



**A Study on the Relationship between E-CRM Features and  
E-Loyalty: the case in UK**

A Thesis Submitted for the Degree of Doctor of Philosophy

by

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## PhD Abstract

E-CRM emerges from the Internet and web technology to facilitate the implementation of CRM; it focuses on Internet or web-based interaction between companies and their customers. In particular, E-CRM enables companies to provide appropriate services and products to satisfy the customers and enhance customer loyalty. Furthermore, E-CRM features are vital for managing customer relationships online. They are generally referred to as concrete website functionality or tools and they are required for customising, personalising and interacting with the customer. Without E-CRM features, CRM could not be realised on the Internet.

In fact, in the literature, there appears to be an absence of theoretical models for E-CRM implementation in general, and E-CRM features in particular. Furthermore, there is a lack of studies focusing on identification of the importance and categorisation of E-CRM features within different stages of transaction cycle. Consequently, this dissertation attempts to fill the information gap based on empirical data derived from survey.

The aim of this dissertation was to examine the relationship between E-CRM features and E-Loyalty at the different stages of transaction cycle (pre-purchase, at-purchase, and post-purchase) on mobile phone companies websites in UK.

The results from this study show that the use of E-CRM in building consumer relationships affects online consumer satisfaction and loyalty. The efficiency of E-CRM program determine the level of which online features, such as search capabilities, security/privacy, payment methods, and online customer support would be implemented on mobile companies' websites.

This research contributes to knowledge in several ways. Most importantly, it illustrates the roles of E-CRM features in enhancing online consumer loyalty at different stages of purchase cycle leading to long-term consumer relationships. In particular, this research highlights the critical features of E-CRM program, which mobile phone companies' websites in UK should invest in their consumer loyalty strategies.

**Keywords:** CRM, E-CRM features, Transaction cycle, E-satisfaction, E-Loyalty

## **Dedication**

This doctoral research effort is dedicated to my parents and my small family, who believed in my ability to achieve this goal. For all your love, support and constant encouragement, this has enabled me to reach this milestone. I could not have imagined achieving this without you all.

I have to say special Thank-you to my Mum the greatest person of all times for all the support she provided me with during my lifetime in order to reach to this point.

## **Acknowledgement**

My thanks goes to the Almighty Allah for helping me to finish this critical stage in my life and giving me the strength to continue studying despite the difficulties I faced during these years.

I can clearly remember the day when I began my journey as a research student at Brunel University, and what made this experience so unique for me revolves around the fact that this degree has prepared me for life, academically, spiritually, emotionally and psychologically. In addition, it has had a tremendously positive impact on my character. I have come to realize that research has taught me much more than publishing papers, reading articles and delivering presentations. It has taught me humility and flexibility.

There are very important people who have helped me reach my goal of completing this doctorate degree. I feel the need to acknowledge them.

I would like to thank my amazing supervisor Professor Zahir Irani, who has been a great support system to me during all stages of this research. I sometimes feel that he offered much more support than what was required of him. He was always there for me at time of need.

Zahir, I really appreciate and value your support, patience and friendship throughout this research. I would also like to thank my second supervisor, Dr Mage Ali who encouraged me to do well.

Last, but not least, my warm and heartfelt thanks go to my family for sticking by me in the days and nights that it took to finish this dissertation: my wife, Rania Al-Jammas, and daughter, Kinda; my mother and father; my sisters, brothers in Syria. Without the blessings and support of my whole family, this thesis would not have been possible. Thank you for the strength you gave to me. I love you all!

## **Declarations**

I declare that, to the best of my knowledge, no portion of the work referred to in this thesis has been submitted in support of an application for another degree, or qualification, to any other university, or institute of learning. Some of the material contained here has been presented in the form of the following:

### **Professional Conference Paper (Published)**

1. Alhaiou, T., Irani, Z., and Ali, M. (2009). *“The Relationship between E-CRM Implementation and E-Loyalty at Different Stages of Transaction Cycle: A Conceptual Framework and Hypothesis”*. European and Mediterranean Conference on Information Systems. (EMCIS 2009), Izmir, Turkey, (CD-Proceedings).
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## List of Abbreviations

CRM	Customer relationship management
E-CRM	Electronic Customer relationship management
E-SQ	E-Satisfaction
E-LOY	E-Loyalty
Pre/E-CRM	Pre-purchase E-CRM Features
AT/E-CRM	Pre-purchase E-CRM Features
Post/E-CRM	Pre-purchase E-CRM Features
TC	Transaction Cycle
WD	Website Design
LP	Loyalty Programme
OD	On time Delivery
S/P	Security /Privacy
SC	Search Capabilities
CFA	Confirmatory Factor Analysis
M	Mean
MANOVA	Multi Analysis of Variances
PhD	Doctor of Philosophy
SE	Standard Error
Sig.	Significant
SPSS	Statistical Package for Social Sciences
$\alpha$	Cronbach's alpha

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# Chapter 1: Introduction

## 1.1 Background to the research problem

The Internet has created an incredible level of excitement through its association with all types of businesses including E-Commerce, E-Business, E-CRM, E-Supply Chain, E-Ticketing, E-Learning and E-Government. Internet-based technology continues to grow in importance in business-to-consumer and business-to-business environments. From the consumer's perspective, Internet-based services significantly reduce the cost of searching; extend the selection of sellers, provide greater control over products/services offered and increase convenience (Anderson and Srinivasan, 2003). Purba (2001, p.111) concludes that "E-CRM is the application of E-technology (or Internet-based technology) to achieve CRM objectives." Yaeckel *et al.*, (2002, p.247) state that if E-CRM is successfully implemented, it will enable customers to access information and services about products that are less expensive and more convenient than the traditional ways of helping customers evaluate and purchase products. They believe that E-CRM customers use self-service tools on the web rather than let a company's employees take care of them directly and hence customers become active players in the purchase and service process. They conclude that in this way companies acquire more knowledge about the customer and, on the other hand, the customer is empowered to manage and control the process via the web. Bergeron (2004) says that E-CRM is customer relationship management on the web and includes the use of e-mail, E-Commerce activity and any other internet-based touch points.

According to Lunsford and Marone (2005, p.54), electronic commerce ordering, product configuration, pricing and tracking are included in E-CRM or web-based applications. Fjermestad *et al.*, (2002) state that every company involved in an online business should educate themselves about electronic customer relationship management. They believe that for quicker implementation of E-CRM many companies began to spend money before developing a

comprehensive E-CRM strategy and, as a result, many companies are dissatisfied with their E-CRM implementation.

Noting the lack of research in the area of E-CRM and customer satisfaction, Feinberg and Kadam (2002) investigated the relationship between E-CRM features and customer satisfaction. They emphasise that companies should only integrate on their websites those E-CRM features that are important for customer satisfaction and in this way companies can cut costs. Shih (2004) and Wixdom and Todd (2005) examined factors such as 'ease of use' and 'usefulness' as determinants of satisfaction in the context of online; Devaraj *et al.*, (2002) argue that the usefulness and ease of use of online shopping, followed by low economic costs and service quality are factors that affect consumers' satisfaction and consequently determine their channel preference. Feinberg *et al.*, (2002) found that the lack of any linkage between E-CRM features and their results may be the cause of E-CRM implementation failure. They further argued that a lack of literature showing how many E-CRM features should be available on a website can cause retailers to fill web pages with as many features as possible and they can spend huge amounts on features which are unimportant or irrelevant to customers.

However, there is an absence of theoretical models for those E-CRM features that affect online loyalty. Furthermore, there is a lack of studies that focus on E-CRM features correlated with the different stages of the transaction cycle (pre-purchase, at-purchase, and post-purchase). Therefore, this study attempts to improve on prior research in providing empirical validation of an E-CRM model by determining its influence on E-Satisfaction and E-Loyalty at different stages of the purchase cycle. Because previous research has not clearly expressed the influence of pre-purchase E-CRM, at-purchase E-CRM and post-purchase E-CRM on E-Satisfaction and E-Loyalty, the present study attempts to reduce this gap by investigating the relationships between these variables in the setting of business-to-consumer E-Commerce.

In summary, the benefits of using the Internet in marketing are massive as they offer a huge opportunity for marketers to create innovative strategies that have not previously been possible. However, marketers need to develop an insightful understanding of consumer behaviour when purchasing products online. This information is intended to help marketing managers to plan

their E-CRM programs to better meet customer's requirements. By doing so, companies will increase E-Satisfaction and E-Loyalty and ultimately, provide consumers with a solid rationale for continuing to buy from the same website. This study is thus significant as it is a first attempt to investigate the relationship between E-CRM factors and customers' E-Satisfaction and E-Loyalty in the context of buying mobile phone products online. The research problem and objectives of this study are addressed next.

## **1.2 Overview of the mobile phone market in the UK**

The mobile phone industry has moved forward by using websites to communicate with customers around the world. A website is a good tool by which a mobile phone company can introduce itself to the world and become a part of the international market, and customers can purchase mobile products/services online using a company website. Therefore, mobile phone customers will move from the offline to the online channel.

On 1 January, 1985 Vodafone made the UK's first mobile call. It marked the launch of the mobile industry and transformed global communications. (Online BBC News, 1<sup>st</sup> Jan, 2005).

The UK has one of the largest mobile markets in Europe, both in revenue and in the number of subscribers, and differs significantly from other European markets as there is no single dominant company (Ofcom, 2009).

The UK mobile phone market is run by five major providers which have all launched 3G services. The five primary operators are: 3 UK, Orange, T-Mobile, O2, and Vodafone. In addition there are a number of mobile virtual network operators (MVNO) which include well-known names such as Virgin Mobile and Tesco.

The UK mobile phone market is now saturated; with 76 million subscribers in the UK in 2008. As a result, the great majority of people in the UK use mobile services and most people report that the market meets their expectations (Mintel, 2008).

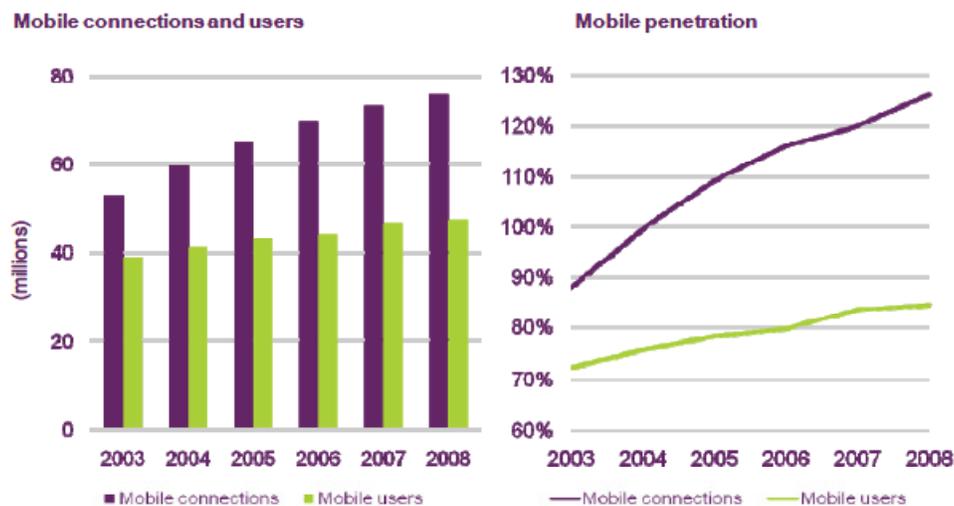
**Table 1.1: Mobile phone subscribers, 2003-08**

Year	Millions	Year on year growth (%)	Total population	% of total population
2003	52.8	-	59.6	89
2004	59.7	13.1	59.8	100
2005	65.5	9.7	60.2	109
2006	69.8	6.6	60.6	115
2007	73.5	5.3	61.0	121
2008	76.0	3.4	61.4	124

Source: Ofcom/Mintel (April, 2009)

As the diagram below shows, the volume of mobile services continues to grow, and has now reached about 89% of the total population. The proportion of households with access to a mobile phone (92%) has already overtaken the proportion of households with a fixed line (87%). Reflecting this trend, one in eight UK households relies solely on mobile services for their voice communication needs (Ofcom, 2008).

**Figure 1.1: Mobile Connections and Users**

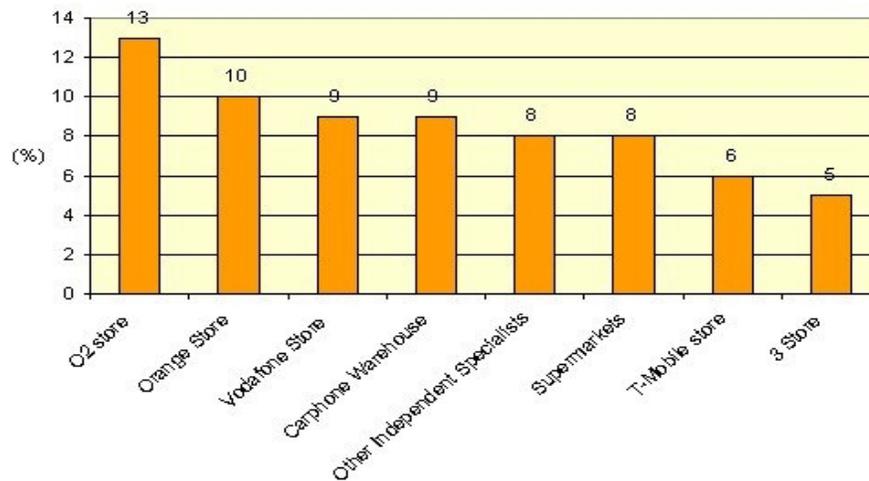


Source: Ofcom's Communications Market Report (2008)

IE Market Research Corp (2010) has reported that the overall subscriber base in UK is still increasing, and the total number of subscribers will rise from 79.8 million in 2009 to 88.6 million in 2014.

The network operators control the UK mobile phone retail sector through their large national chains of outlets, with O2 the market leader in terms of revenue and in terms of consumer penetration (13%), reflecting its flexible pricing and high-profile advertising campaigns as well as its coup in securing the UK licence for the iPhone (Figure 1.2).

**Figure 1. 2: Stores where internet respondents purchased their latest main mobile from (Base: 2,000 internet users' aged 16+)**



Source: Mintel Report (December, 2008)

**E-Commerce an important channel:** Rising E-Commerce sales. The mobile phone has proved a popular grouping online and this area provides growth opportunity for retailers as the high street becomes increasingly saturated with mobile phone stores. Mobile phone retailing is naturally suited to E-Commerce given the nature of the product and the profile of the core customer. E-Commerce is already an important channel of distribution for mobile phone retailing, with 27% of consumers buying their latest mobile phone online. This reflects how the

influence of E-Commerce is greater in technology-driven markets.

**Table 1.2 : Method internet respondents used when it came to buying their latest main mobile (Base: 2,000 internet users aged 16+)**

Mobile phone buying methods	%
Bought direct from an online retailer without going to a store to look first	27
Bought direct from a shop/department store without looking online first	27
None of these	20
Looked around online first, then went to a shop/department store to buy	17
Looked in a shop/department store first, then bought online	7

Source: GMI/Mintel (December, 2008)

Network brands are relatively stronger online, particularly 3, which has a bias towards the key E-Commerce demographic. Some 70% of customers of 3 bought their most recent mobile phone online, compared to an average of 39% (Mintel, 2008).

**Table 1.3: Stores where internet respondents purchased their latest main mobile from (Base: 2,000 internet users aged 16+)**

Company	Total %	Online %	In store %
O2 store	13	16	15
Orange store	10	13	12
Vodafone store	9	10	12
T-Mobile store	6	8	7
3 Store	5	12	1

Source: Mintel (December, 2008)

**Younger consumers buying phones online:** Mintel market research report (2008) has recognized that half of all 25- to 34-year-olds bought their most recent mobile phone online (see Table 1.4 below). This channel is predictably less popular with older consumers, who are conversely more likely to buy in store without looking online.

**Table 1.4: Comparison between those buying their latest main mobile via online and offline channels (Base: 2,000 internet users aged 16+)**

Age	In store %	Online %
16-19	43	41
20-24	39	47
25-34	41	50
35-44	43	43
45-54	49	32
55+	48	27

Source: GMI/Mintel (December, 2008)

From table 1.4 above, it seems that the over-45s have a strong preference for shopping in store rather than online, while the 20-34s gave the highest response rates for shopping online. Response rates were also higher than average among all those under 44.

The driving force behind this success has been competition, in the UK and in international markets. In the race to win customers, mobile operators have arranged networks, offered an ever-increasing range of services and created new ways to buy and pay for services (such as pre-pay).

Significant growth by the mobile phone network operators has not only changed the dynamics of the mobile phone retail market but has also changed the setting of UK retail. As a result of these developments, mobile services play an increasingly important role in our lives, as individuals and as a society.

### **1.3 Problem statement**

Current communication technologies enable companies to communicate with their customers in better and more efficient ways. As companies become more efficient in managing buyer-seller relationships, particularly with the use of the Internet, the need to adopt Internet technology is obviously increasing. Very little work has been done concerning the relationship between E-CRM features, E-Satisfaction and E-Loyalty. In order to have a better understanding of this relationship, this research attempts to perform further investigation for such relationship.

The analysis of current literature relating to the research issues; E-CRM, E-Satisfaction and E-Loyalty has highlighted a number of gaps that this thesis aims to tackle. Clearly, there is a lack of studies focusing on E-CRM in general and particularly in relation to the transaction cycle (pre-purchase, at-purchase and post-purchase). In addition, although there are many studies that provide an assessment of these features there are very few studies that relate these features with the transaction cycle. Finally, there have been no empirical studies focusing on the E-CRM factors influencing a consumer decision to buy mobile phone products/services online in the literature.

The mobile phone industry has moved forward by using websites to communicate with customers around the world. A website is a good tool by which a mobile phone company can introduce itself to the world and become a part of the international market, and customers can purchase mobile products/services online using a company website. Therefore, mobile phone customers will move from the offline to the online channel.

This study, therefore, should be conducted for three reasons. First, based on this development, mobile phone customers are changing their behaviour from buying offline to buying directly online through mobile company websites. As the mobile phone industry has moved online, E-CRM has become more important. Second, mobile phone companies need to know the best ways to service online customers. This research identifies the important antecedents of E-Satisfaction and E-Loyalty in the online environment. Third, no study has examined E-CRM with reference to mobile websites in the UK. Therefore, this study will attempt to answer the question of how E-CRM features enhance E-Satisfaction and E-Loyalty within different stages of the transaction cycle on mobile websites in the UK.

## **1.4 Research aim and objectives**

The primary aim of this study is to develop a conceptual framework that explains how pre-purchase, at-purchase, and post-purchase E-CRM features influence the E-Satisfaction and E-Loyalty of customers when buying mobile phone products/services online. Therefore, the main objectives of the research are:

- To investigate the influence of pre-purchase, at-purchase, and post-purchase E-CRM features on E-Satisfaction and E-Loyalty of customers when buying mobile phone products/services online.
- To identify the nature of the relationships between E-CRM features, E-Satisfaction and E-Loyalty.
- To examine the relationship between pre-purchase, at-purchase, and post-purchase E-CRM features and E-Loyalty.
- To investigate the role of E-Satisfaction as a mediator on the effects of E-CRM features on E-Loyalty.
- To suggest effective marketing strategies that can be offered based on the analysis of the relationship between pre-purchase, at-purchase, and post-purchase E-CRM features, E-Satisfaction and E-Loyalty of customers when buying mobile phone products/services online.

This research aims to provide mobile companies in the UK with a better understanding of their customers and assist them in developing excellent E-CRM strategies which can best serve customers on the internet.

These are the main objectives which of this research. They are all concerned with examining three phenomena: the assessment of E-CRM features through different stages of the transaction cycle, E-Satisfaction and E-Loyalty.

## **1.5 Research significance statement**

This thesis makes a significant contribution to the E-CRM literature by developing an integrative model that combines E-CRM factors related with the three stages of the transaction cycle: (1) pre-purchase E-CRM features, (2) at-purchase E-CRM features and (3) post-purchase E-CRM features. This is the first empirical study to the best of the author's knowledge that develops an integrative framework that combines E-CRM features associated with the transaction cycle.

This research is the first empirical study that investigates the main E-CRM features of mobile company websites, and their relationship with customers' E-Satisfaction and E-Loyalty.

Furthermore, it is hoped that marketing managers in mobile companies will find these results useful when they are planning E-Marketing mixes to increase customer E-Satisfaction and E-Loyalty by finding appropriate E-CRM strategies and tactics to deal with E-CRM factors explored in this research.

An understanding of the connection between E-CRM features and E-Satisfaction helps marketing managers to focus on upgrading those features that will lead to increased E-Satisfaction. By securing these basic features and adding value to their services, mobile phone companies stand to gain a competitive edge that may attract customers to return.

Also, the results of this study will contribute to the body of knowledge regarding the buying and selling of products on the Internet.

Thus, this thesis will contribute to the online shopping literature both theoretically and practically.

## **1.6 Dissertation outline**

The structure of this PhD dissertation follows the methodology suggested by Phillips and Pugh (1994) and consists of four elements namely: (a) background theory; (b) focal theory; (c) data theory; and (d) novel contribution.

First, Background theory: Irani (1998, p.12) explained that establishing a comprehensive background theory involves assessing the field of research, and identifying the problem domain, which is the purpose of Chapter 2.

The second element of the dissertation is focal theory which concentrates on developing a conceptual model that will shape the foundation of the main research. The generation of conceptual models and hypotheses, to push forward the academic discussion, are key tasks during this phase (Irani, 1998). This is described and discussed in Chapter 3.

The third element of the dissertation is the data theory, which addresses issues such as: (a) the most appropriate epistemological stance to adopt; (b) the development of a suitable research methodology and, (c) the conditions affecting the choice of research strategy. These issues are discussed in Chapter 4 of this dissertation. In addition, data theory deals with the data collection process and analysis, which is reported in Chapter 5.

The final element of the dissertation is the novel contribution of this research which concerns its importance, and provides conclusions and recommendations for further studies (Chapter 6).

Therefore, the overall structure of this thesis is composed of six chapters in which each one discusses a particular issue related to the objectives stated above. The following paragraphs explain the importance of these chapters.

### **Chapter 1: Introduction**

This chapter introduces the main area of this research by presenting the background to the research topic which is E-CRM features. The importance of this research and outcomes derived

from the literature investigation are discussed. Thereafter, the aim and objectives of the research are reported along with a brief description of each chapter.

## **Chapter 2: Literature review (background theory)**

After providing a brief introduction to the area of research and establishing the scope of the dissertation, a critical literature review of E-CRM features and their relationship with E-Satisfaction and E-Loyalty is presented. Chapter 2 begins by giving a brief history of the development of E-CRM. Second, the definitions of E-CRM will be discussed together with the reasons that have made it a debatable issue among scholars. Third, the difference between CRM and E-CRM will be discussed and presented. Fourth, the benefits of E-CRM will be discussed; fifth, the components of E-CRM will be discussed and categorised into engage, order, fulfilment, and support components; sixth, E-CRM features will be discussed in relation to the transaction cycle, and will be classified into: pre-purchase E-CRM features, at-purchase E-CRM features, and post-purchase E-CRM features. Finally, the gaps found in the literature will be clarified.

## **Chapter 3: Research model (focal theory)**

The aim of this chapter is to fill the gap reported in Chapter 2 which is the absence of a comprehensive framework for E-CRM features within different stages of the transaction cycle. In doing so, the chapter proposes a conceptual framework that explains the effects of various types of E-CRM features in the context of online shopping, and within the transactional cycle on E-Satisfaction and E-Loyalty. Chapter 3 begins the development of the theoretical framework of this study. This is followed by a discussion of the theoretical linkage between these constructs and the conceptual model that represents the relationships between these variables. Thereafter, the main research constructs and research hypotheses are discussed. Finally, conclusions are drawn together with implications for the next stage.

#### **Chapter 4: Research methodology (data theory-A)**

Chapters 2 and 3 guided the author in understanding and identifying the research issues. In order to deal with these research issues, a research methodology had to be adopted. Chapter 4, therefore, describes and justifies the methodology used in this study: including the research design, sampling technique and the design (as well as the administration) of the survey. The data analysis methods and the appropriate statistical techniques adopted are also presented in this chapter.

#### **Chapter 5: Data analysis (data theory-B)**

The purpose of this chapter is to present the analysis of the data collected and testing of the hypotheses outlined in Chapter 3. In this study a number of relationships between E-CRM features and both E-Satisfaction and E-Loyalty were examined within different stages of the transaction cycle.

#### **Chapter 6: Discussions and conclusions (novel contribution)**

Chapter 6 discusses the research findings in the light of implications for theory and practice. This study proposes an E-CRM model that emphasises the relationship between E-CRM, effective implementation and increased E-Satisfaction and E-Loyalty. In addition, this concluding chapter also discusses the study's limitations and potential directions for further research.

## **Chapter 2: Literature Review**

### **2.1 Introduction**

This chapter presents the theoretical background to this study. It reviews the literature related to the E-CRM area in order to identify the domain of the research problem. In doing so, first, a brief history of the development of E-CRM will be offered; second, the definitions of E-CRM will be discussed and the reasons that have made it an issue among scholars. Third, the differences between CRM and E-CRM will be presented and discussed. Fourth, the benefits of E-CRM will be discussed; namely, increased customer loyalty, more effective marketing, improved customer service and support, and greater efficiency and cost reduction; fifth, the components of E-CRM will be discussed and categorised into engage, order, fulfilment, and support components; sixth, E-CRM features will be discussed in relation to a transition cycle, and will be classified into: pre-purchase E-CRM features, at-purchase E-CRM features, and post-purchase E-CRM features.

This section will focus on the different E-CRM features which are associated with the transaction cycle including website presentation, security/privacy, search capabilities, payment methods, order tracking and customer service. Next, definitions and a discussion of e-satisfaction and E-Loyalty are presented. Finally, the gaps found in the literature will be clarified. Discussion of these gaps will lead to improved understanding of the research issues that should be studied.

## **2.2 Theoretical Background on Relationship Marketing (RM)**

Relationship marketing involves companies' creation, maintenance and enhancement of strong relationships with their customers by delivering superior customer satisfaction (Kotler and Armstrong, 1999). It is directed towards establishing, developing and maintaining consumer loyalty and stimulating repeat purchases over time (Foster and Cadogan, 2000). It involves the idea of treating each consumer in an individualised manner; that is, delivering individualised products/services to each and every consumer (one-to-one marketing) (Moon, 1999).

The process of developing and enhancing relationships has traditionally been undertaken via face-to-face interaction between the customer and the personnel of a service provider (Lang and Colgate, 2003; Johns, 1996). However, the development of Internet shopping gives 'relationship building' a great opportunity to go a step further. Using the Internet as a medium of interaction and a distribution channel is becoming increasingly popular among retailers (Lang and Colgate, 2003).

Berry (1994) suggests that the heart and soul of relationship marketing is marketing to customers after they have become customers. Recently, companies have been moving their marketing strategies away from focusing on individual transactions toward building relationships with customers. More and more companies are developing customer retention and loyalty programmes (Kotler and Armstrong, 1999). Moon (1999) asserts that the key to success of any relationship marketing effort is information.

The application of information technology, which tracks and analyses consumer behaviours, allows firms to easily identify segments of consumers and to focus on marketing efforts (Chen and Popovich, 2003). Therefore, information technology plays a significant role in consumer relationship management, which is further explained below.

### **2.3 Managing Customer Relationships on the Internet**

A new approach to customer relationships management has appeared with the emergence of the Internet. Today, customers can obtain information about the products and services they need by just browsing the Internet from anywhere, and a value added website has become a crucial factor in influencing customers to visit a company's website and learn about its products and services. The company's website plays an important role in attracting customers and encouraging them to stay with the company.

The secret of the Internet for customer relationship management is not about opening an online store or finding new ways to give points or discounts; it is about using this technology to build mutually profitable relationships and strengthening the bond between a business and its customers (Newell, 2000), the ultimate purpose being to enhance customer loyalty. Therefore, a new approach to managing this relationship on the Internet emerged.

The aim of this section is to present an overview of the key concepts—relationship marketing (RM), customer relationship management (CRM) and electronic customer relationship management (E-CRM)—before exploring the relationship between them and then using this to derive a conceptual framework and set of objectives for this study.

### **2.4 Customer Relationship Management (CRM)**

CRM is a customer-centered business strategy aimed at customers' satisfaction, retention, and loyalty by offering them tailored services (Greenberg, 2002). Customer-centric strategy adaptation means adding 'a human dimension' to 'normal' IT projects by stressing organisational and process change. This section will discuss the issues related to CRM.

### 2.4.1 Definition of CRM

The basic philosophy of CRM is based on developing long-term relationships with customers (Kristoffersen *et al.*, 2004). In the literature, Customer Relationship Management (CRM) is viewed as strategic, process-oriented, cross-functional, and value-creating for buyer and seller, and a means of achieving superior financial performance (Lambert, 2004; Boulding *et al.*, 2005; Payne and Frow, 2005 ; Bohling *et al.*, 2006). Zablah *et al.*, (2004) define CRM as very wide aspect strategy, philosophy, and capability, all of which are required for successful CRM implementations. Smith (2001) defines CRM as “a business strategy combined with technology to manage the complete life cycle” and “data-driven marketing.” Bruhn (2003) indicates that, CRM should Achieved during the customer lifecycle to reach its goal which is to optimise the customer value.

CRM is a management approach to identify, attract, develop and maintain successful relationships over time for increased retention of profitable customers (Bradshaw and Brash, 2001; Massey *et al.*, 2001).

The core themes of all CRM definitions focus on a cooperative and collaborative relationship between the company and its customers. According to Sheng (2002), the main objectives of CRM are the acquisition and retention of customers. Fayerman (2002) argued that there are three main areas of CRM. Operational CRM supports front-office processes, e.g. the staff in a call centre; Analytical CRM builds on operational CRM and establishes information on customer segments, behaviour, and value using statistical methods and collaborative CRM concentrates on customer integration using a coordinated mix of interaction channels (multi-channel management) e.g. online shops and call centres. Table 2.2 summarises the focus of CRM definitions.

**Table 2.2 : Classification of CRM Definitions Focus**

Dimension	Description	References
Processes	CRM addresses all aspects of identifying customers, creating customer knowledge, building customer relationships and shaping their perceptions of the organization and its products.	Zablah et al., (2005) Payne and Frow, (2005) Lambert, (2004) Reinartz et al., (2003) Gronroos, (2000)
Strategy	CRM is a comprehensive strategy and process of acquiring, retaining and partnering with selective customers to create superior value for the company and the customer.	Zablah et al., (2005) Lambert, (2004) Adenbajo, (2003) Croteau & Li, (2003) Deck, (2003) Tan et al, (2002) Smith, (2001)
Technological tool	CRM means an enterprise-wide integration of technologies working together such as data warehousing, website, and intranet/extranet. Phone support systems, accounting, sales marketing and production.	Gefen, Ridings, (2002) Shoemaker, (2001) Ranjit ,( 2002)
Business philosophy	CRM is an IT-enhanced value process which identifies, develops, integrates and focuses the various competencies of the firm to the “voice” of the customers in order to deliver long-term superior customer value at a profit to well identified existing and potential customer segments.	Fairhurst, (2001) Piccoli et al, (2003) Hasan,( 2003) Starkey and Woodcock (2002)
Value-creating	Firms must invest in developing and adopting resources that enable them to modify their behaviour towards individual customers on a continual basis.	Zablah et al., (2005) Payne and Frow, (2005) Lambert, (2004)

## 2.4.2 CRM Benefits

A Krueger (2000) stated that the main aim of CRM is to build a long-term relationship with customers and to enhance value shares for both parties. Organisations that adopt CRM may do so for a variety of benefits, mainly improving customer retention and customer loyalty. According to Swift (2001), companies can gain many benefits from CRM implementation. He states that the benefits are generally found in one of these areas: lower cost of recruiting customers, higher customer profitability, increased customer retention and loyalty, reduced cost of sales and evaluation of customers' profitability.

In particular, customers benefit from the belief that they are saving time and money as well as receiving better information and special treatment (Kassanoff, 2000). Furthermore, regardless of the channel or method used to contact the company, whether it is the Internet, call centres, sales representatives or resellers, customers receive the same consistent and efficient service (Creighton, 2000). Furthermore, Mohammad (2001) argues that CRM allows companies to gather and access information about customers' buying histories, preferences, complaints, and other data, so they can better anticipate what customers want. The goal is to generate improved customer loyalty.

Bygstad (2003) stated that "CRM is likened to the BPR thinking, in the way that CRM is also process oriented and focused on dramatic and fundamental change". Thus, CRM is a business philosophy that allows the company to understand its customers' needs and requirements based on their histories and preferences, which will help the company to anticipate their future behaviour.

Today, success in this digital era will rely on those organisations that adopt CRM strategy efficiently and effectively. Table 2.3 provides a brief overview of the benefits that CRM offers by sharing customer data throughout the organisation and implementing innovative technology.

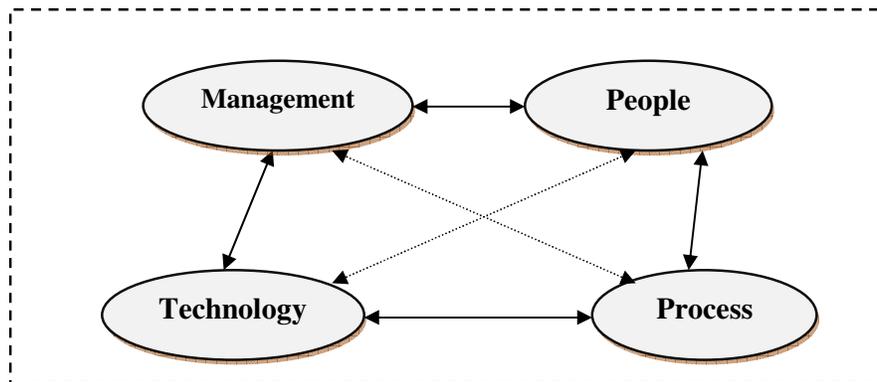
**Table 2.3 : Classification of CRM Benefits**

Dimension	Description	Support References
Lower cost of recruiting customers	The cost of recruiting or obtaining customers will decrease since there are savings to be made on marketing, mailing, contact, follow-up, fulfilment services and so on.	Romano and Fjermestad, (2003) Swift ,(2001) Kkolou ,(2004)
Higher customer profitability	Customer profitability will increase since the customer wallet-share increases, there are increases in up-selling, cross-selling and follow-up sales, and more referrals come with higher customer satisfaction among existing customers.	Charley, (2001) Kkolou, (2004) Bull, (2003)
Increased customer retention and loyalty	Customer retention increases since customers stay longer, The customer also often takes initiatives which increase the relationships, and as a result, the customer loyalty increases as well.	Crosby (2002) Swift, (2001) Kkolou, (2004)
Reduced cost of sales	With better knowledge of channels and distributions the relationship becomes more effective, and the cost of marketing campaigns is reduced.	Swift, (2001) Kkolou, (2004) Kotler, (2000)
Integration of the whole organisation	The entire organisation must be integrated to implement CRM strategy including departments such as IT, finance and human resources.	Romano and Fjermestad, (2003) Crosby (2002) Kracklauer et al., (2001) Moules, (2001)
Improved Customer Service	Customer Service will improve by bringing together all customer service processes around customer “touchpoints” and through the integration and sharing of customer data between itself and its dealers.	Phillip and Peter, ( 2002)
Evaluation of customers Profitability	A firm will get to know which customers are profitable, the one who never might become profitable, and which ones that might be profitable in the future.	Swift, (2001) Kkolou, (2004) Kotler, (2000)

### 2.4.3 CRM Components

CRM is a combination of people, processes, technology, and management that seeks to understand a company's customers. Figure 2.1 presents the key dimensions of CRM: people, process, technology, and management. Each component presents a significant challenge when applying a CRM system in a company, but it is the ability to integrate all three that makes the CRM system. A discussion on each component follows in more detail.

Figure 2.1 : CRM Components



Source: Adapted from: Chen and Popovich (2003)

- **Technology factor**

CRM technology applications link front-office functions e.g. (sales, marketing and customer service) and back-office functions e.g. (financial, operations, logistics and human resources) with the company's customer "touch points" (Fickel, 1999). A company's touch points can include the Internet, e-mail, sales, direct mail, telemarketing operations, call centres, advertising, fax, pagers, stores, and kiosks. These touch points are controlled by separate information systems (Eckerson and Watson, 2000). CRM applications get full benefit of information technology (IT) with their ability to collect and analyse data on customer patterns, interpret

customer behaviour, develop predictive models, respond with timely and effective customised communications and deliver product and service value to individual customers.

The push towards better CRM technologies is a natural result of the search by businesses for greater productivity and efficiency in customer-facing operations like sales, marketing, customer service and support (Greenberg, 2004).

