and Social Psychology Bulletin, 29*(1), 86-95.

Aronson, E., & Carlsmith, J. M. (1968). Experimentation in social psychology. In G. Lindzey & E. Aronson (Eds.), *The handbook of social psychology* (pp. 1-79). Reading, MA: Addison-Wesley.

Aronson, E., Wilson, T. D., & Brewer, M. B. (1998). Experimentation in social psychology. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology*. New York, NY: McGraw Hill.

Augustin, C., & Singh, J. (2005). Curvilinear effects of consumer loyalty determinants in relational exchanges. *Journal of Marketing Research, 42*(1), 96-108.

Averill, J. R. (1980). A constructivist view of emotion. In R. Plutchik & H. Kellerman (Eds.), *Emotion: Theory, research and experience* (pp. 305-339). New York: Academic Press.

Babin, B. J., Darden W. R., & Griffin M. (1994). Work and/or fun: Measuring hedonic and utilitarian shopping, *Journal of Consumer Research, 20*(4), 644-656.

Bagozzi, R. (1993). On the neglect of volition in consumer research: A critique and proposal. *Psychology and Marketing, 10*(3), 215-237.

Bagozzi, R. P., & Dholakia, U. M. (1999). Goal setting and goal striving in consumer behavior. *Journal of Marketing, 63*(4), 19-32.

Baker, J., Levy, M., & Grewal, D. (1992). An experimental approach to making retail store environmental decisions. Journal of Retailing, 68(4), 445-460.

Bakos, J. Y. (1997). Reducing buyer search costs: Implications for electronic marketplaces. *Management Science, 43*(12), 1676-1692.

Balabanis G., Reynolds N., & Simintiras A. (2006). Bases of e-store loyalty: Perceived switching barriers and satisfaction. *Journal of Business Research, 59*(2), 214-224.

Balasubramanian, S., Raghunathan, R., & Mahajan, V. (2005). Consumers in a multichannel environment: product utility, process utility, and channel choice. *Journal of Interactive Marketing, 19*(2), 12-30.

Bamberg, S. (2000). The promotion of a new behaviour by forming an implementation intention: results of a field experiment in the domain of travel made choice. Journal of *Applied Social Psychology, 30*(3), 573-587.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*(2), 344-358.

Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory.* Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1989). Social cognitive theory. In R. Vasta (Ed.), *Annals of Child Development. Six theories of child development* (pp. 1-60). Greenwich, CT: JAI Press.

Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology, 41*(3), 586-598.

Bargh, J. A. (1990). Auto-Motives: Preconscious determinants of social interaction. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition* (pp. 93-130). New York: Guilford Press.

Bargh, J. A., & Gollwitzer, P. M. (1994). Environmental control over goal-directed action. In W. D. Spaulding (Ed.), *Integrative views of motivation, cognition, and emotion* (pp. 71-124). Nebraska symposium on motivation.

Bargh, J. A., Gollwitzer, P. M., Chai, A. L., Barndollar, K., & Trötschel, R. (2001). Automated will: Nonconscious activation and pursuit of behavioural goals. *Journal of*

Personality and Social Psychology, 81(6), 1014-1027.

Bart, Y., Shankar, V., Sultan, F., & Urban, G. L. (2005). Are the Drivers and Role of Online Trust the Same for All Web Sites and Consumers? A Large-Scale Exploratory Empirical Study. *Journal of Marketing, 69*(4), 133-152.

Battacherjee, A. (2001). An empirical analysis of the antecedents of electronic commerce service continuance. *Decision support systems, 32*(2), 201-214.

Baumeister, R.F. (1984). Choking under pressure: self-consciousness and the paradoxical effects of incentives on skilled performance. *Journal of Personality and Social Psychology, 46*(3), 610-620.

Bayley, G., & Nancarrow, C. (1998). Impulse purchasing: a qualitative exploration of the phenomenon. *Qualitative Market Research: An International Journal, 1*(2), 99-114.

Bayuk, J., Janiszewski, C., & LeBoeuf, R. A. (2010). Letting good opportunities pass us by: Examining the role of mindset during goal pursuit. *Journal of Consumer Research, 37*(4), 570-583.

Beatty, S. E., & Ferrell, E. M. (1998). Impulse buying: modelling its precursors. *Journal of Retailing, 74*(2), 169-191.

Belanger, F., Hiller, J.S., & Smith, W. J. (2002). Trustworthiness in electronic commerce: the role of privacy, security, and site attributes. *Journal of Strategic Information Systems, 11*(3/4), 245-270.

Bell, D. R., Chiang, J., & Padmanabhan, D. (1999). The decomposition of promotional response. *Marketing Science, 18*(4), 504-526.

Bell, D. R., Corsten, D. & Knox, G. (2008). The Power of Planned Uncertainty. *International Commerce Review*, *8*(1), 56-64.

Bell, D. R., Corsten, D., & Knox, G. (2011). From point of purchase to path to purchase: how preshopping factors drive unplanned buying. *Journal of Marketing, 75*(1), 31-45.

Bell, D. R., Ho, T-H., & Tang, C. C. (1998). Determining where to Shop: Fixed and variable costs of shopping. *Journal of Marketing Research, 35*(3), 352-369.

Berger, P.D., Bolton, R. N., Bowmann, D., Briggs, E., Kumar, V., Parasuraman, A., & Terry, C. (2002). Marketing actions and the value of customer assets: a framework for customer asset management. *Journal of Service Research, 5*(1), 39-54.

Bergkvist, L., & Rossiter, J. R. (2007). The predictive validity of multiple-item vs. single item measures of the same constructs. *Journal of Marketing Research, 4*(2), 175-184.

Berry, W. D., & Feldman, S. (1985). *Multiple Regression in Practice*. Newbury Park, CA: Sage.

Bettman, J. R., & Park, C. W. (1980). Effects of knowledge and experience and phase of the choice process on consumer decision processes: a protocol analysis. *Journal of Consumer Research, 7*(3), 234-248.

Bhatnagar, A. & Ghose, S. (2004). A latent class segmentation analysis of e-shoppers. *Journal of Business Research, 57*(7), 758-767.

Bickman, L., & Rog, D. J. (1998). *Handbook of Applied Social Research Methods*. Sage publications, California.

Birnbaum, M. H. (2004). Human research and data collection via the Internet. *Annual Review of Psychology, 55*(1), 803-832.

Biswas D. (2004). Economics of information in the web economy: towards a new theory? *Journal of Business Research, 57*(7), 724-733.

Blanca Hernández, Julio Jiménez, M. José Martín (2008). Differences between potential, new and experienced e-customers: Analysis of e-purchasing behaviours. *Internet Research, 18*(3), 248-265.

Blattberg, R., Eppen, G., & Lieberman, J. (1981). A theoretical and empirical evaluation of

price deals in consumer nondurables. *Journal of Marketing 45(*1), 116-129.

Bloch, P. H., & Richins, L. M. (1983). Shopping without purchase: an investigation of consumer browsing behaviour. In R. P. Bagozzi & A. M. Tybout, Advances in Consumer Research (pp. 389-393). Association for Consumer Research.

Boatwright, P., & Nunes, J.C. (2001). Reducing assortment: An attribute-based approach. *Journal of Marketing*, *65*(3), 50-63.

Bo-Chiuan, S. (2008). Characteristics of consumer search on-line: How much do we search? *International Journal of Electronic Commerce*, *13*(1), 109-130.

Borle, S., Boatwright, P. Kadane, J. B., Nunes, J. C., & Shmueli, G. (2005). The effect of product assortment changes on customer retention. *Marketing Science*, *24*(4), 616-622.

Bowlbey, R. (1997). Supermarket futures. In Falk P. & Campbell C. (Eds.), *The shopping experience*. Sage, London.

Bowman, D., & Narayandas, D. (2001). Managing customer-initiated contacts with manufacturers: the impact on share of category requirements and word-of-mouth behaviour. *Journal of Marketing Research*, *38*(3), 291-297.

Brandstätter, E., Küberger, A., & Schneider, F. (2002). A cognitive-emotional account of the shape of the probability weighting function. *Journal of Behavioural Decision Making*, *15*(2), 79-100.

Brandstätter, V., Heimbeck, D., Malzacher, J. T., & Frese, M. (2003). Goals need implementation intentions: The model of action phases tested in the applied setting of continuing education. *European Journal of Work and Organizational Psychology*, *12*(1), 37-59.

Brandstätter, V., Lengfelder, A., & Gollwitzer, P. M. (2001). Implementations intentions and efficient action. *Journal of Personality and Social Psychology*, *81*(5), 946-960.

Bray, J. H., & Maxwell, S. E. (1985). *Multivariate analysis of variance*. Newbury Park, CA.

Brehm, J. W. (1966). *A theory of psychological reactance*. New York: Academic Press.

Brehm, J. W. (1972). *Response to Loss of Freedom: A Theory of Psychological Reactance*. Morristown, NJ: General Learning Press.

Breugelmans, E., Campo, K., & Gijsbrechts, E. (2006). Opportunities for active stock-out management in online stores: the impact of the stock-out policy on online stock-out reactions. *Journal of Retailing, 82*(3), 215-228.

Briggs, S.R., & Cheek, J. M. (1986). The role of factor analysis in the development and evaluation of personality scales. *Journal of Personality, 54*(1), 106-148.

Brody, R., & Cunningham, S.M. (1968). Personality variables and the consumer decision process. *Journal of Marketing Research, 5*(1), 50-57.

Broniarczyk, S. M., Hoyer, W.D., & McAlister, L. (1998). Consumers' perceptions of the assortment offered in a grocery category: The impact of item reduction. *Journal of Marketing Research, 35*(2), 166-176.

Bronner, R. (1982). *Decision making under time pressure: An experimental study of stress behaviour in business management.* Lexington, MA: Lexington.

Brown, M., Pope, N., & Voges, K. (2003). Buying or browsing? An exploration of shopping orientations and online purchase intention. *European Journal of Marketing, 37*(11/12), 1666-1685.

Brucks, M. (1985). The effects of product class knowledge on information search Behaviour. *Journal of Consumer Research, 12*(1), 1-16.

Bucklin, R. E., & Lattin, J. M. (1991). A two-stage model of purchase incidence and brand choice. Marketing Science, 10(1), 24-39.

Burger, J. M. (1987). Increased performance with increased personal control: A self-presentational interpretation. *Journal of Experimental Social Psychology, 23*(4), 350-360.

Burger, J. M. (1989). Negative reactions to increases in perceived personal control. *Journal of Personality and Social Psychology, 56*(2), 246-256.

Burke, R. (1992). Virtual shopping: breakthrough in marketing research. *Harvard Business Review, 74*(2), 120-131.

Burke, R. (2002). Technology and the Customer Interface: What Consumers want in the physical and virtual store. *Journal of the Academy of Marketing Science, 30*(4), 411-432.

Burnham, T. A., Frels, J. K., Mahajan, V. (2003). Consumer switching costs: a typology, antecedents, and consequences. *Journal of the Academy of Marketing Science, 31*(2), 109-127.

Burroughs, J. E. (1996). Product symbolism, self meaning, and holistic matching: the role of information processing in impulsive buying. In K. P. Corfman & J. G. Lynch Jr (Eds.), Advances in Consumer Research (pp. 436-469). Association for Consumer Research.

Campbell, D. T., & Fiske, D. W. Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin, 56*(2), 81-105.

Campbell, D. T. (1957). Factors relevant to the validity of experiments in social settings. *Psychological Bulletin, 54*(4), 297-312.

Campbell, D. T., & Stanley, J. C. (1963). Experimental and quasi-experimental designs for research on teaching. In N. L. Gage (Ed.), *Handbook of research on teaching* (pp. 171-246). Chicago, IL: Rand McNally.

Campo, K., Gijsbrechts, E., & Nisol, P. (2000). Towards understanding consumer response to stock-outs. *Journal of Retailing, 76*(2), 219-242.

Campo, K., Gijsbrechts, E., & Nisol, P. (2004). Dynamics in consumer response to product unavailability: Do stock-out reactions signal response to permanent assortment reductions? *Journal of Business Research, 57*(8), 834-843.

Cao, F., Su, L., Liu, T., & Gao, X. (2007). The relationship between impulsivity and Internet addiction in a sample of Chinese adolescents. *European Psychiatry, 22*(7), 466-471.

Capraro, A.J., Broniarczyk, S., & Srivastava, R.K. (2003). Factors influencing the likelihood of customer defection: the role of consumer knowledge. *Journal of the Academy of Marketing Science, 31*(2), 164-175.

Chadee, D. (2011). *Theories In Social Psychology* (1st ed.). Blackwell Publishing Ltd.

Chandran, S., & Morwitz, V. G. (2005). Effects of participative pricing on consumers' cognitions and actions: a goal theoretic perspective. *Journal of Consumer Research, 32*(2), 249-259.

Chartrand, T. L., & Bargh, J. A. (1996). Automatic activation of social information processing goals: Nonconscious priming reproduces effects of explicit conscious instructions. *Journal of Personality and Social Psychology, 71*(3), 464-478.

Cheema, A., & Papatla, P. (2010). Relative importance of online versus offline information for Internet purchases: Product category and Internet experience effects. *Journal of Business Research, 63*(9/10), 979-985.

Chen S., & Hitt, L. (2002). Measuring switching costs and the determinants of customer retention in Internet-enabled businesses: a study of the online brokerage industry. *Information Systems Research, 13*(3), 255-274.

Christensen, L. B. (1994). *Experimental Methodology (*6th ed.). Simon & Schuster: Needham Heights, MA.

Churchill, G. A. (1979). A paradigm for developing better measures for marketing constructs. *Journal of Marketing Research, 16*(1), 53-78.

Clee, M. A., & Wicklund, R. A. (1980). Consumer behaviour and psychological reactance. *Journal of Consumer Research, 6*(4), 389-405.

Cobb, C. J., & Hoyer, W. D. (1986). Planned versus impulse Purchase Behaviour. *Journal of Retailing, 62*(4), 384-409.

Cochran, W. G. (1977). *Sampling Techniques*. New York: John Wiley & Sons Inc.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioural Sciences*. Academic Press: New York.

Colacchio, F., Tikhonova, O., & Kisis, J. (2003). *Consumer response to out-of-stock: Decision-making process and influencing factors.* Presented at the ECR Europe Berlin Conference.

Constantinides, E. (2004). Influencing the online consumer's behaviour: The web experience. *Journal of Internet Research, 14*(2), 111-126.

Cook, T.D., & Campbell, D.T. (1979). *Quasi-Experimentation: Design and Analysis for Field Settings*. Rand McNally: Chicago, IL.

Corragio, L. (1990). *Deleterious effects of intermittent interruptions on the task performance of knowledge workers: a laboratory investigation* (Unpublished doctoral dissertation). University of Arizona, Tucson.

Corragio, L. (1990). *Deleterious effects of intermittent interruptions on the task performance of knowledge workers: A laboratory investigation*. (Unpublished doctoral dissertation). University of Arizona, Tucson. Retrieved from http://interruptions.net/literature/Coraggio-PhD.pdf

Corsten, D., & Gruen, T. (2003). Desperately seeking shelf availability: an examination of the extent, the causes, and the efforts to address retail out-of-stocks. *International Journal of Retail & Distribution Management, 31*(12), 605-617.