- ***Business Process***

CRM is an enterprise-wide, customer-centric business model that must be built around the customer. It is a continuous effort that requires redesigning core business processes starting from the customer perspective and involving customer feedback. In a customer-centric approach, the goal becomes developing products and services to fit customer needs. Optimising customer relationships requires a complete understanding of all customers; profitable as well as non-profitable, and then to organise business processes to treat customers individually based on their needs and their values (Renner, 2000). To realise effective process change, a company needs first to examine how well existing customer-facing business processes are working, then the company needs to redesign or replace broken or non-optimal processes with ones that have been created and/or agreed upon internally (Goldenberg, 2002).

- ***People***

While both technology and business processes are critical to successful CRM initiatives, it is the individual employees who are the building blocks of customer relations; every employee must understand the purpose of CRM and the changes that it will bring (Chen and Popovich, 2003). Re-engineering a customer-centric business model requires cultural change and the participation of all employees within the organisation. Some employees may wish to leave; others will have positions eliminated in the new business model. Successful implementation of CRM means that some jobs will be significantly changed (Al-Mashari and Zairi, 2000).

Top management must show its commitment to an ongoing company-wide education and training programme. In addition to enhancing employee skills and knowledge, education boosts motivation and commitment of employees and reduces employee resistance. Additionally,

management must ensure that job evaluations, compensation programmes and reward systems are modified on a basis that facilitate and reward customer orientation.

• *Management*

Top management commitment is an essential element for bringing an innovation online and ensuring delivery of promised benefits. It should set the stage in CRM initiatives in leadership, strategic direction, and alignment of vision and business goals (Galbreat and Rogers, 1999). Table 2.4 below review the CRM components discussed above.

**Table 2.4 : Classification of CRM Components**

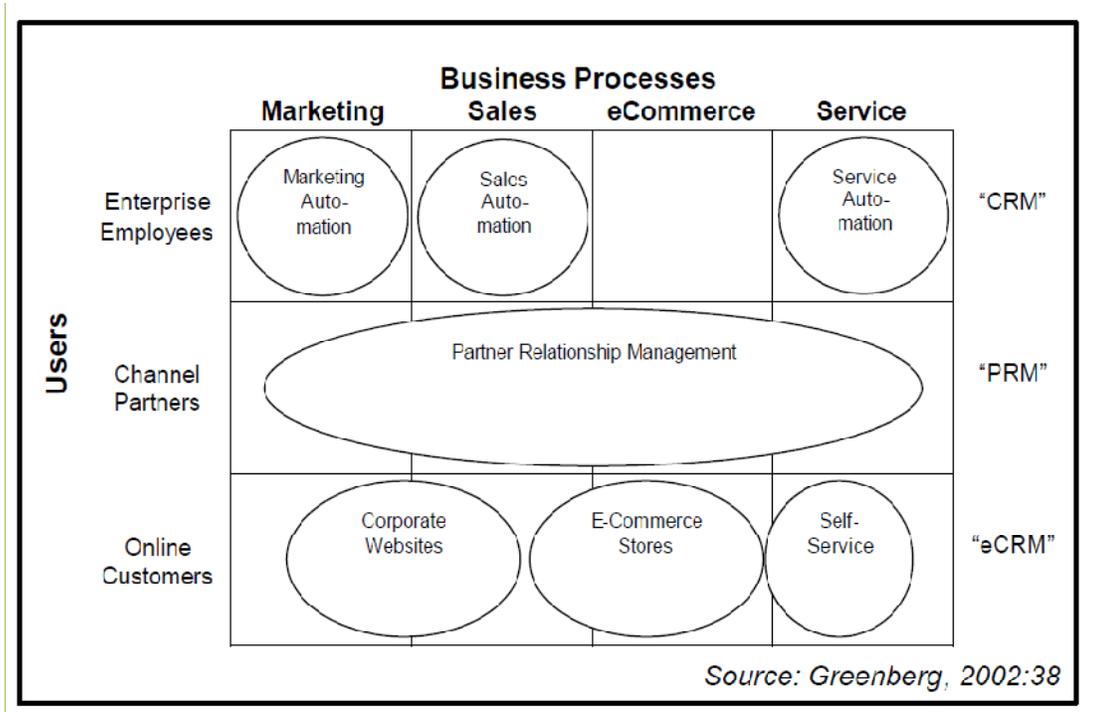
Dimension	Description	Support references
Technology	IT assists with the re-design of a business process by facilitating changes to work practices and establishing innovative methods to link a company with customers, suppliers, and internal stakeholders.	Hammer and Champy, (1993) Eckerson and Watson (2000) Sandoe et al., (2001) Peppard, (2000)
People	CRM projects require the dedicated attention of the implementation project team with representatives from sales, marketing, manufacturing, customer services, information technology, etc.	Al-Mashari and Zairi, (1999) Walden (2000)
Process	Optimising customer relationships requires a complete understanding of all customers; profitable as well as non-profitable, and then to organise business processes to treat customers individually based on their needs and their values.	Renner, (2000) Saunders, (1999)
Management	Top management commitment is an essential element for online innovation and ensuring delivery of promised benefits, it should set the stage in CRM initiatives in leadership, strategic direction, and alignment of vision and business goals.	Herington and Peterson (2000) Galbreat and Rogers, (1999)

#### **2.4.4 CRM and value sharing through the customer lifecycle**

Customer lifetime value (CLV) is the most important number affecting customer acquisition, retention and development efforts (Taylor, 2001). It calculates the profit-stream of a customer over the lifetime of his relationship with a company into one number and one of the main factors shaping lifetime value is customer loyalty. Greenberg (2002) stated that the customer lifecycle is the process which the customer has undergone in order to be with a company over the time of his relationship with that company. In order to estimate what the revenue is from a single customer over the expected lifetime of that customer's relationship with the company, the customer lifecycle needs to be analysed.

The task of collaborative CRM, or more specifically, the front office applications like web portals, customer interaction centres (CIC), email, voice applications (IVR) is to get the data analysed. Furthermore, the customer relationship lifecycle requires a reasonable amount of customer interaction and there is a number of business processes involved in this relationship lifecycle. Recognised as the pillars of CRM, these processes are: Marketing; Sales; e-Commerce and Service (Greenberg, 2002).

Figure 2.2 explains the CRM solution map as described by Greenberg (2002). It is clear from the figure below that there are various CRM applications that maintain these business processes. Typically, enterprise employees have been the primary users of CRM applications, then, e-Commerce storefronts. E-CRM applications were introduced to allow enterprises to interact directly with customers via corporate websites, and self-service applications (Greenberg, 2002).



**Figure 2.2 : CRM Solution Map**

## 2.5 Electronic Customer Relationship Management (E-CRM)

In this section the focus moves from CRM to electronic CRM (E-CRM). This section starts with a discussion about the development of E-CRM followed by various definitions of E-CRM. Different aspects such as E-CRM benefits and E-CRM as an e-Business strategy are discussed. The researcher will look at the importance of E-CRM in building long-term relationships with customers, reducing costs and increasing revenues. The concepts of customer interaction and touch points are also reviewed. A discussion of the components of E-CRM follows using the customer relationship path as illustration.

### **2.5.1 Development of E-CRM**

The concept of CRM changes frequently. The arrival of the Internet allowed CRM to move into E-CRM, or web-based CRM (Norton, 2001). E-CRM developed out of CRM, which has been viewed as call-centre-centric and sales-force-automation-centric (Goldshlager, 2001). Scullin *et al.*, (2002) stated that the rush to implement E-CRM systems is on! Organisations want to achieve the enormous benefits of high return on investments (ROI,) increases in customer loyalty, etc. from the successful implementation of E-CRM. CRM performing companies have to realise the challenging task of putting the 'E' into CRM. It is possible to argue that E-CRM is the future style of CRM; vendors who don't optimise their CRM applications for the web are the vendors who are likely to be out of business soon. E-CRM was distinguished as a leading priority of business executives by AMR Research in 2008 (Fletcher, 2008), and this development has continued, with Forrester Research showing that more than a third of enterprises planned for E-CRM upgrades in 2009 (Marston, 2009).

### **2.5.2 Definitions of E-CRM**

There are several definitions of E-CRM in the literature. Simply, connecting the Internet to CRM has made this term E-CRM. It is an extension of traditional CRM. Jutla *et al.*, (2001) describe E-CRM as the customer relationship care component of e-business. Greenberg (2000) suggests that E-CRM is CRM online. According to Romano and Fjermestad (2001) E-CRM is concerned with attracting and keeping economically valuable customers and eliminating less profitable ones.

Dyche (2001) suggests that there are two main types of E-CRM: operational E-CRM and analytical E-CRM. Operational E-CRM is concerned with the customer touch points; which can be web-based, e-mail, telephone, direct sales, fax, etc. Analytical E-CRM requires technology to process large amounts of customer data.

Rigby *et al.* (2002) argue that E-CRM is not only about technology or about software; it is about aligning business processes with customer strategies supported with software and technology.

Rosen (2001) suggests that E-CRM is about people, processes, and technology. Romano and Fjermestad (2003) stated that there are five major non-mutually-exclusive E-CRM research

areas: E-CRM markets; E-CRM business models; E-CRM knowledge management; E-CRM technology and E-CRM human factors, and each major area is composed of minor ones.

Scullin *et al.*, (2002) argue that organisations want to achieve the enormous potential benefits of high return on investments (ROI), increases in customer loyalty, etc. from successful implementations of E-CRM.

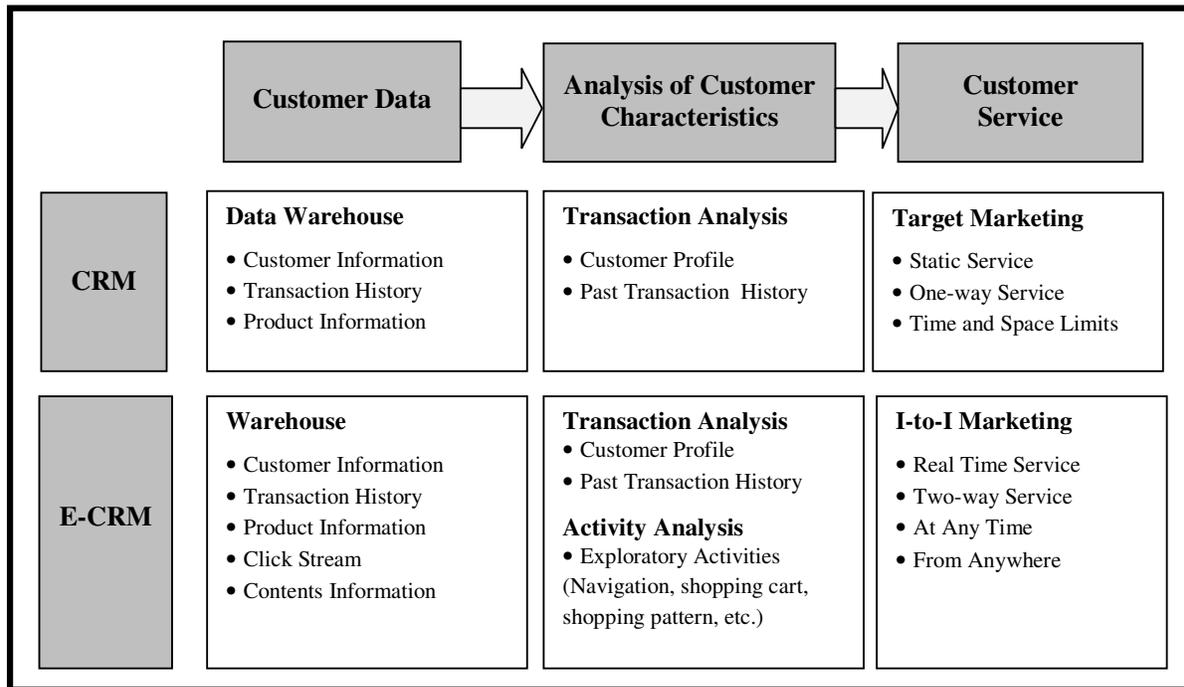
### **2.5.3 Differences between CRM and E-CRM**

The differences between CRM and E-CRM are delicate but important; they concern the underlying technology and its interfaces with users and other systems. For example, E-CRM provides the ability to take care of customers via the web, or customers being able to take care of themselves online, as many E-CRM systems provide the customer with a self-service browser-based window to place orders; check order status; review purchase history; request additional information about products; send e-mails and engage in a mass of other activities.

The customer is no longer limited to contacting an organisation during regular business hours, and the organisation does not have to provide a live contact at the other end for customer enquiries and requests. In effect, within an E-CRM environment, customers do most of the work for themselves and not for the businesses (Chandra and Stickland 2004).

CRM applications are designed around products and job functions. In E-CRM, the applications are designed with the customer in mind and give the customer the 'total experience' on the web. Web-enabled CRM is usually designed around one department or business unit not the entire enterprise. In E-CRM, on the other hand, applications are designed for the entire enterprise including all customers, suppliers, and partners. Traditional CRM has limitations in supporting outside multi-channel customer interactions that combine telephone, the Internet, email, fax, chat, and so on. Unlike traditional CRM, current E-CRM solutions support marketing, sales and service (Pan and Lee, 2003). Table 2.5 and Figure 2.3 below summarise the main differences between the two technologies CRM and E-CRM.

**Figure 2.3 : The Differences between CRM and E-CRM**



Source: Pan and Lee (2003)

**Table 2.5: List of Differences between CRM and E-CRM**

Dimension	CRM	E-CRM	References
Customer contacts	Traditional means of retail store ,telephone or fax	The internet, e-mail, wireless, mobile	Chandra and Stickland ,(2004) Pan and Lee, (2003)
Customer Service	Time and space limit	At any time and from anywhere	Chandra and Stickland, (2004) Pan &Lee ,(2003)
Customisation of information	Customisation is not possible; customisation requires significant changes to the system.	Easy to customise the information for any individual.	Chandra and Stickland ,(2004) Pan and Lee ,(2003)
System focus	Products and job functions	Customer's needs	Chandra and Stickland, (2004) Pan ad Lee, (2003)
System design	System is designed around one department or business unit.	System is designed for the entire enterprise	Chandra and Stickland, (2004)

#### 2.5.4 E-CRM Benefits

In online marketing, the main objective for any company is to maintain the relationship with its customers. E-CRM is the tool which enables a company to achieve this objective. With appropriate E-CRM implementation the following benefits can be achieved: increased customer loyalty, more effective marketing, improved customer service and support, greater efficiency and cost reduction (Scullin et al., 2002). Each one of these benefits is explained below:

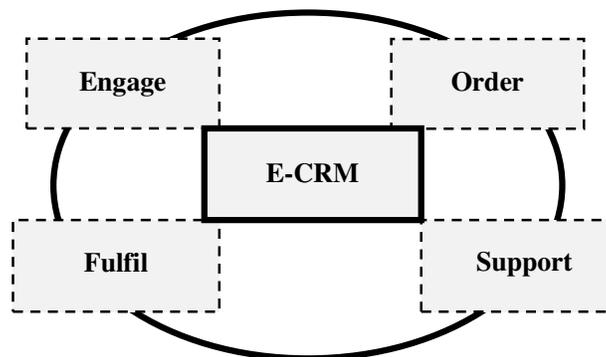
- **Increased customer loyalty.** An effective E-CRM system enables a company to communicate with its customers more efficiently; this is because, with E-CRM software, everyone in an organisation has access to information about the customer, and this information helps a company to focus its time and resources on its most profitable customers. One tool that a company can implement in pursuit of customer loyalty is personalisation, which generates real-time profiles for each customer using data from many sources including customer databases, and transaction systems.
- **More effective marketing.** Having detailed customer information from an E-CRM system allows a company to anticipate the kind of products that a customer is likely to buy as well as the timing of purchases. E-CRM allows for more targeted campaigns and tracking of campaign effectiveness. Customer data can be analysed from multiple perspectives to discover which elements of a marketing campaign had the greatest impact on sales and profitability.
- **Improved customer service and support.** Two key ways to improve customer service and support are through e-mail and direct mail, which can help get offers to a wide range of prospective customers and can customise how that offer is presented. An additional way to assist customers is through improved call centre interaction. When customers dial into a call centre, they expect good service and timely results. E-CRM call centre technology helps manage call routing and tracking. Service representatives are quickly provided with the information they need to troubleshoot and solve problems. In addition, call centre representatives generate orders that are immediately routed to fulfilment, providing an integrated customer experience.

- **Greater efficiency and cost reduction.** E-CRM can deliver 24-hour service without a business having to invest in an around-the-clock physical process. The E-CRM cost is reduced due to the elimination of physical intervention and integrating customer data into a single database, which allows marketing teams, sales forces and other departments within a company to share information and work towards common corporate objectives using the same underlying statistics.

### 2.5.5 E-CRM Components

E-CRM processes consist of four main components: engage, purchase, fulfil and support (Jutla, et al., 2001), as shown in Figure 2.4.

**Figure 2.4: E-CRM Components**



Source: Adapted from: Jutla, *et al.*, 2001

- **Engage component:** The engage component means network enabling the process of engaging the right customers to buy a product or service (Jutla, *et al.*, 2001).

When a customer begins looking online for a product or service information he/she engages in browsing content, searching, configuring, interacting, thus, E-CRM must support these activities as well as identify needs and solve customers' problems. Jutla et al. (2001) state that

identifying needs and solving customer problems in the context of engage enablers means explaining the product or service to fit the customer needs.

- **Order component:** Ordering is the process where a customer selects and makes a commitment to purchase a product. This includes a variety of selection, payment mechanisms, and order management mechanisms (Jutla, et al., 2001).

The payment instruments include credit cards, and electronic funds transfer and other types of non-cash payment such as contracts and invoices. These mechanisms must allow for non-refutation of the transaction. Jutla *et al.* (2001) state that customer ordering is linked to enterprise resource planning (ERP), just-in-time (JIT) inventory control and other logistical and customer-centric devices. This is why supply chain visibility is important to CRM. It generates customer expectations that are more accurate because the customer is presented with accurate delivery date and order status information.

- **Fulfilment component:** Fulfilment is about managing information on product or service movement. It is a subset of knowledge management since it requires knowledge of product movement or supply chain information. The critical enablers in fulfilment are back-end process integration, delivery capability and global sales governance (Jutla, *et al.*, 2001).

- **Support component:** Support function is an application of personalisation and trust that includes the ability of the system to hold customers' requirements. Best examples include having all of the information available to the customer placed in a net-centric environment with allowances for amendments and updates of customer information to occur at the customer level. Order tracking is one of the best known self-service applications (Jutla, *et al.*, 2001).

## 2.5.6 Approaches to implementing E-CRM

E-CRM uses standard approaches to achieve online customer acquisition and retention. According to Chaffey *et al.*, (2003), these approaches include four stages: (1) attract new and existing customers to site, (2a) provide incentives to stimulate action, (2b) capture customer information to maintain relationship, and (3) maintain dialogue using online communication, (4) maintain dialogue using offline communication.

**Stage 1:** Attract new and existing customer to the website:

Chaffey *et al.*, (2003) argue that the strategy of achieving online customer relationship management (E-CRM) should start with consideration of how to acquire customers who want to communicate in this way. These may be either new or existing customers. For new customers the goal is to attract them to the site using all the normal methods of site promotion such as search engines, portals and banner advertisements, and to entice existing customers the strategy is to proactively encourage them to visit the site by using marketing communications (table 2.6).

**Table 2.6: Examples of Some Offers Intended to Initiate One-to-one Marketing**

Offer	Example	Websites
Free information	Subscribing to a free monthly newsletter on one-to-one marketing. Downloading a report	www.101.com www.ft.com
Access to a discussion forum	A community with messages posted about industry or product topics	www.camcable.co.uk
Discounted product purchase	Purchasing a product will enable a retailer to collect a customer's e-mail and real-world addresses, and these can subsequently be used for one-to-one marketing	www.rswwww.com www.amazon.com www.outpost.com
Loyalty schemes	These integrate well with one-to-one	www.webrewards.co.uk

Source: adapted from Chaffey *et al.*, (2003)

**Stage 2a:** Incentives visitors to action:

The quality and credibility of the site must be sufficient to retain visitors' interest so that he or she stays on the site. Two types of incentives have been identified: lead generation offers and sales generation offers (Chaffey *et al.*, 2003).

- Lead generation offers: these are offered in return for customers providing their contact details and characteristics. Commonly used in B2B marketing where free information such as a report or a seminar will be offered.
- Sales generation offers: these are offers that encourage product trial. A coupon redeemed against a purchase is a classic example.

**Stage 2b:** capture customer information to maintain relationship

Once the user has decided the incentive is interesting, he or she will click on the option and will then be presented with an online form, and here the crucial information that must be collected is a method of contacting the customer. Ideally this will be both an e-mail address and a real-world address. The real-world address is important since the postcode may reveal something about the demographics of that person. Apart from the contact information, the other important information to collect is a method of profiling the customer so that appropriate information can be delivered to the customer (Chaffey *et al.*, 2003).

**Stage 3:** Maintain dialogue using online communication

There are many marketing methods that can be used to encourage users to return to a site. According to Chaffey *et al.*, (2003), these devices include: loyalty schemes, news about a particular industry, new product information, price promotions and customer support.

**Stage 4:** Maintain dialogue using offline communication

Direct mail is one of the most effective forms of communication since this can be tailored to be consistent with the user's preferences (Chaffey *et al.*, 2003). The aim here may be to drive traffic to the website as follows: online competition, online web seminar (webinar), and sales promotion.

## 2.6 E-CRM Features within the Transaction Cycle

E-CRM features are vital for managing customer relationships online (Feinberg *et al.*, 2002). They are generally referred to as concrete website functionality or tools (Khalifa *et al.*, 2002, Khalifa and Shen 2005). They are required for customising, personalising and interacting with the customer. Without E-CRM features, CRM could not be realised on the Internet (Khalifa *et al.*, 2002).

Customers usually interact with E-CRM with goals associated with transactions, e.g. information searching, order making/building, online payment and arranging delivery, which follows a sequence or cycle. The assumption behind this sequence is that at each stage of the buying process, the customer needs to use specific E-CRM features (Feinberg *et al.*, 2002, Khalifa *et al.*, 2002; Khalifa and Shen, 2005).

Correspondingly, E-CRM is usually designed to serve these three areas, i.e. pre-sales information, e-commerce services and post-sales support (Feinberg *et al.*, 2002; Lu, 2003). As immediate evaluation objects, E-CRM functions reflect the company's efforts to fulfil the customer's needs within these three stages of the transaction cycle (Liu and Arnett, 2000).

Feinberg *et al.* (2002) map the E-CRM features of retail websites into the pre-sale, sale and post-sale stages in investigating the relationship between E-CRM and satisfaction. Sterne (1996) indicated that internet-based CRM has three general areas: (1) presale information (corporate and product); (2) e-commerce services; and (3) post-sale support.

The use of the transaction cycle framework to classify satisfaction is also supported by Khalifa *et al.*, (2002), who investigated the relative contribution of pre-sale, sale and post-sale satisfaction to the generation of overall satisfaction. Consistent with previous studies (Feinberg *et al.*, 2002, Khalifa *et al.*, 2002, Khalifa and Shen, 2000, Sterne, 1996), the present study aims to group E-CRM features alongside the three basic stages of the consumer buying process: 1. Pre-sales stage; 2. Sales stage; and 3. After-sales stage.

The E-CRM literature will be examined throughout the purchase process to provide an understanding as well as simplify the rich concepts developed over the years. Following this discussion, the satisfaction and loyalty literature will be introduced.

### 2.6.1 Pre-purchase E-CRM features

The pre-purchase is characterised by the customer's need to search for and exchange information about a product or a service. It includes activities like information search and evaluation of alternatives (Engel *et al.*, 1990).

Researchers studying E-CRM success have suggested that an E-CRM program should include several items in the pre-purchase stage which will lead to pre-purchase satisfaction. Anderson and Kerr (2001) state that the first stage of E-CRM is to provide information to customers, and at this stage companies aim to get information back from potential customers as well and learn more about them. Furthermore, Khalifa and Shen (2005; 2009) state that the pre-purchase E-CRM features are those related to activities that customers perform prior to placing an order, e.g., membership registration and information gathering.

Chaffey *et al.*, (2003) enhanced the discussion by highlighting the importance of E-CRM features in influencing online customer acquisition and retention. They state that the key strategy for E-CRM is how to get new customers or to attract existing customers to the website using promotion methods. One of the major contributors who identified E-CRM pre-purchase features was Ross (2005) who stated that companies can win customers by personalising the communication between the seller and the buyer and customising the product and service offering according to desires and needs of their individual customers.

Furthermore, Feinberg *et al.*, (2002) in his study of retail websites highlighted the importance of different pre-purchase E-CRM features (site customisation, local search engine, chat ...) on retail websites and their relationship to consumer satisfaction and site traffic. After a comprehensive examination of the literature the table below presents pre-purchase E-CRM features as recognized by previous studies (See table 2.7).

**Table 2.7: Description of Pre-purchase E-CRM Features**

Authors	Description of the study	Dimensions of Pre-Purchase E-CRM Features
Feinberg et al., (2002)	The state of electronic customer relationship management in retailing	Introduction for first-time users Site customisation Alternative channels Local search engine Membership, Mailing list Site tour , Site map, Chat Electronic bulletin board
Ross, (2005)	E-CRM from a supply chain management perspective	Cross-selling and up-selling Marketing events Customer retention Response management E-mail marketing
Khalifa and Shen, (2005; 2009)	Effects of Electronic Customer Relationship Management on Customer Satisfaction	Site customisation Alternative channels Customer education Loyalty programme Search capabilities, Alerts
Liu et al., (2008)	An empirical study of online shopping customer satisfaction in China : a holistic perspective	Information quality Website design Merchandise attributes
Otim and Grover, (2006)	An empirical study of Web-based services and customer loyalty	Support of product search and evaluation Website aesthetics
Posselt and Gerstner ( 2005)	Pre-sale vs. post-sale e-satisfaction: impact on repurchase intention and overall satisfaction	Ease , Selection , Clarity Price, Look , Free postage/shipping , Charge
Wang and Hurang ( 2004)	Determinants of e-satisfaction in pre-order and post-order phases	Web design , Price, Promotion , Product availability

### 2.6.2 At-purchase E-CRM features

Different E-CRM features at this stage can influence a customer decision to complete the online transaction. Khalifa and Shen (2005; 2009) and Chaffey et al., (2003) highlighted the importance of the loyalty programme at this stage (at-purchase). According to them the loyalty programme feature enables customers to get points on each purchase.

On the basis of these points they are offered some reward in terms of discounts, special terms and benefits. Furthermore, Khalifa and Shen (2005; 2009) emphasised customer education. They explain that customer education relates to the guidance given on the procedures of how to purchase the product, which criteria to consider and how to evaluate them. All these principles fall under the customer education heading.

Moreover, Liu et al., (2008) highlighted the importance of the security/privacy factor which affects a customer's decision to perform a transaction via the company's website. Websites should, therefore, offer some E-CRM features at this stage to reduce any perceived risk and give clients sufficient confidence. At-purchase E-CRM features can give customers a greater feeling of security in performing their transaction online (Rattanawicha and Esichaikul, 2005). For these reasons, it is important that web designers make customers feel that the Internet is a simple, secure and reliable way of performing transactions.

A careful review of the literature is summarised in table 2.8 below which presents pre-purchase E-CRM features as recognized in previous studies.

**Table 2.8: Description of At-purchase E-CRM Features**

Authors	Description of the study	Dimensions of At-Purchase E-CRM Features
Feinberg et al. (2002)	The state of electronic customer relationship management in retailing	Online purchasing Product information Customisation possibilities Purchase conditions Preview product Links
Khalifa and Shen (2005; 2009)	Effects of Electronic Customer Relationship Management on Customer Satisfaction	Product customisation Payment methods Purchase conditions Comparative shopping Dynamic pricing
Liu et al. (2008)	An empirical study of online shopping customer satisfaction in China : a holistic perspective	Transaction capability Response Security/privacy Payment
Otim and Grover (2006)	An empirical study on Web-based services and customer loyalty	Delivery arrangements Transparency of billing

### 2.6.3 Post-purchase E-CRM features

Positive post-purchase customer experiences after making a transaction are a significant factor in the success of any company. Therefore, each transaction should be viewed as a starting point toward building a continuing relationship with clients (Durkin and Howcroft, 2003).

Gardia *et al.*, (1994) suggest that consumers' thoughts and evaluation criteria in the pre-purchase stage differ from those in the post-purchase stage. Furthermore, Oliver and Swan (1989) argue that customer satisfaction is mainly described as a post-purchase experience. Smith and Chaffey (2005) believe that with the use of Internet technology, websites actually have many advantages and much potential to deliver customer satisfaction, in the form of online support and live communication.

Therefore, as suggested by Kotler and Armstrong (2004), companies need to encourage customers to discuss problems and use their feedback to improve both products and services, E-CRM features at this stage are critical for increasing customers' post-purchase satisfaction via one-to-one communication and support from the company's website.

Feinberg *et al.*, (2002) support the complaint feature ability of those websites which provide a specific area for customers where they can leave their complaints. While Feinberg *et al.*, (2002); and Khalifa and Shen (2005) support the availability of the problem solving feature where visitors can solve their problems with products or services themselves with the help of online self-help functionality.

On the basis of the literature review, table 2.9 presents post-purchase E-CRM features as recognized in previous studies.

**Table 2.9: Description of Post-purchase E-CRM Features**

Authors	Description of the study	Post-Purchase E-CRM Features
Feinberg et al., (2002)	The state of electronic customer relationship management in retailing	FAQ Problem solving Complaining ability <b>Spare parts</b>
Khalifa and Shen (2005; 2009)	Effects of Electronic Customer Relationship Management on Customer Satisfaction	Problem solving Feedback channels Order tracking Online community Web centre
Liu et al. (2008)	An Empirical study of online shopping customer satisfaction in China : a holistic perspective	Delivery Customer service
Otim and Grover (2006)	An empirical study on Web-based services and customer loyalty	Order tracking On-time delivery Customer support
Posselt and Gerstner (2005)	Pre-sale vs. post-sale e-satisfaction: impact on repurchase intention and overall satisfaction	Availability , Tracking On-time , Expectation Support
Wang and Hurang (2004)	Determinants of e- satisfaction in pre-order and post-order phases	On-time delivery Met expectations Returns policy Customer service

## 2.7 Purchase Cycle

The purchase decision-making process can be divided into pre-purchase, purchase, and post-purchase stages (Solomon, 2004). The customer's needs and associated activities vary for different transaction cycle stages, and consumers' thoughts and evaluation criteria in the pre-purchase stage differ from those in the post-purchase stage (Gardialet *et al.*, 1994; Taylor and Burn, 1999).

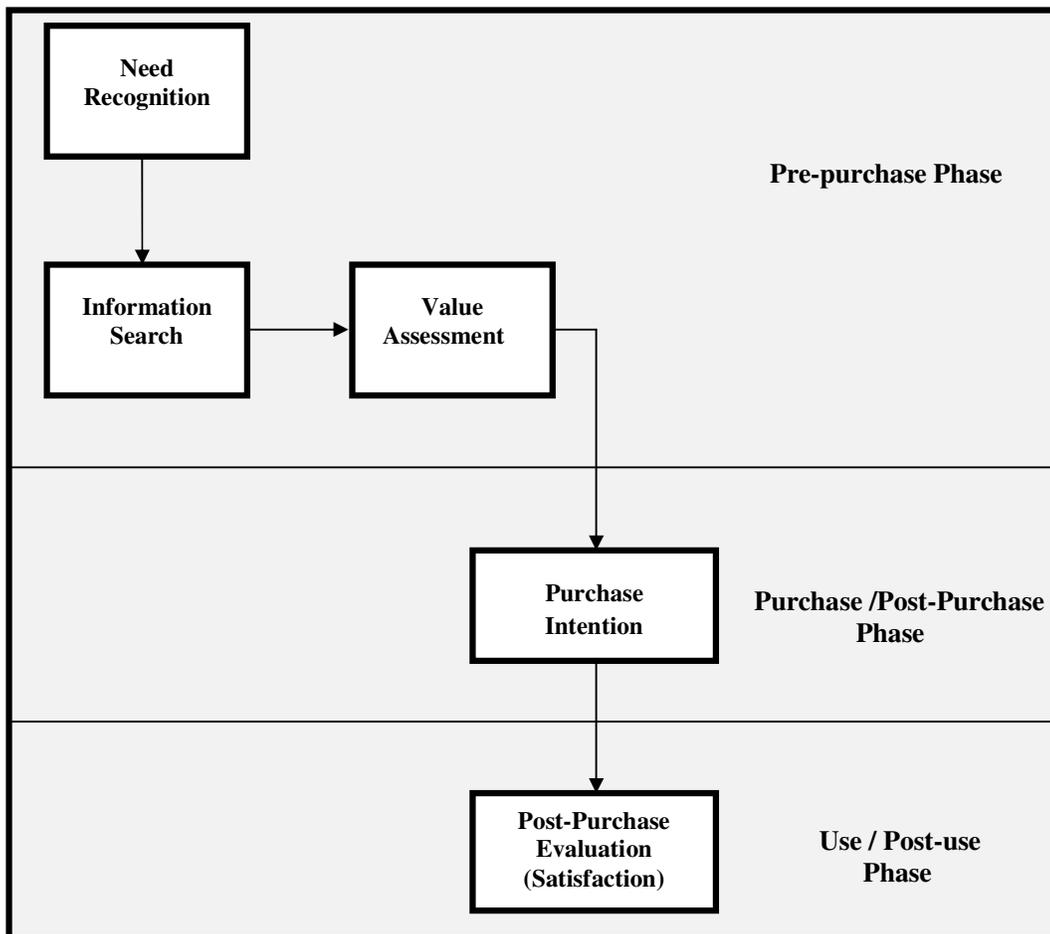
Sterne (1996) suggests a framework for differentiating the online customer experience consisting of three stages: pre-sale, sale, and after-sale interactions. In further research, Lu (2003) uses this framework to study the effects of e-commerce functionality on satisfaction, explaining that E-CRM features contribute differently to the satisfaction associated with each transaction stage.

Following the same line, Feinberg *et al.*, (2002) divide the E-CRM features of retail websites into the pre-sale, sale and post-sale stages in investigating the relationship between E-CRM and satisfaction. Additionally, Khalifa *et al.*, (2005, 2009) used the transaction cycle framework to study the relationship between E-CRM features and overall satisfaction at two stages of the customer lifecycle (attraction and retention).

Kotler (2003) classified the first three stages of the purchase process as follows: the pre-purchase phase of the purchase process; the purchase intention which represents the purchase /post-purchase phase while the post-purchase evaluation stage represents the use /post-use phase in the purchase process (Kotler, 2003).

The purchase process provides a framework to conceptualise the influence of E-CRM features in transactions. Figure 2.5 presents the purchase process as discussed by Kotler (2003).

**Figure 2.5: The Purchase Process**



Source: Kotler, (2003)

## **2.8 Satisfaction on the Internet (E-Satisfaction)**

This section discusses the definitions of customer satisfaction before reviewing the literature with the purpose of identifying the essential factors of consumer E-Satisfaction.

### **2.8.1 Defining E-Satisfaction**

E-satisfaction has become the focus of interest for many researchers (Lin 2003; Feinberg & Kadam 2002; Cao et al., 2004). Anderson & Srinivasan (2003) argue that satisfaction has a significant effect on customer loyalty and retention, as well as profitability. It is often used as a substitute measure of IS success in general and the success of e-commerce applications in particular (Kim *et al.*, 2002). Gable *et al.*, (2003) even argued that satisfaction is an overall measure of success, rather than one of its dimensions.

Anderson and Sullivan (1993) claim that satisfaction is an explicit evaluation of a consumer's experience with the service and is captured as a positive feeling, indifference, or a negative feeling. For example, Shih (2004) and Wixdom and Todd (2005) examined factors such as 'ease of use' and 'usefulness' as determinants of satisfaction in the online context.

Devaraj *et al.*, (2002) argue that the usefulness and ease of use of online shopping, followed by low economic costs, including time and effort involved in finding the right product, price, handling costs and service quality are factors that affect a consumer's satisfaction and consequently determine their preferences. Anderson and Sullivan, (1993); Fornell, (1992); Shemwell *et al.*, (1998) highlighted the importance of service quality as an antecedent of customer satisfaction. Feinberg *et al.*, (2000) reported that over 68% of customers do not revisit a company because of "poor service experience" with other factors such as price (10%) and product issues (17%) less significant.

Rust *et al.*, (1999) argue that the satisfaction of online customers is not only determined by product and service attributes (as in the marketing literature), but also created by the customer's interaction with the system (as in the IS literature). Parasuraman *et al.*, (1985) suggest that there are five elements of service quality by which consumers judge companies: reliability, responsiveness, assurance, and empathy providing caring, individual attention.

Researchers have taken different approaches and focused on a variety of aspects in investigating satisfaction with consumer-based electronic commerce. For instance, some researchers focus primarily on the impact of consumer perceptions of website characteristics (Ho and Wu, 1999; Szymanski and Hise, 2000), such as logistical support, security, and homepage design.