Corstjens, J. & Corstjens, M. (1995). *Store Wars: The battle for mindspace and shelfspace*. Wiley, New York.

Corstjens, M., & Lal, R. (2000). Building store loyalty through store brands. *Journal of Marketing Research, 37*(3), 281-292.

Cox, D. R. (1958). *Planning of experiments*. Wiley and sons Inc, New York, London.

Critcher, C. R., & Ferguson, M. J. (2011). Affect in the abstract: abstract mindsets promote sensitivity to affect. *Journal of Experimental Social Psychology, 47*(6), 1185-1191.

Cronbach, L. J. (1987). Statistical tests for moderator variables: flaws in analyses recently proposed. *Psychological Bulletin, 102*(3), 414-417.

Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. P*sychometrika, 16*(3), 297-334.

Crossman, E. R. F. W. (1959). A theory of the acquisition of speed-skill. *Ergonomics, 2*(2), 153-166.

CRR (2010). Online Retailing: Britain and Europe. Retrieved from http://www.retailresearch.org/onlineretailing.php

Dadzie, K., & Winston, E. (2007). Consumer response to stock-out in the online supply chain. *International Journal of Physical Distribution and Logistics Management, 37*(1), 19-42.

Darley, W. K., Blankson, C., & Luethge, D. J. (2010). Toward an integrated framework for online consumer behaviour and decision making process: a review. *Psychology and Marketing*, 27(2), 94-116.

Dawson, S., Bloch, P. H. & Ridgway, N. M. (1990). Shopping motives, emotional states, and retail outcomes. *Journal of retailing, 66*(4), 408-427.

Day, G. (1969). A two-dimensional concept of brand loyalty. *Journal of Advertising Research, 9*(3), 29-35.

De Kare-Silver, M. (1998). E-shock: The electronic shopping revolution: strategies for

retailers and manufacturers. Macmillan Business.

De Kervenoael, R., Aykac, D. S. O., & Palmer, M. (2009). Online social capital: Understanding e-impulse buying in practice. *Journal of Retailing and Consumer Services 16*(4), 320-328.

Dennis, C., Merrilees, B., Jayawardhena, C., & Wright, L. T. (2009). E-Consumer behaviour. *European Journal of Marketing, 43*(9/10), 1121-1139.

Dennis, A. R., & Valacich, J. S. (2001). Conducting experimental research in Information systems. *Communications of the AIS, 7*(5), 1-45.

Devaraj, S., Fan, M., & Kohli, R. (2002). Antecedents of B2C channel satisfaction and preference: Validating e-commerce metrics. *Information Systems Research, 13*(3), 316-333.

Dewitte, S., Verguts, T., & Lens, W. (2003). Implementation intentions do not enhance all types of goals: the moderating role of goal difficulty. *Current Psychology, 22*(1), 73-89.

Dhar, R., Huber, J., & Khan, U. (2007). The Shopping Momentum Effect. *Journal of Marketing Research, 44*(3), 370-378.

Dholakia, U. M., & Bagozzi, R. P. (2001). Consumer behaviour in digital environments. In J. Wind, & V. Mahajan (Eds.), *Digital marketing: Global strategies from the world's leading experts* (pp. 163-200). New York: Wiley.

Dholakia, U. M., & Bagozzi, R. P. (2002). Mustering motivation to enact decisions: How decision process characteristics influence goal realization. *Journal of Behavioural decision making, 15*(3), 167-188.

Dick, A. S., & Basu, K. (1994). Customer loyalty: towards an integrated framework. *Journal of the Academy of Marketing Science*, 22(2), 99-113.

Dijksterhuis, A., Bos, M. W., Nordgren, L. F., & Van Baaren, R. B. (2006). On making the right choice: the deliberation-without-attention effect. *Science, 311*(5763), 1005-1007.

Dillman, D. A. (2000). *Mail and Internet Surveys: The Tailored Design Method* (2nd ed.). New York: Wiley.

Dittmar, H., Beattie, J., & Friese, S. (1996). Objects, decision considerations and self-image in men's and women's impulse purchases. *Acta Psychologica, 93*(1), 187-206.

Dittmar, H., Long, K., & Bond, R. (2007). When a better self is only a click away: Associations between materialistic values, emotional and identity-related buying motives and compulsive buying online. *Journal of Social and Clinical Psychology, 26*(3), 334-366.

Dodson, J. A., Tybout, A. M., & Sternthal, B. (1978). Impact of deals and deal retraction on brand switching. *Journal of Marketing Research, 15*(1), 72-81.

Donovan, R. J., & Rossiter, J. R. (1982). Store atmosphere: An environmental psychology approach. *Journal of Retailing, 58*(1), 34-57.

Donthu, N., & Garcia, A. (1999). The Internet shopper. *Journal of Advertising Research, 39* (3), 52-58.

Doob, L. W. (1990). *Hesitation: Impulsivity and reflection*. New York: Greenwood Press.

Dowling, G. R., & Uncles, M. D. (1997). Do customer loyalty programs really work. *Sloan Management Review*, 38(4), 71-82.

Drolet, A., & Morrison, D. (2001). Do we really need multiple-item measures in service research? *Journal of Service Research, 3*(3), 196-204.

Duncan, C. P. & Olshavsky, R.W. (1982). External Search: The Role of Consumer Beliefs. *Journal of Marketing Research, 19*(1), 32-43.

Eagly, A., & Chaiken, S. (1993). *Psychology of Attitudes*. NY: Harcourt, Brace Jovanovich, Fort Worth, TX.

East, R., Gendall, P., Hammond, K., & Lomax, W. (2005). Consumer loyalty: singular, additive or interactive? *Australasian Marketing Journal*, 13(2), 10-26.

Emmelheinz, M. A., Stock, J. R. & Emmelheinz, L. W. (1991). Consumer responses to retail stock-outs. *Journal of retailing*, *67*(2), 138-148.

Eroglu, S. A., Machleit, K. A. & Davis, L. M. (2001). Atmospheric qualities of online retailing: A conceptual model and implications. *Journal of Business Research, 54*(2), 177-184.

Eroglu, S. A., Machleit, K.A., & Davis, L.M. (2003). Empirical testing of a model of online store atmospherics and shopper responses. *Psychology & Marketing, 20*(2), 139-150.

E-tailing. (2007). Gauging online consumers' out-of-Stock dilemma. Retrieved from http://www.retailonlineintegration.com/article/gauging-online-consumers-out-of-stock-dilemma-69444/1

Evans, J. B. T. (2008). Dual processing accounts of reasoning, judgment, and social cognition. *Annual Review of Psychology, 59*(1), 255-278.

Eysenck, H. J., Eysenck, S. B. G., & Barrett, P. (1985). A revised version of the Psychoticism scale. *Personality and Individual Differences, 6*(1), 21-29.

Farrar, D. E., & Glauber, R.R. (1967). Multicollinearity in regression analysis: the problem revisited. *The Review of Economics and Statistics, 49*(1), 92-107.

Finn, A., & Kayande, U. (1997). Reliability assessment and optimization of marketing measurement. *Journal of Marketing Research, 34*(2), 262-275.

Fishbein, M. & Ajzen, I. (1975). *Belief, attitude, intention, and behaviour: An introduction to theory and research*. MA: Addison-Wesley.

Fishbein, M. (1980). Theory of reasoned action: some applications and implications. In H. Howe & M. Page (Eds.), *Nebraska symposium on motivation* (pp. 65-116). Lincoln, NB: University of Nebraska Press.

Fitzsimons, G. (2000). Consumer response to stockouts. *Journal of Consumer Research*,

27(2), 249-266.

Fitzsimons, G. J., & Lehmann, D. R. (2004). Reactance to recommendations: when unsolicited advice yields contrary responses. *Marketing Science, 23*(1), 82-94.

Flavián, C., Guinaliu, M., Gurea, R. (2006). The influence of familiarity and usability on loyalty to online journalistic services: The role of user experience. *Journal of Retailing and Consumer Services, 13*(5), 363-375.

Flemming, H. (1976). Psychological theories of consumer choice. *Journal of Consumer Research, 3*(3), 117-142.

Forbes. (1999). Santa flaws. Retrieved from http://www.forbes.com/forbes/1999/1227/6415282a.html.

Forsythe, S. M., & Shi, B. (2003). Consumer patronage and risk perceptions in Internet shopping. *Journal of Business Research, 56*(11), 867-875.

Fred, V. R. W., & Ye, G. (2005). Conscious and Unconscious Processing in Consumer Motives, Goals, and Desires. In S. Ratneshwar & D. G. Mick (Eds.), *Inside consumption: consumer motives, goals, and desires* (pp. 330-339). Routledge, New York.

Freitas, A. L., Gollwitzer, P. M., & Trope, Y. (2004). The influence of abstract and concrete mindsets on anticipating and guiding others' self-regulatory efforts. *Journal of Experimental Social Psychology, 40*(6), 739-752.

Garbarino, E., & Strahilevitz, M. (2004). Gender differences in the perceived risk of buying online and the effects of receiving a site recommendation. *Journal of Business Research, 57*(7), 768-775.

Gardner, M. P, & Rook, D. W. (1988). Effects of impulse purchases on consumers' affective states. *Advances in consumer research, 15*(1), 127-130.

Garson, G. D. (2009). Logistic Regression from Statnotes: Topics in Multivariate Analysis. Retrieved from http://faculty.chass.ncsu.edu/garson/pa765/statnote.htm

Garson, G.D. (2008). Logistic Regression from Statnotes: Topics in Multi-variate Analysis. Retrieved from http://www2.chass.ncsu.edu/garson/pa765/statnote.htm

Gefen, D. (2000). E-commerce: the role of familiarity and trust. *Omega*, *28*(6), 725-737.

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Inexperience and experience with online stores: The importance of TAM and trust. *IEEE Transactions on Engineering Management*, *50*(3), 307-321.

Gerbing, D. W., & Anderson, J. C. (1988). An updated paradigm for scale development incorporating unidimensionality and its assessment. *Journal of Marketing Research, 25*(2), 186-192.

Geskination (2011, March 25). Normality, Skewness, and Kurtosis [Video file]. Retrieved from http://www.youtube.com/watch?v=gW3CNCGGgTY

Girard, T., Silverblatt, R., & Korgaonkar, P. (2002). Influence of product class on preference for shopping on the Internet. *Journal of Computer Mediated Communication, 8*(2). Retrieved from http://jcmc.indiana.edu/vol8/issue1/girard.html.

Girden, E. R. (1992). *ANOVA repeated measures*. Sage publications Inc.

Gollwitzer, P. M., & Kinney, R. F. (1989). Effects of deliberative and implemental mindsets on illusion of control. *Journal of Personality and Social Psychology, 56*(4), 531-542.

Gollwitzer, P. M. (1990). Action phases and mind-sets. In E. T. Higgins & R. M. Sorrentino (Eds.). *Handbook of Motivation and Cognition: Foundation of Social Behaviour* (pp. 53-92). New York: Guilford Press.

Gollwitzer, P. M. (1993). Goal achievement: The role of intentions. *European Review of Social Psychology*, *4*(1), 141-185.

Gollwitzer, P. M., & Bayer, U. (1999). Deliberative versus implemental mindsets in the control of behavior. In Chaiken S. & Trope Y. (Eds.), *Dual-process theories in social*

psychology (pp. 403-422). New York: Guilford.

Gollwitzer, P. M., & Brandstätter, V. (1997). Implementation intentions and effective goal pursuit. *Journal of Personality and Social Psychology, 73*(1), 186-199.

Gollwitzer, P. M., & Moskowitz, G. B. (1996). Goal effects on action and cognition. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 361-399). New York: Guilford Press.

Gollwitzer, P. M., Heckhausen, H., & Steller, B. (1990). Deliberative vs. implemental mindsets: cognitive tuning toward congruous thoughts and information. *Journal of Personality and Social Psychology, 59*(6), 1119-1127.

Gollwitzer, P.M., Fujita, K., & Oettingen, G. (2004). Planning and the implementation of goals. R. Baumeister & K. Vohs (Eds.), *Handbook of self-regulation research* (pp. 211-228). New York: Guilford.

Granbois, D. H. (1968). Improving the study of customer in-store behaviour. *Journal of Marketing, 32*(4), 28-32.

Gremler, D., & Brown, S. (1998). Service loyalty: antecedents, components, and outcomes. In D. Grewal & C. Poechmann (Eds.), *AMA Winter Educators' Conference: Marketing Theory and Applications* (pp. 165-166). Chicago, American Marketing Association.

Griffith, D. A. (2005). An examination of the influences of store layout in online retailing. *Journal of Business Research, 58*(10), 1391-1396.

Grocery Manufacturers of America, Roland Berger, & Direct Store Delivery Committee, GMA. (2002). *Full-shelf satisfaction: reducing out-of-stocks in the grocery channel: an in-depth look at DSD categories*. Grocery Manufacturers of America.

Grossnickle, J., & Raskin, O. (2001). *Online Marketing Research*. McGraw-Hill, Inc., USA.

Gruen, T. W., Corsten, D. S., & Bharadwaj, S. (2002). Retail out-of-stocks: A worldwide examination of extent, causes and consumer responses. Retrieved from

http://www.theconsumergoodsforum.com/pfiles/publications/CIES-FMI-GMA-retail_out_of_stock-study_2002.pdf

Gunness, A., Ogilvie, M., & McManus, P. (2004). '*A multivariate analysis of spontaneous purchases online*. Presented at the ANZMAC Conference, Wellington, New Zealand.

Gunness, A., Ogilvie, M., & Mizerski, K. (2005). *E-Buyers unveil it all*. Presented at the 34th EMAC Conference, Milan, Italy.

Gupta, A., Su, B. C., & Walter, Z. (2004). Risk profile and consumer shopping behaviour in electronic and traditional channels. *Decision Support Systems, 38*(3), 347-367.

Gupta, S. (1988). Impact of sales promotions on when, what and how much to buy. *Journal of Marketing Research, 25*(4), 342-355.

Hair, F.J., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis* (5th ed.). Prentice Hall.

Hand, D. J., & Taylor, C. C. (1987). *Multivariate Analysis of Variance and Repeated Measures.* Chapman and Hall.

Hansen, T., & Jensen, J. M. (2009). Shopping orientation and online clothing purchases: the role of gender and purchase situation. *European Journal of Marketing, 37*(11), 1666-1684.

Harriman, A. (1985). *Women/men/management*. New York: Praeger.

Hatfield, J., Faunce, G. J., & Soames Job, R. F. (2006). Avoiding confusion surrounding the phrase "correlation does not imply causation". *Teaching of Psychology, 33*(1), 49-51.

Hauser, J. R., & Wernerfelt, B. (1990). An evaluation cost model of consideration sets. *Journal of Consumer Research 16*(4), 393-408.

Heckhausen, H. (1986). Why some time out might benefit achievement motivation research. In J. H. L. Van den Bercken, T. C. M. Bergen, & E. E. J. De Bruyn (Eds.), *Achievement and task motivation* (pp. 7-39). Lisse, The Netherlands: Swets & Zeitlinger.

Heckhausen, H., & Gollwitzer, P. M. (1987). Thought contents and cognitive functioning in motivational and volitional states of mind. *Motivation and Emotion*, *11*(2), 101-120.

Heckhausen, H., & Kuhl, J. (1985). From wishes to action: The dead ends and short cuts on the long way to action. In M. Frese & J. Sabini (Eds.), *Goal-directed behaviour: The concept of action in psychology* (pp. 134-159). Hillsdale, NJ: Lawrence Erlbaum.

Heilman, C. M., Nakamoto, K., & Rao, A. G. (2002). Pleasant Surprises: Consumer response to unexpected in-store coupons. *Journal of Marketing Research*, *39*(2), 242-252.

Hernández, B., Jiménez, J., & Martín, J. M. (2010). Customer behaviour in electronic commerce: The moderating effect of e-purchasing experience. *Journal of Business Research*, *63*(9/10), 964-971.

Hirschman, E.C. (1980). Innovativeness, novelty seeking, and consumer creativity. *Journal of Consumer Research*, *7*(3), 283-295.

Hoch, S. J. & Loewenstein, G. F. (1991). Time-inconsistent preferences and consumer self-control. *Journal of consumer research*, *17*(4), 492-507.

Holbrook, M. & Hirschman, E. (1982). The experimental aspects of consumption: consumer fantasies, feelings, and fun. *Journal of consumer research*, *9*(2), 132-140.

Holloway, B. B., Wang, S., Parish, J. T. (2005). The role of cumulative online purchasing experience in service recovery management. *Journal of Interactive Marketing*, *19*(3), 54-66.

Horowitz, J. L., Koppelman, F. S., & Lerman, S. R. (1986). *A self-instructing course in disaggregate mode choice modeling* (Final report). Retrieved from http://www.transportation.northwestern.edu/docs/koppelman/publications/Self-InstructingCourseDisaggregateModeChoice.pdf

Hosmer, D. W., & Lemeshow, S. (2000). Applied Logistic Regression (2nd ed.). John Wiley and Sons, New York, NY.

Hoyer, W. D. (1984). *An examination of consumer decision making for a common repeat purchase product. Journal of Consumer Research, 11*(3), 822-829.

Hutchinson, J. W. (1983). Expertise and the structure of free recall. In R. P. Baggozi & A. M. Tybout (Eds.), *Advances in consumer research* (pp. 585-589). Ann Arbor, MI: Association for Consumer Research.

Inman, J. J., Winer, R. S., & Ferraro, R. (2009). The interplay among category characteristics, customer characteristics, and customer activities on in-store decision making. *Journal of Marketing, 73*(5), 19-29.

Isen, A. M., & Levin, P. F. (1972). The effect of feeling good on helping: Cookies and kindness. *Journal of Personality and Social Psychology, 21*(3), 384-388.

Iyer, E. S & Ahlawat, S. S. (1987). Deviations from a shopping plan: when and why do consumers not buy as planned. *Advances in consumer research, 14*(1), 246-249.

Iyer, E. S. (1989). Unplanned purchasing: Knowledge of shopping environment and time pressure. *Journal of retailing, 65*(1), 40-57.

Jacoby, J., & Chestnut, R. W. (1978). *Brand Loyalty: Measurement and Management*, New York, NY: John Wiley and Sons, Inc.

Jacoby, J., Troutman, T., Kuss, A., & Mazursky, D. (1986). Experience and expertise in complex decision making. In J. Lutz (Eds.), *Advances in Consumer Research* (pp. 469-472). Association for Consumer Research.

Janoff, B. (2000). Click and Stick. *Progressive Grocer, 79*(2), 61-64.

Jarboe, G. R., & McDaniel, C. D. (1987). A profile of browsers in regional shopping malls. *Journal of the Academy of Marketing Science, 15*(1), 46-53.

Jarvenpaa, S. L., & Todd, P. (1997). Consumer Reactions to Electronic Shopping on the World Wide Web. *International Journal of Electronic Commerce, 1*(2), 59-88.

Jarvenpaa, S. L., Tractinsky, N., & Vitale, M. (2000). Consumer trust in an Internet store. *Information Technology & Management, 1*(1/2), 45-71.

Jeffrey, S. A, & Hodge, R. (2007). Factors influencing impulse buying during an online purchase. *Electronic Commerce Research, 7*(3/4), 367-379.

Jing, X., & Lewis, M. (2011). Stockouts in Online Retailing. *Journal of Marketing Research, 48*(2), 342-354.

Johnson E. J., Bellman, S., & Lohse G. (2003). Cognitive lock-in and the power law of practice. *Journal of Marketing, 67*(2), 62-75.

Johnson E. J., Moe, J., Fader, W, Bellman, P. S., & Lohse G. L. (2004). On the depth and dynamics of online search behaviour. *Management Science, 50*(3), 299-308.

Johnson, E. J., & Russo, J. E. (1984). Product familiarity and learning new information. *Journal of Consumer Research, 11*(1), 542-550.

Jones, M. A., Mothersbaugh, D. L., & Beatty, S. E. (2002). Why customers stay: measuring the underlying dimensions of services switching costs and managing their differential strategic outcomes. *Journal of Business Research, 55*(6), 441-450.

Kamali, N., & Loker, S. (2002). Mass customization: On-line consumer involvement in product design. *Journal of Computer-Mediated Communication, 7*(4). Retrieved from http://jcmc.indiana.edu/vol7/issue4/loker.html

Kannan, P. K., Chang, A-M., & Whinston, A. B. (1998). Marketing information on the I-way: data junkyard or information gold mine?. *Communications of the ACM, 41*(3), 35-43.

Karakaya, F. (2000). Market exit and barriers to exit: theory and practice. *Psychology and Marketing, 17*(8), 651-668.

Koelemeijer, K., & Oppewal, H. (1999). Assessing the effects of assortment and ambience: A choice experimental approach. *Journal of Retailing, 75*(3), 319-345.

Kidwell, B., & Jewell, R. D. (2003). The moderated influence of internal control: an examination across health related behaviors. *Journal of Consumer Psychology*, *13*(4), 377-386.

Kim, M. (2004). Consumer response to stockouts in online apparel shopping (Doctoral dissertation, Ohio State University). Retrieved from http://etd.ohiolink.edu/view.cgi/Kim%20Mijeong.pdf?osu1087483690

Kim, H-Y., & Kim, Y-K. (2005). Escapism, consumer lock-in, attitude, and purchase: an illustration from an online shopping context. Presented at the ACRA conference, Philadelphia.

Kim, M., & Lennon, S. (2011). Consumer response to online apparel stockouts. *Psychology & Marketing*, *28*(2), 115-144.

Kim, M., Kim, J., & Lennon, S. (2006). Online service attributes available on apparel retail websites: An E-S-QUAL approach. *Managing Service Quality*, *16*(1), 51-77.

Kivetz, R. (2005). Promotion Reactance: The Role of Effort-Reward Congruity. *Journal of Consumer Research, 31*(4), 725-736.

Knowledge@Wharton. (2009). Not on the list? The truth about impulse purchases. Retrieved from http://knowledge.wharton.upenn.edu/article.cfm?articleid=2132

Kollat, D. T., & Willet, R. P. (1967). Customer impulse purchase behaviour. *Journal of Marketing Research, 4*(1), 21-31.

Koufaris, M. (2002). Applying the Technology Acceptance Model and flow theory to online consumer behaviour. *Information Systems Research*, 13(2), 205-223.

Koufaris, M., Kambil, A., & LaBarbera, A. (2002). Consumer behaviour in web-based commerce: an empirical study. *International Journal of Electronic Commerce*, *6*(2), 115-138.

Krabuanrat, K., & Phelps, R. (1998). Heuristic and rationality in strategic decision making: An exploratory study. *Journal of Business Research, 41*(1), 83-93.

Kreitler, H., & Kreitler, S. (1976). *Cognitive Orientation and Behaviour*. New York: Springer.

Krishnamurthi, L., Mazumdar, T., & Raj, S. P. (1992). Asymmetric response to price in consumer brand choice and purchase quantity decisions. *Journal of Consumer Research, 19*(3), 387-400.

Kucuk, S. U. (2004). Reducing the out-of-stock costs in a developing retailing sector. *Journal of International Consumer Marketing, 16*(3), 75-104.

Kuehl, R. O. (1999). *Design of Experiments: Statistical Principles of Research Design and Analysis* (2nd ed.). Duxbury Press.

Kuhl, J. (1984). Volitional aspects of achievement motivation and learned helplessness: Toward a comprehensive theory of action control. In Maher B. A. & Maher W. A. (Eds.), *Progress in experimental personality research* (pp. 99-171). New York: Academic Press.

Kumar, V., & Shah, D. (2004). Building and Sustaining Profitable Customer Loyalty for the 21st Century. *Journal of Retailing, 80*(4), 317-329.

Kwon, W.S., & Lennon, S. J. (2009). Reciprocal effects between a multi-channel retailer's offline and online brand images. *Journal of Retailing, 85*(3), 376-390.

Laurent, J., & Kapfere, J-N. (1989). Measuring consumer involvement profiles. *Journal of Marketing Research, 22*(1), 41-53.

Lazarus, R. S. (1991). *Emotion and Adaptation*. New York, NY: Oxford Press.

Lee, J. A., & Kacen, J. J. (2008). Cultural influences on consumer satisfaction with impulse and planned purchase decisions. *Journal of Business Research, 61*(3), 265-272.

Lee, L., & Ariely, D. (2006). Shopping goals, goal concreteness, and conditional

promotions. *Journal of Consumer Research, 33*(1), 60-70.

Lee, M. Y., & Johnson, K. K. P. (2002). Exploring differences between Internet apparel purchasers, browsers and non-purchasers. *Journal of Fashion Marketing and Management, 6*(2), 146-157.

Li, H., Kuo, C., & Russell, M. G. (1999). The impact of perceived channel utilities, shopping orientations, and demographics on the consumer's online buying behaviour. *Journal of computer mediated communications,* 5(2). Retrieved from http://www.ascusc.org/jcmc/vol5/issue2/hairong.html.

Liberman, N., & Trope, Y. (1998). The role of feasibility and desirability considerations in 35 Near and Distant Future Decision: a test of temporal construal theory. *Journal of Personality and Social Psychology, 75(*1), 5-18.

Longshore, D. (1998). Self-control and criminal opportunity: A prospective test of the general theory of crime. *Social Problems, 45*(1), 102-113

Loyalty. (2011). In Dictionary.com. Retrieved May 8, 2011, from http://dictionary.reference.com/browse/loyalty

Lussier, R. N. (1995). A nonfinancial business success versus failure prediction model for young firms. *Journal of Small Business Management, 33*(1), 8-20.

Lwin, M. O., & Williams, J. D. (2006). Promises, promises: how consumers respond to warranties in Internet retailing. *Journal of Consumer Affairs, 40*(2), 236-260.

Madhavaram, S. R., & Laverie, D. A. (2004). Exploring impulse purchasing on the Internet. In B. E. Kahn & M. F. Luce (Eds.), *Advances in Consumer Research* (pp. 59-66). Association for Consumer Research.

Majumder. P., & Groenevelt, H. (2002). *Inventory policy implications of online customer purchase behaviour*. ICEB Conference: Global E-business in knowledge-based economy: Management, Practice and Opportunities. Taipei, Taiwan. Retrieved from http://iceb.nccu.edu.tw/proceedings/2002/PDF/f295.pdf

Malhotra, N. K., Hall, J., Shaw, M., & Oppenheim, P. (2004). *Essentials of marketing research: an applied orientation*. Pearson Education Australia, Frenchs Forest, NSW.

Mandel, N., & Johnson, E. J. (2002). When web pages influence choice: effects of visual primes on experts and novices. *Journal of Consumer Research, 29*(2), 235-245.

Mandler, G. (1984). *Mind and body: Psychology of emotion and stress*. New York: Norton.

Mano, H., & Oliver, R. L. (1993). Assessing the dimensionality and structure of the consumption experience: evaluation, feeling, and satisfaction. *Journal of Consumer Research, 20*(3), 451-466.

Mardia, K. V. (1985). Mardia's Test of Multinormality. In S. Kotz and N. L. Johnson (Eds.), *Encyclopedia of Statistical Sciences* (pp. 217-221). NY: Wiley.

Mathwick, C., Malhotra, N. K., & Rigdon, E. (2002). The effect of dynamic retail experiences on experiential perceptions of value: An internet and catalog comparison. *Journal of Retailing, 78*(1), 51-60.

Mattila, A. S., & Wirtz, J. (2008). The role of store environmental stimulation and social factors on impulse purchasing. *Journal of Services Marketing, 22*(7), 562-567.

Mattson, B. E. (1982). Situational influences on store Choice. *Journal of Retailing, 58*(3), 46-58.

McCracken, G. (1986). Culture and consumption: a theoretical account of the structure and movement of the cultural meaning of consumer goods. *Journal of Consumer Research, 13*(1), 71-84.

McCullagh, P. (1980). Regression models for ordinal data (with discussion). *Journal of the Royal Statistical Society, 42*(2), 109-142.

McDaniel, C. D., & Gates, H. J. (2002). *Marketing research: the impact of the Internet*. South-Western.

McIver, J. P., & Carmines, E. G. (1981). *Unidimensional scaling*. Thousand Oaks, CA: Sage.

McKnight, D. H., Choudhury, V. & Kacmar, C. (2002). Developing and validating trust measures for e-Commerce: an integrative typology. *Information Systems Research, 13*(3), 334-359.

Mehrabian, A., & Russell, J.A. (1974). An approach to environmental psychology. Cambridge, MA.

Melnyk, V., Osselaer, S. M. J., & Bijmolt, T. H. A. (2009). Are women more loyal customers than men? Gender differences in loyalty to firms and individual service providers. *Journal of Marketing, 73*(4), 82-96.

Menard, S. (1995). *Applied logistic regression analysis*. Thousand Oaks, CA: Sage.

Menard, S. (2000). Coefficients of determination for multiple logistic regression analysis. *The American Statistician, 54*(1), 17-24.

Menon, S., & Kahn, B. (2002). Cross-category effects of induced arousal and pleasure on the internet shopping experience. *Journal of Retailing, 78*(1), 31-40.

Mentzer, J. T., & Flint, D. J. (1997). Validity in Logistics research. *Journal of Business Logistics, 18*(1), 199-216.

Mick, D. G., & Demoss, M. (1990). Self-Gifts: Phenomenological insights from four contexts. *Journal of Consumer Research, 17*(3), 322-332.

Min, K. S. (2003). *Consumer response to product unavailability*. (Unpublished doctoral dissertation). Ohio State University. Retrieved from http://etd.ohiolink.edu/view.cgi/Min%20Kyeong%20Sam.pdf?osu1060627656

Mitchell, V. W., & Prince, G. S. (1993). Retailing to experienced and inexperienced consumers. *International Journal of Retail and Distribution Management, 21*(5), 10-21.

Moe, W. W. (2003). Buying, searching, or browsing: differentiating between online shoppers using in-store navigational clickstream. *Journal of Consumer Psychology, 13*(1&2), 29-39.