### **2.8.2 E-CRM and E-Satisfaction**

A comprehensive literature review reveals that there are various models of online customer satisfaction such as Khalifa and Liu (2005), Lee and Joshi (2006), Cheung and Lee (2005). Khalifa and Shen (2005) argue that E-CRM features contribute differently to the satisfaction associated with each transaction cycle and customer lifecycle. Different models of online customer satisfaction can be viewed from a perspective that focuses on aspects of satisfaction elements. However, this section aims to classify different models of online customer satisfaction. Table 2.10 presents different studies by different researchers regarding factors influencing online customer satisfaction. The first column shows the author and the year of the study covering the years 1999 to 2006, the second column summaries the results of each study, the third column presents an explanation of the elements found in each study. As a result of the above classification of different models of online customer satisfaction, the following points should be noted:

- Most of these studies indicate that customers will be satisfied if the site design is not complicated and if it is quick and easy to access , search , make payment and easy to track an order .
- There are only a few studies such as Khalifa and Shen (2005) highlighted the E-CRM features, transaction cycle and customer lifecycle in relation to customer satisfaction, and show that E-CRM features contribute differently to the satisfaction associated with the transaction cycle and customer lifecycle.
- Most of these studies indicated that customers use the Internet for a number of different purposes such as saving time, convenience, entertainment, or obtaining information.
- Product variety, price, customer service and product warranties were also found to be important to online customer's satisfaction.
- Security is the main reason preventing customers from purchasing products and services online.

**Table 2.10: Selected Studies of Online Customer Satisfaction**

Study	Results of the study	Perception
Ho and Wu, (1999)	Logistical Support	Quick response to customers' needs Providing communication channels (i.e., e-mail or fax) Quick delivery of goods customers Providing after-sales service
	Technological Support	Computer and network facilities Well-structured information systems
	Homepage Presentation	Ease of use of interface and detailed information of goods Variety of goods and pricing of goods
	Product characteristics Information Characteristics	Reliable output information and secure transaction
Lee and Cheung, (2002)	Information Quality	Availability , accuracy and update
	System Quality	Ease of use, response time and security
	Service Quality	Payment methods, on-time delivery, problem solving and ease of ordering
Lee and Joshi, (2006)	Channel Properties	Time saving, cost saving, transaction cost and cost reduction.
	Store Properties	Ease of use , ease of ordering , product quality, product information, order tracking and services quality
	Customer Properties	Internet expertise and purchase experience
Khalifa and Shen , (2005;2009)	Pre-purchase/Attraction Stage	Site customisation, customer education, alternative channels , loyalty programme membership and search capability alerts
	At-purchase/Attraction Stage	Product customisation, payment methods, purchase conditions, comparative shopping and dynamic pricing
	Post-purchase/Retention Stage	Problem solving, feedback channels, order tracking, online community and web centre

The above analysis of the different models of online customer satisfaction shows that a specific elements of online customer satisfaction has not been agreed upon by the researchers, neither is there agreement on the stages required for e-satisfaction. Furthermore, as discussed earlier, most studies have classified online satisfaction into four groups (system quality, information quality, system use and service quality) and there are only few studies, such as Khalifa and Shen (2005; 2009), that have focused on the use of E-CRM features, transaction cycle and customer lifecycle with relation to customer satisfaction and show that E-CRM features contribute differently to the satisfaction associated with the transaction cycle and customer lifecycle. They argue that it is not possible to ignore these elements due to their importance; they are, in fact, included in almost all studies.

However, different models of online satisfaction also reveal : first, as discussed earlier, that almost all models mentioned online customer satisfaction factors; and second, E-CRM features throughout transactional cycle (the focus of this research) arise in the final study by Khalifa and Shen (2005, 2009). However, the importance of the transactional cycle comes from its impact following implementation E-CRM features. It can be considered to lead to a high level of interactivity between an organisation's website and its customers. For this reason, the current study will focus on this concept.

## **2.9 Consumer Loyalty on the Internet (E-LOY)**

This section discusses the definitions of loyalty. It reviews the literature with the purpose of identifying the fundamental theories of constructing consumer loyalty.

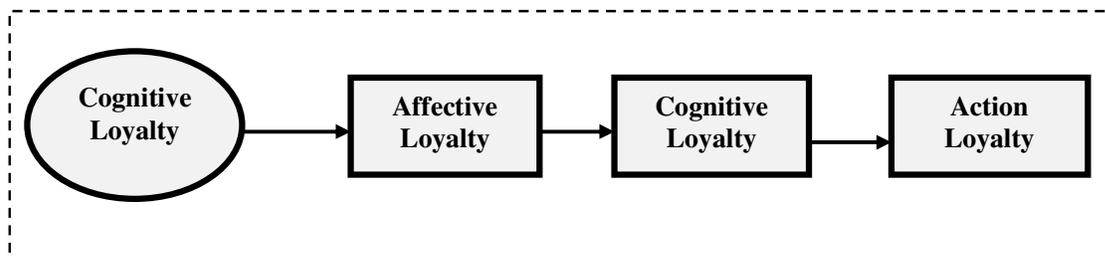
### **2.9.1 Consumer loyalty definition and conceptualization**

The majority of earlier studies describe loyalty as the repeat purchase of a product or service (Homburg and Giering, 2001). Driven by strong competition and cost-efficiency motivation, companies are looking at marketing strategies that enhance customer loyalty. Businesses on the Internet are faced with greater challenges as consumers' search for cost benefits, quality information and cost comparisons across stores are much lower (Lynch and Ariely, 2000). Berry (1993, 2002) believes that "customer loyalty emphasises the interactive nature of relationship

marketing, and can be seen as an acknowledgement of the personal nature of the commitment of customers to the firm".

For many years, many studies have attempted to define the loyalty construct. Researchers have used both attitudinal and behavioural measures to define and assess loyalty (Oliver 1999; Zeithaml 2000). The latter view defines loyalty as repeat patronage (Bloemer and de Ruyter, 1998; Neal, 1999). Oliver (1999) states that loyalty is “a deeply held commitment to re-buy or re-patronise a preferred product/service consistently in the future, thereby causing repetitive same-brand or same-brand set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviours”. Furthermore, Oliver (1999) develops a four-stage loyalty model, which classifies four different categories of loyalty as shown in Figure 2.6.

**Figure 2.6 : Oliver's Four-Stage Loyalty Model**



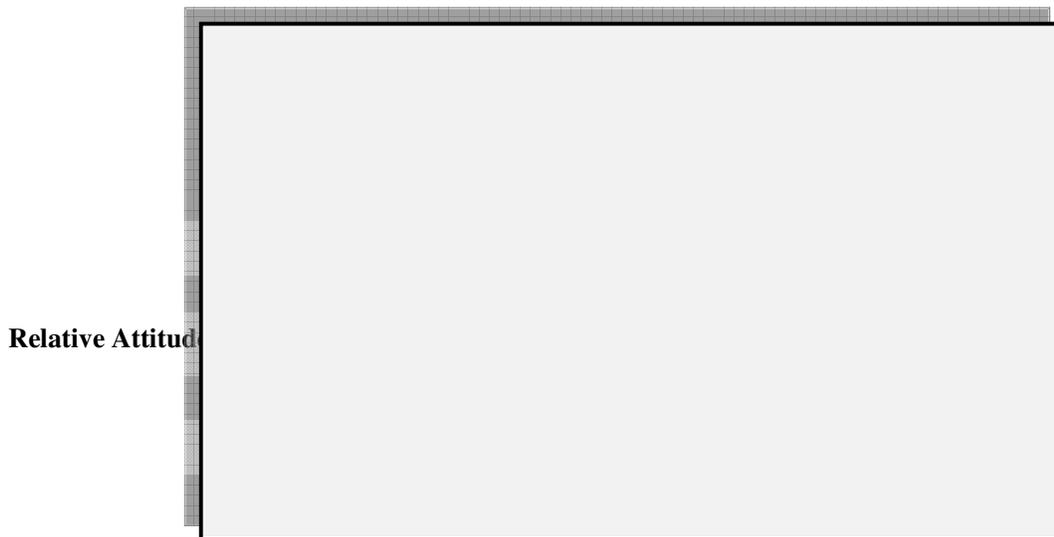
Source: Adapted from: Oliver (1999)

In the first stage, which is cognitive loyalty, customers favour a particular company or brand over others. Once they are pleased, affection will come into play, and at this point, customers will move into the affective loyalty stage. At this stage customers develop positive attitudes towards the company. With a continuous positive experience, customers would move into the cognitive loyalty stage; a stage where they feel they have an obligation to repurchase. This obligation to purchase becomes a desire to act as a result of the previous three stages. This stage is called the action loyalty stage, where customers consistently have a greater commitment to repurchase from a brand or preferred company.

The study of customer loyalty in the online environment is increasing. E-Loyalty is “the customer’s favourable attitude toward an electronic business, resulting in repeat purchasing behaviour” (Anderson and Srinivasan, 2003). E-Loyalty is the equivalent of the “store loyalty”

concept, including repeat store visit behaviour and the purchase of established brand name items in the store (Corstjens and Lal, 2000). Furthermore, Reichheld *et al.*, (2000) stated that E-LOYalty is related to quality customer support, on-time delivery, compelling product presentation, convenience and reasonably priced shipping and handling, together with a clear and trustworthy privacy policy. Dick and Basu (1994) define four dimensions of loyalty based on relative attitude and repeat patronage (see Figure 2.7).

**Figure 2.7 : Attitude-Behaviour Square**



Source: Adapted from: Dick and Basu, (1994)

The first dimension is no loyalty where *relative attitude* is low and repeat purchase is distributed across brands. The second dimension is *spurious loyalty* where repeat patronage of a brand may exist, but low relative attitude indicates that social or situational factors drive the repeat purchase. Latent loyalty is also greatly influenced by social and situational factors; however, in this case a high relative attitude exists but repeat patronage is low. Finally, loyalty exists in cases where relative attitude and repeat patronage are both high.

## 2.9.2 Customer satisfaction as an antecedent of loyalty

There are many variables that have been considered by researchers as antecedents of loyalty and these have been the focus of a number of research studies. The link between satisfaction and loyalty has been well established in the literature (Caruana, 2002; Chiou, 2004; Oliver, 1980). Satisfaction can be attributed to various dimensions such as satisfaction with the personnel, the core service or the organisation in general (Lewis and Soureli, 2006). It may also be considered as the cumulative experience of a customer's purchase and consumption experiences (Andreassen and Lindestad, 1998). From any perspective, the level of satisfaction experienced by the customer affects loyalty (Oliver, 1997; Caruana, 2002; Nguyen and LeBlanc, 1998; Moutinho and Smith, 2000).

Zeithaml *et al.*, (1996) found that customer satisfaction is positively related to customer loyalty. In a study measuring online versus offline environments, Shankar *et al.*, (2003) found the positive relationship between satisfaction and loyalty to be even stronger online than offline. Van Riel *et al.*, (2002) emphasise that customer satisfaction with online support and the core service will both contribute to the creation of desired *behavioural* intentions in the form of loyalty.

In short, researchers explain loyalty as repeat purchases or retention and argue that customer satisfaction leads to loyalty (Floh and Treiblmaier, 2006; Lee-Kelly *et al.*, 2003; Cronin *et al.*, 2000; Rust *et al.*, 2000). Anderson and Srinivassn (2003) identified E-LOYalty as a customer's positive attitude towards an electronic business resulting in repeat buying behaviour. Furthermore, they also investigated the impact of satisfaction on loyalty in the context of electronic commerce. Table 2.12 presents studies from the literature review that judge satisfaction as an antecedent of loyalty.

**Table 2.11: Examples of Studies which Judge Satisfaction as an Antecedent of Loyalty**

Researchers	Antecedent	Dependent variables
Floh & Treiblmaier, (2006)	E-satisfaction	E-Loyalty
Ab Hamid, (2006 )	E-satisfaction	E-Loyalty
Rodgers et al., (2005)	Online satisfaction	E-loyalty
Yang and Peterson, (2004)	E-satisfaction	E-Loyalty
Lee-Kelly et al., (2003)	E-satisfaction	E-Loyalty
Anderson & Srinivasan, (2003)	E-satisfaction	E-Loyalty
Feinberg and Kadam ,(2002)	E-satisfaction	E-Loyalty

## 2.10 Gaps in the Literature

The analysis of current literature relating to the research issues; E-CRM, E-Satisfaction and E-Loyalty has highlighted a number of gaps that this thesis aims to tackle. First, as shown in earlier sections, there is a lack of studies focusing on E-CRM in general and particularly in relation to the transaction cycle (pre-purchase, at-purchase and post-purchase). Although Khalifa and Shen (2005; 2009) have provided a unique study that focused on E-CRM features and online satisfaction, there is an absence of a comprehensive conceptual model that focuses on the effects of different E-CRM factors on e-satisfaction and E-Loyalty. Second, although there are many

studies that provide an assessment of these features there are very few studies that relate these features with the transaction cycle. Finally, there have been no empirical studies focusing on the E-CRM factors influencing a consumer decision to buy mobile phone products/services online in the literature.

Knowledge about key motivational E-CRM factors at each stage of the transaction cycle which influence consumers' online shopping behaviour found from this study would enhance and increase our ability to understand the complex phenomenon of doing business online. This is vital not only for firms selling goods and services on the Internet, it also important for software and Web developers hoping to build a constant consumer base for e-commerce in the near future.

The author of this thesis addresses this absence. Hence, the author will develop a comprehensive conceptual model explaining the effects of various types of E-CRM features on e-satisfaction and E-Loyalty in the context of online shopping and within the transaction cycle (pre-purchase, at-purchase, and post-purchase). However, the importance of the transactional cycle comes from its impact following implementation E-CRM features. It can be considered to lead to a high level of interactivity between an organisation's website and its customers. For this reason, the current study will focus on this concept.

In sum, the literature review indicates gaps in the research in terms of models, target groups, sample size, and additional factors to better explain the relationships between E-CRM features, E-Satisfaction, and E-Loyalty in buying mobile products/services online.

This study is aimed at investigating the E-CRM features that encourage customers to or discourage customers from buying mobile products/services online in the UK. The findings will not only add to the literature but will also provide a basis for future studies on E-CRM features of other online products/services in UK. Although this study is focused on only one application of the Internet, the findings from this study may be generalised to other applications on the Internet as well.

## **2.11 Conclusions**

This chapter presented a review of extant literature relating to the research issues. It outlined the theories underlying the formation of E-CRM features, E-satisfaction, and E-Loyalty, which provide the basis for the development of a conceptual framework for this research. First; a brief history of the emergence and the development of E-CRM was discussed, second; the definitions of E-CRM, E-CRM benefits and components were discussed and presented, third; the researcher discussed different approaches to applying E-CRM which attract new and existing customers to a website, incentivising visitors to action, capturing customer information to maintain relationships, maintaining a dialogue using online communication, and maintaining a dialogue using offline communication, fourth; different E-CRM features associated with the transaction cycle were discussed, which are pre-purchase E-CRM features, at-purchase E-CRM features and post-purchase E-CRM features.

Researchers have used different theories to investigate and examine Internet marketing and factors influencing the online purchase process. Most of their studies showed that customers use the Internet for a variety of purposes including saving time, entertainment, or information gathering. Results also indicated that customers will buy online if the site design is not complicated, is quick and easy to access, easy to download, easy to cancel, easy to make payment, and easy to return unwanted goods.

The differences between CRM and E-CRM are delicate but important; they concern the underlying technology and its interfaces with users and other systems. For example, E-CRM provides the ability to take care of customers via the web, or customers being able to take care of themselves online, as many E-CRM systems provide the customer with a self-service browser-based window to place orders; check order status; review purchase history; request additional information about products; send e-mails and engage in a mass of other activities.

Relatively little has been revealed in the literature about the different features of E-CRM associated with the transaction cycle. Furthermore, the researcher identified a gap in the literature, dealing with the absence of theoretical models for the relationships between different E-CRM features and e-satisfaction and E-Loyalty. Therefore this chapter establishes a

background for the context of E-CRM features that affect e-satisfaction and E-Loyalty and hence supports the researcher in developing a conceptual framework for this research.

Discussion of the E-CRM features and models of E-satisfaction and E-Loyalty led to the identification of research issues that should be considered. Consequently, three important issues derived from the literature review were presented in this chapter. The first issue is that the process of implementing an E-CRM programme passes through different stages of the transaction cycle. The pre-purchase E-CRM features (e.g., search capabilities) are very important for providing resources to enable considered decisions. These features aim at reducing the risk for customers and gaining their trust. An additional explanation for the influence of the pre-purchase E-CRM features is that new customers are not yet sufficiently familiar with the at-purchase and post-purchase E-CRM features to appreciate their importance. Thus, as pre-purchase E-CRM features improve on a website, so the better customer satisfaction will be.

The second issue is that there is an absence of theoretical models for different E-CRM features; therefore, this study improves on prior research to provide empirical validation of an E-CRM model by determining its influence on E-Satisfaction and E-Loyalty at different stages of the purchase cycle. Finally, because previous research has not clearly expressed the influence of pre-purchase E-CRM, at-purchase E-CRM and post-purchase E-CRM on E-Satisfaction, and E-Loyalty, the present study attempts to reduce this gap by investigating the relationships between these variables in the setting of business-to-consumer e-commerce.

These research issues came from the literature review presented in this chapter and are taken into account in Chapter 3.

## **Chapter 3: Conceptual Model and Research Hypotheses**

### **3.1 Introduction**

The previous chapter focused on issues related to E-CRM features, E-Satisfaction, and E-Loyalty including definitions, benefits, techniques and technologies for implementing E-CRM. The main research issues derived from chapter-2 are: (a) there are different elements of E-CRM; these elements could be connected to system quality, information quality and/or service quality; (b) there is a lack of conceptual models for different E-CRM features which affect E-Satisfaction and E-Loyalty as well as a lack of studies that focus on E-Loyalty. (c) There is a surprising lack of detail regarding the effects of different E-CRM features on E-Satisfaction and E-Loyalty within the different stages of the transaction cycle (pre-purchase, at-purchase, and post-purchase) and in the mobile phone field.

The purpose of this chapter is: (a) to develop a comprehensive conceptual model that explains the effects of various types of E-CRM features in the context of online shopping; and within the transaction cycle; on E-Satisfaction, and E-Loyalty, and (b) to present the hypotheses of this study, and (c) to investigate the relationships between E-CRM features, E-Satisfaction and E-Loyalty in the mobile phone field.

The chapter is divided into six sections. It begins with the development of the theoretical framework of this study in section 3.2. The theoretical linkage between these constructs and the conceptual model that represents the relationships among these variables is discussed in sections 3.3 and section 3.4. In section 3.5, the main research constructs and research hypotheses are discussed. Finally, conclusions are drawn in section 3.6 together with implications for the next stage.

### **3.2 Framework Build-up**

The relationships between the five constructs: pre-purchase E-CRM, at-purchase E-CRM, post-purchase E-CRM, E-SQ, and E-LOY have their origins in the literature of electronic customer relationship management (E-CRM), online customer satisfaction (E-SQ) and online customer loyalty (E-LOY). However, despite the growing applications of E-CRM used to build relationships on the Internet, there has been very little empirical work done on E-CRM (Feinberg and Kadam, 2002). For example, studies have attempted to investigate the influence of E-CRM on customer loyalty (Lee-Kelley *et al.*, 2003), E-CRM features affecting customer satisfaction (Feinberg and Kadam, 2002), E-CRM systems' usability and resistance (Fjermestad and Romano, 2003), and E-CRM coordinated marketing and information strategy (Park and Kim, 2003).

Therefore, this study aims to improve on prior research in providing empirical validation of an E-CRM model by determining its influence on E-SQ and E-LOY at different stages of the purchase cycle, and studying the mediation role of E-SQ in this model. This study proposes that the use of E-CRM features will affect E-SQ, which leads to E-LOY, and E-SQ will mediate the relation between E-CRM features and E-LOY.

Because previous research has not clearly expressed the influence of pre-purchase E-CRM, at-purchase E-CRM and post-purchase E-CRM on E-SQ and E-LOY, the present study attempts to reduce this gap by investigating the relationships between these variables in the setting of business-to-consumer e-commerce.

This study expands on the emerging stream which integrates the marketing concepts into relationship marketing and information systems theories.

### 3.3 Conceptual Framework

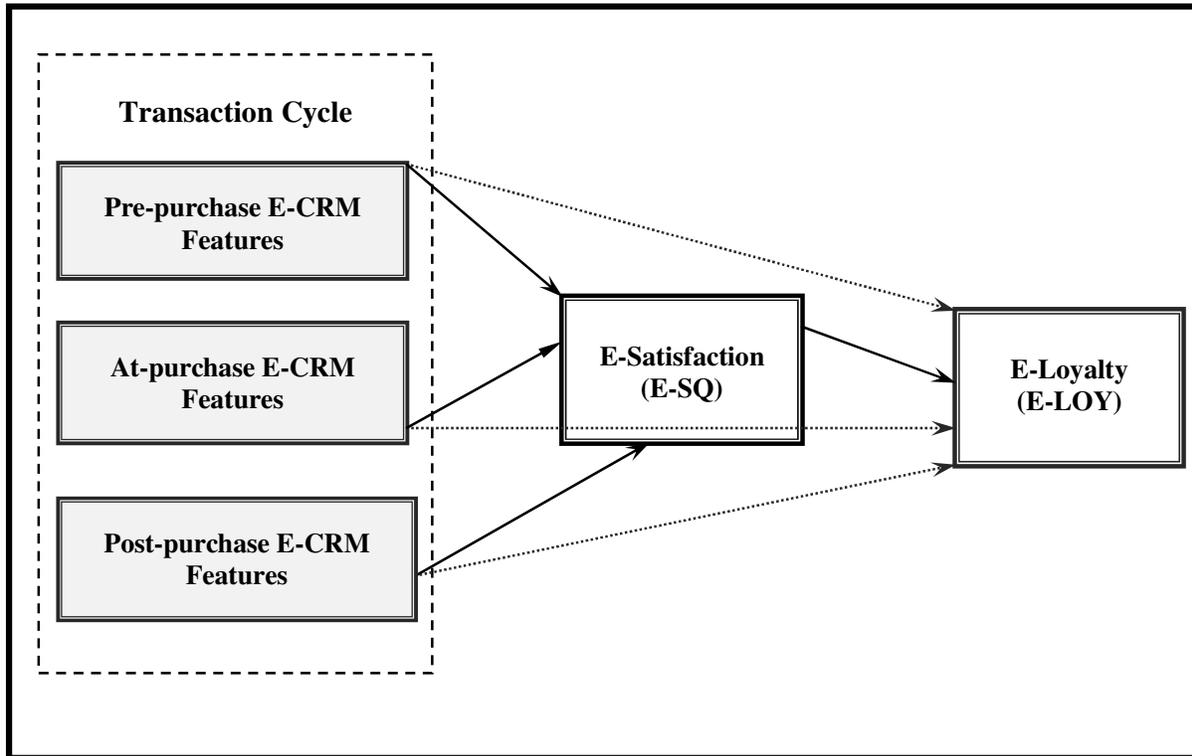
The theoretical framework provides the foundation on which an entire research project is based (Sekaran, 2000). It describes the relationship between variables that contribute to the research problem. The theoretical framework provides a clear understanding of the dynamics of the problem being investigated and thus facilitates the generation of testable hypotheses. The theoretical framework for this study has its origins in electronic customer relationship management (E-CRM), online customer satisfaction (E-SQ) and online customer loyalty (E-LOY) literature (Anderson and Srinivasan 2003; Reichheld and Scheffer, 2000; Srinivasan *et al.*, 2002; Shankar *et al.*, 2003; Gelen, 2002; Larris and Goode, 2004). The theoretical framework for this study contains five major constructs:

- Pre-purchase E-CRM features
- At-purchase E-CRM features
- Post-purchase E-CRM features
- E-Satisfaction
- E-Loyalty

This study identified five variables that are considered relevant to the research problem. The independent variables (IV) for this study include pre-purchase E-CRM, at-purchase E-CRM and post-purchase E-CRM, while the use of E-Satisfaction (E-SQ) and E-Loyalty (E-LOY) are listed as the dependent variables (DV). These variables build up the theoretical framework of this study which is in line with the objectives of this research.

The basic conceptual framework of this study is shown in figure 3.1.

**Figure 3.1: The Conceptual Framework**



Since Internet technology changes rapidly alongside with consumers' expectations, the study of specific E-CRM features has made the past studies less appropriate. Instead, this study focuses on measuring an E-CRM program by investigating the most important E-CRM features in each stage of transaction cycle which include almost all of E-CRM activities. Furthermore, By carefully looking at the 'pre-purchase', 'purchase', and 'post-purchase' features mentioned in section 2.7, once can easily observe that there are some features which are completely for the use of e-retailer for example 'customer service' and order tracking features are totally for the use of sellers. Based on our customer perspective of this study the author has selected only those features which are related to customers only. On the other hand the features mentioned in section 2.7 include some factors which are purely used for retail selling and have nothing to do with mobile phone companies, for example, 'spare part' features is the characteristic of retail industry.

The Purpose of our study requires us to choose features related to customers' and mobile phone companies perspective. Furthermore, Customers' perspective of study requires us to use 'purchase' word instead of 'sale'. Those features which customer can come across before the purchase, at the time of purchase, and after the purchase are, as mentioned by Khalifa and Shen (2005), named as the 'pre-purchase features of E-CRM' , 'at-purchase features of E-CRM', and 'post-purchase features of ECRM' respectively. Drawn from a comprehensive literature review (Khalifa and Shen, 2005; 2009; Lee and Joshi, 2006; Cheung and Lee, 2005; Wang and Hurang, 2004). and consistent with the above justifications of selection of E-CRM features the following factors were proposed as the dimensions of pre-purchase E-CRM construct, namely: (a) website presentation, (b) search capabilities, and (c) loyalty programmes. moreover the following factors were proposed as the dimensions of at-purchase E-CRM construct, namely: (a) security/privacy, and (b) payment methods. And the following factors were proposed as dimensions of post-purchase E-CRM construct, namely: (a) order tracking, (b) on-time delivery, and (c) customer service.

### **3.4 Major Research Model Constructs and Research Hypotheses**

The proposed conceptual model of this study assumes that online satisfaction (E-SQ) is affected by the following three types of E-CRM constructs. These constructs are: (1) pre-purchase E-CRM constructs (website presentation, search capabilities, and loyalty programmes.); (2) at-purchase E-CRM constructs (security/privacy and payment methods); (3) post-purchase E-CRM constructs (order tracking, on-time delivery, and customer service) (Feinberg et al., 2002; Lu, 2003; Cheung and Lee, 2005; Khalifa and Shen, 2005; 2009). The predictor variables from the above-mentioned three categories are expected to affect and explain the E-SQ, which in turn is expected to predict the actual E-LOY. Figure 3.2 presents the proposed conceptual model of the relationship between E-CRM and E-LOY at different stages of the transaction cycle and explains the hypothesised relationships between the constructs of this study. The following sections also provide in-depth descriptions of each construct and the theoretical justification for including them in the proposed conceptual model.

### 3.4.1 Pre-purchase E-CRM construct

The pre-purchase E-CRM features are those associated with activities that customers encounter prior to placing an order, e.g. membership registration and information gathering (Khalifa and Shen, 2009). Feinberg *et al.*, (2002), in their study of retail websites, highlighted the importance of different pre-purchase E-CRM features (site customisation, local search engine, chat ... etc.) on retail websites and their relationship to customer satisfaction. In order to gain an in-depth and better understanding, pre-purchase E-CRM features have been investigated in several studies (Feinberg *et al.*, 2002; Lu 2003; Cheung and Lee, 2005; Khalifa and Shen, 2005; 2009).

For example, Khalifa and Shen (2005; 2009) deconstructed pre-purchase E-CRM features into six constructs (site customisation, customer education, alternative channels, loyalty programmes, search capabilities and alerts). Furthermore, Wang and Hurang (2004) deconstructed pre-purchase E-CRM features into four constructs; namely, web design, price, promotion and product availability.

Drawn from a comprehensive literature review (Khalifa and Shen, 2005; 2009; Lee and Joshi, 2006; Cheung and Lee, 2005; Wang and Hurang, 2004). The following factors were proposed as the dimensions of pre-purchase E-CRM construct, namely: (a) website presentation, (b) search capabilities, and (c) loyalty programmes (Table 3.1). The pre-purchase E-CRM factors related to this study are discussed below in detail. Thereafter the related hypotheses are formulated.

**Table 3.1: Pre-purchase E-CRM Features**

Pre-purchase E-CRM	Dimension	Importance	Supporting references
Website Presentation	This refers to pictures, images, and information presented well on the website.	It is very important to attract customers and enhance purchasing decision	Lee and Cheung ( 2002) Wang and Hurang ( 2004) Liu et al., (2008) Khalifa and Shen (2009;2005)
Loyalty Programme	A programme that allows consumers to collect points for every purchase from or visit to a site, which are redeemable for free gifts, coupons or cash rebates.	Keeping the communication with customers simple makes it easy for customers to find information	Liu et al., (2008) Khalifa and Shen (2009;2005)
Search Capabilities	Sophisticated search engines allow customers to specify multiple criteria for quick retrieval of the desired information	Search capabilities save customers time and enhance purchasing decisions	Khalifa and Shen (2005; 2009) Lee and Cheung ( 2002) Feinberg et al. (2002)

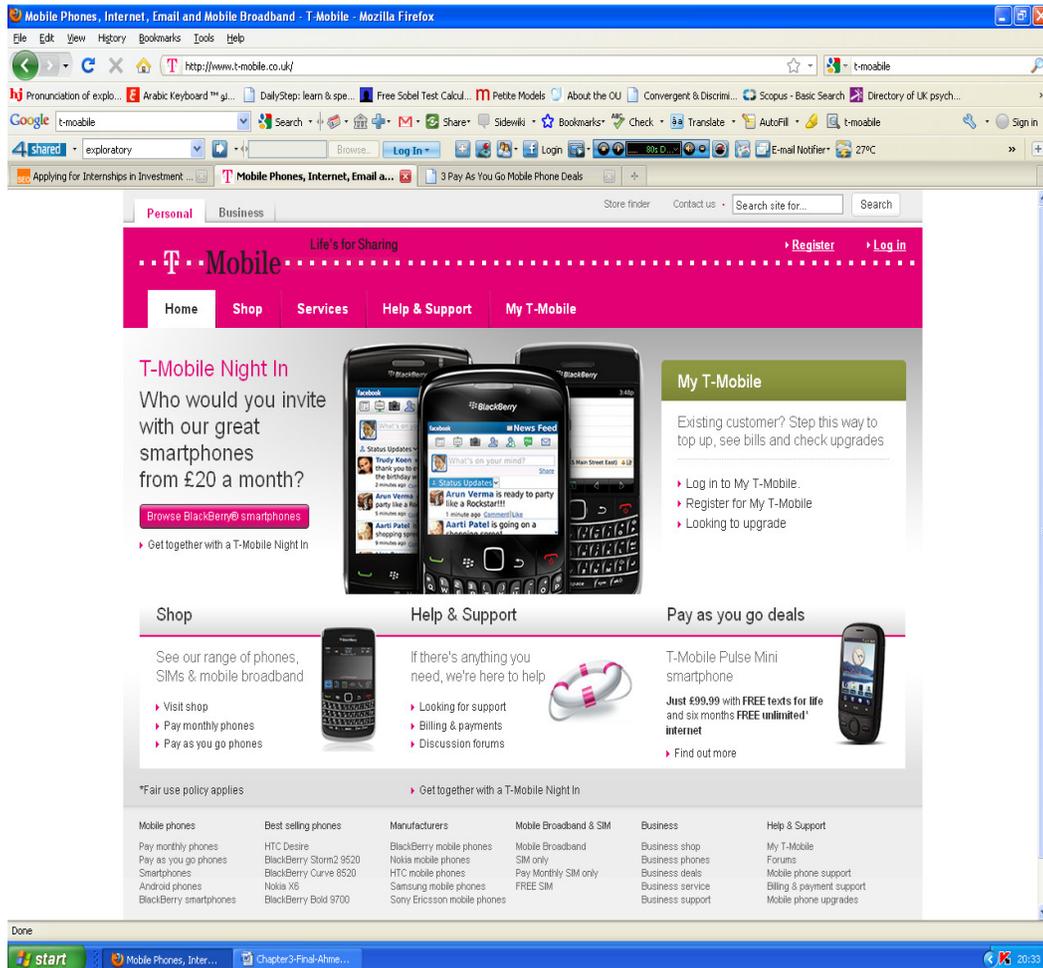
- **Website Presentation**

Website design is a key feature in the transaction function. Srinivasan *et al.*, (2002) focused on the character of websites, which they defined as the overall image or personality that an e-retailer projects to consumers through the use of style, colours, logos, and themes on the website. Holloway and Beatty (2008) stated that the website design covers the consumer's entire experience with the website, including the organisation of the website, the products offered, the prices of these product offerings, the online purchasing process, and shipment tracking features. Further, this dimension is the most frequently cited driver of satisfaction. In their study, Khalifa and Shen (2009; 2005) found that website dimension had a positive effect on E-SQ. Moreover, Devaraj *et al.*, (2006) examined the determinants of consumer satisfaction and preferences online. . They defined website design as important in building customer satisfaction online. Therefore, the above theoretical argument leads to the first hypothesis:

**Hypothesis 1a :** *Website Design* will have a positive effect on *E-SQ*

As mobile companies' websites are the field of this study and consistent with the hypothesis above, Figure 3.3 below presents a mobile company website (T-Mobile) as an example of the website presentation hypothesis.

**Figure 3.3:** Screenshot for T-Mobile Website Company /10th June 2007



Source: <http://www.t-mobile.co.uk>

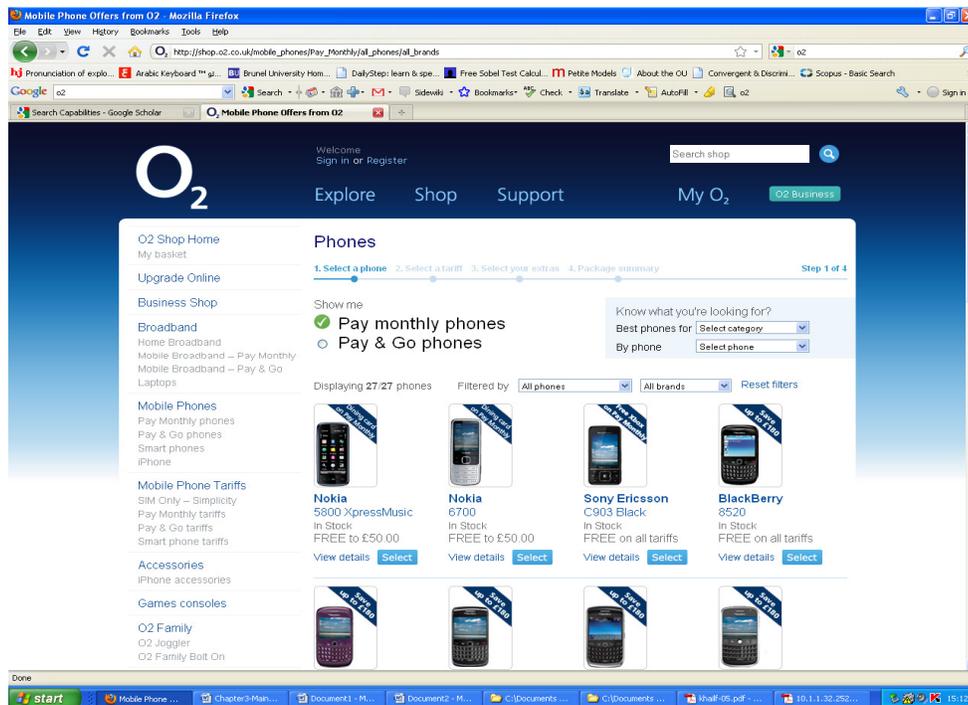
- **Search Capabilities**

This feature is especially important when the customer has to consider a large number of criteria in selecting the product. Its importance highlights the necessity to support the customer's decision-making process. Many mobile companies offer their products through their websites.

When a customer is looking for something specific, it is useless to search in product areas different from the one the desired product belongs to. Suppose a person is interested in buying a certain handset and the selected website also sells mobile accessories and gifts; it is self-evident that it would make sense to allow the customer to search from among the group of phones.

As the mobile companies' websites are the field of our study and consistent with the hypothesis above, Figure 3.4 below presents a mobile company website (O2) as an example of the search capabilities hypothesis. In Figure 3.4 we can see how these categories can be arranged on a mobile company's website.

**Figure 3.4: Screenshot for O2 Website Company /10th June 2007**



Source: <http://www.o2.co.uk>

Therefore, the above theoretical argument leads to the following hypothesis:

**Hypothesis 1b:** *Search Capabilities* will have a positive effect on *E-SQ*

- **Loyalty Programmes**

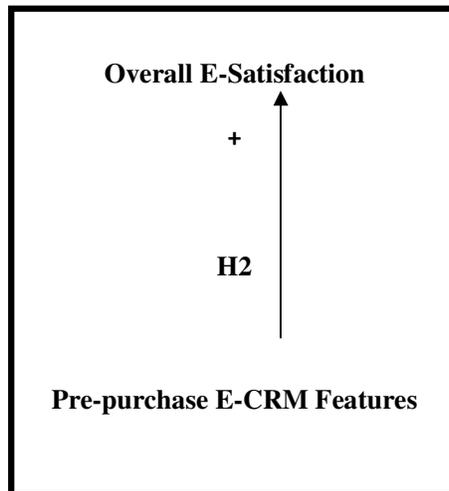
Yi and Jeo (2003) defined a loyalty programme as an integrated system of marketing actions that aims to make customers more loyal by developing personalised relationships with them. A growing numbers of online retailers encourage their customers to enrol on a loyalty programme by providing them with attractive membership benefits, (e.g., gifts... etc). Such programmes enable the online retailers to learn more about the online behaviour of registered members (e.g., click stream analysis) and hence achieve better satisfaction. Bolton *et al.*, (2000) argue that a loyalty programme with outstanding service and quickly earned rewards will help divert customers' minds from the price. Khalifa and Shen (2005; 2009) and Chaffey *et al.*, (2003) highlighted the importance of the loyalty programme at this stage (pre-purchase) and, according to them, the loyalty programme feature enables customers to acquire points on each purchase and, on the basis of these points, they can obtain some reward in terms of discounts, special terms and benefits. Furthermore, they reported a positive effect of the loyalty programme on E-SQ. Therefore, the above theoretical argument leads to the following hypothesis:

***Hypothesis 1c:*** *A Loyalty Programme will have a positive effect on E-SQ*

The notion about pre-purchase satisfaction appears to be generally well supported in the literature, which views pre-purchase satisfaction as a logical antecedent to the purchase. Without positive feelings towards buying some products for the first time, it is likely no purchase would be made. Although researchers debated a direct relationship between pre-purchase E-CRM features and E-SQ, some stated that pre-purchase E-CRM features influence E-SQ. For example, Khalifa and Shen (2005; 2009) found that pre-purchase E-CRM factors have a positive effect on E-Satisfaction. Furthermore, Liu *et al.*, (2008) found the same result in their study. Thus, this leads to the formulation of the following hypothesis:

***Hypothesis 2:*** *Pre-Purchase E-CRM Features will have a positive effect on E-SQ*

Figure 3.5 presents the hypothesis between pre-purchase E-CRM constructs and E-SQ as hypothesised above.



**Figure 3.5: The Relationship between the Pre-purchase E-CRM Construct and E-SQ**

### **3.4.2 At-purchase E-CRM constructs**

Pacheco (1989) suggested that an effective customer satisfaction system provides management with early warning signals, which enable the avoidance of loss of market share. Khalifa and Shen (2005; 2009) state that at-purchase E-CRM features are those that support activities associated with product selection and ordering, e.g., comparative shopping and order placement. This categorisation of at-purchase E-CRM features is consistent with previous research that distinguished between satisfactions at different stages of the transaction cycle.

Homburg and Giering (2001) state that at-purchase satisfaction occurs through personal interaction with the sales personnel and the capability of the seller to meet the individual needs of customers. In order to gain an in-depth and better understanding, at-purchase E-CRM constructs have been investigated in several studies (Feinberg *et al.*, 2002; Lu 2003; Cheung and Lee, 2005; Khalifa and Shen 2005; 2009). For example, Khalifa and Shen (2005; 2009) deconstructed at-purchase E-CRM features into five constructs (product customisation, payment methods, purchase conditions, comparative shopping, and dynamic pricing). Liu *et al.*, (2008) also deconstructed at-purchase E-CRM features into four constructs; namely, transaction capability, response, security/privacy and payment.

Following a comprehensive literature review (Khalifa and Shen, 2005; 2009; Lee and Joshi, 2006; Cheung and Lee, 2005; Wang and Hurang, 2004), the following factors are proposed as the dimensions of at-purchase E-CRM construct, namely: (a) security/privacy, and (b) payment methods. The above-mentioned at-purchase E-CRM factors related to this study are discussed below in detail. Thereafter, the related hypotheses are formulated.

- **Security/Privacy**

Cho and Park (2001) stated that a website's security is its ability to protect shoppers' personal information from unauthorised use or disclosure. Compared with the traditional economy, online consumers are more keenly aware of the need for privacy/security (Culnan, 1999; Friedman et al., 2000; Grewal *et al.*, 2004). Liu et al., (2008) highlighted the importance of the security/privacy factor which can affect the customer decision to perform a transaction via the company's website. Websites should therefore strengthen this construct at this stage to reduce any perceived risk and give customers sufficient confidence. Bruskin/Goldberg Research, for example, reports that 75% of Internet shoppers emphasise credit-card security as a major consideration when deciding whether or not to buy items online (Chain Store Age, 1999).

Therefore, the above theoretical argument and published reports imply that negative/positive perceptions of financial security can have a negative/positive effect on E-SQ levels. Hence, this leads to the following hypothesis:

***Hypothesis 3a : Security/Privacy will have a positive effect on E-SQ***

- **Payment Methods**

Another important factor contributing to online customer satisfaction is payment methods as suggested in our model. Payments methods are another form of customisation that enable the customer to choose a preferred payment method e.g., credit card, cash on delivery, and electronic cash (Khalifa and Shen, 2005). Clearly, e-payment methods are essential in e-commerce to achieve volume online transactions (Wang, 2001). Customers like to have more than one payment option when buying products/services online. Further, Obie (2000) stated that offering multiple payment options on a company website is a means of increasing sales by increasing customer convenience and confidence (Obie, 2000) . Liu *et al.*, (2008) found in their

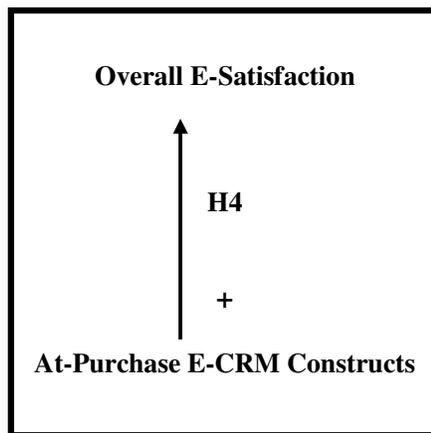
study that the payment methods offered have an effect on E-SQ. Thus, this leads to the formulation of the following hypothesis:

**Hypothesis 3b:** *Payment Methods will have a positive effect on E-SQ*

On the basis of the previous argument associated with the at-purchase E-CRM constructs it is hypothesised that:

**Hypothesis 4:** *At-Purchase E-CRM Constructs will have a positive effect on E-SQ*

Figure 3.6 below presents the relationship between at-purchase E-CRM and overall E-SQ as hypothesised above.



**Figure 3.6 :** The relationship between At-Purchase E-CRM Factors and E-SQ

### 3.4.3 Post -purchase E-CRM constructs

Khalifa and Shen (2009) stated that the post-purchase E-CRM functions are those related to after-sales services (e.g. problem solving and order tracking). Gardialet *et al.*, (1994) and Taylor and Burn (1999) suggest that consumers' thoughts and evaluation criteria in the pre-purchase stage differ from those at the post-purchase stage. Bearden and Teel (1983); and Oliver and Swan (1989) argue that customer satisfaction is mainly described as a post-purchase experience. The most common types of complaints about Internet transactions include refund and billing disputes, return and exchange policies, defective products, and poor customer service (Chen and Chang, 2003). Feinberg *et al.*, (2002) support the complaint ability of websites which provide a

specific area for customers to lodge their complaints. Furthermore, Feinberg *et al.*, (2002); and Khalifa and Shen (2005) support the availability of a problem-solving feature where visitors can solve their problems with products or services themselves with the help of online self-help functionality.

Following a comprehensive literature review (Khalifa and Shen 2005; 2009; Lee and Joshi 2006; Cheung and Lee 2005; Wang and Hurang, 2004), this research deconstructed post-purchase E-CRM features into three constructs, namely: (a) order tracking, (b) on-time delivery, and (c) customer service. The above-mentioned post-purchase E-CRM constructs related to this study are discussed below in detail. Thereafter, the related hypotheses are formulated. Table 3.2 below presents a description of post-purchase E-CRM features.

**Table 3.2: Post-purchase E-CRM Factors**

Post-purchase E-CRM	Dimension	Importance	Supporting references
On-time delivery	This can take several forms, some passive, e.g., online manuals, FAQs and others more interactive, e.g., expert systems, web agents.	Problem solving is important to enhance customer trust and retention.	Khalifa and Shen 2005 Lee and Cheung 2002 Cao et al 2003
Order tracking	Ability to track orders until delivered and follows up stage by stage.	Order tracking gives the customers the ability to track their orders until delivered which affects customer satisfaction.	Khalifa and Shen 2005 Cao et al 2003
Customer service	Customer support following the purchase of a product or service, e.g., warranty (or guarantee) and return policies.	After-sales service is important to enhance customer trust and long-term relationships.	Lee and Cheung 2002 Gefen 2002 Cheung and Lee 2005

- **Order Tracking**

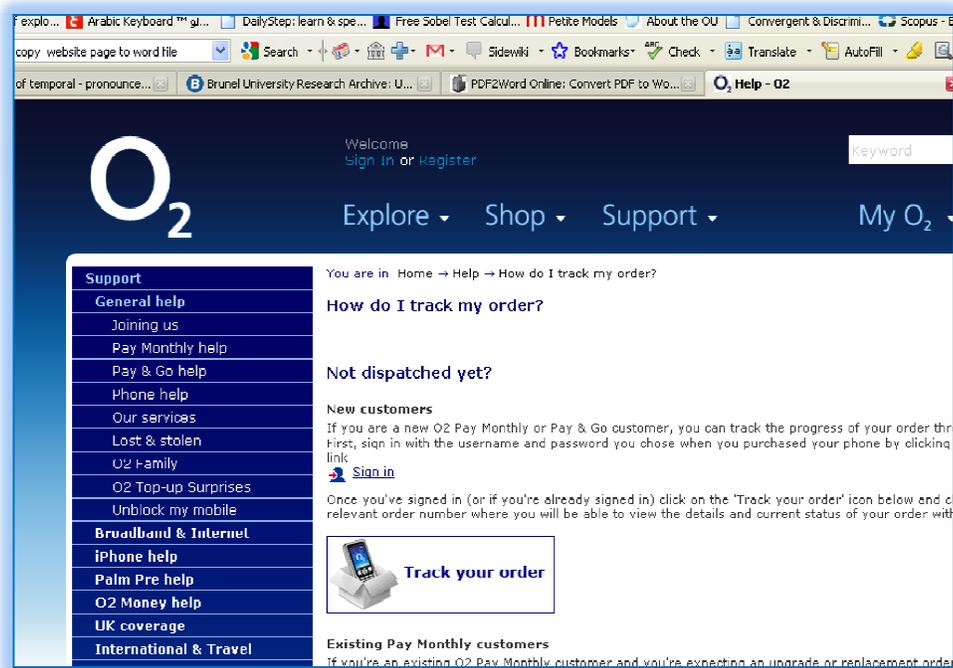
Khalifa and Shen (2009) defined order tracking as the ability to track orders until delivered and follow up stage by stage. Such a facility is at the core of E-CRM in that it helps to strengthen the relationship between the customer and the online retailer by making it more active.

Given that customers cannot physically handle the product and carry it home after an online purchase, support of order tracking removes uncertainty about the online order process and gives customers some sense of control about the status of their orders (Kim *et al.*, 2008). Therefore, the above theoretical argument indicates that negative/positive experiences of order tracking can have a negative/positive effect on E-SQ levels. Hence, this leads to the following hypothesis:

**Hypothesis 5a:** *Order tracking will have a positive effect on E-SQ*

As mobile companies' websites is the field of this study and consistent with the hypothesis above, Figure 3.7 below presents a mobile company website (O2) as an example of the order tracking hypothesis.

**Figure 3.7: An Example of an Order Tracking Feature**



Source: <http://www.o2.co.uk>

- **On-time Delivery and Customer Service**

Liu *et al.*, (2008) have indicated that delivery and customer service play a critical role in customer satisfaction. To satisfy customers in today's competitive e-business environment,

online retailers must focus on delivery and customer service. On-time delivery and a prompt reply to customers' concerns and enquiries are crucial. Late delivery may have a negative effect on satisfaction.

As shown by the 2004 China Online Shopping Report by CNNIC, 25 per cent of Chinese customers were not satisfied due to late delivery or wrong product delivery (CNNIC, 2004). In the online shopping environment, delayed delivery and ignorance of customers' concerns and enquiries will cause customer dissatisfaction (Liu *et al.*, 2008).

Because customers lack direct, face-to-face interaction with service providers, many issues still require human intervention. Therefore, company representatives must be able to answer customer enquiries and solve problems as soon as they occur. Hence, the above argument leads to the following hypotheses:

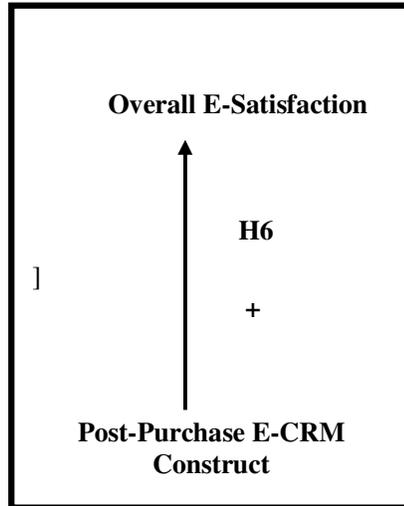
***Hypothesis 5b :*** *On-time delivery will have a positive effect on E-SQ*

***Hypothesis 5c :*** *Customer service will have a positive effect on E-SQ*

On the basis of the previous argument associated with post-purchase E-CRM factors the next hypothesis to investigate will be the relationship between the post-purchase E-CRM construct and overall E-SQ, therefore it is hypothesised that:

***Hypothesis 6:*** *Post-Purchase E-CRM Features will have a positive effect on E-SQ*

Figure 3.8 below presents the relation between post-purchase E-CRM and Overall E-SQ as hypothesised above.



**Figure 3.8: The Relationship between Post-purchase E-CRM construct and E-SQ**

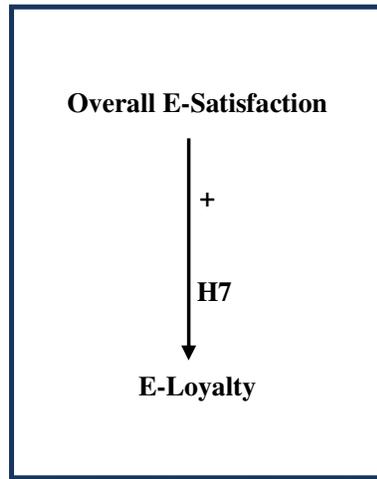
#### **3.4.4 The relationship between overall E-Satisfaction and E-Loyalty**

The relationship between E-Satisfaction and E-LOY has been well established in the literature (Amin, 2009; Deng et al., 2009; Casalo´et al., 2008; Chiou, 2004; Taylor and Baker 1994, Oliver, 1980). Researchers have explained loyalty as repeat purchase or retention and argue that customer satisfaction leads to loyalty. For example, a study by Van Riel *et al.*, (2002) highlighted the fact that customer satisfaction with online support will contribute to the creation of desired behavioural intentions in the form of loyalty.

Therefore, the above theoretical argument leads to the following hypothesis:

***Hypothesis 7: Overall E-Satisfaction will have a positive effect on E-LOY***

Figure 3.9 below presents the relationship between overall E-Satisfaction and E-LOY as hypothesised above.



**Figure 3.9: The Relationship between E-Satisfaction and E-LOY**

#### **3.4.5 The relationship between E-CRM constructs, E-Satisfaction, and E-Loyalty**

Companies must move from focusing solely on satisfying customers to creating and enhancing loyalty. Customer satisfaction is not a proxy for establishing relationships, but customer relationships are influenced by other relationship factors which include support behaviour and loyalty (Oliver, 1997), which in turn are affected by the mediating factor of satisfaction. Customers have the desire to continue visiting a site when they are satisfied with the service provision. These feelings of commitment will lead to actual repurchase behaviour. Sharp *et al.*, (1997) claim that attitudinal loyalty will encourage loyalty behaviours.

In fact, these arguments largely point to the need to understand better those E-CRM features and dimensions that are more likely to increase E-Satisfaction, and create E-Loyalty (Feinberg and Kadam, 2002). Further, there is agreement on the need to examine the influence of E-CRM on E-Satisfaction, and E-Loyalty (Ndubisi *et al.*, 2009, Yang and Tsai, 2007; Parasuraman and Grewal, 2000). Therefore, this study improves on prior research to provide empirical validation of an E-CRM model by determining its influence on E-Satisfaction and E-Loyalty.

Therefore, a full model of this study hypothesises that: E-CRM will influence E-Loyalty, which is affected by E-Satisfaction, and E-Satisfaction will mediate the relationship between E-CRM features and E-Loyalty. Thus, in the present study, the following relationships are hypothesised:

**Hypothesis 8a:** *E-SQ will mediate the effect of Pre-purchase E-CRM features on E-LOY*

**H Hypothesis 8b:** *E-SQ will mediate the effects of At-purchase E-CRM features on E-LOY*

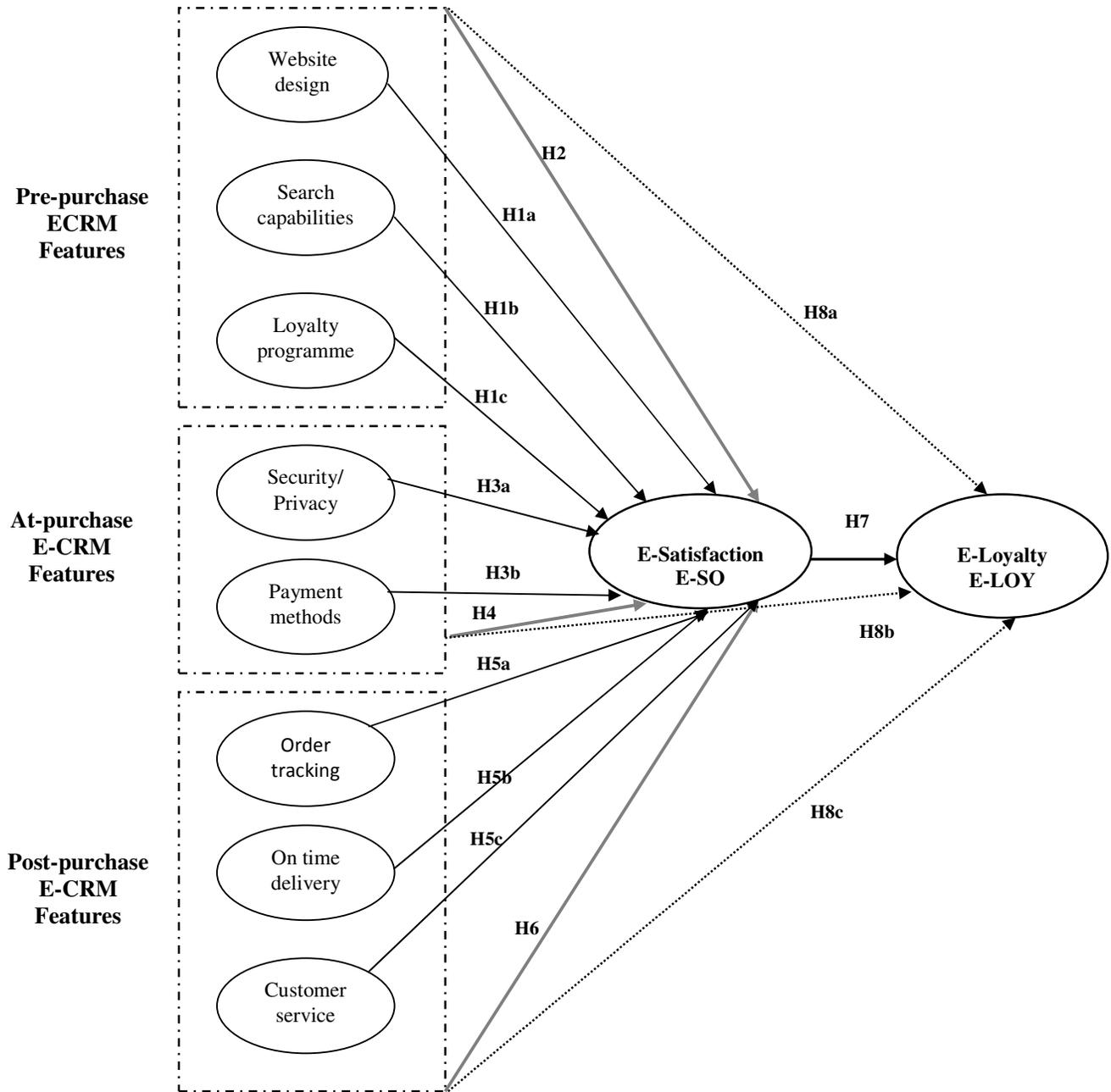
**Hypothesis 8c:** *E-SQ will mediate the effects of Post-purchase E-CRM features on E-LOY*

A list of full research hypotheses is presented in Table 3.3 below

HN	Description
H1a	Website Design will have a positive effect on E-Satisfaction
H1b	Search Capabilities will have a positive effect on E-Satisfaction
H1c	A Loyalty Programme will have a positive effect on E-Satisfaction
H2	Pre-purchase E-CRM Features will have a positive effect on E-Satisfaction
H3a	Security/Privacy will have a positive effect on E-Satisfaction
H3b	Payment Methods will have a positive effect on E-Satisfaction
H4	At-purchase E-CRM Constructs will have a positive effect on E-Satisfaction
H5a	Order Tracking will have a positive effect on E-Satisfaction
H5b	On- time Delivery will have a positive effect on E-Satisfaction
H5c	Customer Service will have a positive effect on E-Satisfaction
H6	Post-purchase E-CRM will have a positive effect on E-Satisfaction
H7	E-Satisfaction will have a positive effect on E-Loyalty
H8a	E-Satisfaction will mediate the effects of Pre-purchase E-CRM on E-Loyalty
H8b	E-Satisfaction will mediate the effects of At-purchase E-CRM on E-Loyalty
H8c	E-Satisfaction will mediate the effects of Post-purchase E-CRM on E-Loyalty

**Table 3.3: Research Hypotheses**

**Transaction Cycle**



**Figure 3.2: The Conceptual Model of the Relationship between E-CRM, E-SQ and E-LOY**

The proposed conceptual model will investigate the following research questions:

**RQ1:** Do pre-purchase E-CRM constructs (website presentation, search capabilities, and loyalty programmes.); at-purchase E-CRM constructs (security/privacy and payment methods); and post-purchase E-CRM constructs (order tracking, on-time delivery, and customer service) affect E-SQ when adopting E-CRM on UK mobile companies' websites?

**RQ2:** How strongly do pre-purchase E-CRM constructs (website presentation, search capabilities, and loyalty programmes.); at-purchase E-CRM constructs (security/privacy and payment methods); and post-purchase E-CRM constructs (order tracking, on-time delivery, and customer service) affect E-SQ when adopting E-CRM on UK mobile companies' websites?

**RQ3:** Does E-SQ affect and lead to E-LOY on UK mobile companies' websites?

**RQ4:** Do pre-purchase E-CRM constructs; at-purchase E-CRM constructs and post-purchase E-CRM constructs affect E-LOY when adopting E-CRM on UK mobile companies' websites?

**RQ5:** How strongly do pre-purchase E-CRM constructs; at-purchase E-CRM constructs and post-purchase E-CRM constructs affect E-LOY?

**RQ6:** Does E-SQ mediate the relationship between pre-purchase E-CRM constructs; at-purchase E-CRM constructs, post-purchase E-CRM constructs and E-LOY?

### 3.5 Conclusions

Based on the literature review, there are different elements of E-CRM; these elements may be connected to system quality, information quality and/or service quality. Hence, it is valuable conducting this study to investigate the effects of various E-CRM features on E-Satisfaction and E-Loyalty, and within different stages of the transaction cycle (pre-purchase, at-purchase and post-purchase). Chapter three has discussed the concepts of E-CRM features, E-Satisfaction and E-LOYalty. The first section concentrated on developing the theoretical framework of this study , which contains five major constructs:

- Pre-purchase E-CRM features
- At-purchase E-CRM features
- Post-purchase E-CRM features
- E-Satisfaction
- E-Loyalty

This study identified five variables that are considered relevant to the research problem. The independent variables (IV) for this study include pre-purchase E-CRM, at-purchase E-CRM and post-purchase E-CRM, while the use of E-Satisfaction (E-SQ) and E-Loyalty (E-LOY) are given as the dependent variables (DV). These variables build up the theoretical framework of this study which is in line with the objectives of this research.

The next section discussed the theoretical linkage between the constructs, followed by development of the conceptual model for the study as shown in fig. (3.2). in section 3.5, the main research constructs and research hypotheses are discussed. The main E-CRM factors were classified based on the stages of a transaction cycle (pre-purchase, at-purchase, and post-purchase). The relationships between the constructs found in this study have been developed into a number of hypotheses to be tested as described in the next chapter.

This chapter has helped to develop a conceptual model that shows all the E-CRM features affecting E-Satisfaction and E-Loyalty. As seen in Fig. (3.2), E-CRM features were identified in three stages of a transaction cycle. Drawn from a comprehensive literature review the

following factors were proposed as the dimensions of pre-purchase E-CRM construct, namely: (a) website presentation, (b) search capabilities, and (c) loyalty programmes, also the following factors were proposed as the dimensions of at-purchase E-CRM construct, namely: (a) security/privacy, and (b) payment methods. And the following factors were proposed as dimensions of post-purchase E-CRM construct, namely: (a) order tracking, (b) on-time delivery, and (c) customer service.

However, in developing the proposed model, a number of gaps have been highlighted through a review of the literature. Therefore, hypotheses have been proposed to bridge these gaps, and as a result, offer a further understanding of the phenomenon of E-CRM features. Thus, this research intends to fill the research gap by separately testing the relations between each of the dimensions of E-CRM, E-SQ and E-LOY.

It is expected that the results will not only provide e-retailers with the knowledge on E-CRM features they should focus on at each stage of transaction cycle, but also may help explain various aspects of E-loyalty formation and the "mixed effectiveness" of customer loyalty enhancement programs in Internet shopping. The domain problem has been addressed through the presentation of a conceptual model, which integrates 'key' E-CRM features that affect E-Satisfaction and E-Loyalty.

The next Chapter will discuss the research design and data collection method and the methodology undertaken during this research.

## **Chapter 4: Research Design and Methods**

### **4.1 Introduction**

In the previous chapter, the fundamental theoretical framework of this study was developed. This chapter describes the methodology that will be undertaken in relation to justification of the research paradigm, questionnaire design, sampling process and data collection and administration. Development of the research instrument will be described as well as the results from a pilot study. In addition, this chapter introduces the planned analysis strategy to test the hypotheses of this study. Finally, ethical considerations relating to the research design of this study are discussed and conclusions are drawn.

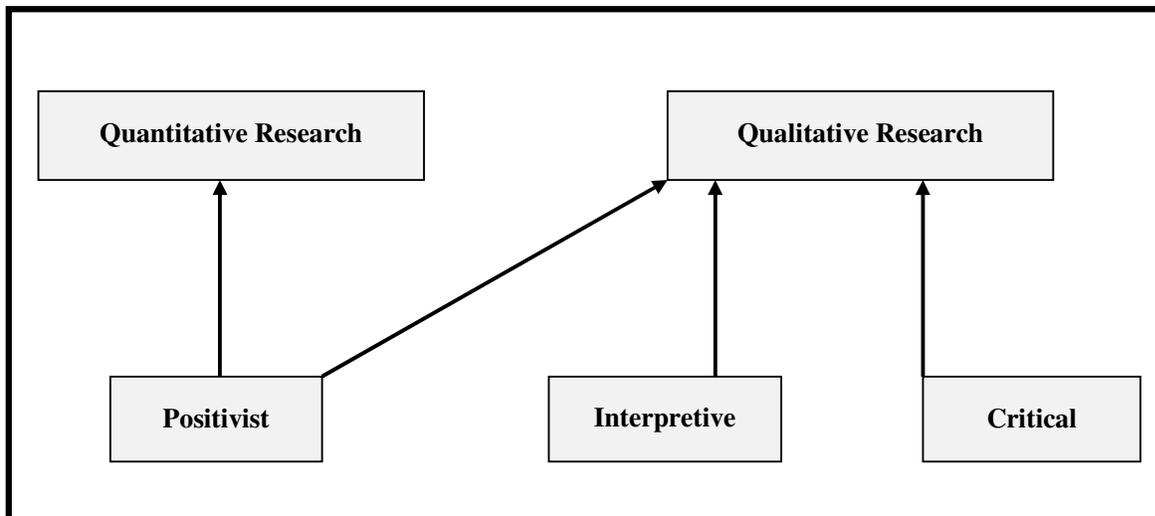
The researcher discusses in detail the empirical research methodology including data collection and data analysis. The data collection section is described in five parts as (a) data collection (b) sample selection and participation (c) developing the survey questionnaire (d) and (e) pilot study. After that reliability and validity are discussed to justify the data. The chapter also discusses what kind of data is required for examining the variables. Then, data analysis processes and statistical techniques are selected to analyse the data. Finally, the research ethical issues discussed to ensure the data is unbiased and can support generalisability. Conclusions are the final component of this chapter.

## 4.2 Justification of Paradigm and Methodology

Choosing the most appropriate research paradigm is the most important initial research design step. This section will review and evaluate research paradigms to identify the most suitable paradigm for this research. A paradigm reflects the philosophy of knowledge while methodology focuses on the practicalities of how we come to know (Trochim, 1998).

A paradigm serves a number of purposes: (1) it guides professionals as it indicates important issues challenging any discipline; (2) it develops models and theories that permit practitioners to attempt to solve these issues; (3) it establishes criteria for tools such as methodology, instruments, and data collection that might enable the solution of these issues; (4) it provides the principles, procedures, and methods to be considered when similar issues arise again (Filstead, 1979).

Mingers (2001; 2003) identified three major paradigms that researchers can select in order to guide a particular research. These are positivism, interpretivism and critical research (Figure 4.1 below).



**Figure 4.1: Epistemological assumptions for qualitative and quantitative research:**

Adopted from: Straub et al, (2005)

### **4.2.1 Positivism**

Positivism is an epistemological position that advocates the application of the methods of the natural sciences to the study of social reality and beyond (Neuman, 2006). In the social sciences, there is an attempt to discover the factors which cause phenomena in much the same way that scientists construct various theories to explain the behaviour of dependent variables. Positivism maintains that knowledge should be based on real facts, not abstractions, thus knowledge is predicated on observations and experiment in contrast to the phenomenological paradigm of searching for the inner meaning or the essence of things (Robson, 2002). The principal data collection techniques in positivism include experiments and sample surveys (Christie *et al.*, 2000). Positivism is considered as a link between theory and the research and attempts to test theory in order to increase predictive understanding of phenomena. Orlikowski and Baroudi (1991) defined research as positivist if there was evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and the drawing of inferences about a phenomenon from the sample to a stated population. Straub *et al.*, (2005) described positivism from the statistical point of view to suggest that the objective of statistics (mainly T, F, and Chi-square statistics) employed by quantitative positivist research (QPR) is to falsify the null hypothesis, which is the assumption that the data in the dependent variable are not affected by the data in the independent variable(s).

Since this research provides evidence of propositions (Chapter 2), quantifiable measures of variables (Chapter 4), hypothesis testing and the describing of a phenomenon from a sample to a stated population (chapters 5 and 6), the positivist epistemology was considered to be appropriate for this research. A further discussion on this issue is provided in last paragraph of this section. However, the next two paragraphs briefly discuss the relevance of the other two epistemologies for this research.

### **4.2.2 Interpretivism**

Boland (1985) stated that hermeneutics and phenomenology are the philosophical basis of interpretive research. Mayers (1997) suggested that interpretive researchers start out with the belief that access to reality is only through social constructions such as language, consciousness

and shared meanings. Compared with positivist research, the focus of interpretivist research is on the full complexity of human sense or meaning humans make of events (Kaplan and Maxwell, 1994). According to Hart (2002), laboratory experiments, field experiments, surveys (aiming at statistical significance), simulation, formal theorem proof, and case studies (arguable) are some of the research methods adopted within the positivist basis, whereas action research, grounded theory, ethnographic studies, case studies (also arguable), and meta analysis (a hybrid) are adopted within interpretivism. .

Since interpretivist epistemology focuses upon the complexity of human sense making, it was necessary to pursue research employing qualitative data collection (Straub et al., 2005) with limited respondents. The purpose of this research was to gather evidence in a quantitative manner; hence interpretivist epistemology was considered to be less relevant for this research.

### **4.2.3 Critical Theory**

Critical theory is extremely useful to investigate social, political, cultural economic, ethnic and gender values. Because such issues are investigated using ethnographic and historical studies, they tend to take a long time to complete (Perry, 2000). Critical theory may be the most appropriate paradigm when the study is attempting to intervene in the transformation of the respondents' mental, emotional and/or social structure (Christie et al., 2000). However, as stated by Guba and Lincoln (1994), critical theory is only suitable for research when the researcher aims to be a 'transformative intellectual' who liberates people from their historical mental, emotional and social structures. Critical research focuses on the oppositions, conflicts and contradictions in contemporary society (Mayers, 1997).

Critical epistemology was not suitable for this research. This is because it is not the purpose of the current research to focus upon oppositions, conflicts and contradictions; instead it investigates E-CRM factors that, at this particular point in time, affect E-Loyalty. An additional reason is that the purpose of this research was to gather evidence in a quantitative manner, which critical epistemology does not facilitate.

Overall, from the above discussion, it can be seen that the positivism paradigm is the most suitable one for this research. This is because E-CRM implementation is considered to be one of the most mature areas within IS and marketing research. Due to a long tradition of research in this area, a number of theories and models have been developed and validated for examining a variety of technological objects. Consequently, a variety of constructs (dependent and independent variables) suitable for diverse situations are available which can rationally be adapted to examine the adoption and diffusion of new technologies (Venkatesh *et al.*, 2003). This was the basis for developing a conceptual model of E-CRM and formulating the research hypotheses presented in Chapter 3. Following the description of positivism by Straub *et al.*, (2005), this research will employ statistics, such as the T, F, and Chi-square test, to determine if this data supports the research hypotheses.

### **4.3 Research Design**

This research attempts to examine independent variables such that pre-purchase E-CRM features (website presentation, search capabilities, and loyalty programmes.); at-purchase E-CRM features (security/privacy and payment methods); and post-purchase E-CRM constructs (order tracking, on-time delivery, and customer service) with dependent variable such that E-Satisfaction and E-Loyalty. Initially, the literature was reviewed to explore gap in the research and develop an understanding of the investigation domain. It was observed that E-Satisfaction is affected by pre-purchase E-CRM features, at-purchase E-CRM features, and post-purchase E-CRM features. From that point of view, researchers have empirically examined the affects of different E-CRM features on E-Satisfaction employee and found positive results (Feinberg *et al.*, 2002; Cheung and Lee, 2005; Khalifa and Shen, 2005; 2009). Thus, this research explores the influence of different E-CRM features on E-Loyalty at different stages of transaction cycle.

An appropriate research design is essential as it determines the type of data, data collection technique, the sampling methodology, the schedule, and the budget (Hair *et al.*, 2003). Primarily, it helps to align the planned methodology with the research problems (Churchill and Iacobucci, 2004).