Monroe, K. B. (1990). *Pricing: Making profitable decisions*. New York: McGrawHill.

Monroe, K. B., & Chapman, J. D. (1987). Framing effects on buyers' subjective product evaluations. In M. Wallendorf & P. Anderson (Eds), *Advances in Consumer Research* (pp. 193-197). Association for Consumer Research.

Mook, D. (2001). *Psychological Research: The Ideas Behind the Methods* (1st ed.). W. W. Norton & Company.

Moreau, C. P., Lehmann,D. R., & Markman, A. B. (2001). Entrenched knowledge structures and consumer response to new products. *Journal of Marketing Research, 38*(1), 14-29.

Moreland, R.L., & Zajonc, R.B. (1982). Exposure effects in person perception: familiarity, similarity, and attraction. *Journal of Experimental Social Psychology*, *18*(5), 395-415.

Morrison, M., Wang, P., Oppewal, H., & Waller, D. (2005). *Comparing choice models across decision states: some preliminary results*. Paper presented at the ANZMAC conference, Fremantle, Australia.

Mummalaneni V. (2005). An empirical investigation of web site characteristics, consumer emotional states and online shopping behaviours. *Journal of Business Research, 58*(4), 526-532.

Murray K., & Häubl G. (2007). Explaining cognitive lock-in: the role of skill-based habits of use in consumer choice. *Journal of Consumer Research, 34*(1), 77-88.

Murray K., & Häubl G. (2002). The fiction of no friction: a user skills approach to cognitive lock-in. In Broniarczyk S. M. and Nakamoto K. Valdosta G. A. (Eds.), *Association for Consumer Research* (pp. 11-18).

Murray, K., & Häubl, G. (2011). Freedom of choice, ease of use, and the formation of interface preferences. *MIS Quarterly, 35*(4), 955-976.

Murray, K., & Bellman, S. (2011). Productive play time: the effect of practice on consumer demand for hedonic experiences. *Journal of the Academy of Marketing Science, 39*(3), 376-391.

Musch, J., & Reips, U. D. (2000). A brief history of Web experimenting. In M. H. Birnbaum (Ed.), *Psychological experiments on the Internet* (pp. 61-88). San Diego, CA: Academic Press.

Nederkoorn, C., Guerrieri, R., Havermans, R. C., Roefs, A., & Jansen, A. (2009). The interactive effect of hunger and impulsivity on food intake and purchase in a virtual supermarket: Interactive effect of hunger and impulsivity. *International Journal of Obesity, 33*(8), 905-912.

Neuman, W.L. (1994). S*ocial Research Methods: Qualitative and Quantitative Approaches*. Allyn and Bacon, Boston, MA.

Niebel, B. W. (1972). *Motion and Time Study* (5th ed.). Homewood, IL: Richard D. Irwin.

Noble, S. (2011, January 28). *Australian online retail forecast, 2010 to 2015*. Retrieved from http://www.forrester.com/home#/Australian+Online+Retail+Forecast+2010+To+2015/quickscan/-/E-RES58276

Norusis, M. J. (2005). *SPSS 13.0 guide to data analysis* (1st ed.). Upper Saddle River, Prentice Hall, New Jersey.

Norusis, M. J. (2012). *IBM SPSS Statistics 19 Guide to Data Analysis*. Upper Saddle River, N.J: Prentice Hall.

Novak, T.P., & Hoffman, D.L. (1996). New Metrics for New Media: Toward the development of web measurement standards. *World Wide Web Journal*, *2*(1), 213-246.

Retrieved from http://www2000.ogsm.vanderbilt.edu/novak/web.

Nunnally, J. C. (1978). *Psychometric Theory*. McGraw Hill, New York.

Nurosis, M. (1993). *Statistical Data Analysis*. SPSS Inc.

O'Connell, A. (2006). *Logistic regression models for ordinal response variables*. Thousand Oaks.

Oliver, R. L. (1997). *Satisfaction: A behavioural perspective on the consumer*. New York: McGraw-Hill.

Oliver, R. L. (1999). Whence consumer loyalty? *Journal of Marketing, 63*(special edition), 33-44.

Oosterhof, A. (1994). *Classroom applications of educational measurement* (2nd ed.). New York, NY: Merrill.

Oppewal, H. (2010). Causal research. In J. Sheth & N. K. Malhotra (Ed.), *Wiley International Encyclopedia of Marketing*. John Wiley & Sons Ltd.

Orbell, S., Hodgkins, S., & Sheeran, P. (1997). Implementation intentions and the theory of planned behaviour. *Personality and Social Psychology Bulletin, 23*(9), 953-962.

Pallant, J. (2007). *SPSS Survival Manual* (3rd ed.). Crows West, New South Wales.

Parboteeah, D.V., Valacich, J.S., & Wells, J.D. (2009). The influence of website characteristics on a consumer's urge to buy impulsively. *Information Systems Research, 20*(1), 60-78.

Park, C. W., Iyer, E. S. & Smith, D. C. (1989). The effects of situational factors on in-store grocery shopping behavior: the role of store environment and time available for shopping. *Journal of Consumer Research, 15*(4), 422-434.

Park, E.J., Kim, E.Y., Funches, V.M., & Foxx, W. (2011). Apparel product attributes, web browsing, and e-impulse buying on shopping websites. *Journal of Business Research,*

65(11), 1583-1589.

Patzer, G. (1996). *Experiment-Research Methodology in Marketing: Types and applications*. Westport, London, UK: Quorum Books.

Pauwels, K., Hanssens, D. M, & Siddarth, S. (2002). The long-term effects of price promotions on category incidence, brand choice, and purchase quantity. *Journal of Marketing Research, 39*(4), 421-439.

Peckham, J. (1963). The Consumer speaks. *Journal of Marketing*, *27*(4), 21-26.

Pedhazur, E. J. (1997). *Multiple regression in behavioural research* (3rd ed.). New York: Harcourt Brace College Publishers.

Peduzzi, P., Concato, J., Kemper E., Holford, T. R., & Feinstein, A. R. (1996). A simulation study of the number of events per variable in logistic regression analysis. *Journal of Clinical Epidemiology, 49*(12), 1372-1379.

Perdue, B. C., & Summers, J. O. (1986). Checking the success of manipulations in marketing experiments. *Journal of Marketing Research*, *23*(4), 317-326.

Perlmutter, L. C., & Monty, R. A. (1977). The importance of perceived control: fact or fantasy? *American Scientist, 65*(6), 759-765.

Perugini, M., & Conner, M. (2000). Predicting and understanding behavioural volitions: the interplay between goals and behaviours. *European Journal of Social Psychology*, *30*(5), 705-731.

Peter, J. P. (1979). Reliability: a review of psychometric basics and recent marketing practices. *Journal of Marketing Research, 16*(1), 6-17.

Peter, J. P. (1981). Construct Validity: a review of basic issues and marketing practices. *Journal of Marketing Research, 18*(2), 133-145.

Peterson, R. A., Balasubramanian, S., & Bronnenberg, B. J. (1997). Exploring the

implications of the Internet for consumer marketing. *Journal of the Academy of Marketing Science, 25*(4), 329-346.

Phau, I., & Poon, S. M. (2000). Factors influencing the types of products and services purchased over the Internet. *Internet Research: Electronic Networking Applications and Policy, 10*(2), 102-113.

Pham, M. T., Cohen, J. B., Pracejus, J. W., & Hughes, D. (2001). Affect monitoring and the primacy of feelings in judgment. *Journal of Consumer Research, 28*(2), 167-188.

Pieters, R. (1993). A control view on the behaviour of consumers: Turning the triangle. In: G. L Bamossy & W. F. Van Raaij (Eds.), *European Advances in Consumer Research* (pp. 507-512). Association for Consumer Research.

Piron, F. (1991). Defining impulse purchases. *Advances in Consumer Research, 18*(6), 509-514.

Punj, G., & Moore, R. (2009). Information search and consideration set formation in a web-based store environment. *Journal of Business Research, 62*(6), 644-650.

Ratneshwar, S., Barsalou, L.W., Pechmann, C., & Moore, M. (2001). Goal-derived categories: The role of personal and situational goals in category representations. *Journal of Consumer Psychology, 10*(3), 147-157.

Rawlings, J. O., Pantula, S. G., & Dickey, D. A. (1998). *Applied Regression Analysis: A Research Tool* (2nd ed.). Springer-Verlag New York, Inc.

Reibstein, D. J. (2002). What attracts customers to online stores, and what keeps them coming back? *Journal of the Academy of Marketing Science, 30*(4), 465-473.

Reichheld, F. F. (2003). The one number you need to grow. *Harvard Business Review, 81*(12), 46-54.

Reichheld, F. F., & Schefter, F. (2000). E-loyalty: your secret weapon on the web. *Harvard Business Review, 78*(2), 105-113.

Reips, U. D. (2002). Standards for Internet-based experimenting. *Experimental Psychology, 49*(4), 243-256.

Reips, U. D. (2000). The Web experiment method: Advantages, disadvantages, and solutions. In M. H. Birnbaum (Ed.), *Psychological experiments on the Internet* (pp. 89-114). San Diego, CA: Academic Press.

Reips, U. D. (2001). The Web Experimental Psychology Lab: Five years of data collection on the Internet. *Behaviour Research Methods, Instruments, and Computers, 33*(2), 201-211.

Reis, H., & Judd, C. (2000). *Handbook of Research Methods in Social and Personality Psychology*. Cambridge: Cambridge University Press.

Rhee, J., & Bell, D. R. (2002). The inter-store mobility of supermarket shoppers. *Journal of Retailing, 78*(4), 225-237.

Richard, M-O., & Chandra, R. (2005). A model of consumer web navigational behaviour: conceptual development and application. *Journal of Business Research, 58*(8), 1019-1029.

Rodgers, W., Solomon, N., & Kwanho, S. (2005). The moderating effect of on-line experience on the antecedents and consequences of on-line satisfaction. *Psychology & Marketing, 22*(4), 313-331.

Roland Berger (2003). ECR – Optimal shelf availability: Increasing shopper satisfaction at the moment of truth.

Rook, D. W. (1987). The buying impulse. *Journal of Consumer Research, 14*(2), 189-199.

Rook, D. W., & Fisher, R. J. (1995). Normative influences impulsive buying behaviour. *Journal of Consumer Research, 22*(3), 305-313.

Rook, D. W., & Hoch, S. J. (1985). Consuming Impulses. In E. C. Hirschman & M. B. Holbrook (Eds.), *Advances in Consumer Research* (pp. 23-27). Association for Consumer Research.

Rosenbloom, P., & Newell, A. (1987). Learning by chunking: a production system model of practice. In Klahr, D., Langley, P., & Neches, R. (Eds.), *Production System Models of Learning and Development* (pp. 221-286). Cambridge, MA: MIT Press.

Rosenthal, R., & Rosnow, R. L (1969). The volunteer subject. In R. Rosenthal & R. L. Rosnow (Eds.), *Artifact in behavioural research* (pp. 143-179). New York: Academic Press.

Rossiter, J. R. (2002). The C-OAR-SE procedure for scale development in marketing. *International Journal of Research in Marketing, 19*(4), 305-335.

Rossiter, J. R., & Eagleson, G. (1994). Conclusions from the ARF's copy research validity project. *Journal of Advertising Research, 34*(3), 19-32.

Rusbult, C. E., Zembrodt, M., & Gunn, L. K. (1982). Exit, voice, loyalty, and neglect: responses to dissatisfaction in romantic involvements. *Journal of Personality and Social Psychology, 43*(6), 1230-1242.

Russell, J. A., & Mehrabian, A. (1976). Environmental variables in consumer research. *Journal of Consumer Research, 3*(1), 62-63.

Salisbury, W. D., Pearson, R. A., Pearson, A. W., & Miller, D. W. (2001). Perceived security and worldwide web purchase intention. *Industrial Management & Data Systems, 101*(4), 165-177.

Sanchez-Franco, M. J., & Rondan-Cataluña, F. J. (2010). Virtual travel communities and customer loyalty: Customer purchase involvement and web site design. *Electronic Commerce Research and Applications, 9*(2), 171-182.

Schary, P. B., & Christopher, M. (1979). The Anatomy of a Stock-Out. *Journal of Retailing, 55*(2), 59-70.

Schuh, A. J. (1978). Effects of an early interruption and note taking on listening accuracy and decision making in the interview. *Bulletin of the Psychonomic Society 12*(3), 242-244.

Schumann, D. W. & Thorson, E. (2007). *Internet Advertising: Theory and Research* (2nd ed.). Psychology Press.

Seiders, K., & Tigert, D. J. (1997). The impact of competitive market structure on store loyalty and switching behaviour. *International Journal of Retail, Distribution, and Consumer Research, 7*(3), 227-249.

Seligman, M. E. P. (1975). *Helplessness: On depression, development, and death*. San Francisco: Freeman.

Senecal, S., & Nantel, J. (2004). The influence of online product recommendations on consumers' online choices. *Journal of Retailing*, *80*(2), 159-169.

Shadish, W. R., Cook, T. D., & Campbell, T. D. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin.

Shankar, V., Smith, A. K., & Rangaswamy, A. (2003). Customer satisfaction and loyalty in online and offline environments. *International Journal of Research in Marketing*, *20*(2), 153-175.

Shapiro, C., & Varian, H. R. (1999). *Information Rules*. Boston, MA: Harvard Business School Press.

Sheeran, P., Webb, T. L., & Gollwitzer, P. M. (2005). The interplay between goal intentions and implementation intentions. *Personality and Social Psychology Bulletin*, *31*(1), 87-98.

Sheth, J. N., & Park, W. C. (1974). A Theory of Multidimensional Brand Loyalty. In Ward S. & Wright P. (Eds.), *Advances in Consumer Research* (p. 449-459), Association for Consumer Research.

Shih, H-P. (2012). Cognitive Lock-In effects on consumer purchase intentions in the context of B2C web sites. *Psychology and Marketing*, *29*(10), 738-751.

Shim, S., Eastlick, M., Lotz, S. L., & Warrington, P. (2001). An online prepurchase intentions model: the role of intention to search. *Journal of Retailing*, *77*(3), 397-416.

Shiu, E. M. K., Walsh, J., Hassan, L., M., & Shaw, D. (2011). Consumer uncertainty revisited. *Psychology and Marketing*, *28*(6), 584-607.

Sloot, L. M., Verhoef, P. C., & Franses, P. H. (2005). The impact of brand equity and the hedonic level of products on consumer stock-out reactions. *Journal of Retailing, 81*(1), 15-34.

Sloot, L.M., & Verhoef, P.C. (2008). The impact of brand delisting on store switching and brand switching intentions. *Journal of Retailing*, *84*(3), 281-296.

Smith, M. D. (2002). Loyalty and e-marketing issues. *Quarterly Journal of Electronic Commerce*, *3*(2), 149-161.

Smith, M. D., Bailey, J., & Brynjolfsson, E. (1999). Understanding digital markets: review and assessment. In Brynjolfsson E. & Kahin, B. (Eds.), *Understanding the Digital Economy* (pp. 181-195), MIT Press, Cambridge, MA.