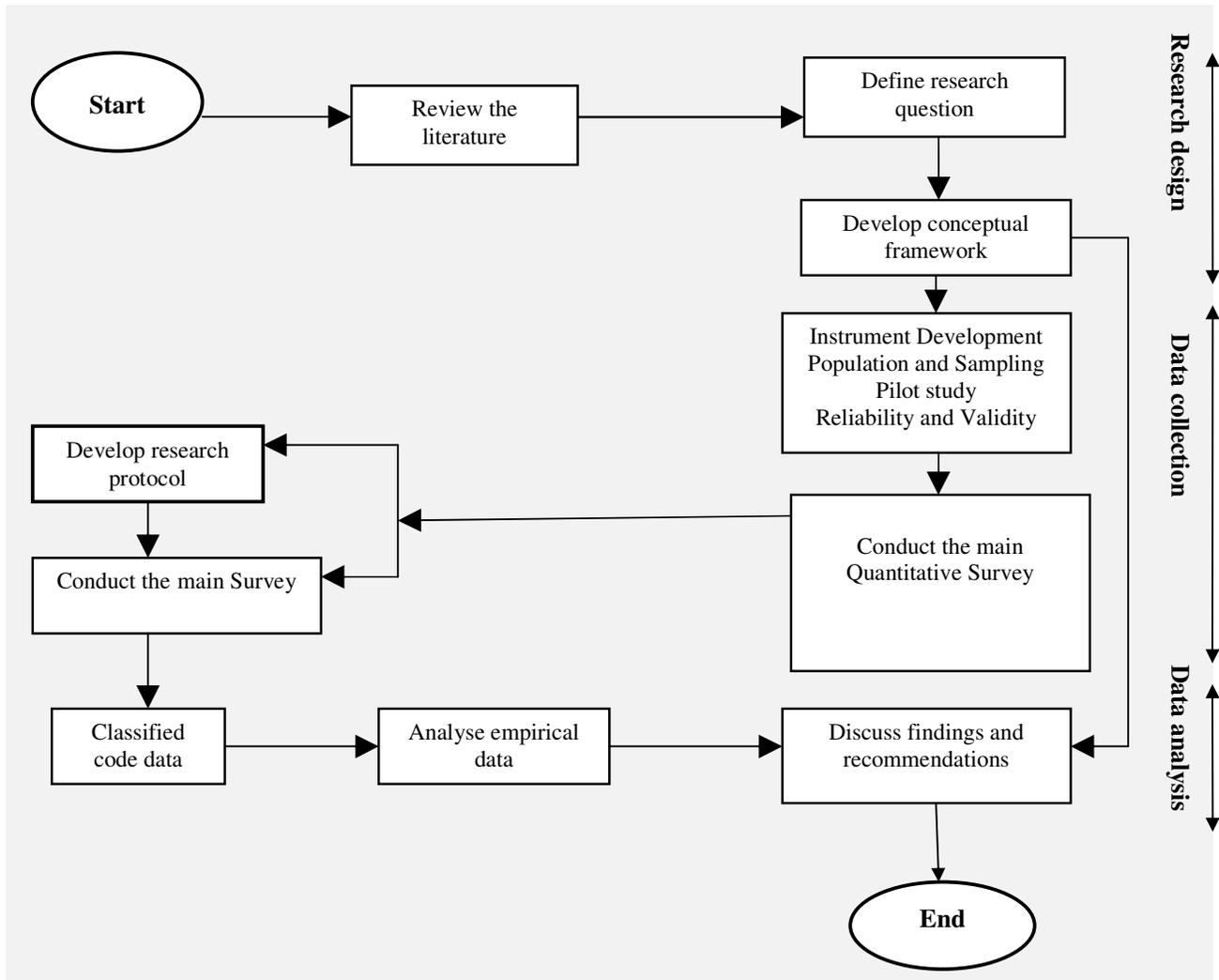
For this research, a research design has been developed to focus on the research step by step. In fact, the research design is based on a research model that is implanted in the assumption that research is perceived as a sequence of steps closely interrelated, and the success of one step is dependent on completion of the preceding step (Sarantakos, 1993). Although, research design helps to draw boundaries for the research in defining the study setting, type of investigation that needs to be carried out, the unit of analysis and other relevant issues related to research, Hussey and Hussey (1997) argued that the research process can only be successful if the researcher makes the right choices in the research design.

The research design applied for this study is based on the hypothetico-deductive method. This method starts from a literature review, theoretical framework, formulating hypotheses and making logical deductions from the results of the study (Sekaran, 2006). The hypothetico-deductive method broadly divides a research design into a series of steps that lead to answering the research questions (Neuman, 1995). Figure 4.2 lists the step-by-step process that will be used to conduct the study.

This research design describes the hypothetico-method that leads to answering the research questions and justifies the hypotheses. The research process started with extensive literature review helping the researcher to create an awareness of the research domain. Through establishing a gap in the literature, an understanding was developed of the research domain. After finding the gap and developing understanding of the research in the literature, a conceptual model was developed to represent the intended empirical research. In the conceptual model several factors have been connected regarding understanding of employee attitudes and behaviours in a change situation. To test the model, data is required to validate the research hypotheses. The type of data has been determined as quantitative, the epistemology stance determined, and a research strategy identified.

In view of the above discussion, the research follows the positivist philosophical approach for data collection. According to Cohen *et al.* (2000), the positivist approach starts from the literature review and develops hypotheses on the basis of a conceptual framework. Thus, in this philosophical stance, data can be collected by a survey questionnaire. According to Chen (2005, p-153), attitudes measurement often involves asking respondents not just what they feel about a particular object, but what they believe about it. In positivist methodology, survey questionnaires

use Likert scaling to measure the attitudes of individuals (Miller and Brewer, 2003) because the reliability of Likert scales tends to be good and partly because of the greater range of answers permitted to respondents (Oppenheim, 1992, p-200).



**Figure 4.2 Research Design**

Based on the need of research for empirical study, it was decided that this research design used quantitative research methods as a strategy for theory testing. This research design follows a plan of action or protocol because of important tool for various following reasons.

1. To put the task of data collection in a manageable format.
2. To ensure that required data are gathered.
3. To ensure that the research follows a particular schedule.
4. To follow the path by which knowledge was developed.

Within the protocol, a quantitative research method has been developed to gather data as required for the analysis. The method is in the form of a survey questionnaire, in which there is a series of questions relating to the E-CRM features that can affect E-Satisfaction and E-Loyalty.

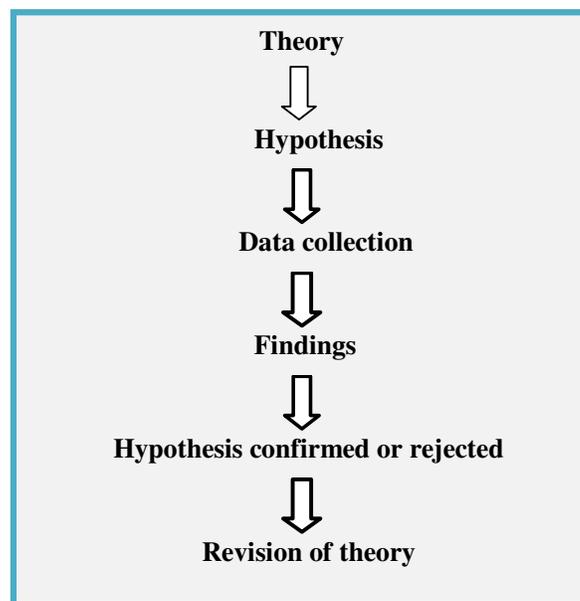
A survey questionnaire needs to develop a protocol and address ethical issues before collecting the full scale data. Initially, to assess the reliability and validity of the instrument, a pilot study was conducted to check internal consistency, questionnaire items, language and time taken to complete it and validity was measured through field experts. The study concludes with an extensive discussion and findings suggesting recommendations for future research and limitations.

This study is a cross-sectional survey where data is collected at one point in time from samples to determine relationships between variables at the time of the study. Although the researcher acknowledges the limitations of this type of investigation, it is beyond the timeframe of this research project to make use of a longitudinal study.

There are two different approaches regarding the research design: the inductive and the deductive research approaches.

### 4.3.1 Deductive versus inductive

The deductive approach represents the most common view of the nature of the relationship between theory and research (Bryman and Bell, 2007). According to Sekaran (2000), the deductive method is suitable if one starts with a theoretical framework, formulating hypotheses and logically deducing conclusions from the results of the study. A research project should be designed to test a hypothesis. This process is shown in Table 4.3.



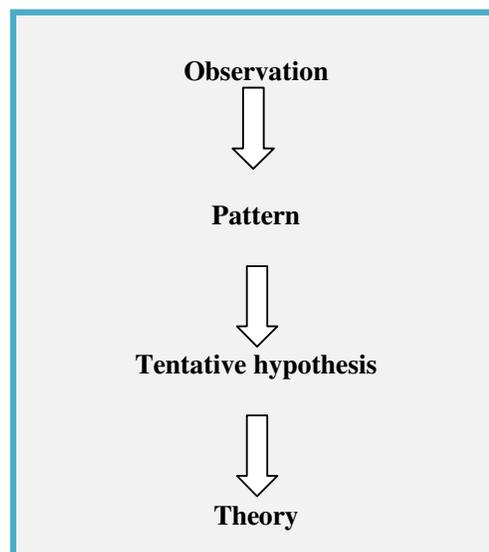
**Figure 4.3: Process of deductive approach: Bryman and Bell, (2007)**

The first step in the deductive process is the generation of theories and hypotheses. The generation of ideas could be based on personal experience or could be theories and hypotheses that stemmed from a literature search that brought together other researchers' ideas. It could also stem from a desire to find a solution to an existing problem. The second step after generation of theories and hypotheses in the deductive process is operationalisation of the concepts in the theories or hypotheses in such a way that those concepts can be measured through empirical observations. The next step in the process involves identifying and deciding between alternative techniques or approaches for measuring the operationalised concepts, which also include the

selection and design of the research methodology to be used (e.g., research instrument, sampling plan, data collection methods, and methods of analysis and interpretation of empirical observations and measurements).

The final step in the deductive process would be the falsification and discarding step, in which researchers decide the extent to which chosen theories and hypotheses are falsified and the extent to which parts of these theories or hypotheses, if any, remain un-falsified (Lancaster, 2005).

In the inductive process, researchers observe certain phenomena and arrive at conclusions; the researcher logically creates a general suggestion based on observed evidence or facts. From an inductive standpoint, theory is the result of research, and the processes of induction involve drawing general conclusions from specific observations (Rryman and Bell, 2007). The inductive process involves steps that can be thought of as opposite to the deductive approach, moving from specific observations to broader generalisations and theories. In inductive reasoning, researchers begin with specific observations and measures, start to detect patterns and regularities, formulate some tentative hypotheses that can be explored, and finally end up developing some general conclusions or theories (Trochim and Donnelly, 2005). It is helpful to connect these approaches to the aforementioned research philosophies: the deductive approach owes more to positivism while the inductive approach owes more to phenomenology or social constructionism.



**Figure 4.4: Process of inductive approach**

The main objective of this study is to determine the relationships among E-CRM features, E-Satisfaction and E-Loyalty. In the current study, the deductive approach was considered as the most appropriate in order to test the theory through empirical investigation.

The study's perspective refers to doing a longitudinal versus cross-sectional study. When data is collected at more than one point in time, the study is considered longitudinal (Creswell, 2003). A cross-sectional (also called one-shot) study is done when data is collected just once over a period of time which may be days, weeks, or months in order to answer a research question. A cross-sectional study is a widely used research design in the social sciences which is associated either with questionnaires or structured interviews. It entails the collection of data (qualitative or quantitative) with more than one case (usually more than 15) within a specific period of time in order to detect associations between variables (Robson, 2002).

This study is a cross-sectional survey where data is collected at one point in time from samples to determine relationships between variables at the time of the study. Although the researcher acknowledges the limitations of this type of investigation, it is beyond the timeframe of this research study to make use of a longitudinal study.

#### **4.4 Quantitative and Qualitative Data**

According to Myers (1997), qualitative data is derived from various sources that include observation and participant observation, interviews and questionnaires, and documents and texts. Qualitative data are useful means to understand people and the social and cultural contexts within which they live (Myers, 1997). Comford and Smithson (1996) explained quantitative data as metrics (numbers) that can be used to describe the phenomenon (objects and relationships) under study. Straub *et al.*, (2005) argued that the numbers come to represent values and levels of theoretical constructs and concepts and the interpretation of the numbers is viewed as strong scientific evidence of how a phenomenon works. Sources of quantitative data in the social sciences include survey methods, laboratory experiments, formal methods (e. g. econometrics) and numerical methods such as mathematical modelling (Myers, 1997).

Given that the data used in this research were collected employing survey methods (Myers, 1997) and represent values and levels of theoretical constructs (Straub et al., 2005) such as website design, security/privacy, payment methods, order tracking, customer service, and E-Satisfaction, the data collected in this research belong to the quantitative category rather than qualitative.

#### **4.4.1 Justification for Quantitative Approach**

The epistemology focuses strongly on hard human facts and causes. This research approach emphasises realism of context and the use of quantitative methods of research such as facts and causes of social phenomena. It assumes that the social world is composed of relatively concrete empirical artefacts that can be identified, studied and measured through approaches derived from natural sciences. Thus, for the purpose of conducting this research, it was felt that understanding the nature of 'individual behaviour as online customer' demanded a more contextually oriented study perspective. Furthermore, Given that the data used in this research were collected employing survey methods (Myers, 1997) and represent values and levels of theoretical constructs (Straub et al., 2005) such as website design, security/privacy, payment methods, order tracking, customer service, and E-Satisfaction, the data collected in this research belong to the quantitative category rather than qualitative.

#### **4.5 Justification for Use of a Survey as the Chosen Research Approach**

There are different methods for data collection identified in the literature, including mail, face-to-face, telephone, email, and a combination of these methods (Cooper and Schindler, 2001; Sekaran, 2000; and Zikmund, 1997). The decision to choose a survey method may be based on a number of factors which include sampling, type of population, question format, question content, response rate, costs, and duration of data collection (Aaker *et al.*, 2000). Webber (2004) believes that the choice of different research methods is largely due to factors such as type of training provided for the researcher, social pressures associated with advisors and colleagues and preferences of obtaining certain types of insight during the research.

When the researcher considered an organisation as a unit of analysis, the case study approach was favoured. In studies related to individual users or consumers, the survey approach was favoured (Dwivedi, 2005). This can be attributed to issues such as convenience, cost, time and accessibility (Gilbert, 2001). Furthermore, the aim of this research was to examine the relationship between E-CRM features, E-Satisfaction and E-Loyalty. Therefore, in order to get an overall picture of the research issue, collecting data from a large number of participants was required. This meant employing any other approach such as ethnography which uses interviews or observation, as data collection tools would require a substantial amount of financial resources, and time. As this is a student research study, all three factors limited the ability of the researcher when investigating this research issue.

Further, selection of the approach in this study was also influenced by the type of theory and models employed to examine the causal relationships between the variables (Chapter 3).

The conceptual model proposed in Chapter 3 includes a number of research hypotheses that need to be tested before concluding this study. This requires collecting quantitative data and statistical analysis in order to test the research hypotheses. Although a number of research approaches are available within the category of quantitative positivist research (Straub *et al.*, 2005). on the basis of the above-mentioned analysis, it was decided that the survey was one of the most appropriate and practicable research approaches to conduct this research.

This study used a self-administered survey because it had the advantages of versatility, speed, and also worked as a check-point to ensure that all respondents in this study could understand the concepts they are answering (Grossnickle and Raskin, 2001). The key strengths of a self-administered survey are mainly cost and accuracy (Kumar and Day, 1998). A self-administered survey is easily designed and administered. In addition, respondents can carefully consider and answer questions at their discretion. In a survey, respondents may be asked a variety of questions regarding their behaviour, attitudes, demographics and lifestyle characteristics (Malhotra, 1999). Furthermore, Kassim (2001) stated the following advantages when using a self-administrated survey:

- The questions can be answered by circling the proper response format and with an interviewer present; respondents could seek clarity on any question so as to meet consistent question objectives (Aaker *et al.*, 2000).
- A higher response rate of almost 100% can be assured since the questionnaires are collected immediately once they are completed (Sekaran, 2000).
- Higher privacy of respondents because respondents are not required to reveal their identities (Burns and Bush, 2002).
- This method offered the highest degree of control over sample selection (Burns and Bush, 2002).

#### **4.5.1 Sample Design**

A sample is defined as part of the target population, carefully selected to represent the total population (Cooper and Schindler, 2001). The process of sampling involves selecting a sufficient number of cases from the target population to make conclusions about the whole population. Since this research is studied from customers' perspective, the target population of this research is Internet shoppers in UK (aged 18 or over) who had favourite mobile phone websites they particularly like to visit to search for information and/or to purchase mobile phone items. However, it would be too expensive and impractical in reality to gather a complete list of

people across the United Kingdom who purchased mobile phone items directly from mobile phone websites; therefore, for convenience, it was decided that the customers would be 'students'.

Therefore the target population of this research study is all those customers of mobile phone websites who are students at Brunel University, West London (U.K.) and used to purchasing mobile phone items online. Hence, it is reasonable to use convenience sampling in this research.

According to Loehlin (1992), the researcher should plan to collect at least 100 cases, with 200 being better for this class of model with two to four latent variables. The consequences of using smaller samples include more failures, inappropriate solutions, and lowered accuracy of parameter estimates (Loehlin, 1992). Hair *et al.*, (1998) recommended the appropriate sample size for model estimation is a size between 100 to 200. For factor analysis, the minimum sample size is required to be at least five times greater than the observed variables.

A total of 44 observed items were included in this study: 5 items for the website design construct; 4 items for the loyalty programme construct; 4 items for the search capabilities construct, 4 items for the security/privacy construct; 3 items for the payment methods construct; 4 items for the on-time delivery construct; 4 items for the order tracking construct; 4 items for the customer service construct; 5 items for the E-Satisfaction construct, and 7 items for the E-Loyalty construct.

A self-administered questionnaire was used to conduct this research. A self-administered questionnaire has the advantages of flexibility, speed, and also worked as a check-point to ensure that all respondents in this study could understand the concepts they are answering (Grossnickle and Raskin, 2001).

#### **4.5.2 Reasons for adopting convenience sampling in this thesis**

This thesis uses a non-probability convenience sampling technique. Convenience sampling enables the researcher to select a number of cases whose size depends mainly on participants' availability and the ease of data collection. It consists of groups of individuals who are easily accessible to the researcher. The advantage of this method is that it enables the researcher to cope with the resource available for the research. Although random sampling techniques are not employed consistently throughout the methodology of this research, it was found that the sample characteristics satisfied the criteria for the target population, as suggested by previous research on target populations. This thesis targets users of the Internet; however, the Internet represents a common problem for surveying since there is no central registry of all Internet users. As such, research targeting Internet users attempts to answer questions about all users by selecting a subset of users to participate. Students have been the subject matter of research in consumer behaviour studies which have contributed valuable results (McKenzie, 2008; Russell, 2005; Eagle and Brennan, 2007).

Student samples are appropriate to online shopping research (e.g., Balabanis and Reynolds, 2001; Fiore *et al.*, 2005; Kim *et al.*, 2007), because they are computer literate and have few problems using new technology. Students also are likely customers for electrical goods (Jahng *et al.*, 2000). Furthermore, this sample reflects the characteristics of those who are currently most likely to have access to the Internet. It also serves as a good sample for Internet buyers in general, and it is an important part of the population of online buyers (Grabner-Kräuter and Kaluscha, 2003). Compared to the general population, students are the heaviest users of internet technologies (Hoffman *et al.*, 2004). Because students represent a potential ready division for internet services and are believed to be frequent and active internet users (Jun *et al.*, 2003; Lee and Lin, 2005), they are commonly used in studies on internet technologies (e.g. Athiyaman, 2002; George, 2004; Goldsmith and Lafferty, 2002). Students were used to examine:

- (a) Attitudes toward web advertising (e.g. Brackett and Carr, 2001).
- (b) Factors that affect web advertising recall and recognition (e.g. Danaher and Mullarkey, 2003).
- (c) Relationships between personal characteristics and internet usage (e.g. Engelberg and Sjöberg, 2004).
- (d) Antecedents of online purchasing (e.g. Kuhlmeier and Knight, 2005).

(e) Effects of consumer characteristics on online banking adoption (e.g. Lassar, Manolis, and Lassar, 2005).

Several of the studies use students for their surveys (e.g., Aladwani and Palvia, 2002; Lee and Lin, 2005; and Loiacono *et al.*, 2002). Yoo and Donthu (2001) gather data from convenience samples of students who were asked to visit and evaluate internet shopping sites over a period of 2 days. Loiacono *et al.*, (2002) also use a convenience sample of students to visit and evaluate websites. They told undergraduate students to explore a selected website and asked them to imagine that they are searching for a book. However, online customers commonly are younger and more highly educated than conventional customers, making a student sample more representative of the online customer population (OECD, 1998). Furthermore, using a student sample may represent the future e-shopping patterns in the population at large. Therefore, the profile of students is closer to that of the online customer population than is the profile of the population generally.

### **4.5.3 Non-response Bias**

#### **4.5.3.1 Non-response**

The most important feature for a sample is that it sufficiently represents the target population. It is important that the research sample is sufficiently large to give us the necessary confidence in our data. Therefore, we needed to secure as high a Response rate as possible in order to ensure that our sample would be comprehensive. Non-respondents damage sample validity because of the distortion created in representing the population through refusal to be involved in the research. As a result, the respondents will not represent the whole population and the data collected may be biased (Saunders *et al.*, 2009).

The causes of non-response include: refusal to respond, ineligibility to respond or contact failure. The most common is the refusal to participate or be involved in the survey, without offering a reason (Saunders *et al.*, 2009). According to Churchill (1995, p.662): — Non-response is a problem for any survey, because it raises the question of whether those who did respond are different in some important way from those who did not respond.

#### **4.5.3.2 Non-response Bias**

A bias sample can be defined as a sample that is systematically different to the population from which it was drawn (Fowler, 2002). This non-response bias occurs when a significant number of people in the survey sample fail to respond and have relevant characteristics that differ from those who do respond (Dillman, 2000). In such cases, the non-response is selective. As an indication of the importance of understanding non-response bias, Dillman lists non-response error as one of the four primary sources of survey error (2007).

Non-response bias arises more commonly in research that uses telephone or mail surveys to acquire data. In this research, we did not use postal mail to distribute the questionnaire. A self-administered questionnaire (paper-based questionnaires) was used to conduct this research. By adopting this procedure, any bias in data collection was minimised.

#### **4.5.3.3 Reducing Non-response**

Fowler (2002) suggested the following three important measures to reduce a non-response: (1) the layout should be clear, so it is easy to see how to progress; (2) the questions should be nicely spaced and easy to read; and (3) the response tasks should be easy to undertake. The response tasks should be a check, a box or circling of a number. The abovementioned three measures were followed whilst developing and validating the instruments through content validity, pre-test and pilot test.

This study used a self-administered survey (paper-based) because it had the advantages of versatility, speed, and also worked as a check-point to ensure that all respondents in this study could understand the concepts they are answering (Grossnickle and Raskin, 2001). A self-administered survey is easily designed and administered. In addition, respondents can carefully consider and answer questions at their discretion. Furthermore, Kassim (2001) stated the following advantages when using a self-administrated survey:

➤ The questions can be answered by circling the proper response format and with an interviewer present; respondents could seek clarity on any question so as to meet consistent question objectives (Aaker *et al.*, 2000).

- A higher response rate of almost 100% can be assured since the questionnaires are collected immediately once they are completed (Sekaran, 2000).
- Higher privacy of respondents because respondents are not required to reveal their identities (Burns and Bush, 2002).
- This method offered the highest degree of control over sample selection (Burns and Bush, 2002).

The majority of respondents from the pilot study were satisfied with the length, layout and easiness to read, which means that there were minimal chances of non-response due to the nature of the data collection tool (i. e. paper-based survey) employed in this research. By adopting this procedure, any bias in data collection was minimised.

#### **4.6 Instrument Development**

All measures were taken directly or adapted from previously validated measures on E-CRM (Wang and Liao, 2007; Liu *et al.*, 2008; Flavian *et al.*, 2005; Bhattacharjee, 2001b; and Simons *et al.*, 2009), E-Satisfaction (Kim *et al.*, 2008; Bart *et al.*, 2005; and Bhattacharjee, 2001a), and E-Loyalty (Flavian *et al.*, 2005; and Ril *et al.*, 2004). Due to the critical importance of the instrument in the accuracy of survey estimates, Straub *et al.*, (2004) recommended that if a previously validated instrument is available, researchers should use it rather than developing a new one for efficiency reasons. Finally, 44 measurement items were developed, as shown in Table 4.1 below. A structured questionnaire was developed to collect data on the constructs in this study. All constructs were measured using multiple item, five-point, Likert scales ranging from (1) 'strongly disagree' to (5) 'strongly agree'.

The final version of the questionnaire is at Appendix 1. Ten constructs were included in the study: pre-purchase E-CRM constructs (website presentation, search capabilities, and loyalty programme), at-purchase E-CRM constructs (security/privacy, and payment methods), post-purchase E-CRM constructs (order tracking, on-time delivery, and customer service), E-Satisfaction, and E-Loyalty.

**Table 4.1: Items Developed for the Survey Instrument**

Construct	Items	Adapted from
Website Design	<ol style="list-style-type: none"> <li>1. The mobile phone website has an attractive appearance.</li> <li>2. The mobile phone website uses good colour combinations.</li> <li>3. The mobile phone website is easy to use.</li> <li>4. The mobile phone website is always up and accessible.</li> <li>5. Web pages load quickly on the mobile phone website.</li> </ol>	<p>Wang and Liao (2007) Liu et al., (2008)</p>
Search Capabilities	<ol style="list-style-type: none"> <li>1. I could search easily for information on the mobile phone website.</li> <li>2. The website provides sufficient facilities for searching products/services.</li> <li>3. It took me little effort to find the information I needed.</li> <li>4. The information searching system on this mobile phone website is fast and convenient.</li> </ol>	<p>Flavian et al., (2005) Wang and Liao (2007) Liu et al., (2008)</p>
Loyalty Programme	<ol style="list-style-type: none"> <li>1. The mobile phone website offers attractive cash rebates for any purchase (e.g. cash back, cash in advance ...).</li> <li>2. The mobile phone website offers an attractive points redemption scheme for any purchase (e.g. free minutes, free texts ...).</li> <li>3. The mobile phone website offers attractive coupons for any purchase.</li> <li>4. The mobile phone website offers attractive gifts for any purchase.</li> </ol>	<p>Bhattacharjee (2001) Loon et al., (2009)</p>
Security/Privacy	<ol style="list-style-type: none"> <li>1. I feel safe completing transactions on this mobile phone website.</li> <li>2. My personal information feels safe on this mobile phone web- site.</li> <li>3. The mobile phone website charges only the agreed amount of money.</li> <li>4. The mobile phone website demonstrates its concern about consumers' privacy.</li> </ol>	<p>Liu et al., (2008) Kim et al., (2008)</p>
Payment Methods	<ol style="list-style-type: none"> <li>1. The mobile phone website has various payment options (online card payment, cash on delivery, etc)</li> <li>2. I accept the payment options provided by the mobile phone website.</li> <li>3. The mobile phone website offers convenient payment procedures.</li> </ol>	<p>Liu et al., (2008) Wang and Liao (2007)</p>

<p><b>On-Time Delivery</b></p>	<ol style="list-style-type: none"> <li>1. The mobile products/services are delivered promptly after the online order and when expected.</li> <li>2. I feel confident that the products/services will be delivered at the time promised by the company.</li> <li>3. I am satisfied with the delivery mode of the mobile phone website (post, express delivery, home delivery, etc)</li> <li>4. The items sent by the mobile phone company are well packaged and perfectly sound.</li> </ol>	<p>Liu et al., (2008) Posselt and Gerstner (2005)</p>
<p><b>Order Tracking</b></p>	<ol style="list-style-type: none"> <li>1. There is the ability to track orders until delivered.</li> <li>2. A tracking number is provided for shipment.</li> <li>3. An order confirmation e-mail has been sent.</li> <li>4. The mobile phone website provides tracking tools for checking the status of an order.</li> </ol>	<p>Posselt and Gerstner (2005) Liu et al., (2008) Simons et al., (2009)</p>
<p><b>Customer Support</b></p>	<ol style="list-style-type: none"> <li>1. The mobile phone website responds to complaints/ enquiries quickly.</li> <li>2. The mobile phone website provides adequate FAQ services.</li> <li>3. The mobile phone website responds to requests promptly.</li> <li>4. The mobile phone website provides a good after-sales service.</li> </ol>	<p>Simons et al., (2009) Wang and Liao (2007)</p>
<p><b>E-Satisfaction</b></p>	<ol style="list-style-type: none"> <li>1. I am satisfied with the pre-purchase experience on this mobile website (e.g., search capability, loyalty, site design, ...etc )</li> <li>2. I am satisfied with the purchase experience on this mobile web-site (e.g., payment procedure, security/privacy, etc).</li> <li>3. I am satisfied with the post-purchase experience on this mobile website (e.g., order tracking , on-time delivery, problem solving, etc)</li> <li>4. The mobile phone website is always up and accessible.</li> <li>5. Web pages load quickly in the mobile phone website.</li> </ol>	<p>Bhattacharjee (2001a) Liu et al., (2008)</p>
<p><b>E-Loyalty</b></p>	<ol style="list-style-type: none"> <li>1. I will buy from this mobile phone website the next time I purchase any mobile phone products/services.</li> <li>2. I would recommend this mobile phone website to others.</li> <li>3. It would be difficult to change my beliefs about this mobile phone website.</li> <li>4. I visit this mobile phone website more frequently than others in the same category.</li> <li>5. I prefer this mobile phone website than others in the same category.</li> <li>6. I intend to continue using this mobile phone website.</li> <li>7. I am unlikely to consider changing to another mobile phone website.</li> </ol>	<p>Lin and Wang (2005) Flavian et al., (2005) Ril et al., (2004)</p>

- **Website Design**

This variable measures characteristics of the website design such as attractiveness, appearance, loading, colours and accessibility. The website design was measured by five features: attractive appearance; colour combination; accessibility; speed of web page loading and ease of use. The items were adapted from the items originally developed by Wang and Liao (2007) and Liu *et al.*, (2008) (table 4.1). A five-point Likert scale was used to measure all items ranging from (1) 'strongly disagree' to (5) 'strongly agree'.

- **Search Capabilities**

Search capabilities were evaluated using four items: ease of information search; sufficient facilities for searching products/services; ability to find required information; and a fast and convenient information searching system. . The items were adapted from Flavian *et al.*, (2005), Wang and Liao (2007), and Liu *et al.*, (2008) to measure search capabilities (table 4.1). A five-point Likert scale was used to measure all items ranging from (1) 'strongly disagree' to (5) 'strongly agree'.

- **Loyalty Programme**

Loyalty programmes were evaluated using four standard offers: cash repayment for any purchase; a points redemption scheme for any purchase; coupons for any purchase; and gifts for purchase/subscription. The items were adapted from Bhattacharjee (2001b) and Simons *et al.*, (2009). A five-point Likert scale was used to measure all items ranging from (1) 'strongly disagree' to (5) 'strongly agree'.

- **Security/Privacy**

Security/privacy was measured using four items: safety completing transactions; customers personal information feels safe; the website charges only the agreed amount of money; and the website demonstrates its concern for about consumers' privacy. The items were adapted from Liu

*et al.*, (2008), Kim *et al.*, (2008) and Bart *et al.*, (2005). A five-point Likert scale was used to measure all items ranging from (1) 'strongly disagree' to (5) 'strongly agree'.

- **Payment Methods**

Payment methods were evaluated using three items: the web-site offers various payment options; I accept the payment options; and the web-site provides convenient payment procedures. The three items were adapted from Liu *et al.*, (2008) and Wang and Liao (2007). A five-point Likert scale was used to measure all items ranging from (1) 'strongly disagree' to (5) 'strongly agree'.

- **On-Time Delivery**

On-time delivery indicates that customers received products/services on time or earlier. On-time delivery was evaluated using four items: Products are delivered promptly after the online order; I feel confident that products will be delivered as promised; I am satisfied with the delivery mode; and the items sent by the company are well packaged and perfectly sound. These items were adapted from Liu *et al.*, (2008), Posselt and Gerstner (2005) and Simons *et al.*, (2009). A five-point Likert scale was used to measure all items ranging from (1) 'strongly disagree' to (5) 'strongly agree'.

- **Order Tracking**

Order tracking refers to on-line tracking confirmation via e-mail and third party websites such as FedEx. This variable was measured using four items: ability to track orders until delivered; a tracking number provided for shipment; an order confirmation e-mail has been sent; and the website provides tracking tools for checking on the status of an order. These items were adapted from Posselt and Gerstner (2005), Liu *et al.*, (2008) and Simons *et al.*, (2009). A five-point Likert scale was used to measure all items ranging from (1) 'strongly disagree' to (5) 'strongly agree'.

- **Customer service**

Customer service refers to the quality of service provided by e-tail stores' employees via either phone or e-mail. Customer service was measured using four items adapted from Wang and Liao (2007) and Simons *et al.*, (2009). A five-point Likert scale was used to measure all items ranging from (1) “‘strongly disagree’ to (5) “‘strongly agree’.

- **E-Satisfaction**

E-satisfaction was measured using five items adapted from Bhattacharjee (2001a) and Liu *et al.*, (2008). A five-point Likert scale was used to measure all items ranging from (1) ‘strongly disagree’ to (5) ‘strongly agree’.

- **E-Loyalty**

E-Loyalty was measured using seven items adapted from Lin and Wang (2005), Flavian *et al.*, (2005), and Ril *et al.*, (2004)

The survey instrument comprised three sections. In the first section, respondents were asked to fill in their experiences and evaluations of mobile companies’ websites that they had used within the past six months to purchase mobile phone products/services. In the second section, they were asked to identify the extent to which they agree/disagree with the items related to their latest online shopping experience. Each item was measured on a five-point Likert scale from (1) ‘strongly disagree’ to (5) ‘strongly agree’. In the final section, respondents were asked to fill in their gender, age, educational level, and income level.

Table 4.2 below shows the survey questionnaires in relations with the hypotheses and variables.

<b>HN</b>	<b>Hypothesis</b>	<b>Questions</b>
-	E-Loyalty	Q. B38 to B44
-	Background Questions	Q. A1 to A4
-	Demography Questions	Q. C1 to C5
H1a	Website Design will have a positive effect on E-Satisfaction	Q. B1 to B5
H1c	Loyalty Programme will have a positive effect on E-Satisfaction	Q. B6 to B9
H1b	Search Capabilities will have a positive effect on E-Satisfaction	Q. B10 to B13
H3a	Security/Privacy will have a positive effect on E-Satisfaction	Q. B14 to B17
H3b	Payment Methods will have a positive effect on E-Satisfaction	Q. B18 to B20
H5b	On- time Delivery will have a positive effect on E-Satisfaction	Q. B21 to B24
H5a	Order Tracking will have a positive effect on E-Satisfaction	Q. B25 to B28
H5c	Customer Service will have a positive effect on E-Satisfaction	Q. B29 to B32
H7	E-Satisfaction will have a positive effect on E-Loyalty	Q. B33 to B37
H2	Pre-purchase/E-CRM will have a positive effect on E-Satisfaction	Q. B1 to B13
H4	At-purchase/E-CRM will have a positive effect on E-Satisfaction	Q. B14 to B20
H6	Post-purchase/E-CRM will have a positive effect on E-Satisfaction	Q. B21to B32
<b><u>Mediation effects</u></b>		
H8a	E-Satisfaction will mediate the effects of Pre-purchase/E-CRM on E-Loyalty	Mediation effect
H8b	E-Satisfaction will mediate the effects of At-purchase/E-CRM on E-Loyalty	Mediation effect
H8c	E-Satisfaction will mediate the effects of Post-purchase/E-CRM on E-Loyalty	Mediation effect

**Table 4.2 : Survey Questionnaire Items Relations with the Hypotheses and Variables**

## 4.7 Questionnaire Design and Data Collection

According to McDaniel and Gates (2006), marketing research uses different methods for collecting data. In addition to focus groups and in-depth interviews, surveys are also common and popular. Surveys range between the use of non-Internet survey forms and Internet survey methods. The first type of surveys can be administered via a number of techniques: 'executive interviews' when the sample consists of managers, mall intercept interviews, telephone interviews, and self-administered questionnaires. The decision to choose a survey method may be based on a number of factors which include sampling, type of population, question format, question content, response rate, costs, and duration of data collection (Aaker *et al.*, 2000). The most appropriate survey method for this research was a self-administered one. This study used a self-administered survey because it had the advantages of versatility, speed, and also worked as a check-point to ensure that all respondents in this study understood the concepts they were answering (Grossnickle and Raskin, 2001).

The key strengths of a self-administered survey are mainly cost and accuracy (Aaker, Kumar and Day, 1998). In general, a self-administered survey is easily designed and administered. In addition, respondents can consider and answer questions at their discretion. In a survey, respondents may be asked a variety of questions regarding their behaviour, attitudes, demographics and lifestyle characteristics (Malhotra, 1999).

In this survey, a self-completion questionnaire with closed questions was developed. The self-completion questionnaire is very common method within business research, and the research instrument has to be easy to follow and its questions have to be particularly easy to answer (Bryman and Bell, 2003). Meanwhile, whether to ask a question in an open or closed format is one of the most significant considerations for many researchers. According to Bryman and Bell (2003), the closed question format has some advantages: it is easy to process answers; it enhances the comparability of answers, and makes it easier to show the relationship between variables. It seemed the most appropriate format for this research.