Smith, S. M. & Albaum, G. S. (2005). *Fundamentals of Marketing Research*. Thousand Oaks, CA: Sage Publications.

Solomon, M. R., Dann, S., Dann, S., & Russell-Bennett, R. (2007). *Consumer behaviour: Buying, having, being*. NSW: Prentice Hall.

Spears, N., & Singh, S. N. (2004). Measuring attitude toward the brand and purchase intentions. *Journal of Current Issues and Research in Advertising*, *26*(2), 53-66.

Srinivasan, S. S., Anderson, R. E, & Ponnavolu, K. (2002). Customer loyalty in e-commerce: an exploration of its antecedents and consequences. *Journal of Retailing*, *78*(1), 41-50.

Srull, T. K., & Wyer, R. S. (1989). Person memory and judgment. *Psychological Review*, *96*(1), 58-83.

Stern, H. (1962). The significance of impulse buying today. *Journal of Marketing*, *26*(2),

59-62.

Stigler, G., & Becker, S. G. (1977). De gustibus non est disputandum. *American Economic Review, 67*(2), 76-90.

Talaga, J. & Tucci, L. (2001). Consumer tradeoffs in on-line textbook purchasing. *Journal of Consumer Marketing, 18*(1), 10-18.

Tice, D., Bratslavsky, E., & Baumeistrer, R. (2001). Emotional distress regulation takes precedence over impulse control: if you feel bad, do it! *Journal of Personality & Social Psychology, 80*(1), 53-67.

Tabachnick, B., & Fidell, L. S. (2000). Using multivariate statistics (4th ed.). Needleham Heights, MA: Allyn and Bacon.

Tabachnick, B., & Fidell, E. (2007). *Using Multivariate Statistics* (5th ed.). Pearson.

Tabachnick, B., & Fidell, L. (1996). *Using Multivariate Statistics* (3rd ed.). Harper Collins.

Taylor, J. C., Fawcett. S., & Jackson G. C. (2004). Catalogue retailer in-stock performance: an assessment of customer service levels. *Journal of Business Logistics, 25*(2), 119-137.

Taylor, S., & Todd, P. (1995). Assessing IT usage: the role of prior experience. *MIS Quarterly, 19*(4), 561-570.

Thorbjørnsen, H., & Supphellen, M. (2004). The impact of brand loyalty on website usage. *Journal of Brand Management, 11*(3), 199-208.

Trope, Y., & Liberman, N. (2003). *Temporal construal. Psychological Review, 110*(3), 403-421.

Trope, Y., Liberman, N., & Wakslak, C. (2007). Construal Levels and Psychological Distance: effects on representation, prediction, evaluation, and behaviour. *Journal of Consumer Psychology, 17*(2), 83-95.

Ülkümen, G., Chakravarti, A., & Morwitz, V. (2010). The effect of exposure to narrow

versus broad categorizations on subsequent decision making and information processing. *Journal of Marketing Research, 47*(4), 659-671.

Valacich, J. S., Parboteeah, D. V., & Wells, J. D. (2007). Not all interface characteristics are created the same: The online consumer's hierarchy of needs. *Communications of the ACM, 50*(9), 84-90.

Vallacher, R. R., & Wegner, D. M. (1987). What do people think they're doing? Action identification and human behaviour. *Psychological Review, 94*(1), 3-15.

Venkatesh, V. & Morris, M.G. (2000) Why don't men ever stop to ask for directions? Gender, social influence and their role in technology acceptance and usage behaviour. *MIS Quarterly, 24*(1), 115-139.

Venkatesh, V., & Davis, F.D. (1996). A Model of the antecedents of perceived ease of use: development and test. *Decision Sciences, 27*(3), 451-481.

Venkatesh, V., Morris, M., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: toward a unified view. *MIS Quarterly, 27*(3), 425-478.

Verbeke, W., Farris, P., & Thurik, R. (1998). Consumer response to the preferred brand out-of-stock situation. *European Journal of Marketing, 32*(11/12), 1008-1028.

Vergin, R. C., & Barr, K. (1999). Building competitiveness in grocery supply through continuous replenishment planning: Insights from the field. *Industrial Marketing Management, 28*(2), 145-153.

Verhagen, T., & Van Dolen, W. (2011). The influence of online store beliefs on consumer online impulse buying: A model and empirical application. *Information & Management, 48*(8), 320-327.

Verhoef, P. & Sloot, L. (2005). Out-of-Stock: reactions, antecedent, management solutions and a future perspective. In Retailing in the 21st Century: Current and Future Trends. In K. Manfred & Mantrala M. (Eds.), *The nature of play: Great apes and humans* (pp. 89-112). Springer Verlag.

Verplanken B. & Herabadi, A. (2001). Individual differences in impulse buying tendencies: Feeling and no thinking. *Journal of personality, 15*(1), 71-83.

Verplanken, B., & Sato, A. (2011). The psychology of impulse buying: An integrative self-regulation approach. *Journal of Consumer Policy, 34*(2), 197-210.

Verplanken, B., & Faes, S. (1999). Good intentions, bad habits, and effects of forming implementation intentions on healthy eating. *European Journal of Social Psychology, 29*(5-6), 591-604.

Verplanken, B., Herabadi, A. G., Perry, J. A., & Silvera, D. H. (2005). Consumer style and health: The role of impulsive buying in unhealthy eating. *Psychology and Health, 20*(4), 429-441.

Vohs, K. D., & Faber, R. J. (2007). Spent resources: self-regulatory resource availability affects impulse buying. *Journal of Consumer Research, 33*(4), 537-547.

Wade, M., & Tingling, P. (2005). A new twist on an old method: a guide to the applicability and use of web experiments in management research. *Database for Advances in Information Systems, 36*(3), 69-88.

Wagner, J. A., Klein, N. M., & Keith, J. E. (2003). Buyer-seller relationships and selling effectiveness: the moderating influence of buyer expertise and product competitive position. *Journal of Business Research, 56*(4), 295-302.

Wallace, D. W., Giese, J. L., & Johnson, J. L. (2004). Customer retailer loyalty in the context of multiple channel strategies. *Journal of Retailing, 80*(4), 249-263.

Walter, C. K., & Grabner, J. R. (1975). Stock out models: empirical test in a retail situation. *Journal of Marketing, 39*(3), 56-68.

Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: How good are single-item measures? *Journal of Applied Psychology, 82*(2), 247-252.

Weathers, D., & Makienko, I. (2006). Assessing the Relationships between e-tail success and product and web site factors. *Journal of Interactive Marketing, 20*(2), 41-54.

Weinberg, P., & Gottwald, W. (1982). *Impulsive consumer buying as a result of emotions. Journal of Business Research, 10*(1), 43-57.

Wells, W. D., & Gubar, G. (1966). Life cycle concept in marketing research. *Journal of Marketing Research, 3*(4), 355-363.

Westbrook, R. (1987). Product/consumption based affective responses and postpurchase process. *Journal of Marketing Research, 24*(3), 258-270.

Wetzel, C. G. (1977). Manipulation checks: a reply to Kidd. *Representative Research in Social Psychology, 8*(2), 88-93.

White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review, 66*(5), 297-330.

Wilson, T. D., & Schooler, J. (1991). Thinking too much: Introspection can reduce the quality of preferences and decisions. *Journal of Personality and Social Psychology, 60*(2), 181-192.

Worcester R. M., & Burns T. R. (1975). A statistical examination of the relative precision of verbal scales. *Journal of Market Research Society, 17*(3), 181-197.

Wuensch, K. L. (2009). Binary logistic regression with PASW/SPSS. Retrieved from http://core.ecu.edu/psyc/wuenschk/MV/Multreg/Logistic-SPSS.pdf.

Wyer, R. S. (1980). The acquisition and use of social knowledge: basic postulates and representative research. *Personality and Social Psychology Bulletin, 6*(4), 558-573.

Xia, L., & Sudharshan, D. (2002). Effects of interruptions on consumer online decision processes. *Journal of Consumer Psychology, 12*(3), 265-280.

Xu, A. J., & Wyer, R. S. (2007). The effect of mind-sets on consumer decision strategies.

Journal of Consumer Research, 34(4), 556-566.

Yoh, E., Damhorst, M. L., Sapp, S., & Laczniak, R. (2003). Consumer adoption of the Internet: the case of apparel shopping. *Psychology & Marketing, 20*(12), 1095-1118.

Youn, S., & Faber, R. J. (2000). Impulse buying: its relation to personality traits and cues. *Advances in Consumer Research, 27*(1), 179-185.

Zauberman, G. (2003). The intertemporal dynamics of consumer lock-in. *Journal of Consumer Research, 30*(3), 405-419.

Zeithaml, V. A., & Fuerst, W. F. (1983). Age differences in response to grocery store price information. *The Journal of Consumer Affairs, 17*(2), 402-420.

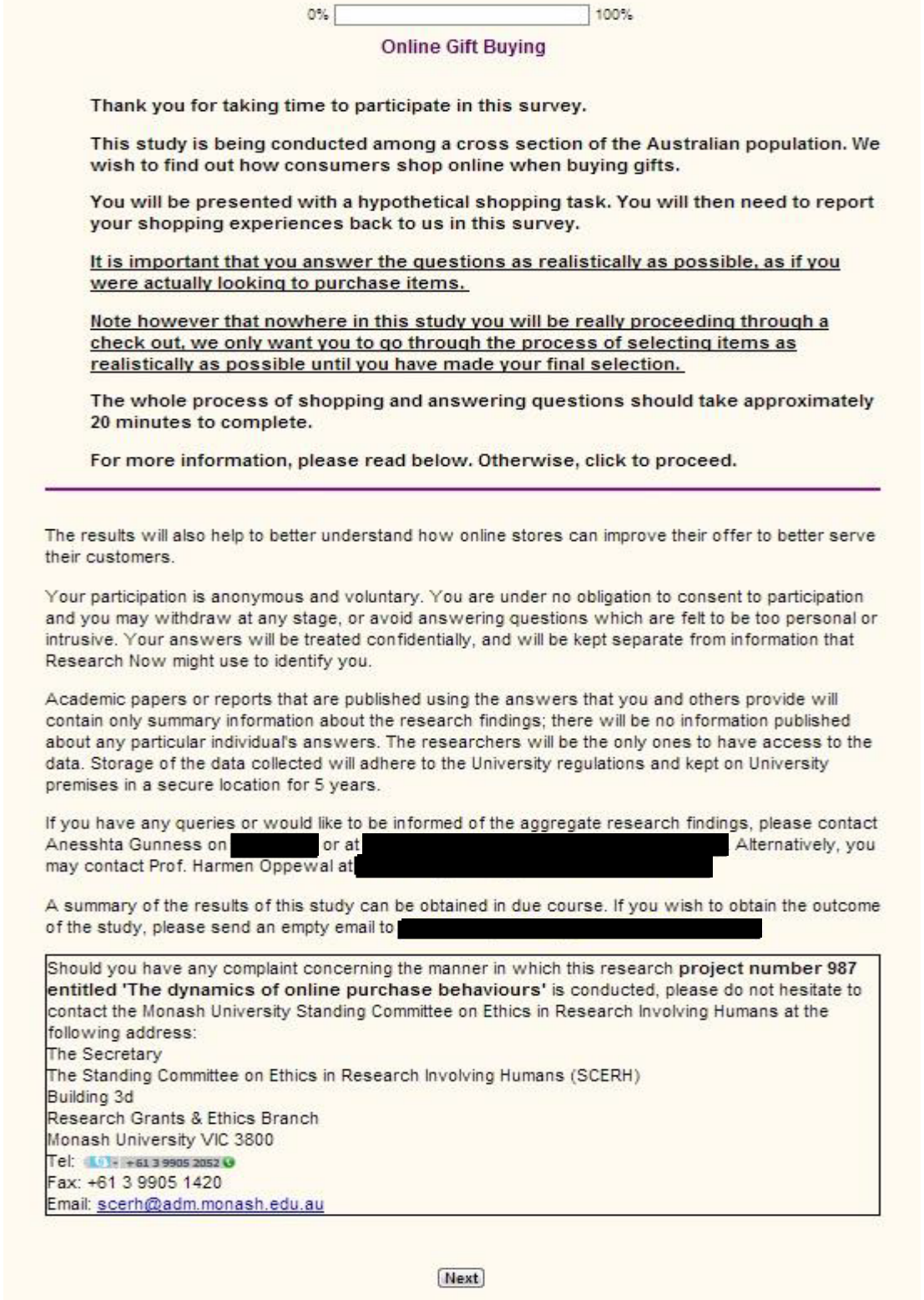
Zeitlin, D. M., & Westwood, R. A. (1986). Measuring Emotional Response. *Journal of Advertising Research, 26*(5), 34-44.

Zikmund, W. (2000). *Exploring Marketing Research* (7th ed.). The Dryden Press.

Zinn, W., & Liu, P.C. (2008). A comparison of actual and intended consumer behavior in response to retail stockouts. *Journal of Business Logistics, 12*(2), 141-159.

Zinn, W., & Liu, P.C. (2001). Consumer Response to Retail Stockouts. *Journal of Business Logistics, 22*(1), 49-71.

Appendix A – The experiment, 6/2 group (implemental MS)



0% 100%

Online Gift Buying

Thank you for taking time to participate in this survey.

This study is being conducted among a cross section of the Australian population. We wish to find out how consumers shop online when buying gifts.

You will be presented with a hypothetical shopping task. You will then need to report your shopping experiences back to us in this survey.

It is important that you answer the questions as realistically as possible, as if you were actually looking to purchase items.

Note however that nowhere in this study you will be really proceeding through a check out, we only want you to go through the process of selecting items as realistically as possible until you have made your final selection.

The whole process of shopping and answering questions should take approximately 20 minutes to complete.

For more information, please read below. Otherwise, click to proceed.

The results will also help to better understand how online stores can improve their offer to better serve their customers.

Your participation is anonymous and voluntary. You are under no obligation to consent to participation and you may withdraw at any stage, or avoid answering questions which are felt to be too personal or intrusive. Your answers will be treated confidentially, and will be kept separate from information that Research Now might use to identify you.

Academic papers or reports that are published using the answers that you and others provide will contain only summary information about the research findings; there will be no information published about any particular individual's answers. The researchers will be the only ones to have access to the data. Storage of the data collected will adhere to the University regulations and kept on University premises in a secure location for 5 years.

If you have any queries or would like to be informed of the aggregate research findings, please contact Anesshta Gunness on [redacted] or at [redacted] Alternatively, you may contact Prof. Harmen Oppewal at [redacted]

A summary of the results of this study can be obtained in due course. If you wish to obtain the outcome of the study, please send an empty email to [redacted]

Should you have any complaint concerning the manner in which this research **project number 987 entitled 'The dynamics of online purchase behaviours'** is conducted, please do not hesitate to contact the Monash University Standing Committee on Ethics in Research Involving Humans at the following address:
The Secretary
The Standing Committee on Ethics in Research Involving Humans (SCERH)
Building 3d
Research Grants & Ethics Branch
Monash University VIC 3800
Tel: +61 3 9905 2052
Fax: +61 3 9905 1420
Email: scerh@adm.monash.edu.au

Next

Online Gift Buying

First, we would like to ask some questions regarding your online purchases in general.