The questionnaire was composed of three parts (see appendix D). Sections were numbered with detailed headings: A, B, and C. The questionnaire was broken into different component sections as A1-A4, B1-B44, and C1-C5 to make the number of questions appear to be fewer than they

actually are and to encourage higher completion rates (Grossnickle and Raskin, 2001). Questions were grouped by topic and placed in a logical sequence starting with broad questions and narrowing down in scope. Demographic information such as a respondent's age group and income level, were placed last in this study. The first section, which consisted of four questions (A1-A4), was the screening component. The screening questions ensured that respondents possessed sufficient experience to answer questions about their evaluation of mobile companies' website. Only those respondents who had purchased from a mobile website within the past six months were allowed to answer the questions in the second section. The second section (B1-B44) contains all ten constructs in the research model with a total of 44 statements. Several items on each construct were developed and adopted from relevant literature (Table 4.1). The final section C is about individual demographic information.

All the items in section B were measured by using a five-point Likert scale, at 5 'strongly agree' and 1 'strongly disagree'. The five-point rating scale is the most popular scale for measuring attitudes and is as reliable as the seven- or nine-rating scales (Zikmund 1997). Therefore, a five-point Likert scale was selected for this study based on its popularity, high reliability, and appropriateness to the nature of this study.

The questionnaire was distributed to 380 students at Brunel University; West London, UK. The survey was administrated and monitored by the researcher. After removing 20 invalid questionnaires due to incomplete or inaccurate responses, there were only 360 eligible respondents, which were above the recommendation of at least 200 cases for the proposed analysis (Loehlin 1992; Boomsma 1983), and these were used for future analysis in this study.

The completed questionnaires were coded and statistically analysed using the SPSS 15.0 package. Respondents were mostly male (64.7 %) and 51.1% of respondents were between the ages of 18 and 22 years. The majority of respondents were single (61.4%) and had an income in the range of £1000 or under per month. 45.3 % of respondents had obtained a university first degree.

In summary, questions were designed with proper wording, response formatting, and layout in order to encourage response, make it easy for respondents to provide accurate answers, and facilitate ease of analysis.

## 4.8 Pilot Study

To empirically examine the proposed model and associated hypotheses, we designed a questionnaire with multiple questions per construct. Prior to the main survey, the survey instrument was pilot tested. A pilot study is conducted to detect the weaknesses in design and instrumentation. It should draw subjects from the target population and simulate the procedures and protocols that have been designed for data collection. A pilot survey is a small-scale version of the larger survey; it relates particularly to questionnaire survey. There are many purpose of pilot survey, Ticehurst and Veal (2000) stated the following purposes of pilot study: (1) Testing questionnaire wording. (2) Testing questions sequencing. (3) Testing questionnaire layout. (4) Gaining familiarity with respondents. (5) Estimating questionnaire completion time, And (6) Testing analysis procedures.

The size of the pilot group may range from 25 to 100 (Cooper and Schindler 1998). In this study, the pilot survey was conducted within Brunel University by using personal administered survey. In total, 40 questionnaires distributed to the students, who used the internet to buy mobile phone in the UK. Using a five-point Likert scale, rating from 1= strongly disagree to 5= strongly agree, respondents were asked to circle the response which best described their level of agreement. The completion time for the pilot survey was around 20 minutes to 40 minutes. The duration of this pilot survey was from 1<sup>st</sup> to 20<sup>th</sup> March 2009. There were interesting comments from respondents about wording, format of the questionnaire and inappropriate sequencing. . It was better to find these early before distributing questionnaires to a large number of respondents. It was clear that the pilot survey could be used to test out all aspects of the survey and not just question wording (Ticehurst and Veal 2000).

After the data was collected, reversed scoring was performed for the negatively worded items, data was analysed by using preliminary basic statistical methods using SPSS 15, and the respondents feedback was summarised. Any biases could also be detected if the respondents had tended to respond similarly to all items or stuck to only certain points on the scale (Sekaran, 2003). The next topic considers the reliability and validity of the instrument and confirms that instrument is ready to be used in the main survey.

## 4.8.1 Validity and Reliability

### 4.8.1.1 Reliability

According to Ticehurst and Veal (2000), reliability is the extent to which research findings would be the same if the research were to be repeated at a later date, or with a different sample of subjects. In other words, the reliability of a measure indicates the extent to which the measure is without bias (error free) and hence offers consistent measurement across time and across the various items in the instrument. This study used the most popular test of reliability that is the Cronbach's coefficient alpha. This is a test of the consistency of respondents' answers to all the items in a measure. According to Sekaran (2000), reliability less than 0.6 are considered to be poor, those in the 0.7 range, acceptable, and those over 0.8 good. In this study, the 50-item instrument had a reliability of 0.944, exceeding the minimum standard of 0.80 suggested for basic research (Nunnally 1978) (see table 3 below). Table 2 presents the Cronbach's coefficient alpha for the pilot study with 40 cases.

**Table 4.3: Coefficient Alpha and Correlations of Scales for Pilot Study**

Constructs	Cronach's $\alpha$ Score
Website Design	0.712
Search Capabilities	0.879
Loyalty Programme	0.795
Security/Privacy	0.879
Payment Methods	0.904
Order Tracking	0.744
On- time Delivery	0.819
Customer Service	0.812
E-Satisfaction	0.903
E-Loyalty	0.882

It is clear from table 4.3 that all internal consistency reliabilities based on Cronbach's alpha are greater than 0.70 and considered to be good and acceptable.

#### 4.8.1.2 Validity

Validity refers to the accuracy of measurement, whether the conceptual and operational definitions are truly a reflection of the underlying concept to be measured (Burns & Bush 1995). There are several types of validity tests include: content validity, criterion-related validity, and construct validity (Sekaran 2003).

- Content validity

Content validity is mainly the subjective agreement among professionals that the measurement scales accurately reflect what is supposed to measure (Cooper & Schindler, 2001). In this study content validity was tested by (1) all items are taken from prior literature Review. (2) Asking a panel of professionals, who have experiences in shopping online, to provide their judgements on the questionnaire especially on the items in each concept. Some minor revisions were made to the instrument according to their suggestions. (3) Undertaking pilot study with a group of similar subjects as the population (Brunel University's student).

- Construct validity

Construct validity can be established though (1) correlational analysis (convergent and discriminant validity), (2) factor analysis, and (3) the multi-trait, multi-method matrix of correlations (Peter 1981). For the purpose of the pilot study, the author selected to carry on a convergent validity.

- Convergent validity

Convergent validity refers to the items purporting to measure the same construct correlates positively with one another (Parasuraman 1991). Convergent validity is synonymous with criterion validity (Zikmund 2003) and with correlational analysis, and is one way of establishing construct validity for this study. It assesses the degree to which two measures of the same concept are correlated, with high correlation indicating that the scale is measuring its intended concept. Robinson (1991) has suggested that item-to-total correlations exceed 0.50 and the inter-

item correlations exceed 0.30. Cohen (1998) suggest that correlation ( $r$ ) =0.50 to 1:00 (large correlation).

As a result, the item-to-total correlations of the indicators in each construct were in high levels (more than 0.50) which indicated the convergent validity of the instrument (see Appendix 4).

#### **4.9 Main Survey Data Analysis**

It is important to make a decision on how to analyse the data prior to data analysis in order to avoid collecting data in the wrong format and to prevent inaccurate findings from that data (Cooper and Schindler, 2001). In this research the collated data was analysed using SPSS version 15.0. The reason for selecting the SPSS.0 statistical package is that it facilitates the calculation of all essential statistics, including descriptive statistics, reliability test, correlation test, factor analysis, and linear and multiple regression analysis, required for data analysis and present findings. Further, SPSS is easily available and user friendly so it can be learnt within a short period of time.

#### **4.10 Statistical Techniques**

The final step is to select the appropriate statistical analysis technique. To do this, research elements, namely the research problem, objectives, characteristics of the data and the underlying properties of the statistical techniques are considered (Malhotra, 1999).

To meet the purposes of this study, the following statistical techniques were used:

#### **4.10.1 Descriptive statistics**

Descriptive statistics refers to the transformation of raw data into a form that would provide information to describe a set of factors in a situation that will make them easy to understand and interpret (Kassim, 2001; and Zikmund, 2000). Descriptive analysis is a univariate analysis which consists of frequency tables, diagrams, measures of central tendency (mean, median, and mode) and measures of dispersion (Bryman and Bell, 2003).

#### **4.10.2 Correlation analysis**

This examines the relationships between variables describing the direction and degree of association between them. A correlation matrix includes the values of the correlation coefficients for the variables involved. (Robson, 2002). A correlation is very low if the coefficient has a value under 0.20, low between 0.21 and 0.40, moderate between 0.41 and 0.70, and high between 0.71 and 0.91 (Pfeifer, 2000). In this study, the Pearson correlation method was used to test the bivariate relationships between measured and latent variables.

#### **4.10.3 Regression analysis**

Regression is used to examine the relationship between variables especially the extent to which a dependent variable is a function of one or more independent variables. It is used to analyse the relationship between a single dependent variable and several independent variables (Hair et al., 1998). The purpose of performing linear regression analysis is to examine whether significant relationships exist between the independent variables (i. e. pre-purchase, at-purchase and post-purchase E-CRM constructs) and dependent variable (E-Satisfaction). Multiple regression analysis was used to examine the proposed research hypotheses. In this study multiple regression was used since there was an attempt to predict an outcome from various predictors (Field, 2005).

The researcher conducted fundamental tests of the underlying assumptions for multiple regression analysis in order to ensure that the data were conducive to such analyses. For

example, the relationships between the independent variables as well as the relationships between the dependent and independent variables were analysed using correlation coefficients for every potential pair of variables used in the study. Multicollinearity tests were developed using variance inflation factors (VIF) to test for the presence of multicollinearity between each of the independent variables. The results of the tests for multicollinearity depended upon the values of the VIFs for all independent variables.

#### **4.10.4 Factor Analysis**

Factor analysis is a statistical technique used for a large number of variables to establish interrelationships between such variables. It summarises the information contained in a large number of variables into a smaller number of factors (Rummel, 1967). This technique attempts to determine the number and nature of the underlying factors affecting the relationship between a set of variables (Schwartz, 1971). A factor matrix is a table of coefficients that expresses the relationships between the variables and the underlying factors. The elements in the factor matrix are referred to as 'factor loadings'. The higher/lower loading factors will obviously produce higher/lower values. Factors that produced eigenvalues greater than 1.0 are considered significant. Principal component analysis with varimax rotation was used in order to reduce the number of variables (Hair *et al.*, 1998).

In summary, a sequence of structured steps and various statistical tests were planned for data preparation and data checking in order to ensure the accuracy and reliability of data before the data analysis stage in chapter 5. The ethical considerations of this study are discussed next.

## **4.11 Reliability and Validity Test of the Main Survey**

### **4.11.1 Reliability**

In order to test reliability, a Cronbach Coefficient Alpha was used as it is the most common method used for assessing the reliability of a measurement scale with multi-point items (Hayes, 1998). The coefficient, which reflects homogeneity among a set of items, varies from 0 to 1. However, if a scale used to measure a construct has an alpha value greater than 0.70, the scale is considered reliable in measuring the construct (Hair *et al.*, 1995; Pallant, 2001). In this research, the reliability was determined by using Cronbach's alpha and an alpha value of 0.70 or greater was considered acceptable.

### **4.11.2 Validity**

The validity of a measurement instrument refers to how well it captures what it is designed to measure (Burns and Bush, 1995). There are several types of validity tests including:

**Content validity.** Content validity is mainly the subjective agreement among professionals that the measurement scales accurately reflect what they are supposed to measure (Cooper and Schindler, 2001). In this study content validity was tested by (1) determining the variables which have been defined and used previously in the literature (Churchill and Iacobucci, 2004). In this study, the dimensions of variables were identified from marketing and information systems literature, thus all items were taken from a prior literature review. (2) Asking a panel of professionals, who have experience in shopping online, to provide their judgement on the questionnaire especially on the items in each concept, and as a result some minor revisions were made to the instrument according to their suggestions. (3) Undertaking a pilot study with a group of similar subjects as the target population.

**Construct validity.** Construct validity demonstrates the extent to which the constructs hypothetically relate to one another to measure a concept based on the theories underlying a research study (Malhotra, 1999; Zikmund, 2000). For the purpose of this study, factor analysis was performed to measure the dimensions of a concept as well as to identify which items were

appropriate for each dimension. Further, to achieve construct validity, the measurement should demonstrate convergent validity and discriminant validity.

1. *Convergent validity*: refers to the items implicit intention to measure the same construct correlates positively with one another (Malhotra 1999; Parasuraman, 1991). Convergent validity is synonymous with criterion validity (Zikmund, 2003) and with correlational analysis, and is one way of establishing construct validity for this study. It assesses the degree to which two measures of the same concept are correlated, with high correlation indicating that the scale is measuring its planned concept. Robinson (1991) has suggested that item-to-total correlations exceed 0.50 and the inter-item correlations exceed 0.30 Consider as high correlation. For the purpose of this study, item-to-total correlations were performed, and as a result, the item-to-total correlations of the indicators in each construct were at high levels (more than 0.50) which indicated the convergent validity of the instrument.
2. *Discriminant validity*: requires that an item does not correlate too highly with other items of different constructs (Hair et al., 2003). According to Brown et al (1993); discriminant validity refers to the degree to which measures of theoretically unrelated constructs do not correlate highly with one another. In this study, the correlation matrix and inter-construct correlation were analysed for convergent and discriminant validity.

#### **4.12 Hypotheses Testing**

After the development and validation of measurement scales, the hypotheses were tested using the multiple regression analysis. It is an appropriate and widely used method for investigating the relationship between a dependent variable and two or more independent variables due to its well developed underlying statistical theory (Hair *et al.*, 2006). The research hypotheses were tested from the standardised estimate and t value (critical ratio). For data analysis, the researcher employed SPSS.15 to examine the model for the hypotheses. According to Hair *et al.* (2006), the following assumptions were examined.

1. Descriptive statistics (including the examination of potential outliers) – this is to give an overview about the aggregated data to be employed in the analysis. The investigation of potential outliers is particularly important because their existence may distort an estimation of regression coefficients and representation of the relationships in a sample (Hair *et al.*, 2006, p-220). For this outliers were examined in SPSS 15.0 for Windows (Next Chapter).
2. Multi-collinearity – this refers to the relationship between two (collinearity) or more (multi-collinearity) independent variables in a regression model. Ideally it is desirable to have a number of independent variables highly correlated with the dependent variable, but with little correlation among them. When there is a substantial degree of multi-collinearity, the process for separating the effects of independent variables becomes more difficult. In other words, it makes the consideration of the contribution of each independent variable difficult because the effects of independent variables are confounded. To diagnose this potential problem the researcher employed SPSS 15.0 for Windows to compare the condition index and variance inflation factor (VIF) of the model with suggested threshold values (Hair *et al.*, 2006).
3. Normality of Residuals – for any value of independent variable X, the residuals around the regression line are assumed to be normally distributed. The violation of the normality assumption will affect the statistical significance tests especially in small samples. Furthermore, the normality of the residuals often is a signal of other problems in the regression model such as misspecification (using an incorrect regression model) (Cohen *et al.*, 2000, p-120). Kurtosis and Skewness test (Field, 2006; Tabachnick and Fidell, 2007; Hair *et al.*, 2006), Kolmogorov and Shapiro method test (Field, 2006) and histogram of all variables data along with normality distribution also normal Q-Q plot of data was used to assess the normality of residuals(Next Chapter).
4. Homoscedasticity – for any value of an independent variable X, homoscedasticity refers to the condition whereby conditional variance of the residuals around the regression line is constant (Lewis-Beck, 1993, p-18). Conditional variances represent the variability of the residuals around the predicted value for a specified value of X.

Homoscedasticity is an essential assumption because its violation will lead to incorrect estimations of the standard errors as well as significant tests. In this study, the researcher used Levene's test of homogeneity of variance in SPSS 15.0 for the Windows to confirm the results of variability of dependent variables with independent variables (Tabachnick and Fidell, 2007).

After important assumption had been evaluated, the researcher tested the significance of parameters estimated (e.g. significance of coefficient, etc.) and interpreted the results accordingly.

#### **4.13 Ethical Considerations**

Ethical issues must be considered throughout the entire process in order to make sure that the results and the final report of this study truly represent all the data and relevant conditions (McPhail 2000). The research was conducted according to the Economic and Social Research Council (ESRC) research ethics framework. The questionnaire was designed according to ESRC ethical guidelines. Therefore, the survey contained a covering letter explaining the purpose of the study, indicating that participation was voluntary and that responses would be treated confidentially. Also, participants were free to withdraw at any time and the contact details of the researcher and supervisor were given in the covering letter should respondents have any ethical concerns. Prior to the distribution of the questionnaire to the participants, the questionnaires received ethical approval from Brunel University Ethics Committee.

#### **4.14 Conclusions**

The research methodology has been developed within this chapter. This methodology describes the stages in the research process. The research design was then operationalised into a protocol, which provides a 'step-by-step' procedure of the data gathering process.

Many researchers in the domain of IS and marketing research have applied a positivist approach. Therefore, a positivist approach was considered to be an appropriate approach for this research. Following this, a justification for the selection of the survey as a research approach was provided. Having established that a survey was an appropriate approach, a detailed account of the various aspects of the survey approach was offered.

To validate and understand the conceptual framework, it was found that a quantitative research approach would be more appropriate than a qualitative one. Thus, Measurement scales for each construct have been identified, based on a well known previously tested scales. The data collection tool used in this research was a self-administrated questionnaire. The reasons for the selection of this method were also provided in a detailed manner.

A pilot study was conducted to measure the reliability and validity of the questionnaire before the actual full scale study. Details of practical considerations such as sampling and participation, measurement scales and data analysis procedure were also discussed in this chapter. Upon completion of the study, the data was cleaned, coded and entered on to the statistical package for social sciences (SPSS) version 15.0 for Windows. Analytical techniques included descriptive statistics and exploratory factor analysis was discussed briefly.

The testing of the hypotheses and the relationships between independent and dependent variables is presented in Chapter 5.

## **Chapter Five: Empirical Data Analysis and Findings**

### **5.1 Introduction**

The previous chapter identified and justified the research methodology for this study. This chapter analyses the data gathered using that methodology. This chapter is concerned with analysing and uncovering the relationships between independent and dependent variables. Since the study adopted quantitative methods in which a survey questionnaire was applied to obtain the data. This chapter consists of analysing the data with subsequent discussions. Based on quantitative data, SPSS 15.0 was used data analysing. This chapter comprises of the following sections such that introduction, demographic characteristics, factor loading and multiple regression analysis, hypotheses testing, and conclusions.

### **5.2 Response rate**

The questionnaire was distributed to 380 students at Brunel University; West London, UK. The survey was administered and monitored by the researcher. After eliminating 20 invalid questionnaires due to incompleteness or inaccuracy in responding to the questions, there were only 360 eligible respondents who passed the post screening questions. This gave a response rate of 95 % percent, which above the recommendation of at least 200 cases for the proposed analysis (Loehlin, 1992; Boomsma, 1983) and these were used for future analysis in this study. Table 5.1 below presents the response rate.

**Table 5.1: Successful Rate of Valid Respondents**

	Students	%
Total questionnaires distributed	380	100.0
<i>Total respondents in this survey</i>	380	100.0
Invalid questionnaires	20	0.05
<i>Eligible respondents in this survey</i>	360	95.0

Source: developed for this research

### 5.3 Profile of respondents

The important demographic characteristics of respondents are presented in table 5.2 below. Respondents were mostly male (64.7%) and 51.1% of respondents were between the ages of 18 and 22 years. The majority of respondents were single (80.8%) and has income in the range of £ 1000 or less per month. 45.3 % of respondents have obtained a university degree.

**Table 5.2 : Profile of Respondents in this Survey**

Characteristics	Frequency	Valid percent %
<b>Age (years)</b>		
<18	13	3.6
18-22	184	51.1
23-27	68	18.9
28-32	73	20.3
33 and above	14	3.9
<b>Gender</b>		
• Male	233	64.7
• Female	122	33.9
<b>Marital Status</b>		
• Single	291	80.8

• Married	61	16.9
• Others	2	0.6
<b>Education</b>		
• High School	18	5
• College	78	21.7
• Bachelors	163	45.3
• Master or higher	94	26.1
<b>Income (monthly £)</b>		
• <1000£	221	61.4
• 1000-2000	119	33.1
• 2001 and above	10	2.8
<b>Products</b>		
• Mobile Handset	251	69.7
• SIM Card	34	9.4
• Head Phone	3	0.8
• Home Broadband	33	9.2
• Mobile Broad Band	32	8.9
<b>Company</b>		
• O2	79	21.9
• Orange	75	20.8
• T-mobile	94	26.1
• Vodafone	29	8.1
• Virgin	6	1.7
• 3	69	19.2
• Carphone warehouse	8	2.2
<b>Last purchase</b>		
• 1-6 Month	161	44.7
• 7-12	128	35.6
• 13-18	53	14.7
• 19-24	7	1.9

## 5.4 Descriptive statistics

In this section, the collected data was transformed into a form that was easy for the researcher to understand and interpret (Zikmund, 1997). All items were rated on a five point Likert scale with a score of 5 indicating strong agreement and a score of 1 indicating strong disagreement. Means of almost all variables (44 items) were well above the neutral position ( $m > 2.5$ ). These results then indicated a strong level of agreement among respondents on each of the statements used for measuring variables in this survey.

Table 5.3 below reports the summary statistics of means and standard deviation of the items measuring different constructs.

**Table 5.3 : Means and standard deviations of items**

Items	Mean	Std. Deviation
<b>Website Design (WD)</b>		
B1/website appearance	3.74	0.662
B2/website colour	3.71	0.68
B3/easy to use	3.92	0.612
B4/accessible	3.76	0.73
B5/pages load	3.81	0.791
<b>Loyalty Programme (LP)</b>		
B6/cash	2.89	1.245
B7/points	3.17	1.200
B8/coupons	2.65	1.169
B9/gifts	2.65	1.092
<b>Search Facilities(SF)</b>		
B10/easily search	3.76	0.781
B11/searching facilities	3.79	0.772
B12/little effort	3.82	0.901
B13/search system	3.62	0.795
<b>Security/Privacy (S/P)</b>		
B14/feel Safe	3.94	0.907
B15/personal information	4.05	0.898

B16/agreed money	4.03	0.907
B17/consumer privacy	3.86	0.892
<b>Payment Methods(PM)</b>		
B18/payment options	4.03	0.905
B19/accept payment	4.05	0.840
B20/convenient payment	4.14	0.634
<b>On-time Delivery (OD)</b>		
B21/delivered promptly	4.24	0.895
B22/delivered when promised	3.91	0.979
B23/ delivery mode	4.14	0.761
B24/well packaged	4.04	0.821
<b>Order Tracking (OT)</b>		
B25/ability to track	3.28	0.843
B26/tracking number	3.05	1.005
B27/order confirmation	4.09	0.793
B28/tracking tools	3.35	0.831
<b>Customer service (CS)</b>		
B29/complaints response	3.24	0.900
B30/adequate FAQ	3.47	0.964
B31/requests response	3.26	0.975
B32/good after-sale service	3.25	0.940
<b>E-Satisfaction (E-SQ)</b>		
B33/pre-purchase E-SQ	3.71	0.895
B34/at-purchase E-SQ	3.88	0.934
B35/post-purchase E-SQ	3.72	0.934
B36/wise choice	3.72	0.939
B37/overall E-SQ	3.82	0.892
<b>E-Loyalty (E-LOY)</b>		
B38/next time purchase	3.46	1.026
B39/recommend this website	3.59	0.988
B40/change beliefs	3.14	0.962
B41/visit frequently	3.28	0.974
B42/prefer this website	3.11	1.136
B43/continue using	3.20	1.021
B44/no changing to website	3.12	0.998

## **5.5 Preliminary examination of data**

This section presents the screening and cleaning of raw data before they were analyzed. Two broad categories of problems are discussed: case-related issues such as the accuracy of the data input, and missing observations; and distribution issues such as normality (Hair *et al.*, 2006, p-37).

### **5.5.1 Data cleaning and screening**

Screening of the data sets was conducted through an examination of basic descriptive statistics and frequency distributions. Values that were found to be out of range or improperly coded were detected with straightforward checks. Therefore, carefully screened data and the consideration and resolution of the problematic data before the main analysis are primary to ensure the accuracy of data analysis (Kassim, 2001).

### **5.5.2 Missing Data**

Missing data is one of the most continuing problems in data analysis. It is a fairly common occurrence in certain areas of research which can affect the results of research objectives. Missing data occurs for a variety of reasons but the most common reasons in social science research are long questionnaires and/or participants who accidentally miss out questions. According to Tabachnick and Fidell (2007, p-62), missing data importance depend on the type of missing data, how much is missing, and why it is missing. However, the type is more important than the number missing. To find the missing data, this study applied SPSS 15.0 found all missing data was less than 5% of the total data. Thus, the removal of all missing data such that 20 samples out of 380 samples is about 5 % which does not cause problems with the outcome of the analysis.

### 5.5.3 Outliers

Outliers refer to “observations with a unique combination of characteristics identifiable as distinctly different from the other observations” (Hair *et al*, 2006, p. 73). These outliers might be very high or very low scores (extreme values), and could result in non-normality data and distorted statistics (Hair *et al*, 1995; Tabachnick and Fidell, 2001). There are three methods to detect outliers (Hair *et al.*, 2006, p-73 and Field, 2006). Such as: Univariate detection, Bivariate detection, and Multivariate detection.

To identify univariate outliers, all the scores for a variable were converted to standard scores. In the case of small sample size (80 or fewer cases), a case is an outlier if its standard score is  $\pm 2.5$  or beyond (Hair *et al*, 2006). If the sample size is larger than 80 cases, a case is an outlier if its standard score is  $\pm 3.0$  or beyond. The result of this analysis indicated that the data contained a number of univariate outliers.

Bivariate outliers can be identified by applying a pair of variables jointly in a scatter plot in which if case(s) fall markedly outside the range of the other observations will be seen as isolated points (Hair *et al.*, 2006).

To detect the multivariate outliers, Mahalanobis  $D^2$  (d-squared), which is a multi-dimensional version of a z-score, measures the distance of a case from the centroid (multi-dimensional mean) of a distribution, given the covariance (multi-dimensional variance) of the distribution (Hair *et al*, 2006). The larger the value of the Mahalanobis  $D^2$  for a case, and the smaller its corresponding probability value, the more likely the case was to be a multivariate outlier. Mahalanobis  $D^2$  was computed in SPSS 16.0 with the regression procedure for a set of independent variables. The save option added the  $D^2$  values to the data set. Mahalanobis  $D^2$  is distributed as a chi-square statistic with degrees of freedom equal to the number of independent variables in the analysis. A case is a multivariate outlier if the probability associated with its  $D^2$  is 0.001 or less.

Outliers cannot be categorically characterised as either beneficial or problematic (Hair, *et al.* 2006) but they can bias the mean and inflate the standard deviations (Field and Hole, 2003). Thus, the researcher should be aware of such values because they bias the model research fit to the data (Field, 2006). By exploring the Mahalanobis distances and resulting chi-square values ( $p < .001$ ) for the dataset, (13) cases were determined as multivariate outliers.

#### **5.5.4 Testing the normality assumption**

Following the assessment of missing data and outliers' detection, normality of distribution of the data was assessed. Normality refers to the data distribution which is a fundamental assumption in measuring the variation of variables. The most fundamental assumption in multivariate analysis is normality.

For analysing the data, it is not always required but is found better if the variables are normally distributed (Tabachnick and Fidell, 2007). According to Hair *et al.*, (2006, p-79), if the variation from the data normal distribution is sufficiently large, all resulting statistical tests are invalid, because normality is required to use the F and t statistics.

Normality of data can be assessed by statistical methods (Hair *et al.*, 2006). In statistical method, normality of data distribution can be measured by Kurtosis and Skewness test, and Kolmogorov and Shapiro method (Tabachnick and Fidell, 2007; Hair *et al.*, 2006). For that, initially descriptive statistics were applied in SPSS 15.0 to know the skewness and kurtosis (Table 5.4). All variables were found normally distributed; however, values for skewness were found negative and for kurtosis values were mixed such that negative and positive.

Table 5.4 shows data screening results for the variables analyzed in the study with means, standard deviations, skewness and kurtosis values for each individual variable.

**Table 5.4: Skewness and Kurtosis values**

Items	Mean	Std. Deviation	Skewness		Kurtosis	
			Statistic	Std. Error	Statistic	Std. Error
B1	3.74	0.662	-0.880	.111	0.564	.222
B2	3.71	0.68	-0.915	.111	0.940	.221
B3	3.92	0.612	-1.030	.111	0.756	.221
B4	3.76	0.73	-0.828	.111	0.492	.222
B5	3.81	0.791	-1.181	.109	1.528	.218
B6	2.89	1.245	-1.155	.109	1.139	.218
B7	3.17	1.200	-1.147	.110	0.990	.220
B8	2.65	1.169	-1.166	.109	0.973	.217
B9	2.65	1.092	-1.557	.108	3.528	.216
B10	3.76	0.781	-1.031	.108	0.601	.216
B11	3.79	0.772	-0.697	.109	0.223	.217
B12	3.82	0.901	-1.696	.108	3.065	.216
B13	3.62	0.795	-1.357	.108	1.638	.216
B14	3.94	0.907	-2.120	.108	4.617	.216
B15	4.05	0.898	-1.955	.108	3.888	.216
B16	4.03	0.907	-1.661	.108	2.543	.216
B17	3.86	0.892	-2.249	.108	5.807	.216
B18	4.03	0.905	-1.245	.108	1.165	.216
B19	4.05	0.840	0.171	.108	-1.184	.216
B20	4.14	0.634	-0.115	.108	-1.407	.216
B21	4.24	0.895	0.021	.108	-1.405	.216
B22	3.91	0.979	-1.208	.110	1.095	.219
B23	4.14	0.761	-1.179	.110	0.725	.220
B24	4.04	0.821	-1.017	.112	0.211	.223
B25	3.28	0.843	-1.189	.111	0.879	.222
B26	3.05	1.005	-0.624	.112	-0.206	.223
B27	4.09	0.793	-0.177	.110	-0.744	.219
B28	3.35	0.831	-0.569	.110	-0.300	.220
B29	3.24	0.900	-0.500	.110	-0.751	.220
B30	3.47	0.964	-1.085	.111	0.649	.221
B31	3.26	0.975	-1.203	.108	1.199	.217
B32	3.25	0.940	-1.296	.108	1.470	.217
B33	3.71	0.895	-1.383	.109	1.974	.217
B34	3.88	0.934	-1.423	.109	2.201	.217

B35	3.72	0.934	-1.211	.108	1.598	.217
B36	3.72	0.939	-0.834	.109	0.373	.217
B37	3.82	0.892	-0.518	.109	-0.004	.217
B38	3.46	1.026	-0.346	.109	-0.730	.218
B39	3.59	0.988	-0.063	.109	-1.047	.218
B4	3.14	0.962	-0.880	.108	0.762	.217
B41	3.28	0.974	-0.915	.111	0.564	.222
B42	3.11	1.136	-1.030	.111	0.940	.221
B43	3.20	1.021	-0.828	.111	0.756	.221
B44	3.12	0.998	-1.181	.111	0.492	.222

## 5.6 Exploratory analysis

Next, an exploratory analysis was undertaken in order to test the measurement items used in this research. 44 items were proposed to contribute to 10 constructs in this survey. Measurement scales used in this study were developed initially from the literature. The analysis started with item analysis to filter and get better measures before using exploratory factor analysis to examine the dimensions of each construct and using confirmatory factor analysis to test and confirm the relationships between observed variables under each hypothesized construct (Hair *et al.*, 1998; Zikmund, 1997). The next section started with item analysis before processing with exploratory factor analysis.

### 5.6.1 Item Analysis

The purpose of conducting an item analysis is to select those items that will provide the most accurate and appropriate description of the behaviour under investigation (Kumar and Beyerlein, 1991). The correlation power of each item is computed by using corrected-item total correlation index (Roderick, 1999). Many researchers suggested deleting items with negative or item-to-

total correlations below 0.15 because they are considered poor items and should be eliminated in order to sharpen the conceptual identity of each construct (Kehoe, 1995). As suggested by Leak and Randall (1995) deleting one item at a time until no further increase in coefficient alpha is obtained. Corrected item-total item below 0.15 was used as criteria for deleting items in this study. Table 5.5 below reports the summary statistics of item-to-total correlations.

**Table 5.5: Items Analysis**

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
<b>Website Design</b>			
B1/website appearance	15.23	3.487	<b>.147</b>
B2/website colour	15.17	3.413	<b>.086</b>
B3/easy to use	15.19	2.625	.477
B4/accessible	15.06	3.787	<b>.054</b>
B5/pages load	15.25	2.263	.504
<b>Loyalty Programme</b>			
B6/cash	8.47	8.137	.591
B7/points	8.19	8.277	.604
B8/coupons	8.71	8.529	.585
B9/gifts	8.71	8.385	.682
<b>Search Facilities</b>			
B10/easily search	11.26	4.233	.720
B11/searching facilities	11.23	4.251	.699
B12/little effort	11.30	3.927	.624
B13/search system	11.37	4.201	.686
<b>Security/Privacy</b>			
B14/feel Safe	11.98	4.268	.829
B15/personal information	11.89	4.382	.805
B16/agreed money	11.91	5.010	.555
B17/consumer privacy	12.11	5.382	.530
<b>Payment Methods</b>			
B18/payment options	8.12	2.074	.703
B19/accept payment	8.00	2.321	.755
B20/convenient payment	7.98	2.768	.793

<b>On-time Delivery</b>			
B21/delivered promptly	11.98	5.053	.578
B22/delivered when promised	12.25	4.653	.661
B23/ delivery mode	12.02	4.910	.692
B24/well packaged	12.18	4.683	.719
<b>Order Tracking</b>			
B25/ability to track	10.49	3.335	.718
B26/tracking number	10.73	3.164	.581
B27/order confirmation	9.69	5.645	<b>-.005</b>
B28/tracking tools	10.43	3.404	.705
<b>Customer service</b>			
B29/complaints response	9.89	5.989	.618
B30/adequate FAQ	9.70	5.570	.702
B31/requests response	9.93	5.566	.606
B32/good after-sale service	9.95	5.765	.654
<b>E-Satisfaction</b>			
B33/pre-purchase E-SQ	15.19	7.694	.693
B34/at-purchase E-SQ	15.04	7.713	.671
B35/post-purchase E-SQ	15.25	7.796	.604
B36/wise choice	15.30	7.677	.599
B37/overall E-SQ	15.16	7.814	.652
<b>E-Loyalty</b>			
B38/next time purchase	18.81	26.694	.662
B39/recommend this website	18.68	26.863	.670
B40/change beliefs	19.19	26.837	.675
B41/visit frequently	19.00	26.036	.650
B42/prefer this website	19.14	23.409	.803
B43/continue using	19.09	24.296	.817
B44/no changing to website	19.25	25.224	.767

As shown in table 5.5. The corrected item-total correlation from four items (B1, B2, B4 and B27) were lower than 0.15, indicating low correlation power and should be deleted (Kehoe 1995; Ebel and Frisbie, 1986). As a result, the number of items for website design construct should reduce from five items to two items and the number of items for order tracking should reduces from four to three items.

## 5.7 Reliability Test

The internal consistency reliability of each construct will be determined by using Cronbach alpha (Malhotra *et al.*, 1999). Low alpha indicated that some items did not share equally in common core (Churchill, 1979). Cronbach alpha coefficients less than 0.6 are considered to be poor, 0.7 is considered to be acceptable and those over 0.8 are considered to be good (Mak, 2001; Sekaran, 2000). Almost all Cronbach alpha coefficients for this study were close to 0.8 and higher, which demonstrated high internal consistency of scales used for measuring different observed variables under each construct in this study (Forman and Nyatanga, 2001; Hair *et al.*, 2000). The value of Cronbach alpha coefficient for each construct is presented in table 5.6 below.

**Table 5.6: Cronach's alpha coefficient of the items**

Construct	Number of items	Cranach's alpha coefficient	Alpha for survey data
Website design (WD)	2	0.880	
Search capabilities (SC)	4	0.800	
Loyalty programme (LP)	4	0.860	
Payment methods (PM)	3	0.907	
Security/privacy (S/P)	4	0.837	<b>0.950</b>
Order tracking (OT)	3	0.859	
On-time delivery (OD)	4	0.833	
Customer service (CS)	4	0.845	
E-Satisfaction (E-SQ)	5	0.844	
E-Loyalty (E-LOY)	7	0.910	

## 5.8 Correlation

Correlation coefficient provides the basis of relationship between two variables which further authorizes the condition of unique variance shared between variables (Schumacker and Lomax, 2004). In this study, the Pearson correlation method was used to test the bivariate relationships between measured and latent variables. The Pearson correlations between the dimensions show that most of the dimensions in general are significantly related to each other at 0.01 and 0.05 significant level. The correlation matrix between all the items is given in appendix 3. (See appendix 3)

### 5.8.1 The Association between the Constructs

An initial assessment can be made to see whether the constructs under consideration are related to one another. This type of association or correspondence between the constructs can be undertaken to observing the bivariate correlation coefficients of the constructs. The correlation matrix in table 5.7 below represents the correlation coefficients of the summated scores for each individual construct. Table 5.7 below presents the correlation between the constructs

**Table 5.7: Correlation between the Constructs**

Items	WD	LP	SC	S/P	PM	OD	OT	CS	E-SQ	E-LOY
WD	1									
LP	0.10	1								
SC	0.41	0.15	1							
S/P	0.12	0.11	0.54	1						
PM	0.11	0.23	0.51	0.61	1					
OD	0.10	0.45	0.60	0.61	0.63	1				
OT	0.13	0.24	0.21	0.28	0.17	0.46	1			
CS	0.20	0.29	0.30	0.33	0.16	0.24	0.16	1		
E-SQ	0.21	0.17	0.32	0.55	0.42	0.51	0.19	0.69	1	
E-LOY	0.34	0.25	0.31	0.29	0.22	0.28	0.32	0.56	0.54	1

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

The bivariate correlation coefficients, as shown in the Table 5.7 above, indicate that there are fairly moderate correlations between the constructs. The highest correlation, 0.69, is between E-SQ and CS constructs whilst the lowest, 0.10, is between LP and WD. However, all the correlation coefficients are significant at the 0.01 level.