Qu. 1: How often approximately do you purchase the following items from **normal shops**?

	Weekly	Every month	Every 3 months	Every 6 months	Once a year	Less than once a year	Never purchased
Flowers	○	○	○	○	○	○	○
Chocolates	○	○	○	○	○	○	○
Wine	○	○	○	○	○	○	○
Gift Hamper	○	○	○	○	○	○	○
Books	○	○	○	○	○	○	○
DVDs or CDs	○	○	○	○	○	○	○
Gift cards	○	○	○	○	○	○	○

Qu. 2: How often approximately do you purchase the following items from **online stores**?

	Weekly	Every month	Every 3 months	Every 6 months	Once a year	Less than once a year	Never purchased
Flowers	○	○	○	○	○	○	○
Chocolates	○	○	○	○	○	○	○
Wine	○	○	○	○	○	○	○
Gift Hamper	○	○	○	○	○	○	○
Books	○	○	○	○	○	○	○
DVDs or CDs	○	○	○	○	○	○	○
Gift cards	○	○	○	○	○	○	○

Qu. 3: In the past 3 months, how many times have you made an online purchase of at least $100?

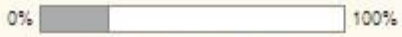
Choose one

Qu. 4: What is your level of experience in terms of online shopping?

Choose one

Back Next


0%
100%
Online Gift Buying
Scenario 1: Purchase an item for yourself
In this scenario, imagine this:
You have a $100 voucher which can ONLY BE USED AT giftsaustralia.com.au (which you will access very shortly). You have decided to use the voucher to purchase something for yourself. You do not have to spend the full $100, any unspent money will go to the Red Cross Charity.
This is what you will do:
1. Visit the site and find something that you would definitely buy for yourself.
2. Copy and paste the name of the item you choose in the space provided below.
3. MAKE SURE that you RIGHT CLICK on link below to open the site in a new window.
4. CLOSE THE SITE WHEN YOU FINISH.
http://giftsaustralia.com.au/
RIGHT CLICK and open in new window!
NOTE: MAC users, please CONTROL and CLICK to open in new window!
My item from giftsaustralia
Back
Next



Online Gift Buying

Scenario 2: Draw a list of potential gifts based on your search at giftsaustralia

---

In this scenario:

Again, imagine that you have a voucher **WORTH $100.** You can only use it at **giftsaustralia [**which we will call **SITE A for simplicity** - *button on next page*]**.** Again, any unspent money goes to the Red Cross Charity.

However, this time you are NOT purchasing for yourself.

Think of a very special person in your life. Assume that it's his/her birthday in **ONLY 3 DAYS**. You have decided to use the voucher to buy a gift for him/her.

Also assume that this person has indicated that he/she would love to receive EITHER of the following:

A GIFT HAMPER/BASKET ***OR*** FLOWERS

So, you are *thoughtfully* drawing up a list of items that will help you decide which single one to buy (shortly).

First, who is the special person you are thinking of getting the gift for? Please highlight from dropdown menu:

Choose one

How old is that special person?

Choose one

Back Next

0% 100%

Online Gift Buying

This is what you will do next:

- Search for and select **6 possible gift items from site A [button below]: 3 from the category of gift hampers/baskets and 3 from the category of flowers** - choose carefully.
- Take into account **delivery time and delivery costs**
- Spend between **4-6 minutes** at site A.
- **You MUST copy and paste** the names of exactly 6 items that you select from this site
- Highlight reasons for your choices
- Make sure you **RIGHT CLICK** on link below to **OPEN SITE A IN NEW WINDOW.**
- **CLOSE SITE A** when your selection is complete
- **KEEP PRESENT BROWSER OPEN AT ALL TIMES!**

WEBSITE A

RIGHT CLICK and open in new window!

NOTE: MAC users, please CONTROL and CLICK to open in new window!

My selection of *GIFT BASKETS/HAMPERS* from website A - giftsaustralia.com.au

1.
2.
3.

My selection of *FLOWERS* from website A - giftsaustralia.com.au

1.
2.
3.

Before you proceed, please make sure that you close site A.

Qu. 1: Have you closed site A?

- ○ *Yes*
- ○ *No*

Please highlight your reason (s) for selecting these gift baskets and flowers:

- ☐ Good value for money
- ☐ Within budget
- ☐ On time delivery
- ☐ Good price
- ☐ Good quality
- ☐ Other (please specify) _____

Back Next

Online Gift Buying

Next, you are expected to visit site B (a new site). However, we would first like to know YOUR THOUGHTS WITH REGARDS TO GIFTAUSTRALIA.COM.AU.

Qu.1: I feel very much accustomed to this site.

Totally DISAGREE	Somewhat disagree	Not agree/not disagree	Somewhat agree	Totally AGREE
○	○	○	○	○

Qu. 2: I feel that I have definitely learnt to find my way around this site.

Totally DISAGREE	Somewhat disagree	Not agree/not disagree	Somewhat agree	Totally AGREE
○	○	○	○	○

Qu. 3: Compared to other online stores I know, this site is quite unique.

Totally DISAGREE	Somewhat disagree	Not agree/not disagree	Somewhat agree	Totally AGREE
○	○	○	○	○

Back Next

0% 100%

Online Gift Buying

Scenario 3: Visit website FLOWERS.COM.AU and search for potential gifts to add to your list

---

In this scenario:

Suppose you have decided to continue shopping for gift items for 'that very special person', but this time at **flowers.com.au** [which we will call **SITE B for simplicity].** Again, pretend that you have a voucher worth **$100** which, this time, you can only **use at site B**. Again, any unspent amount goes to the Red Cross Charity.

Remember!!! That person wants EITHER:

A GIFT HAMPER ***OR*** FLOWERS

This is what you will do next:

- Search for and select **1 item from each of the same categories: gift hampers** and **flowers.**
  - Take into account **delivery time and delivery costs**
  - Spend between **2-4 minutes** at site B.
- **You MUST copy and paste** the names of the 2 items chosen from this site
- Give **reasons (s)** for your choices.
- **RIGHT CLICK** on link below to open site B in a new window.
- **CLOSE SITE B** after you select the items.
- **KEEP PRESENT BROWSER OPEN AT ALL TIMES!**

WEBSITE B

RIGHT CLICK and open in new window!

NOTE: MAC users, please CONTROL and CLICK to open in new window!

My selection of *GIFT HAMPER/BASKET* from website B - flowers.com.au

1.

My selection of *FLOWERS* from website B - flowers.com.au

1.

Please state your reason (s) for selecting the gift hamper/basket and flowers

- [ ] Good value for money
- [ ] Within budget
- [ ] On time delivery
- [ ] Good price
- [ ] Good quality
- [ ] Other (please specify)

Back Next

Online Gift Buying

Next, you will be presented with another scenario. But first, please hightlight the answers that best describe your position WITH REGARDS TO FLOWERS.COM.AU.

Qu. 1: I have definitely learnt to find my way around this site.

Totally DISAGREE	Somewhat disagree	Not agree/not disagree	Somewhat agree	Totally AGREE
○	○	○	○	○

Qu. 2: To me, this site is quite unique.

Totally DISAGREE	Somewhat disagree	Not agree/not disagree	Somewhat agree	Totally AGREE
○	○	○	○	○

Qu. 3: I feel very much accustomed to this site.

Totally DISAGREE	Somewhat disagree	Not agree/not disagree	Somewhat agree	Totally AGREE
○	○	○	○	○

Back Next

0% 100%

Online Gift Buying

Step 4: Based on the two websites, you have now drawn a list of items from which you would consider purchasing for 'that very special person' whose birthday is in 3 DAYS ONLY.

At this stage:

Qu. 1: Have you yet decided what you will purchase?

Definitely UNDECIDED	Somewhat undecided	Somewhat decided	Definitely DECIDED
○	○	○	○

Qu. 2: How certain are you about what you will purchase?

Very UNCERTAIN	Somewhat uncertain	Somewhat certain	Very CERTAIN
○	○	○	○

Qu. 3: Please indicate,

(a) Which website you are **more likely** to purchase from:

Very likely SITE A	Somewhat more likely site A	Somewhat more likely site B	Very likely SITE B
○	○	○	○

(b) Which category of item you are **more likely** to purchase from:

Very likely FLOWERS	Somewhat more likely flowers	Somewhat more likely hamper	Very likely HAMPER
○	○	○	○

Qu. 4: Please indicate how certain you are of purchasing from the category you **indicated in qu. 3 (b), above:**

Will definitely NOT BUY	Will probably not buy	Equally likely to buy as not to buy	Probably will buy	Definitely WILL BUY
○	○	○	○	○

Back Next

0% 100%

Online Gift Buying

Qu. 5: Which item are you most likely to buy for that 'very special person'? Please select from your list of selections:

Choose one

We now wish to know how you are feeling towards purchasing the item you selected in qu. 5 (above).

At this stage:

Qu. 6: I strongly intend to buy this item:

Totally DISAGREE	Somewhat disagree	Not agree/not disagree	Somewhat agree	Totally AGREE
○	◉	○	○	○

Qu. 7: It is very important for me to be able to buy this item:

Totally DISAGREE	Somewhat disagree	Not agree/not disagree	Somewhat agree	Totally AGREE
○	○	○	○	○

Qu. 8: I feel determined to buy this item:

Totally DISAGREE	Somewhat disagree	Not agree/not disagree	Somewhat agree	Totally AGREE
○	○	○	○	○

Back Next

0% 100%

Online Gift Buying

The following is your list of selections from both websites A and B:

Hampers from site A - GIFTSAUSTRALIA	Flowers from site A - GIFTSAUSTRALIA
-	-
-	-
-	-
Hampers from site B - FLOWERS.COM.AU	**Flowers from site B - FLOWERS.COM.AU**
-	-

Qu. 1: If all conditions were held constant and I could only purchase from my list of selections (above), I would purchase:

Choose one

Qu. 2: I would be very interested to add more items to my list of selections.

Totally DISAGREE	Somewhat disagree	Not agree/not disagree	Somewhat agree	Totally AGREE
○	○	○	○	○

Qu. 3: Which website would you go back to if you were to add more items to your list of selections?

Very likely SITE A	Somewhat more likely site A	Somewhat more likely site B	Very likely SITE B
○	○	○	○

Back Next

0% 100%

Online Gift Buying

Scenario 5: An additional purchase task

Again, we would like you to please highlight the item that you would select if you were to purchase from your list of items:

Choose one

Now, imagine this:

You are at the website to purchase the item that you have selected (in the previous page). As you you start ordering the item, you think to yourself *'I will soon be finished with this purchase. Mission almost complete!'.*

In the process, you suddenly discover that the item is not currently available because it is out of stock!

Qu. 1: Thinking realistically,

(a) This would annoy me:

Totally DISAGREE	Somewhat disagree	Not agree/not disagree	Somewhat agree	Totally AGREE
○	○	○	○	○

(b) I would feel angry:

Totally DISAGREE	Somewhat disagree	Not agree/not disagree	Somewhat agree	Totally AGREE
○	○	○	○	○

(c) I would **NOT** feel disappointed:

Totally DISAGREE	Somewhat disagree	Not agree/not disagree	Somewhat agree	Totally AGREE
○	○	○	○	○

(d) This would **NOT** irritate me:

Totally DISAGREE	Somewhat disagree	Not agree/Not disagree	Somewhat agree	Totally AGREE
○	○	○	○	○

Qu. 2: STILL assuming that your selected item is not in stock, which **OTHER ITEM** WOULD YOU CHOOSE TO BUY **FROM YOU LIST**?

Choose one

Qu.3: Let's assume that there was **no restriction in your use of the voucher** and you could use it to purchase **hampers and flowers at other online and offline stores as well.**

What would you **DO** in response to the selected item not being available?

I would:

- Continue looking for items at the SAME site
- Continue looking for items BUT at the OTHER site
- Purchase another item which is in the list
- Go to yet other online stores
- Go to a physical store
- Other (please specify)

Back Next

Step 6: Section A

Since you've now had the opportunity to spend more time at giftsaustralia.com.au (site A) and flowers.com.au (siteB), we wish to know a bit more about your experiences at these sites.

Qu. 3: How similar did you find the two sites?

Very DISSIMILAR	Somewhat dissimilar	Somewhat similar	Very SIMILAR
○	○	○	○

Qu. 4: Which website have you developed a preference for?

Prefer SITE A	Somewhat prefer site A	Somewhat prefer site B	Prefer SITE B
○	○	○	○

Qu. 5: How likely is it that you will consider purchasing from website A in the future?

Very UNLIKELY	Somewhat unlikely	Somewhat likely	Very LIKELY
○	○	○	○

Qu. 6: How likely is it that you will consider purchasing from website B in the future?

Very UNLIKELY	Somewhat unlikely	Somewhat likely	Very LIKELY
○	○	○	○

Qu. 7: At which website would you feel more comfortable to look for items in the future:

Very likely SITE A	Somewhat more likely site A	Somewhat more likely site B	Very likely SITE B
○	○	○	○

Qu. 8: Which website would you be willing to recommend to someone?

Very likely SITE A	Somewhat more likely site A	Somewhat more likely site B	Very likely SITE B
○	○	○	○

We would now like you to briefly think about your selection of items. Think of the prices of the items on your list.

Qu. 9: I am confident that I can recall the price range of the items in my list of selections.

Totally AGREE	Somewhat agree	Not agree/not disagree	Somewhat not agree	Totally DISAGREE
○	○	○	○	○

Back Next

0% 100%

Online Gift Buying

Step 6 :Section B

The following questions will help us to identify whether we have included people from different backgrounds in this research.

Qu. 10: What is your age group?

Choose one

Qu. 11: What is your gender?

- Male
- Female

Qu. 12: Which income group do you regard yourself to be in?

Choose one

A final question:

Qu. 13: Prior to this survey, had you ever visited either site A or B?

- Yes
- No

If you have any comments regarding the survey, please type them in the space provided below:

THANK YOU FOR YOUR PARTICIPATION!

Back Finish

Appendix B – The pretests and pilot test

B.1 Introduction

Given the use of an experimental design, it was imperative to conduct pre- and pilot tests at the onset of the study to detect problems and determine whether the treatments were successful at causing changes in behaviours (Perdue & Summers, 1986; Christensen, 1994). Pretests and pilot test were even more essential than if a lab experiment was conducted, given that concerns could not be clarified, because of the absence of the experimenter (Wade & Winding, 2005).

The first pretest was a paper and pencil exercise. The second pretest was conducted on a computer screen while the third pretest was administered entirely online. Finally, the experiment was pilot tested on a group of 126 candidates. It is to be noted that the same subject type and instruments, were used both for the pilot test and main experiment although pretest and pilot participants were not part of the final experimental sample (Murray & Bellman, 2011; Kamali & Loker, 2002).

B.1.1 Pretest exercises

B.1.1.1 Pretest 1 – paper and pencil

The first pretest was a paper and pencil task conducted on a group of 6 respondents who were either PhD students or part of the academic staff at Monash University. Based on Internet shopper demographics (Lee & Johnson, 2002), college students are especially likely to be potential Internet shoppers. Thus, using university students as the population under scrutiny was still a viable option for pretest 2.