## 5.9 Factor Analysis

Before conducting a factor analysis, it is essential to perform a test for sampling adequacy and sphericity. These two tests confirm whether it is worth proceeding with factor analysis (Hinton *et al.*, 2004).

### *Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) Test*

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was first computed to determine the suitability of employing factor analysis, and the results are presented in Table 5.8. The KMO is estimated using correlations and partial correlations in order to test whether the variables in a given sample are adequate to correlate. A general rule is that as a measure of factorability, a KMO value of 0.5 is poor, 0.6 is acceptable and a value closer to 1 is better (Hinton *et al.*, 2004). The results illustrated in Table 5.8 suggest that the KMO is well above the recommended acceptable level of 0.6 as the obtained value is 0.87. The aforementioned results confirm that the KMO test supports the sampling adequacy and it is worth conducting a factor analysis. This means that higher KMO values indicate the possibility of factor existence in data as it was assumed in the conceptual model.

**Table 5.8: KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.874
Bartlett's Test of Sphericity	Approx. Chi-Square	3966.539
	df	528
	Sig.	.000

### ***Bartlett's test of sphericity Test***

Bartlett's test of sphericity Test is conducted for the purpose of confirming the relationship between the variables. If there is no relationship then it is irrelevant to undertake factor analysis. As a general rule  $P$  value  $<0.05$  indicates that it is appropriate to continue with the factor analysis (Hinton *et al.*, 2004). The results illustrated in Table 5.8 above suggest that the calculated  $P$  value is  $< 0.00$ , which means that there are relationships between the constructs in question. Therefore, it was considered appropriate to continue with the factor analysis.

#### **5.9.1 Factor Loadings**

To remove the redundant (highly correlated) variables from the survey data and to reduce variables into definite number of dimensions, factor analysis is done by the principal component extraction method with Varimax rotation using *SPSS 15.0*. The original 44 items of the questionnaire after item analysis reduced to 40 and after factor analysis reduces to 27 items and settled with 10 dimensions. The sorted rotated values of factor loading with minimum value of 0.5 or more are considered and are shown in the Table 5.9 below. The rotated component matrix presented in table 5.9 below shows the factor loadings for all ten constructs, which is clearly suggest that the ten component loaded. All the items loaded above 0.40, which is the minimum recommended value in business research (Straub *et al.*, 2004). Also, cross loading of the items was not found above 0.40. The two items of website design construct loaded on component 1. Therefore, the first component represents the underlying item of website design construct. All three items of the security/privacy construct loaded on component 2.

	Items	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
WD	B2	<b>0.92</b>									
	B4	<b>0.93</b>									
SC	B10		<b>0.80</b>								
	B11		<b>0.82</b>								
	B13		<b>0.74</b>								
LP	B6			<b>0.83</b>							
	B7			<b>0.79</b>							
PM	B18				<b>0.82</b>						
	B19				<b>0.90</b>						
	B20				<b>0.86</b>						
S/P	B15					<b>0.79</b>					
	B17					<b>0.81</b>					
OT	B25						<b>0.83</b>				
	B26						<b>0.85</b>				
	B28						<b>0.85</b>				
OD	B21							<b>0.85</b>			
	B22							<b>0.78</b>			
CS	B29								<b>0.83</b>		
	B30								<b>0.85</b>		
	B31								<b>0.57</b>		
	B32								<b>0.65</b>		
E-SQ	B35									<b>0.53</b>	
	B37									<b>0.87</b>	
E-LOY	B40										<b>0.83</b>
	B41										<b>0.81</b>
	B42										<b>0.73</b>
	B43										<b>0.82</b>

**Table 5.9: Rotated Factor Loadings with Varimax Rotation**

Extraction method: Principal component analysis

Rotation method: Varimax with Kaiser Normalisation

It is a happenstance that the above 10 dimensions are exactly same as the dimensions considered in conceptual framework. This is because the items selected for the questionnaire survey are mainly related to these dimensions. Hence, the factor loadings of the items can be fittingly named as the dimensions considered in the conceptual framework. Generally, factor loading represents how much a factor explains a variable. High loading indicates that the factor strongly influence the variable. Assuming a factor loading of more than 0.80 as having high impact on the variables, it is concluded from Table 5.9 that some variables that are less than 0.80 need attentions for the E-Loyalty improvement of mobile website companies. They are item B13 in SC dimension, variable B7 in LP dimension, B15 in S/P dimension, B22 in OD, B31/B32 in CS dimension, B35 in E-SQ dimension, and B42 in E-LOY dimension.

#### **5.10 Total Variance Explained**

Table 5.10 below summarizes the total variance explained for the extracted components that shown in Table 5.9 It is clear that all constructs had eigenvalues greater than 1 and in combination accounted for a total of 80.21 % variance in data. The maximum variance of 24.41% was explained by the web site design WD construct; SC had the second largest variance 11.75%. The loyalty programme construct followed by a variance of 10.98 %. The payment method outcomes contribute to a variance of 6.64 %. The minimum variation of 3.16 % was accounted for by the E-LOY construct, the S/P construct accounted for only a 6.10 % variance. Order tracking construct accounted for a total variance of 4.99 %, on time delivery accounted for a total of 4.80 % variance. The customer service construct accounted for 4.08 % variance.

**Table 5.10 : Total Variance Explained**

Constructs	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
WD	8.055	24.411	24.411
SC	3.880	11.756	36.167
LP	3.626	10.988	47.155
PM	2.191	6.640	53.795
S/P	2.013	6.101	59.896
OT	1.648	4.993	64.889
OD	1.586	4.806	69.695
CS	1.348	4.085	73.780
E-SQ	1.081	3.275	77.054
E-LOY	1.043	3.162	80.216

## **5.11 Multiple Regression Analysis**

### **5.11.1 Regression analysis I: Examining the Relationship between E-CRM features and E-SQ**

A Multiple Regression Analysis was conducted using SPSS 15.0 to examine the relationship between E-CRM mobile websites features and customer's E-Satisfaction to these websites. The Independent variables were the proposed eight dimensions of e-CRM mobile website features, which are: website design (WD), search capabilities (SC), loyalty programme (LP), security/privacy (S/P), payment methods (PM), order tracking (OT), on-time delivery (OD), and customer service (CS). The dependent variables were E-Satisfaction (E-SQ) towards these websites. Tables (5.11.1, 5.11.2, 5.11.3) report the regression analysis results for the relationship e-CRM mobile website features and E-Satisfaction. From the regression analysis, it is observed that the relationship between various dimensions of E-CRM mobile websites features and E-

Satisfaction (E-SQ) are more or less statistically significant at 95% confidence level, ( $P < 0.05$ ). Also, the adjusted  $R^2$  value is 0.493 which indicates that the relationship is statistically significant; therefore, the hypotheses (H1a, H1b, H1c, H3a, H3b, H5a, H5b and H5c) are supported (table 5.11). Table 5.11.3 below shows the significant variables, such as search capabilities (SC) ( $\beta = 0.44$ ,  $P < .001$ ), customer service (CS) ( $\beta = 0.329$ ,  $P < .001$ ), payment methods (PM) ( $\beta = 0.27$ ,  $P < .001$ ).

Figure 5.1 below presents the multiple regressions 1 for the relationship between E-CRM features and E-Satisfaction

**Table 5.11.1: Regression analysis 1: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.710 <sup>(a)</sup>	.504	.493	1.192

a Predictors: (Constant),

b Dependent Variable: E-SQ

**Table 5.11.2: Regression analysis 1: ANOVA <sup>(b)</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	506.617	8	63.327	42.676	.000 <sup>(a)</sup>
	Residual	498.380	351	1.420		

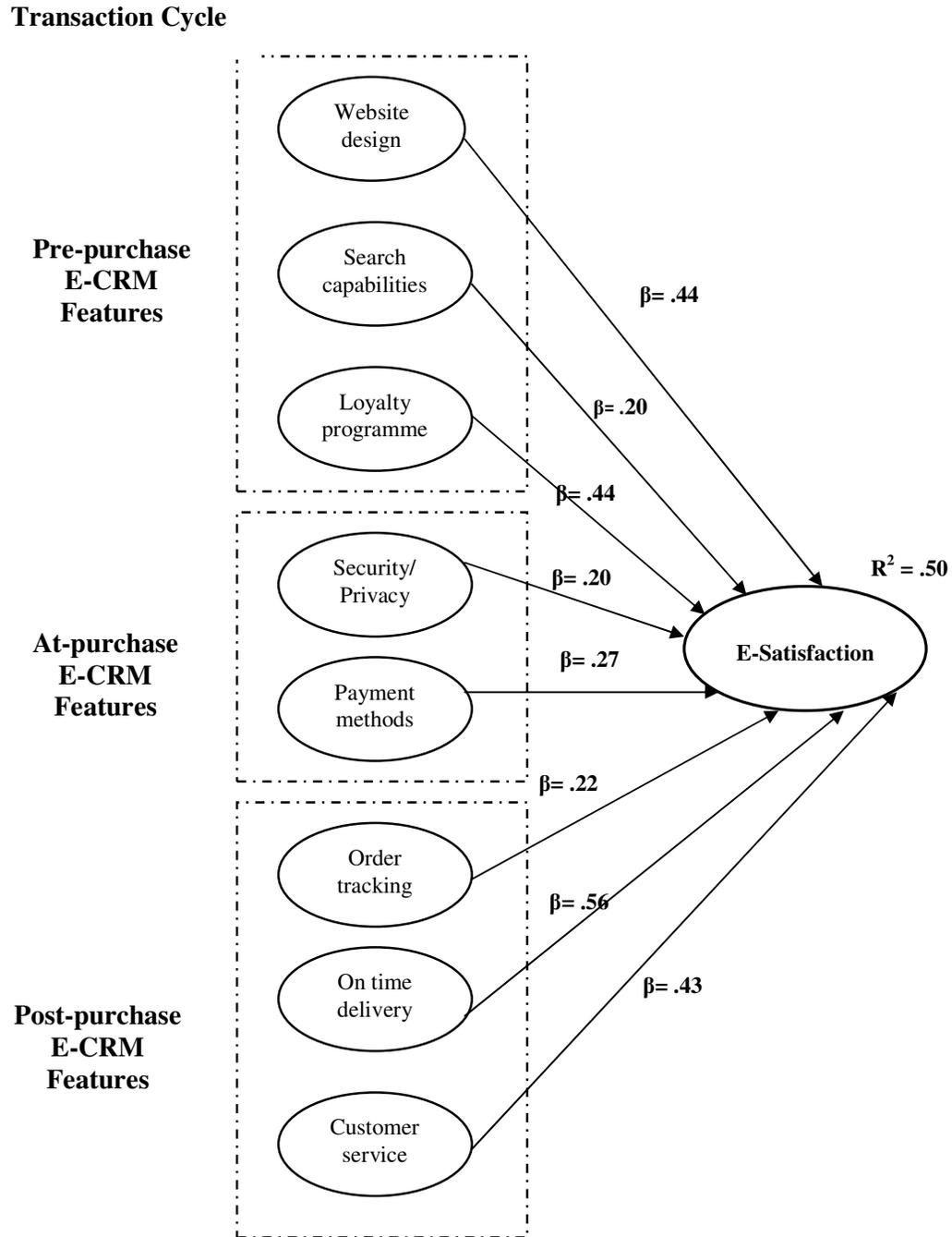
a Predictors: (Constant), service, Web, Tracking, Payment, Programme, Security, deliver, Search

b Dependent Variable: E-SQ

**Table 5.11.3: Regression analysis 1: Coefficients**

<b>Independent Variables</b>	<b>Std. Error</b>	<b>Standardized Coefficients <math>\beta</math></b>	<b>t-value</b>	<b>VIF</b>	<b>p</b>
<b>Constant</b>	0.243			-----	0.057
<b>WD</b>	0.038	0.443	1.914	1.667	0.007
<b>SC</b>	0.068	0.203	2.763	1.267	0.000
<b>LP</b>	0.037	0.175	2.227	1.355	0.005
<b>S/P</b>	0.052	0.207	2.826	1.801	0.016
<b>PM</b>	0.035	0.273	4.326	1.346	0.004
<b>OT</b>	0.029	0.223	1.784	1.137	0.003
<b>OD</b>	0.055	0.563	1.510	1.206	0.016
<b>CS</b>	0.052	0.439	2.575	1.230	0.000

Figure 5.1: the effects of E-CRM mobile website features on E-SQ



**Table 5.11: Hypothesis Assessment**

Research hypothesis	$\beta$	t-value	Results
H1a : WD $\longrightarrow$ E-SQ	0.443	1.914	Supported
H1b : SC $\longrightarrow$ E-SQ	0.203	2.763	Supported
H1c: LP $\longrightarrow$ E-SQ	0.175	2.227	Supported
H3a: S/P $\longrightarrow$ E-SQ	0.207	2.826	Supported
H3b : PM $\longrightarrow$ E-SQ	0.273	4.326	Supported
H5a: OT $\longrightarrow$ E-SQ	0.223	1.784	Supported
H5b: OD $\longrightarrow$ E-SQ	0.563	1.510	Supported
H5c: CS $\longrightarrow$ E-SQ	0.439	2.575	Supported

### Multicollinearity Diagnostics

When performing a regression analysis, an important cause of concern is the existence of multicollinearity (is a statistical phenomenon in which two or more predictor variables in a multiple regression model are highly correlated) amongst the independent variables. It is likely to exist when the independent variables included in the analysis are not accurately independent and measure unnecessary information (Myers, 1990). The existence of multicollinearity negatively affects the predictive ability of the regression model (Myers, 1990) and causes problems when attempting to draw assumptions about the relative contribution of each predictor variable to the success of a model (Brace *et al.*, 2003). Therefore, it is important to examine whether the problem of multicollinearity exists in this research. SPSS 15.0 provides two options to find out if data suffers the problem of multicollinearity, the two options are tolerance (T) and variance inflation factor (VIF) (Brace *et al.*, 2003).

According to Myers (1990), if the VIF value for any constructs surpasses 10, then there is a possibility of multicollinearity amongst constructs. If detected, in order to overcome

this problem, a variable with a VIF value more than 10 needs to be deleted (Myers, 1990). The VIF for each independent variable was less than 10 which is cut-off value beyond which multicollinearity would be indicated; this implies no serious muticollinearity. Table 5.11.3 includes the VIF values for the independent variables of the study.

### 5.11.2 Regression analysis II: Examining the Relationship between, E-SQ and E-LOY

A Multiple Regression Analysis was conducted using SPSS 15.0 to examine the relationship between E-Satisfaction and E-LOY towards mobile phone websites. The independent variable was E-Satisfaction, and the dependent variable was E-LOY towards the mobile website. Tables (5.12.1, 5.12.2, and 5.12.3) reports the regression analysis results for the relationship E-Satisfaction and E-LOY. From the regression analysis, it is observed that the relationship E-Satisfaction and E-LOY is statistically significant at 95% confidence level, ( $P < 0.05$ ). Also, the adjusted  $R^2$  value is 0.468, which indicates that the relationship is statistically significant; therefore, the hypothesis (H7) is supported. Figure 5.2 shows the multiple regressions II for the relationship between E-Satisfaction and E-LOY toward the mobile websites. From the results, it is concluded that E-LOY toward favorite mobile websites can be explained, at least to some extent, by E-Satisfaction toward these websites. Thus, Hypothesis 7 of this study is supported (table 5.12).

**Table 5.12 : Hypothesis 7 Assessment**

Research hypothesis	$\beta$	t-value	Results
H7 : E-SQ $\longrightarrow$ E-LOY	0.405	7.856	Supported

**Table 5.12.1 : Regression analysis II : Model Summary<sup>(b)</sup>**

Independent Variables	Coefficients $\beta$	Std. Error	t-value	P
Constant		.223	2.926	.004
E-SQ	.405	.063	7.856	.000

a Predictors: (Constant), E-SQ

b Dependent Variable: E-LOY

**Table 5.12.2: Regression analysis II: ANOVA<sup>(b)</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.684 <sup>(a)</sup>	.468	.466	2.75

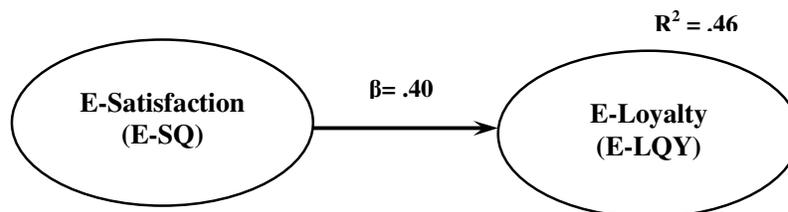
a Predictors: (Constant), E-SQ

b Dependent Variable: E-LOY

**Table 5. 12.3 : Regression analysis II: Coefficients**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	71.894	2	35.947	63.933	.000 <sup>(a)</sup>
	Residual	200.728	357	.562		

**Figure 5.2: The multiple regressions for the relationship between E-Satisfaction and E-LOYalty toward the mobile websites**



### 5.11.3 Regression analysis III: Examining the Relationship between Pre/E-CRM, At/E-CRM, and Post/E-CRM Features and E-SQ

A new scale category was created for each pre-purchase E-CRM, at-purchase E-CRM, and post-purchase E-CRM mobile websites features category. The average of all the items for each category achieved this. The purpose was to conduct a regression analysis with E-Satisfaction as the dependent variable and pre-purchase E-CRM, at-purchase E-CRM, and post-purchase E-CRM mobile websites Features, as the independent variables. From the analysis a significant model emerged table 5.13.1 below. The adjusted R square is 0.513, which indicates that the relationships are statistically significant; therefore, the hypotheses (H2, H4, and H6) are supported (table 5.13).

Tables (5.13.1, 5.13.2, and 5.13.3) reports the regression analysis results for this relation. From the findings it is concluded that pre-purchase E-CRM mobile websites features, at-purchase E-CRM mobile websites features and post-purchase mobile websites features are plays an important role in predicting customers' e-satisfaction toward these websites.

Figure 5.3 shows the multiple regressions III for the relationship pre-purchase E-CRM, at-purchase E-CRM, and post-purchase E-CRM mobile websites Features and E-Satisfaction

**Table 5.13.1 : Regression analysis III: Model Summary <sup>(b)</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.7188	0.517	0.513	0.530

**Table 5.13.2: Regression analysis III: ANOVA <sup>(b)</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	114.547	3	35.849	126.314	.000 <sup>(a)</sup>
	Residual	67.334	356	.133		

a Predictors: (Constant), Post-purchase, Pre-Purchase, At-Purchase

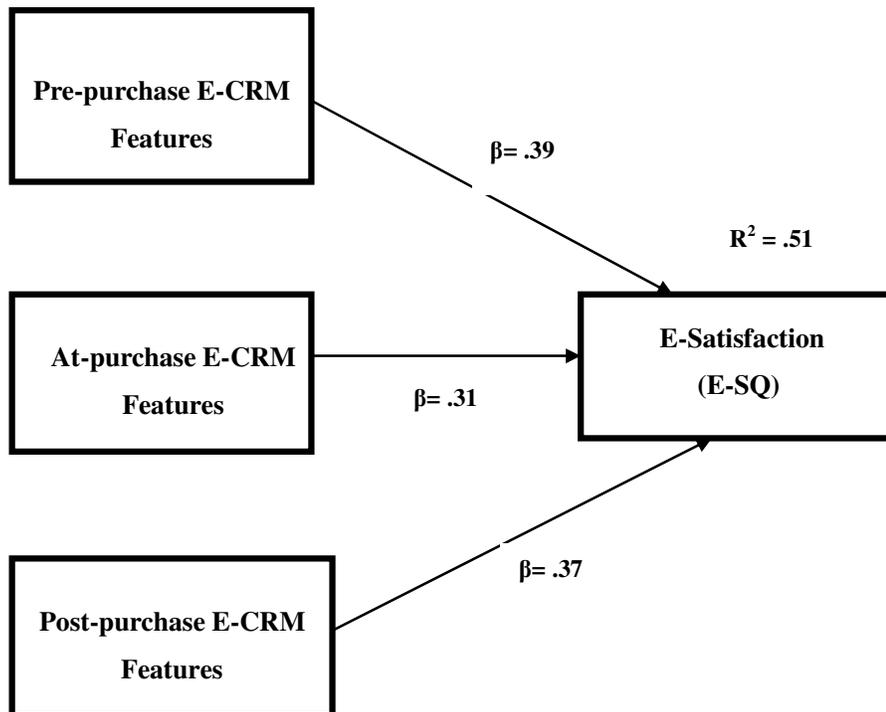
b Dependent Variable: Satisfaction

**Table 5.13.3 : Regression analysis III: Coefficients<sup>(a)</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients $\beta$	t-value	Sig.
		B	Std. Error			
1	(Constant)	-0.917	0.247		-3.711	0.000
	Pre/E-CRM	0.324	0.069	0.397	4.675	0.000
	At/E-CRM	0.312	0.049	0.311	6.402	0.000
	Post/E-CRM	0.351	0.069	0.376	9.458	0.000

a. Dependent Variable: E-SQ

**Figure 5.3 : The multiple regressions for the relationship between Pre/E-CRM, At/E-CRM, and Post/E-CRM Features and E-SQ**



**Table 5.13 : Hypotheses Assessment**

<b>Research hypothesis</b>		<b>Results</b>
H2 : Pre/E-CRM Features	—————▶ E-SQ	<b>Supported</b>
H4 : Pre/E-CRM Features	—————▶ E-SQ	<b>Supported</b>
H6 : Pre/E-CRM Features	—————▶ E-SQ	<b>Supported</b>

## **5.12 Mediation Effects**

The amount of mediation of one initial variable (e.g., Pre/ E-CRM) can be estimated by the indirect effect of the initial variable when adding the path from the initial variable to the so-called outcome variable (i.e., E-LOY), while controlling the mediator and the other initial variable (i.e., Pre/ E-CRM) as covariate in the mediation model (Kenny, 2006). In the mediation model the total effect can be used to estimate the direct effect of the initial variable on the outcome variable when the model does not include the mediator. If the total effect of the initial variable is significant meaning that there is an effect that can be mediated. In addition, if the direct effect is not significant, the mediator has a complete mediating effect on the relationship between the initial variable and the outcome variable. If the direct effect is significant, the mediator has a partial mediating effect on the relationship between the initial variable and the outcome variable. According to MacKinnon (2000), regression is the most common method for testing mediation.

Baron and Kenny (1986) proposed a four step approach in which several regression analyses are conducted and significance of the coefficients is examined at each step. Table 5.14 below presents these steps in details.

**Table 5.14 : Mediation Test Steps**

Steps	Analysis	Visual Drawing
Step 1	Conduct a simple regression analysis with X predicting Y to test for path alone, $Y = B_0 + B_1X + e$	$X \xrightarrow{\quad C \quad} Y$
Step 2	Conduct a simple regression analysis with X predicting M to test for path alone, $M = B_0 + B_1X + e$	$X \xrightarrow{\quad a \quad} M$
Step 3	Conduct a simple regression analysis with M predicting Y to test the significance of path alone, $Y = B_0 + B_1M + e$	$M \xrightarrow{\quad b \quad} y$
Step 4	Conduct a multiple regression analysis with X and M predicting Y, $Y = B_0 + B_1X + B_2M + e$	$X \xrightarrow{\quad} M \xrightarrow{\quad} Y$ $X \xrightarrow{\quad c' \quad} Y$

**5.12.1 Regression I: Examining the Relationship between E-CRM (X) Stages and E-LOY(y)**

A new scale was created for each pre-purchase E-CRM, at-purchase E-CRM and post-purchase E-CRM. The computing average of all the items for each category achieved this. The purpose was to conduct a regression analysis with E-LOY as the dependent variable and pre-purchase E-CRM, at-purchase E-CRM and post-purchase E-CRM as the predictor variables. From the analysis a significant model emerged table 5.15.1 below. The adjusted R square is .419, which indicates that the relationships are statistically significant.

Tables (5.15.1, 5.15.2, and 5.15.3) report the regression analysis results for this relationship.

**Table 5.15.1: Regression I: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.651 <sup>(a)</sup>	.424	.419	1.11838

a Predictors: (Constant)

b Dependent Variable: E-LOY

**Table 5.15.2: Regression I: ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	326.207	3	107.734	86.732	.000(a)
	Residual	423.783	356	1.253		

**Table 5.15.3: Regression I: Coefficients**

Constant	Unstandardized Coefficients		Standardized Coefficients $\beta$	t	Sig.
	B	Std. Error			
	-0.233	0.338		-0.585	0.514
<b>Pre/E-CRM</b>	0.967	0.089	0.227	5.234	0.000
<b>At/E-CRM</b>	0.932	0.535	0.084	3.563	0.001
<b>Post/E-CRM</b>	0.956	0.064	0.267	4.679	0.000

Dependent Variable: E-LOY

**5.12.2 Regression analysis III: Examining the relationship between overall E-CRM stages and E-LOY controlling for E-SQ**

A Multiple Regression Analysis was conducted using SPSS 15.0 to examine the relationships between pre-purchase E-CRM, at-purchase E-CRM, and post-purchase E-CRM as independent variables and E-LOY as dependent variable while controlling E-Satisfaction. A new scale was created for each pre-purchase E-CRM, at-purchase E-CRM and post-purchase E-CRM. The computing average of all the items for each category achieved this. The purpose was to conduct a regression analysis with E-LOY as the dependent variable and pre-purchase E-CRM, at-purchase E-CRM and post-purchase E-CRM as the predictor variables while controlling E-Satisfaction (path  $c'$ , table 5.14).

From the analysis a significant model emerged table 5.16.1 below. The adjusted R square is 0.22 and 0.31 which indicates that the relationships are statistically significant; therefore, path  $c'$  is significant. This regression equation also provided an estimate of Path ( $c'$ ) the relation between E-CRM features and E-LOY, controlling for E-Satisfaction. When that path is zero, there is complete mediation. However, Path ( $c'$ ) was 0.56 and still significant ( $p < .001$ ) meaning there is no complete mediation effect of E-Satisfaction.

Tables (5.16.1, 5.16.2, and 5.16.3) reports the regression analysis results for this relationship. Figure 5.4 shows the multiple regressions III for this relationship.

**Table 5.16.1: Regression analysis III: Model Summary**

<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
<b>1</b>	0.470	0.221	0.214	0.724
<b>2</b>	0.563	0.317	0.309	0.679

a Predictors: (Constant), Post/E-CRM, Pre/E-CRM, At/E-CRM

b Predictors: (Constant), Post/E-CRM, Pre/E-CRM, At/E-CRM, E-SQ

c Dependent Variable: E-LOY

**Table 5.16.2 : Regression analysis III: ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	52.87	3	17.62	33.59	0.000
	Residual	186.79	356	0.52		
2	Regression	75.98	4	19.00	41.20	0.000
	Residual	163.67	355	0.46		

a Predictors: (Constant), Post/E-CRM, Pre/E-CRM, At/E-CRM

b Predictors: (Constant), Post/E-CRM, Pre/E-CRM, At/E-CRM, E-SQ

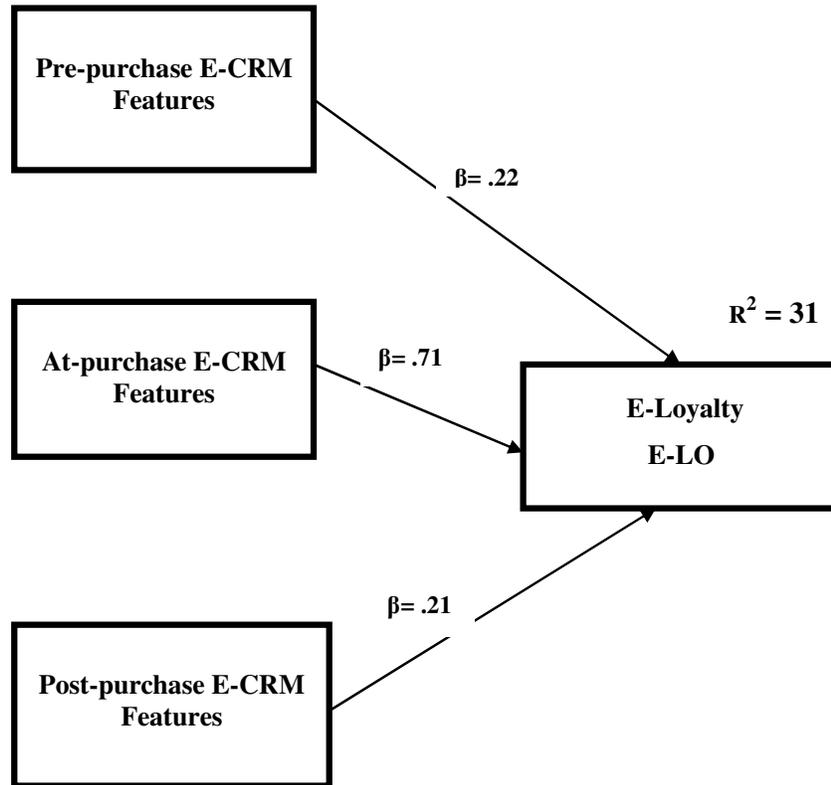
c Dependent Variable: E-LOY

**Table 5.16.3 : Regression analysis III: Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients $\beta$	t-value	Sig.
		B	Std. Error			
1	(Constant)	-0.124	0.338		-0.366	0.714
	Pre-E-CRM	0.867	0.095	0.276	4.234	0.000
	At-E-CRM	0.833	0.089	0.243	3.563	0.000
	Post-E-CRM	0.856	0.094	0.267	4.679	0.000
2	(Constant)	-0.132	0.323		-0.234	0.626
	Pre/E-CRM	0.744	0.092	0.229	2.682	0.000
	At/E-CRM	0.715	0.066	0.713	3.696	0.000
	Post/E-CRM	0.733	0.099	0.214	2.289	0.000
	Sat	0.567	0.068	0.447	3.080	0.000

a Dependent Variable: E-LOY

**Figure 5. 4 :** The multiple regressions for the relationships between Pre/E-CRM, At/E-CRM, and Post/E-CRM Features and E-LOY controlling for E-SQ



Following the steps outlined earlier for testing mediation, we first established that E-CRM Features (predictors) are related to E-Loyalty (the outcome) by regressing E-Loyalty on E-CRM features (path c, table 5.14). The unstandardized regression coefficient ( $\beta$ ) associated with the effect of E-CRM on E-Loyalty were significant ( $p < .0001$ ) Thus, Path c was significant, and the requirement for mediation in Step 1 was met.

To establish that E-CRM features are related to E-Satisfaction (the hypothesized mediator, Path a), we regressed E-Satisfaction on E-CRM features (path a, table 5.14). The unstandardized

regression coefficient ( $\beta$ ) associated with this relation also was significant at the ( $p < .0001$ ) level, and thus the condition for Step 2 was met (path a was significant).

To test whether E-Satisfaction is related to E-Loyalty (path b, table 5.14), we regressed E-Loyalty on E-Satisfaction (path b, table 5.14). The coefficient associated with the relation between E-Satisfaction and E-Loyalty also was significant ( $p < .0001$ ). Thus, the condition for Step 3 was met (Path b was significant). Finally to establish that E-CRM features are related to E-Loyalty controlling E-Satisfaction (path  $c'$ , table 5.14) we regressed E-Loyalty on E-CRM features while controlling E-Satisfaction. This regression equation also provided an estimate of Path ( $c'$ ) the relation between E-CRM features and E-Loyalty, controlling for E-Satisfaction. When that path is zero, there is complete mediation. However, Path ( $c'$ ) was 0.31 and still significant ( $p < .001$ ) meaning there is no complete mediation effect of E-Satisfaction.

### 5.12.3 Measuring the indirect effect

The test of the indirect effect is given by dividing  $ab$  by the square root of the variance ( $b^2s_a^2 + a^2s_b^2$ ) and treating the ratio as a Z test (i.e., larger than 1.96 in absolute value is significant at the .05 level). Where  $a$  and  $b$  are unstandardized regression coefficients and  $s_a$  and  $s_b$  are their standard errors. The amount of mediation, which is called the indirect effect, is defined as the reduction of the effect of the initial variable on the outcome or  $c - c'$ . This difference in coefficients is theoretically exactly the same as the product of the effect of X on M times the effect of M on Y or  $ab$ ; thus it holds that  $ab \approx c - c'$ . (Kenny, 2003). It is much more common and more highly recommended to perform a single test of the significance of  $a*b$ . The test was first proposed by Sobel (1982) has been by far the most commonly reported. It requires the standard error of  $a$  or  $s_a$  and the standard error of  $b$  or  $s_b$ . The Sobel test provides the standard error of  $ab$  can be shown to equal approximately the square root of:  $b^2s_a^2 + a^2s_b^2$

The test of the indirect effect is given by dividing  $ab$  by the square root of the above variance and treating the ratio as a Z test (i.e., larger than 1.96 in absolute value is significant at the .05

level). 
$$z = \frac{ab}{\sqrt{b^2s_a^2 + a^2s_b^2}}$$

By using the website of Kristopher J. Preacher and Geoffrey J. Leonardelli, the critical ratio ( $Z$ ) was calculated to test whether the indirect effect of the IV (Pre/E-CRM, At/E-CRM, and Post/E-CRM) on the DV (E-LOY) via the mediator (E-SQ) is significantly different from zero and the result was:

**$Z1= 4.175$ .** Thus, E-SQ is a significant mediator between Pre/E-CRM and E-LOY.

Bolger (2002) also recommended calculating the confidence interval around the estimate of the indirect effect. The formula for calculating a 95% confidence interval is the product of Paths  $a$  and  $b \pm s_{ab} z_{.975}$ , where  $z_{.975}$  is equal to the constant 1.96 and  $s_{ab}$  is the standard error term calculated earlier. For our example, the 95% confidence interval was:

$$0.2809 \pm 0.0672 (1.96) = (0.4126, 0.1492)$$

This confidence interval does not include zero, which is consistent with the conclusion that there is mediation (i.e., the indirect effect is not zero). As  $Z1$  significantly different from zero, Thus, Hypothesis 8a of this study is supported (Table 5.17).

**$Z2= 5.2645$ .** Thus, E-SQ is a significant mediator between At/E-CRM and E-LOY.

The 95% confidence interval was:  $0.2598 \pm 0.07426 (1.96) = (0, 4053, 0.1143)$

This confidence interval does not include zero, which is consistent with the conclusion that there is mediation (i.e., the indirect effect is not zero). As  $Z2$  significantly different from zero, Thus, Hypothesis 8b of this study is supported (Table 5.17).

**$Z3= 4.44102$ .** Thus, E-Satisfaction is a significant mediator between post/E-CRM and E-LOY.

The 95% confidence interval was:  $0.3004 \pm 0.0676 (1.96) = (0.4328, 0.168)$

This confidence interval does not include zero, which is consistent with the conclusion that there is mediation (i.e., the indirect effect is not zero). As  $Z3$  significantly different from zero, Thus, Hypothesis 8c of this study is supported (Table 5.17).

**Table 5.17: Hypotheses Assessment**

Research hypothesis		Results
H8a : Pre/E-CRM Features	—————▶ E-LOY	<b>Supported</b>
H8b : Pre/E-CRM Features	—————▶ E-LOY	<b>Supported</b>
H8c : Pre/E-CRM Features	—————▶ E-LOY	<b>Supported</b>

The amount of mediation is the proportion of the total effect that is mediated, which is defined by  $a*b/c$  (Shrout and Bolger, 2002). Using the unstandardized regression coefficients from our study, the results were as follow:

➤ *Pre/E-CRM*:  $0.2809/0.967 = 0.29$ .

As a result, about 29% of the total effect of Pre/E-CRM on E-LOY is mediated by E-SQ.