Mindset manipulations caused negligible differences in reactions. When interviewed, participants constantly pointed to the low sense of involvement that they felt towards purchasing a gift for a *departing colleague* – the cover story used for this first

pretest exercise. Respondents suggested that they would feel more engaged if the purchase was for someone special/close to them; therefore, pretest 2 requested that respondents pretend to be purchasing for a special person.

Also, instead of books and DVDs as items under investigation, there was unanimous consent that this be changed to more 'involving' types of items. Therefore, the researcher selected experiential items: hampers and flowers (Koelemeijer & Oppewal, 1999; Weathers & Makienko, 2006) which, incidentally, have also been found to be amongst the 15% top selling products online (Phau & Poon, 2000). So, while we are able to contribute to the literature on the purchase of hedonic items, the choice for hedonic items also helped to gauge involvement with the experimental tasks.

B.1.2 Pretests 2 and 3

Pretest 2 was conducted on a group of 10 subjects who had not participated in pretest 1. The group was predominantly comprised of academic staff at Monash University. Pretest 2 helped to further evaluate the effectiveness of the vignettes used for the manipulations of mindset as well lock-in. It was also largely a 'trial run' to determine the length of time respondents invested, on average, in completing the entire experiment. While the experiment was not yet administered online, participants were nevertheless asked to visit 2 websites (www.dstore.com.au and www.completebasketcase.com.au) and pretend to shop for a gift after choosing 12 items from one site and 2 from the other. Hence, pretest subjects recorded their respective time spans with regards to the purchase tasks as well as the questionnaire filling activities.

No dropout was recorded and all questions were answered. When interviewed, respondents, however, had strong concerns about the time spent visiting the websites. Indeed, they registered a time span varying from 40 minutes to over 1 hour to complete the entire experiment – something they qualified as too long. Respondents also complained about redundancy and lack of clarity of vignettes/questions.

When conducting an experiment, unawareness of the study's purpose is desirable as it implies minimal impact on the study's internal validity. Therefore, as concluding exercise, the researcher assessed the suspicion of participants (both in the pilot test and pretest exercises) vis-à-vis the cover story; respondents were asked to indicate what they thought the aim of the experiment was. They were all unsuccessful at guessing the purpose of the research (Armor & Taylor, 2003; Verplanken & Faes, 1999).

All suggestions were taken into account and modifications were made accordingly. For instance, the researcher deleted questions that were repetitive, too winding, or captured constructs that did not represent this study's immediate interest, amongst others.

Pretest 3 was administered online and hosted at www.instantsurvey.com . Based on the feedback of 10 respondents, the exercise was still qualified as being too time consuming; this is usually a good reason to invite dropouts, one of the most common and challenging issues when conducting online experiments (Birnbaum, 2004). Although, yet again, no dropout was recorded, instructions/vignettes were further shortened and made even crisper.

B.2 The Pilot test

Similar to the main experiment, the sampling frame was provided by Research Now. Respondents were randomly sent invitation e-mails containing the link to the experiment, with a request to participate. Experimental procedures were also similar, with, however, a few exceptions:

- One pair of websites was used (www.dstore.com.au and www.completebasketcase.com.au)
- Respondents received both levels of lock-in, but chose 12 and 2 or 2 and 12 items from each site, respectively.

It is to be noted that the survey was programmed such that all questions were compulsory and unless answered, respondents could not progress further. By the same token, it was, therefore, logical to expect no missing data as the data was also stored in a format that directly fed into SPSS.

Unfortunately, a systematic dropout point was noted – approximately, 50% of respondents dropped out during website visits. This pattern was detected based on the abandoned lists where respondents were expected to type the name of each of their selections.

While high dropout rate is very common in online research (Birnbaum, 2004), it became even more of a concern since it was related to the manipulation of the independent variable. It was plausible that the long list of items could have invited the high level of dropout – therefore, the number of items had to be reduced. While the pilot test was well underway, it was decided that 6 instead of 12 items would suffice for the main experience to create the high lock-in condition; this reasoning was based on Murray and Häubl (2003) who reported that at the sixth trial, the time taken to perform the task had the biggest fall.

B.3 Pilot test results

In total, 124 cases were viable for further analysis, 47 of which formed the implemental group and 77 represented the deliberative mindset subjects. Females were more highly represented than males. Most of the respondents had more than a year's experience in online shopping. Interestingly, age was quite varied, with those aged 60 forming the second biggest group. Table B.1 summarizes this sample's profile.

Table B.1: Pilot Sample description

Variable	Category	Sample	
		Frequency	Percent (%)
Gender	Male	47	37.3
	Female	77	62.7
Age	18-20	7	5.6
	21-25	18	14.3
	26-30	17	13.5
	31-35	13	10.3
	36-40	16	12.7
	41-55	23	21.4
	56-60	13	10.3
	Over 60	19	15.1
Level of education	Grammar/Primary School	3	2.4
	High School/Equivalent	50	39.7
	Vocational/Technical School	24	19
	University/College graduates	38	30.2
	Postgraduates	9	7.2
	Other	2	1.6
Income	Under $20,000	19	15.1
	$20,000-$59,999	39	57.2
	$60,000-$79,999	20	15.9
	$80,000-$149,999	6	4.8
	Rather not say	8	6.3
Use of Internet to shop	Less than 6 months	16	12.7
	6-12 months	10	7.9
	1-3 years	42	33.3
	4^{+} years	58	46

Similar to the procedure adopted in the main study, the pair of website was balanced in their order of presentation. Again, the site that was presented first, based on the original pair was referred to as A, and the second as B. When counterbalanced, they were still called sites A and B. Additionally, within each pair of sites viewed, participants were assigned to either of the mindset conditions. Therefore, 4 different experimental links were created. A summary of the groups can be viewed below:

Group 12/2 – at the first site, respondents selected 12 items, 6 from each category, to add to their list; following their visit to website B, 2 items were added to the list (1 from each category). Two additional groups were

formed as these respondents were randomly placed in either of the 2 mindset conditions; deliberative, coded as 1, implemental, coded as 0.

Group 2/12 – respondents first selected 2 items, 1 per category at site A, followed by 12 from the second site. Again, they were either in a deliberative or implemental mindset.

To denote the 2 different orders for website presentation, a new variable (as in the main study) 'siteorder' was created and used to assess the possibility of confounding effects. Results are discussed next.

B.3.1 Analyzing the possibility of confound and lock-in manipulations

Confounding check

To assess whether the order of site presentation interfered with lock-in manipulations, a mixed subject ANOVA was conducted with 'LI' as the within subject factor, described as 'LIfirst' and 'LIsecond' and portraying lock-in scores at their respective intervals; 'siteorder' was the between subject variable.

The ANOVA test revealed an insignificant interaction between 'LI' and 'siteorder', F (1,122) =.304, p=.583, partial eta squared=.002. Therefore, irrespective of the order in which the sites were presented, it did not confound the lock-in manipulation.

While the ANOVA results are quite promising in that no order effect was detected, to our great disappointment, none of the analysis relating to the lock-in scores could be reliably assessed. Unfortunately, due to human error, the lock-in manipulation measures, although presented at different intervals, were not adequately administered; both sets of treatments were placed at the concluding stages of the experiment, whereas they should have followed each set of treatments, thereby inviting treatment decay (Shadish et al., 2002). Therefore, appropriate modifications were made to the

experiment's structure to cater for the proper location for the lock-in manipulation measures for the main experiment.

Site preference

As an independent 'entity' (since it was not part of the lock-in manipulation scores), the dependent measure for site preference offered some bearing on the lock-in manipulation. Between sites A and B, for successful manipulation, respondents should manifest higher preference for the high lock-in site. This was statistically supported.

B.3.2 Checking mindset manipulations

To assess the effectiveness of the manipulations, a series of independent sample t-test were conducted between implemental and deliberative mindset groups on the 7 different measures (most of which have been outlined in chapter 6) which asked respondents to evaluate the extent to which they felt that they had decided what to purchase (Gollwitzer et al., 1990; Gollwitzer & Kinney, 1989); the extent to which they felt certain (Lee & Ariely, 2006) about what they intended to purchase; how determined and committed (Chandran & Morwitz (2005) they felt in terms of purchasing the selected item; how important (Gollwitzer & Brandstätter (1997) they felt it was to be able to purchase the selected item. Ratings for desirability (Perugini & Conner, 2000) and strength of intention (Brandstätter et al., 2003) vis-à-vis purchasing the selected item were also recorded.

Results were in line with existing literature (Gollwitzer et al., 1990; Armor & Taylor, 2003; Sheeran et al., 2005) with, however, a few exceptions. For instance, significance values were above the desired level of 0.05 for desire, strength of goal intention, determined and committed. Results are depicted in table B.2, and reviewed thereafter.

Table B.2: Mean values of all items tested against deliberative and implemental mindsets

Mindset manipulations	Implemental mindset (*n* = 47)		Deliberative Mindset (*n* = 77)		T-Test	
	M	**SD**	**M**	**SD**	***t***	***p***
Decided (dependent)	3.50	.8666	3.20	.9643	2.628	.010
Certain (dependent)	3.51	.8564	3.11	.90283	2.402	.018
Determined	3.42	1.0372	3.25	1.1402	.812	.418
Committed	3.36	1.0919	3.05	1.1343	1.496	.137
Important	3.76	.8650	3.32	1.0316	2.432	.016
Desire	3.80	.7977	3.76	.93042	.259	.796
Strength of goal intention	3.80	.7977	3.71	.8864	.552	.552

When respondents were asked the extent to which they felt that they had reached a decision as to what to buy, implemental mindset candidates scored higher (M = 3.50 vs. 3.20; p = 0.010). Deliberative mindset subjects felt less certain about the item that they intended to purchase (p = 0.018). Deliberative mindset respondents also felt that it was not as important to be able to buy the selection as opposed to the subjects in the implemental group (M = 3.76 vs. 3.32; p = 0.016). Feelings associated with being committed to the purchase of that item also showed the same inclination, but at an insignificant level. The 2-tailed tests demonstrated that respondents in the deliberative mindset did not exhibit a high level of desirability (M=3.80 vs. 3.76, p=.796); additionally, strength of goal intention did not significantly differ between implemental and deliberative mindset (M=3.80 vs. 3.71, *p*=0.552).

B.3.2.1 Item elimination

Factor analysis was conducted to reduce the number of items for mindset manipulation and include only those that explain most of the variability. A few issues need to be satisfied to confirm the suitability of factor analysis to a data set. Firstly, for sample size to be adequate, there should be at least five cases for every variable (Hair et al., 1998). This threshold was satisfied with more than 17 cases per variable. Secondly, no outliers were detected; finally, KMO was above .6, with a significant Bartlett's test (p=.000). Therefore, the data was suitable for factor analysis.

The first diagnosis was that all items fit well together. Communality values were all above the .3 threshold (Hair et al., 1998), with the lowest being .636. Further scrutiny showed that eigen values were higher than 1 for 2 components, respectively explaining 63.24% and 19.9% of the variance, thereby suggesting a two factor solution. The scree plot, however despite showing a sharp decline between components 1 and 2, still declined quite remarkably until it started to plateau at component 4. So, based on the scree plot, the researcher decided to retain 4 variables.

'Decided' and 'certain' loaded strongly and positively on both components. 'Important' loaded the highest on component 1 (.905), but quite low on component 2. These variables were therefore retained as part of the 4 factor solution.

The items 'committed', 'desire' and 'determined' were eliminated because when the factor analysis was run again with Varimax rotation, they still showed the lowest loadings on both components (Hair et al., 1998). In fact, 'committed' and 'determined' registered the lowest factor loadings on component 2 (0.069 and .163).

'Strength of goal' was retained as the fourth variable; the varimax rotation showed considerable improvement on component 2. Additionally, 'strength of goal intention' is the determinant to goal achievement and depicts the strength of commitment that individuals have towards implementing actions to reach set goals (Perugini & Conner, 2000; Henderson et al, 2000). Therefore, the use of both items ('committed' and 'strength of goal') would have, anyway, been redundant.

B.3.3 Assessing the effects of mindset on purchase intentions

Following the successful manipulation for mindset, we assessed the association between mindset and purchase intent. Descriptive data, shown in table B.3, suggests that 63.8% of the respondents in the implemental mindset intended to purchase the planned item while 45.5% of respondents in the deliberative condition changed their decision and

would make an unplanned purchase. This association was also statistically supported, χ^2 (1, n=124) =3.951, *p*=.047, phi=.179. Such observation supports predictions that candidates in the implemental condition were more willing to purchase the planned item as compared to those in the deliberative condition.

Table B.3: Contingency table, Mindset by purchase intent

			Purchase Intent	
			Planned	**Unplanned**
Mindset	Implemental	Count	30	17
		% within Mindset	63.8%	36.2%
		% within Purchase	46.2%	28.8%
	Deliberative	Count	35	42
		% within Mindset	45.5%	54.5%
		% within Purchase	53.8%	71.2%

B.3.3.1 Binary Logistic regression – Purchase intentions

We conducted a binary logistic regression analysis to assess the causal effects of mindset on purchase intents. The analysis revealed mindset as a significant predictor of purchase intent, Wald=3.895, exp (b)=2.118, p=.048; those in the implemental mindset (as opposed to those in the deliberative mindset condition) were 2 times more likely to buy the planned item. Table B.4 depicts this significant parameter.

Table B.4: Significant parameters – Purchase intentions

		B	**S.E.**	**Wald**	**df**	**Sig.**	**Exp(B)**
Step 1[a]	Mindset(1)	.750	.380	3.895	1	.048	2.118
	Constant	-.568	.304	3.501	1	.061	.567

a. Variable(s) entered on step 1: Mindset.

B.3.4 OOS responses: negative emotions

This pretest exercise, as mentioned earlier, used 5 items to measure negative emotional responses. The rationale for this initiative was that since measuring out-of-

stock responses did not constitute the prime interest of the thesis, we, instead aimed at including the most popularly manifested emotions and examine them individually and not as a summated scale of negative emotions.

Based on frequency data, depicted in table B.5, in line with Kim (2004), 'unhappy' (M=3.56, SD=.997) and 'angry' (M=3.31, SD=3.31) were the least popular negative emotions as compared to 'disappointed' (M=4.23, SD=.766), irritated' (M=3.71, SD=1.13) and 'annoyed' (M=4.27, SD=1.03). Scores for 'unhappy' and 'angry' were the lowest; while, as mentioned, 'unhappy' was deleted from further inclusion in the study, 'angry' was retained was kept to capture a sufficiently wide range of emotional responses.

Table B.5: Frequency of negative emotions

	Frequency			
Emotions	**Yes**	**No**	**Maybe**	**Total**
Annoyed	106	4	14	124
Angry	59	24	41	124
Unhappy	70	14	40	124
Disappointed	112	5	7	124
Irritated	112	5	7	124

B.3.4.1 OOS behavioural responses

Initially, a list of 8 items, all of which are listed in table B.6, assessed OOS behavioural responses. It is important to highlight that the questionnaire was designed in such a way that respondents could only select one option, which was expected to be the strongest one.

Again, we assessed the frequency of these reactions across the sample. Most chose to purchase another item on the list, while the second most popular reaction was to swap shopping channels and visit a physical store. While these trends were further investigated in the main study here we focus, in this section, on the frequency distribution rather.

For the main experiment, we did not include items that are accompanied with an asterix for the obvious reason that they were the least popular. All items that were used for the main study are included in table B.6.

Table B.6: OOS behavioural responses – pilot test and main experiment

Behavioural responses	Frequency (%)
Items for pilot test	
Purchase another item on the list	36.9
*Purchase flowers instead of a gift hamper at the same site	1.6
Purchase a gift hamper or flowers at the same site	12.9
*Purchase neither a gift hamper nor flowers, but a different item	2.4
Purchase flowers instead of a gift hamper at the other site	1.6
*Purchase a gift hamper or flowers at the other site	6.5
Go to a physical store	24.2
Go to yet other websites	11.3
Other	.8
Items for main study	
Continue looking for items at the same store	
Continue looking for items but at another store	
Purchase another item on the list	
Go to yet other online stores	
Go to a physical store	

B.4 Summary and conclusions

While we demonstrate ceiling effects for purchase intent (at the item level), based on these findings and annotated discussions, a few modifications were made before 'going live' for the final and main experiment. These are outlined next.

- Number of items to be used for high lock-in manipulations was reduced to 6; obviously, this meant that 8 items were to be chosen – 6 and 2 or 2 and 6, [or 2 and 2, if in the control group].

- Extensive modifications were made to the lock-in scales to include the following items: ‘learnt to find my way’, ‘accustomed’ and ‘unique’. As well as ‘site preference’ as dependent measure, we also include ‘comfort to return to site’.

- The number of scales for mindset manipulation was reduced to 4.

- The number of items for measuring OOS emotional responses was dropped to 4.

- The experiment’s structure was changed and redundant questions/scenarios were dropped.

- Although this decision was not informed by the pilot test, 4 sites were used instead of 2 for the main experiment to control for order effect.

Appendix C – The explanatory statement

0% 100%

Online Gift Buying

Thank you for taking time to participate in this survey.

This study is being conducted among a cross section of the Australian population. We wish to find out how consumers shop online when buying gifts.

You will be presented with a hypothetical shopping task. You will then need to report your shopping experiences back to us in this survey.

It is important that you answer the questions as realistically as possible, as if you were actually looking to purchase items.

Note however that nowhere in this study you will be really proceeding through a check out, we only want you to go through the process of selecting items as realistically as possible until you have made your final selection.

The whole process of shopping and answering questions should take approximately 20 minutes to complete.

For more information, please read below. Otherwise, click to proceed.

The results will also help to better understand how online stores can improve their offer to better serve their customers.

Your participation is anonymous and voluntary. You are under no obligation to consent to participation and you may withdraw at any stage, or avoid answering questions which are felt to be too personal or intrusive. Your answers will be treated confidentially, and will be kept separate from information that Research Now might use to identify you.

Academic papers or reports that are published using the answers that you and others provide will contain only summary information about the research findings; there will be no information published about any particular individual's answers. The researchers will be the only ones to have access to the data. Storage of the data collected will adhere to the University regulations and kept on University premises in a secure location for 5 years.

If you have any queries or would like to be informed of the aggregate research findings, please contact Anesshta Gunness on [redacted] or at [redacted]. Alternatively, you may contact Prof. Harmen Oppewal at [redacted]

A summary of the results of this study can be obtained in due course. If you wish to obtain the outcome of the study, please send an empty email to [redacted]

Should you have any complaint concerning the manner in which this research **project number 987 entitled 'The dynamics of online purchase behaviours'** is conducted, please do not hesitate to contact the Monash University Standing Committee on Ethics in Research Involving Humans at the following address:
The Secretary
The Standing Committee on Ethics in Research Involving Humans (SCERH)
Building 3d
Research Grants & Ethics Branch
Monash University VIC 3800
Tel: +61 3 9905 2052
Fax: +61 3 9905 1420
Email: scerh@adm.monash.edu.au

Next

Appendix D – Plum, intentions to choose the high lock-in site (B)

Model Fitting Information

Model	-2 LL	Chi-Square	df	Sig.
Intercept Only	109.802			
Final	99.098	10.704	3	.013

Link function: Logit.

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	20.584	24	.663
Deviance	21.870	24	.587

Link function: Logit.

Parameter estimates – Site choice

		Estimate	Std. Error	Wald	df	Sig.
Threshold	[Site choice = 1.00]	-.988	.220	20.200	1	.000
	[Site choice = 2.00]	.295	.207	2.029	1	.154
	[Site choice= 3.00]	1.568	.235	44.689	1	.000
Location	LI	.623	.272	5.237	1	.022
	LIxexperience	-.623	.236	6.956	1	.008
	Experience	.419	.168	6.253	1	.012

Appendix E – MANOVA Analysis

Descriptive Statistics

	LI	MS	Mean	Std. Deviation	N
Annoyed	Low	Implemental	4.3529	.68771	51
		Deliberative	4.2800	.70102	50
	High	Implemental	4.1429	.89909	42
		Deliberative	4.1633	.89784	49
	Total	Implemental	4.2581	.79267	93
		Deliberative	4.2222	.80249	99
Angry	Low	Implemental	3.4314	.98499	51
		Deliberative	3.4000	1.01015	50
	High	Implemental	3.3333	.92833	42
		Deliberative	3.3061	1.10310	49
	Total	Implemental	3.3871	.95590	93
		Deliberative	3.3535	1.05282	99
Disappointed	Low	Implemental	4.0588	.85818	51
		Deliberative	3.8600	.90373	50
	High	Implemental	3.6905	1.02382	42
		Deliberative	3.9388	1.06865	49
	Total	Implemental	3.8925	.94940	93
		Deliberative	3.8990	.98452	99
Irritated	Low	Implemental	3.8431	1.02708	51
		Deliberative	3.8800	.71827	50
	High	Implemental	3.6429	1.10036	42
		Deliberative	3.7143	1.19024	49
	Total	Implemental	3.7527	1.05970	93
		Deliberative	3.7980	.97917	99

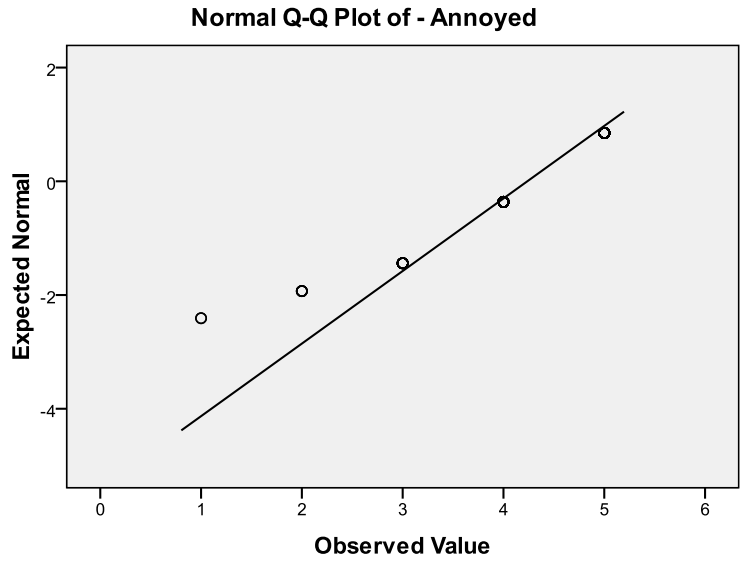
Multivariate tests

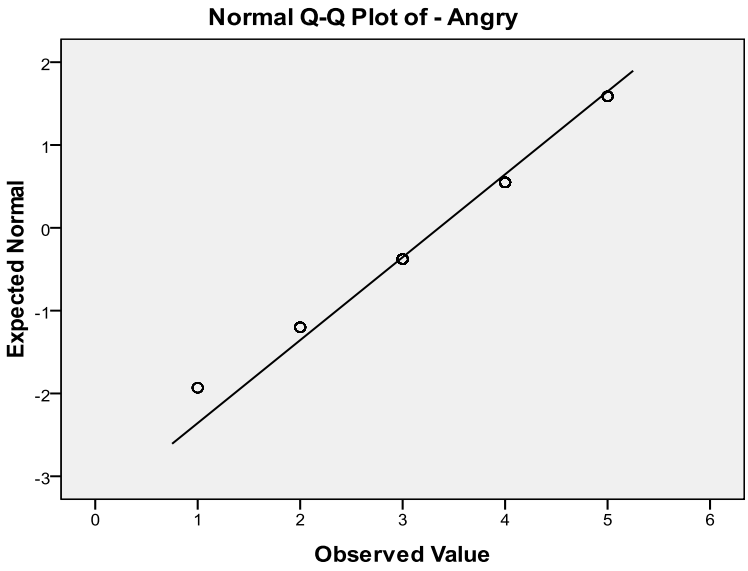
Effect		Value	F	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.966	1332.349[a]	185.000	.000	.966
	Wilks' Lambda	.034	1332.349[a]	185.000	.000	.966
	Hotelling's Trace	28.808	1332.349[a]	185.000	.000	.966
	Roy's Largest Root	28.808	1332.349[a]	185.000	.000	.966
LI	Pillai's Trace	.013	.602[a]	185.000	.662	.013
	Wilks' Lambda	.987	.602[a]	185.000	.662	.013
	Hotelling's Trace	.013	.602[a]	185.000	.662	.013
	Roy's Largest Root	.013	.602[a]	185.000	.662	.013
MS	Pillai's Trace	.003	.152[a]	185.000	.962	.003
	Wilks' Lambda	.997	.152[a]	185.000	.962	.003
	Hotelling's Trace	.003	.152[a]	185.000	.962	.003
	Roy's Largest Root	.003	.152[a]	185.000	.962	.003
LI * MS	Pillai's Trace	.033	1.570[a]	185.000	.184	.033
	Wilks' Lambda	.967	1.570[a]	185.000	.184	.033
	Hotelling's Trace	.034	1.570[a]	185.000	.184	.033
	Roy's Largest Root	.034	1.570[a]	185.000	.184	.033

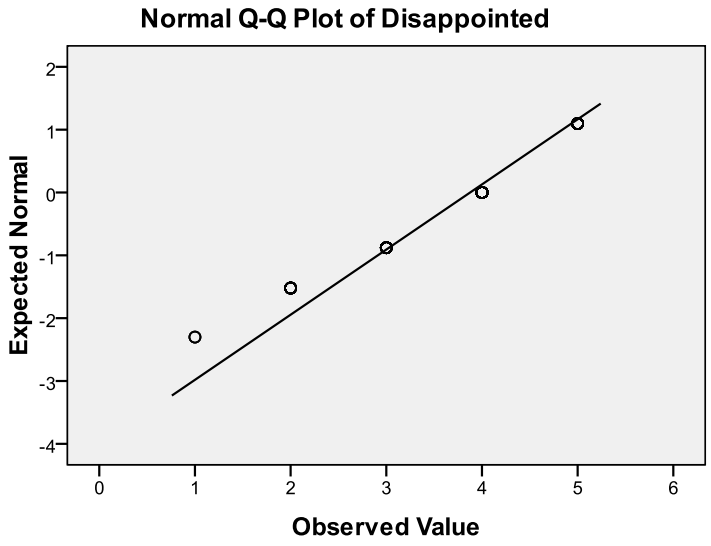
Tests of Between-Subjects Effects

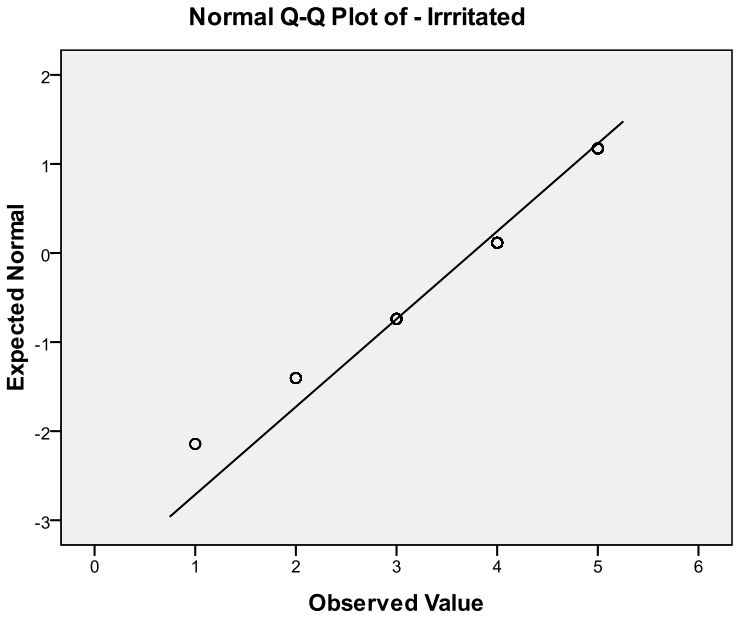
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Annoyed	1.415[a]	3	.472	.742	.528	.012
	Angry	.493[c]	3	.164	.161	.923	.003
	Disappointed	3.281[d]	3	1.094	1.177	.320	.018
	Irritated	1.702[e]	3	.567	.545	.652	.009
Intercept	Annoyed	3422.965	1	3422.965	5382.210	.000	.966
	Angry	2164.773	1	2164.773	2116.903	.000	.918
	Disappointed	2883.878	1	2883.878	3104.566	.000	.943
	Irritated	2712.954	1	2712.954	2606.638	.000	.933
LI	Annoyed	1.274	1	1.274	2.004	.159	.011
	Angry	.439	1	.439	.430	.513	.002
	Disappointed	1.000	1	1.000	1.077	.301	.006
	Irritated	1.598	1	1.598	1.535	.217	.008
MS	Annoyed	.033	1	.033	.052	.820	.000
	Angry	.041	1	.041	.040	.842	.000
	Disappointed	.029	1	.029	.031	.859	.000
	Irritated	.140	1	.140	.134	.714	.001
LI * MS	Annoyed	.104	1	.104	.163	.686	.001
	Angry	.000	1	.000	.000	.989	.000
	Disappointed	2.385	1	2.385	2.567	.111	.013
	Irritated	.014	1	.014	.014	.907	.000
Error	Annoyed	119.564	188	.636			
	Angry	192.251	188	1.023			
	Disappointed	174.636	188	.929			
	Irritated	195.668	188	1.041			
Total	Annoyed	3572.000	192				
	Angry	2373.000	192				
	Disappointed	3092.000	192				
	Irritated	2935.000	192				
Corrected Total	Annoyed	120.979	191				
	Angry	192.745	191				
	Disappointed	177.917	191				
	Irritated	197.370	191				

Appendix F – Assessing Normality, Q-Q plots






Normal Q-Q Plot of Disappointed
Expected Normal
Observed Value
2
1
0
-1
-2
-3
-4
0
1
2
3
4
5
6


Normal Q-Q Plot of - Irrritated
Expected Normal
Observed Value
2
1
0
-1
-2
-3
0
1
2
3
4
5
6