➤ *At/Purchase*:  $0.2598/0.932 = 0.28$

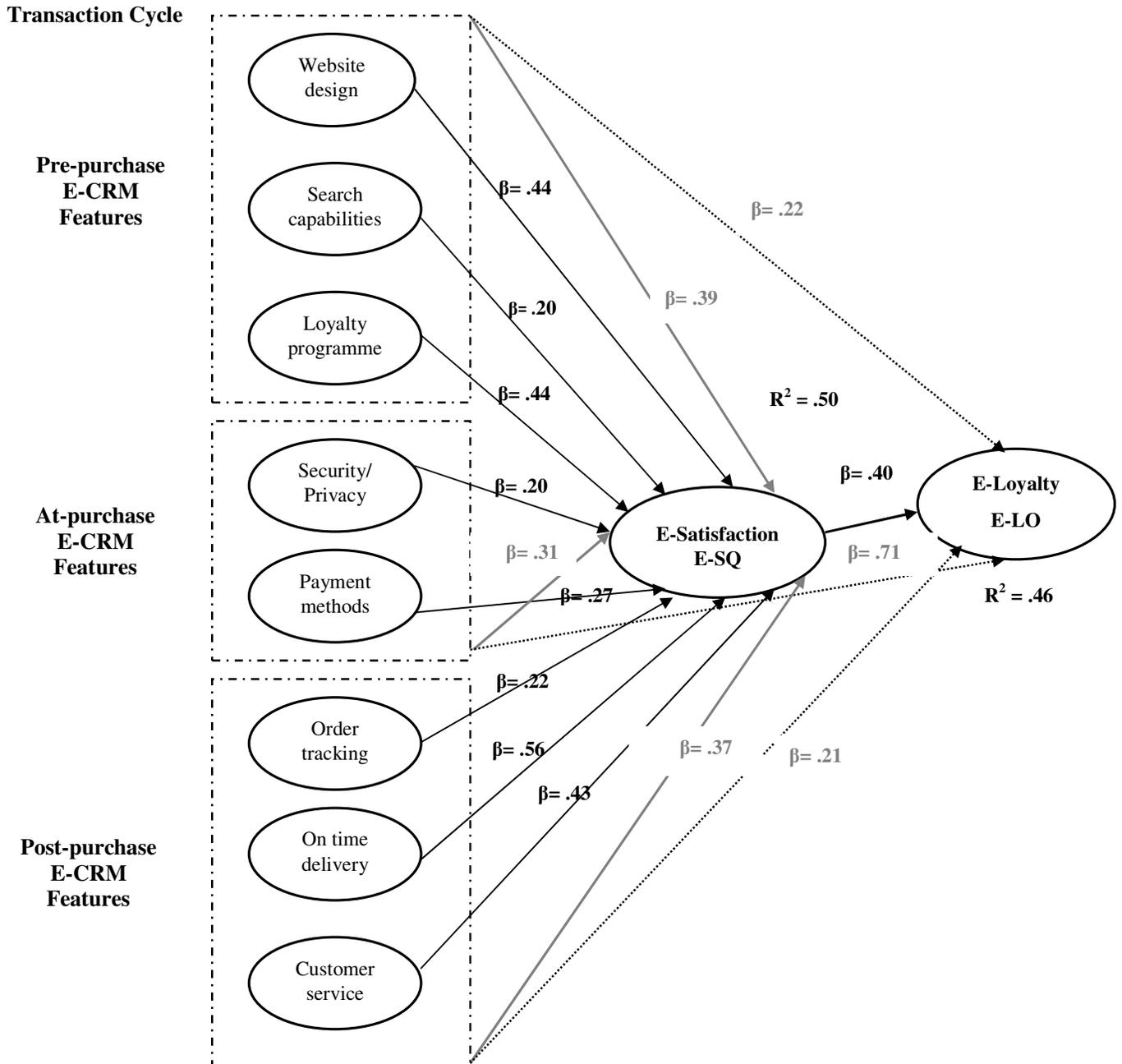
As a result, about 28% of the total effect of At/ E-CRM on E-LOY is mediated by E-SQ.

➤ *Post/Purchase*:  $0.3004/0.956 = 0.31$

As a result, about 31% of the total effect of Post/ E-CRM on E-LOY s is mediated by E-SQ.

The results showed support for all the research hypotheses; Table 5.18, and Figure 5.5 below presents the hypothesized relationships and summarizes the results.

**Figure 5.5 :** The full model of the relationship between E-CRM features and E-LOY within the transaction cycle



**Table 5.18: Research Hypotheses Assessment**

<b>HN</b>	<b>Description</b>	<b>Results</b>
H1a	Website Design will have a positive effect on E-Satisfaction	<b>Supported</b>
H1b	Search Capabilities will have a positive effect on E-Satisfaction	<b>Supported</b>
H1c	Loyalty Programme will have a positive effect on E-Satisfaction	<b>Supported</b>
H3a	Security/Privacy will have a positive effect on E-Satisfaction	<b>Supported</b>
H3b	Payment Methods will have a positive effect on E-Satisfaction	<b>Supported</b>
H5a	Order Tracking will have a positive effect on E-Satisfaction	<b>Supported</b>
H5b	On- time Delivery will have a positive effect on E-Satisfaction	<b>Supported</b>
H5c	Customer Service will have a positive effect on E-Satisfaction	<b>Supported</b>
H7	E-Satisfaction will have a positive effect on E-Loyalty	<b>Supported</b>
H2	Pre-purchase/E-CRM will have a positive effect on E-Satisfaction	<b>Supported</b>
H4	At-purchase/E-CRM will have a positive effect on E-Satisfaction	<b>Supported</b>
H6	Post-purchase/E-CRM will have a positive effect on E-Satisfaction	<b>Supported</b>
H8a	E-Satisfaction will mediate the effects of Pre-purchase/E-CRM on E-Loyalty	<b>Supported</b>
H8b	E-Satisfaction will mediate the effects of At-purchase/E-CRM on E-Loyalty	<b>Supported</b>
H8c	E-Satisfaction will mediate the effects of Post-purchase/E-CRM on E-Loyalty	<b>Supported</b>

## 5.13 Conclusions

In conclusion, this chapter presents the findings from final purified scales and hypotheses testing. This section was followed by the explanation of factor loading to identify the groups or clusters of variables. An exploratory factor analysis technique was used to show the relationship of variables to factors. In this section factors were extracted with the help of eigenvalues. Applying Varimax of orthogonal technique in principal component, factors were rotated which showed maximum variance of factor loading. Before inferring results, reliability and construct validity tests were also conducted in which all measurement scales were found satisfactory.

All independent variables related to E-CRM features were found positively and significantly correlated to the dependent variable.

The findings showed statistically significant positive relationships between independent variables and the dependent variable. All independent variables related to E-CRM features were found positively and significantly correlated to the independent variable such that E-Satisfaction and E-Loyalty. Further, in the pre-purchase E-CRM construct, three features such that website design, search capabilities and loyalty programme were found positively and significantly related to E-Satisfaction. In the second construct, at-purchase E-CRM, the two features such that security/privacy and payment methods were found positively and significantly related to E-Satisfaction. Furthermore, post-purchase features such that on-time delivery, order tracking, and customer service were found positively and significantly related to E-Satisfaction.

In brief, the effect of E-CRM features on E-Loyalty is dependent upon the levels of E-Satisfaction. A well integrated process of E-CRM will not be effective unless mobile companies fully understand and observe the drivers of E-Satisfaction. The implications for theory and practice from these results as well as limitations of this research are discussed in chapter 6 and 7.

## **Chapter 6: Discussion and Revised Conceptual Model**

### **6.1 Introduction**

Following the analysis of research data in chapter five, this final chapter presents the conclusions and implications of the research findings. It begins with a discussion relating to the research hypotheses followed by the contribution of this research to theoretical development. In discussing the practical implications, an E-CRM model is proposed and marketing managers may find it useful to knowing the process of building long-term relationships with online customers. Finally, the limitations and future directions for research conclude the chapter. There are six main sections in this chapter.

Section 6.1 presents a brief introduction to this chapter. A discussion regarding the research hypotheses forms section 6.2. The linkage between overall E-CRM factors, E-Satisfaction, and E-Loyalty is discussed in section 6.3.

### **6.2 Discussion Regarding Research Hypotheses**

This section summarises the hypotheses proposed in Chapter 3 and states whether they are supported by the data analysis or not. Table 6.1 illustrates that a total of 15 research hypotheses were tested to examine if the independent variables significantly explained the dependent variables. All the 15 research hypotheses were supported by the data analysis. The fact that all research hypotheses were supported by the data analysis means that all the independent variables significantly explained dependent variables.

**Table 6.1: Results of Research Hypotheses**

<b>HN</b>	<b>Description</b>	<b>Results</b>
H1a	Website Design will have a positive effect on E-Satisfaction	<b>Supported</b>
H1b	Search Capabilities will have a positive effect on E-Satisfaction	<b>Supported</b>
H1c	Loyalty Programme will have a positive effect on E-Satisfaction	<b>Supported</b>
H3a	Security/Privacy will have a positive effect on E-Satisfaction	<b>Supported</b>
H3b	Payment Methods will have a positive effect on E-Satisfaction	<b>Supported</b>
H5a	Order Tracking will have a positive effect on E-Satisfaction	<b>Supported</b>
H5b	On- time Delivery will have a positive effect on E-Satisfaction	<b>Supported</b>
H5c	Customer Service will have a positive effect on E-Satisfaction	<b>Supported</b>
H7	E-Satisfaction will have a positive effect on E-Loyalty	<b>Supported</b>
H2	Pre-purchase/E-CRM will have a positive effect on E-Satisfaction	<b>Supported</b>
H4	At-purchase/E-CRM will have a positive effect on E-Satisfaction	<b>Supported</b>
H6	Post-purchase/E-CRM will have a positive effect on E-Satisfaction	<b>Supported</b>
H8a	E-Satisfaction will mediate the effects of Pre-purchase/E-CRM on E-Loyalty	<b>Supported</b>
H8b	E-Satisfaction will mediate the effects of At-purchase/E-CRM on E-Loyalty	<b>Supported</b>
H8c	E-Satisfaction will mediate the effects of Post-purchase/E-CRM on E-Loyalty	<b>Supported</b>

### **6.2.1 The relationship between pre-purchase E-CRM features and E-Satisfaction**

One reasonable justification of the importance of the pre-purchase E-CRM construct is that at this stage potential customers are mainly concerned with deciding whether or not to become a customer. Therefore, pre-purchase E-CRM features (e.g., search capability) are very important resources for making considered decisions. These features aim at reducing risk for customers and gaining their trust. An additional explanation for the influence of the pre-purchase E-CRM

features is that new customers are not yet sufficiently familiar with the at-purchase and post-purchase E-CRM features to appreciate their importance. Thus, as pre-purchase E-CRM features increase on a website, so the better the customer satisfaction will be. This hypothesis is confirmed by the findings obtained in this research which suggest that the overall pre-purchase E-CRM factors have a significant positive influence on E-Satisfaction (H2, Table 6.1).

Following the theoretical foundation presented in chapter 2, this research divided the pre-purchase E-CRM construct into three factors: website design, search capability, and loyalty programme. These features were expected to provide a measure of pre-purchase E-CRM towards E-Satisfaction. Consistent with the findings of Feinberg and Kadam (2002), the results of this study support the hypothesis proposed by this study that pre-purchase E-CRM features have a positive effect on E-Satisfaction.

The results tend to agree with the findings of similar studies regarding E-CRM features by (Khalif and Shen 2005; Otim and Varun 2006; Liu *et al.*, 2008). The results gained from this study on the relationships between pre-purchase E-CRM Features and E-Satisfaction is discussed below in detail.

#### ➤ Feature 1: Website Design

As discussed in Chapter 2, several previous empirical studies have found that website design is an important factor in determining online satisfaction (Kim *et al.*, 2008; Liu *et al.*, 2008, Schaupp and Be' langer, 2005; Wolfenbarger and Gilly, 2003). This study proposed that website design would have a positive effect on E-Satisfaction. The results of this study supported and confirmed the hypothesis that website design has a significant positive influence on E-Satisfaction (H1a) with a path coefficient value of 0.44. Furthermore, the findings of this study illustrated that this Feature is the second most important element in determining the level of E-Satisfaction. This finding is consistent with the study of Szymanski and Hise (2000), but somewhat opposed to Kim and Stoel's (2004) finding.

➤ Feature 2: Search Capability

The findings of this study confirmed the hypothesis that a search capability has a significant positive influence on E-Satisfaction (H1b) with a path coefficient of 0.44. It was also found that the search capability is the leading driver of E-Satisfaction at this stage (pre-purchase); this is because the search capability is very important when the customer has a large number of criteria to consider before selecting a product. Its importance highlights the necessity of supporting the customer's decision-making process during the pre-purchase phase. This finding is consistent with the studies of Kalifa and Shen (2005; 2009).

➤ Feature 3: Loyalty programme

The findings of this study confirmed that a loyalty programme feature has a significant positive influence on E-Satisfaction (H1c) with a path coefficient of 0.17. Although this feature not perceived to be as important as the other pre-purchase E-CRM features, it was found that a loyalty programme is the third most important feature driving E-Satisfaction level at this stage (pre-purchase). This finding is consistent with the studies of Simons *et al.*, (2009), Ahmad and Chowdhury (2008), Kalifa and Shen (2005), and Chen *et al.*, (2002).

## **6.2.2 The relationship between at-purchase E-CRM Features and E-Satisfaction**

Following the theoretical foundation presented in chapter 2, this research divided the at-purchase E-CRM construct into two features: security/privacy, and payment methods. These factors were expected to provide a measure of these at-purchase E-CRM features towards E-Satisfaction. The results of the study support the hypothesis proposed by this study that at-purchase E-CRM features have a positive effect on E-Satisfaction (H4, Table 6.1).

The results tend to agree with the findings of similar studies regarding E-CRM features by Khalif and Shen (2005; 2009), Otim and Varun (2006), and Liu *et al.*, (2008). The results gained from this study on the relationship between at-purchase E-CRM features and E-Satisfaction is discussed below in detail.

➤ Feature 1: Security/Privacy

The findings of this study confirmed the hypothesis that the security/privacy feature of a mobile company's website has a significant positive influence on E-Satisfaction (H2a) with a path coefficient of 0.77. It was also found that security/privacy is the leading driver of E-Satisfaction in this stage (at-purchase). This finding is consistent with the studies of Kim et al., (2008), Liu *et al.*, (2008), Anand (2007), Yang and Tsai (2007), and Schaupp and Be'linger (2005), but conflicts with Kim and Stoel's (2004) finding. Furthermore, security/privacy emerges as the most important driver of E-Satisfaction at this stage (at-purchase) with a path coefficient of 0.77.

➤ Feature 2: Payment Methods

As discussed in chapter 2, e-payment methods are essential in e-commerce in enabling customers to make online transactions. Consumers would like to have more payment options apart from using credit cards when buying mobile phone products online. The findings of this study confirmed the hypothesis that the payment methods feature of a mobile company's website has a significant positive influence on E-Satisfaction (H2b). This factor was the second strongest factor contributing to E-Satisfaction with a path coefficient of 0.27.

These findings are in accordance with the literature. This study also that payment risk is an important factor influencing consumer decisions when buying confirms products online (Kalifa and Shen, 2005; Wang, 2001; Miyazaki and Fernandez, 2000; Korgaonkar and Wolin, 1999).

### **6.2.3 The relationship between post-purchase E-CRM features and E-Satisfaction**

As discussed in chapter 2, this research divided the post-purchase E-CRM construct into three Features: order tracking, on-time delivery, and customer service. These elements were expected to provide a measure of post-purchase E-CRM features towards E-Satisfaction. The findings of this study confirmed the hypothesis proposed by this study that post-purchase E-CRM features have a positive effect on E-Satisfaction (H6, Table 6.1). All three post-purchase E-CRM features were found to be significant, but in a slightly different order. These results tend to agree with the

findings of similar studies regarding post-purchase E-CRM features by Khalif and Shen (2005), Otim and Varun (2006), and Liu *et al.*, (2008). The results gained from this study on the relationship between post-purchase E-CRM features and E-Satisfaction are discussed below in detail.

➤ Feature 1: Order Tracking

As discussed in chapter 2, with this feature customers tend not to wait inactive to be informed of the status of their order but actively seek the information online. Such capability is at the essence of E-CRM and it helps to strengthen the relationship between the customer and the seller by making it less passive and more active. The findings of this study confirmed the hypothesis that the order tracking feature of a mobile company's website has a significant positive influence on E-Satisfaction (H3a) with a path coefficient of 0.43. Given that customers cannot physically handle the product and carry it home after an online purchase, support of order tracking removes uncertainty about the online order process and gives customers some sense of control about the status of their order. This finding is consistent with the studies of Kim *et al.*, (2008), and Schaupp and Be'linger (2005).

➤ Feature 2: On-Time Delivery

The findings of this study confirmed the hypothesis that on-time delivery has a significant positive influence on E-Satisfaction (H3b) with a path coefficient of 0.22, which is consistent with the studies of Sharma *et al.*, (1995), Liu *et al.*, (2008), and Schaupp and Be'linger (2005). This finding supports results in the literature which indicate that customers are concerned about delivery because they have had to pay money in advance and wait for delivery. This is unlike buying from traditional shops, where customers take products away with them immediately after paying. In today's competitive e-marketplace, online retailers must keep a close eye on their delivery service if they want to keep customers happy.

### ➤ Feature 3: Customer Service

This finding supports the literature that the quality of online customer service is an antecedent of E-Satisfaction (Cho and Park, 2001). This factor was the strongest driver of E-Satisfaction at this stage (post-purchase). The findings of this study confirmed the hypothesis that customer service has a significant positive influence on E-Satisfaction (H3C) with a path coefficient 0.56. The importance of customer service confirmed the necessity of providing immediate solutions to customers' problems and suggests the need for real-time interactivity. This finding is consistent with the studies of Simons *et al.*, (2009), Liu *et al.*, (2008), Wolfinbarger and Gilly (2003), and Wang (2001).

This finding supports the literature that post-purchase E-CRM features (order tracking, on-time delivery, and customer service) are important factors influencing consumer satisfaction when buying mobile phone products/services online. Similar discoveries are found in the literature among websites users for other technological products (Kim *et al.*, 2008, Liu *et al.*, 2008, Khalif and Shen, 2005, Szymanski and Hise 2000; Venkatesh and Davis, 2000). This finding is important both to companies selling mobile phone products/services online and to web developers. Customers do not touch and feel products sold online. As a result, order tracking, on-time delivery, and customer service are important factors for the success of companies selling mobile phone products online.

#### **6.2.4 The linkage between E-CRM features and E-Loyalty**

As discussed in chapter 2, the ultimate aim of E-CRM is to gain consumer loyalty, leading to repeat purchases and increased profitability (Anderson and Mittal, 2000; Galbreath, 2002; Reichheld and Scheffer, 2000; Yang and Peterson, 2004). As there is a lack of empirical evidence of the proposed relationship, this study makes a contribution to knowledge about the effect of E-CRM on E-Loyalty. In this study hypotheses H6a, H6b, and H6c were concerned with the relationship between E-CRM Features and E-Loyalty.

The results of this study indicated that there was a significant and positive relationship between E-CRM Features and overall E-Loyalty. This result confirmed that overall E-CRM Features are an antecedent to E-Loyalty. This study agrees with the finding in Lee-Kelley *et al.*, (2003) which suggests that in the context of the Internet, implementation of E-CRM can directly improve consumer loyalty.

### **6.2.5 The linkage between E-Satisfaction and E-Loyalty**

Researchers interpret loyalty as repeat purchase or retention and argue that consumer satisfaction leads to loyalty (Amin, 2009; Deng et al., 2009, Casalo *et al.*, 2008; HOQ and Shemwell *et al.*, 1998; Taylor and Baker, 1994). Hypothesis 7 discovered the relationship between E-Satisfaction and E-Loyalty toward a specific mobile company website. The finding of this research supports the hypothesis that E-Satisfaction has a direct positive impact on E-Loyalty with a path coefficient of 0.40 and this result tended to agree with the findings of similar studies by Ab Hamid (2006), Yang and Peterson (2004), Van Riel *et al.*, (2002); and Feinberg and Kadam (2002) about the direct influence of E-Satisfaction on E-Loyalty within the context of E-CRM Features.

Furthermore, this study is consistent with the results of Anderson, and Ponnavaolu, (2002) who found that E-Satisfaction has a positive effect on E-Loyalty.

### **6.3 The Linkage between E-CRM Features, E-Satisfaction, and E-Loyalty/ The Full Model**

Overall, the full model of this study suggests that E-CRM is directly related to E-Satisfaction and will influence E-Loyalty. This study provides a contribution to knowledge by modelling the cause-effect structure of E-CRM implementation and E-Satisfaction and E-Loyalty. That is, the effective use of Internet technology in building customer relationships (E-CRM) will increase E-Satisfaction leading to E-Loyalty. In addition, results from the other models do not confirm past researchers' suggestion that customers remain loyal and continue to return to a service provider,

even though they are dissatisfied. Thus, this research makes a contribution to knowledge about the mediating effect of E-Satisfaction on E-Loyalty.

The suggestion that E-CRM features lead to improved E-Satisfaction and E-Loyalty reported by Feinberg and Kadam (2002), Ab-Hamid, (2006) , Yang and Tsai (2007) , Hao-Erl (2008) , and Ndubisi *et al.*, (2009), Cronin *et al.*, (2000), Rust *et al.*, (2000) and van Riel *et al.*, (2002) was finding supported in this research.

The results of data analysis and hypotheses testing were clarified that pre-purchase, at-purchase and post-purchase E-CRM features have a strong effect on E-Satisfaction which in turn has a significant effect on E-Loyalty. The findings showed that E-Satisfaction plays a mediating role to partially mediate the relationship between pre-purchase, at-purchase, and post-purchase E-CRM features and E-Loyalty. It implies that the more customers are satisfied with E-CRM features, so the more customers are likely to remain loyal to the mobile websites they visited. In addition, the finding does not support suggestions by previous researchers (Simons *et al.*, 2009; Otim and Grover, 2006; Chang *et al.*, 2005; Anderson and Srinivasan, 2003; Reinartz and Kumar, 2002; Yu and Dean 2001) that E-Loyalty is not affected by E-Satisfaction.

Therefore this study provides empirical evidence of online satisfaction-loyalty linkage in an E-CRM business-to-consumer environment.

#### **6.4 E-CRM Features Model**

A summary of the research hypotheses test, and also a reflection on the hypotheses in relation to proposed conceptual model, were provided above. This subsection summarises the above discussion and reflects on the performance of the E-CRM features model in comparison to its guiding models and framework.

Figure 6.1 illustrates the validated model of E-CRM features that was proposed in Chapter 3 (Figure 3.2). Figure 6.1 shows the paths from website design, search capabilities and loyalty programme towards E-Satisfaction (E-SQ) being significant. Furthermore the path from the

overall pre-purchase E-CRM features to E-SQ is also significant. As it was hypothesised, paths from security/privacy and payment methods are also significant. Furthermore, the path from overall at-purchase E-CRM features towards E-SQ is also significant. The three post-purchase E-CRM features (order tracking, on-time delivery and customer service) are significantly related to E-SQ. This means that all three dimensions of the determinants of E-SQ, (i. e. pre-purchase E-CRM features, at-purchase and post-purchase E-CRM features), are significantly related to E-SQ.

Finally, both E-SQ and E-CRM features are significant determinants of E-Loyalty (E-LOY)

The results of data analysis and hypotheses testing were clarified that pre-purchase, at-purchase and post-purchase E-CRM features have a strong effect on E-Satisfaction which in turn has a significant effect on E-Loyalty.

The findings showed that E-Satisfaction plays a mediating role to partially mediate the relationship between pre-purchase, at-purchase, and post-purchase E-CRM features and E-Loyalty. It implies that the more customers are satisfied with E-CRM features, so the more customers are likely to remain loyal to the mobile websites they visited. In addition, the finding does not support suggestions by previous researchers (Simons *et al.*, 2009; Otim and Grover, 2006; Chang *et al.*, 2005; Anderson and Srinivasan, 2003; Reinartz and Kumar, 2002; Yu and Dean 2001) that E-Loyalty is not affected by E-Satisfaction.

**Figure 6.1: The full model of the relationship between E-CRM features and E-LOY within the transaction cycle**

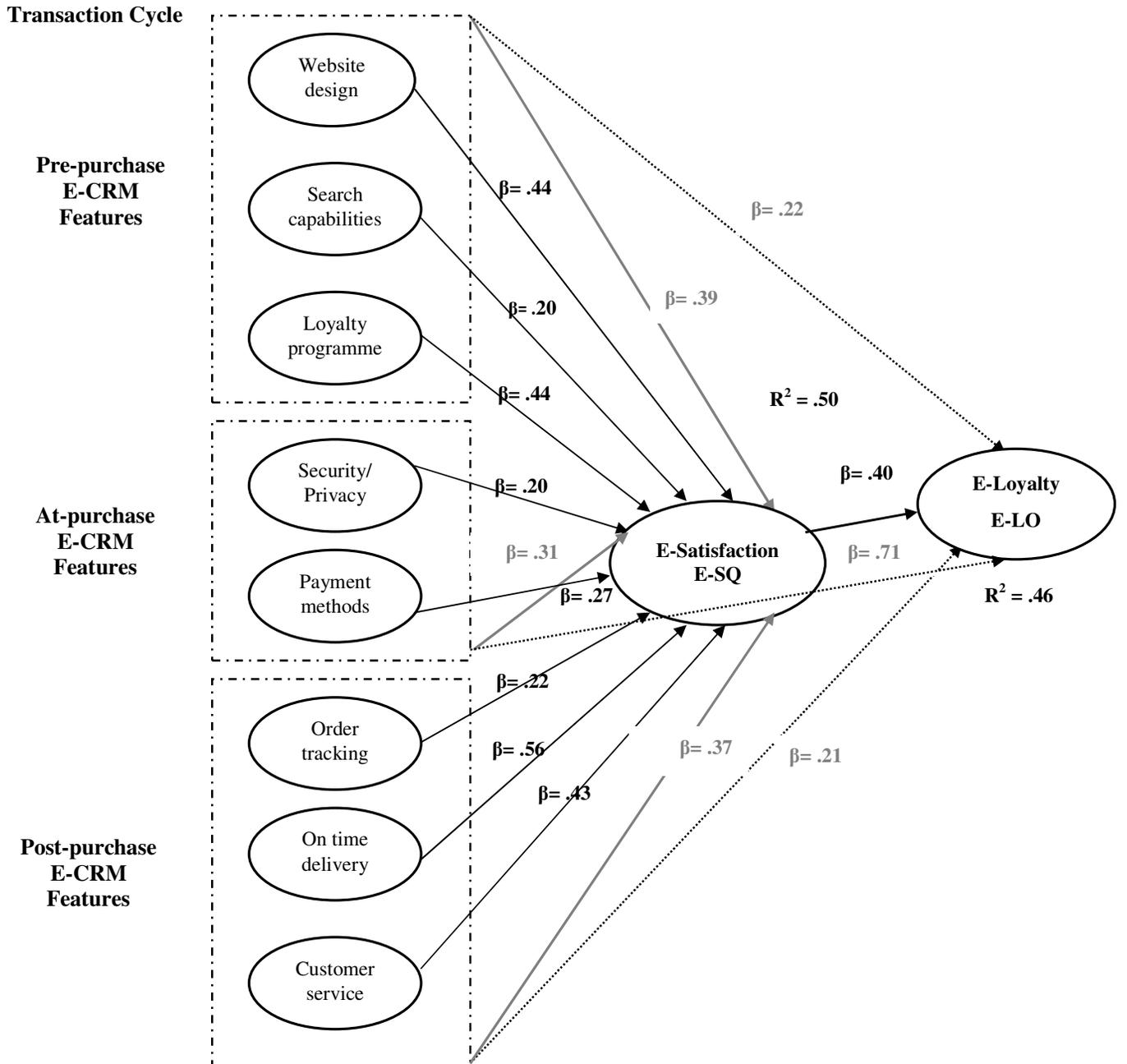
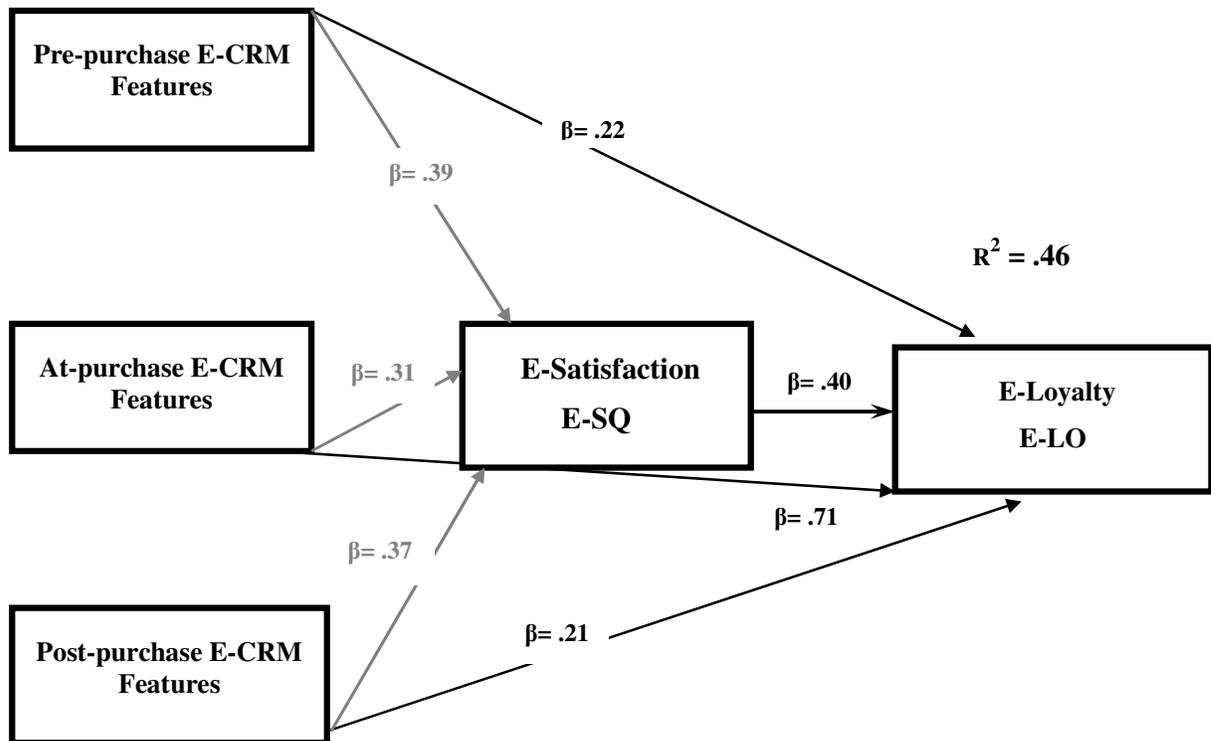


Figure 6.2 shows the overall paths from pre-purchase, at-purchase and post-purchase E-CRM constructs towards E-LOY. Consistent with the hypotheses, the overall pre-purchase, at-purchase and post-purchase E-CRM constructs explained E-LOY. This means that all three types of the determinants of E-LOY (i. e. pre-purchase, at-purchase and post-purchase E-CRM constructs) have significant influence on E-LOY. From the three types of determinants, the largest variance of E-LOY was explained by at-purchase E-CRM factors, which was followed by overall pre-purchase E-CRM factors and overall post-purchase E-CRM factors that explained the least variance of E-LOY.



**Figure 6.2: Overall Impact of pre-purchase, at-purchase and post-purchase E-CRM constructs Towards E-LOY**

## **6.5 Conclusion**

In conclusion, this chapter has provided discussion on the results of the scale and population, measurement scales purification and hypotheses testing. All hypotheses developed in the framework were discussed with previous literature and found inferences for the future. All independent predictor variables were positively and significantly related to E-Satisfaction and E-Loyalty. The results of data analysis and hypotheses testing were clarified that pre-purchase, at-purchase and post-purchase E-CRM features have a strong effect on E-Satisfaction which in turn has a significant effect on E-Loyalty.

The results of data analysis and hypotheses testing were clarified that pre-purchase, at-purchase and post-purchase E-CRM features have a strong effect on E-Satisfaction which in turn has a significant effect on E-Loyalty. The findings showed that E-Satisfaction plays a mediating role to partially mediate the relationship between pre-purchase, at-purchase, and post-purchase E-CRM features and E-Loyalty. It implies that the more customers are satisfied with E-CRM features, so the more customers are likely to remain loyal to the mobile websites they visited.

This finding supports the literature that the quality of online customer service is an antecedent of E-Satisfaction. The importance of customer service confirmed the necessity of providing immediate solutions to customers' problems and suggests the need for real-time interactivity.

In brief, the effect of E-CRM features on E-Loyalty is dependent upon the levels of E-Satisfaction. A well integrated process of E-CRM will not be effective unless mobile companies fully understand and observe the drivers of E-Satisfaction. The implications for theory and practice from these results as well as limitations of this research are discussed in chapter 7.

## **Chapter 7: Conclusions**

### **7.1 Introduction**

The scope of this study was to examine the relationship between E-CRM features and E-Loyalty at the different stages of transaction cycle (pre-purchase, at-purchase, and post-purchase) on mobile phone companies websites in UK.

Based on different review of extant literature and different theoretical perspectives, an integrative theoretical framework was developed which is composed of E-CRM features, E-Satisfaction and E-Loyalty. Alongside the theoretical framework, a set of hypotheses have been developed.

The study applied a positivist approach methodology in which a survey questionnaire was used to obtain quantitative data to test hypotheses. The questionnaire was distributed to 500 students at Brunel University; West London, UK. The survey was administrated and monitored by the researcher. SPSS 15.0 software applied to test the hypothesised relationships.

The findings showed that E-Satisfaction plays a mediating role to partially mediate the relationship between pre-purchase, at-purchase, and post-purchase E-CRM features and E-Loyalty. It implies that the more customers are satisfied with E-CRM features, so the more customers are likely to remain loyal to the mobile websites they visited.

In this chapter, Section 7.1 presents a brief introduction to this chapter. The section on research implications (section 7.2) presents the theoretical contribution and managerial implications of this research. Limitations and directions for future research are discussed in section 7.3. The final section (section 7.4) is an overall conclusion of this thesis.

## **7.2 Implications of Research Findings**

The assessment of the literature related to E-CRM, E-Satisfaction and E-Loyalty, showed that relatively little research has been performed on this topic. Furthermore, the research that has been done failed to provide sufficient coverage of the interaction between E-CRM, customer satisfaction and their loyalty toward a specific website. This study is an attempt to contribute theoretically and practically to the UK telecoms industry.

### **7.2.1 Theoretical implications**

Overall the findings and contributions of this research have several implications for theory about modelling the E-CRM implementation relationship with E-Satisfaction and E-Loyalty. However, the theoretical contribution of this thesis can be summarised into two key points:

- **Analytical integration of the three constructs: E-CRM, E-Satisfaction and E-Loyalty**

Much has been discussed and examined about the links between E-CRM implementation and consumer satisfaction and loyalty in a traditional retail environment. However, studies related to the theoretical implications of this causal-effect structure in an online environment are lacking (Gronroos, 2000).

The theoretical contribution of this thesis is produced by an attempt to re-integrate E-CRM, E-Satisfaction and E-Loyalty in an online environment into the telecoms industry (mobile company websites in UK). This study explores the relationships between different constructs, incorporating an extensive set of factors that affect E-Loyalty towards mobile phone companies' websites in the UK, and offers a systematic analytical approach with specific factors and variables that provide a practical means of understanding complicated issues.

Although there have been several attempts to investigate consumer behaviour on the Internet, many tend to focus on consumer behaviour towards Internet technology in general. For example, Geissler (2001), Torkzadeh and Dhillon (2002), and Vatanasombut *et al.*, (2004) examined consumer behaviour in relation to site design, download speed, entertainment and security factors while others have aimed to understand the factors that influence the relationship between E-Satisfaction and E-Loyalty (Anderson and Srinivasan, 2003; Cho and Park 2001; van Riel *et al.*, 2001; Yang and Peterson, 2004).

The suggestion that E-CRM features lead to improved consumer satisfaction ( $r^2 = 0.81$ ) and loyalty ( $r^2 = 0.72$ ) reported in this study is consistent with the findings of Feinberg and Kadam (2002); Lee- Kelley *et al.*, (2003); and Taylor and Hunter (2002). Further, this study confirms what was discovered by Taylor and Hunter (2002) in a business-to-business context, about E-Satisfaction having a moderating effect on E-Loyalty ( $r^2 = 0.55$ ) within an E-CRM context. Therefore, this study provides empirical evidence of online Satisfaction-Loyalty linkage in an E-CRM business-to-consumer environment.

- **E-CRM features within the transaction cycle stages**

Little empirical evidence has been presented in the study of E-CRM program elements. This is the first time that an attempt has been made to identify E-CRM based on the transaction cycle. The classification of pre-purchase, at-purchase and post-purchase transaction features offers the opportunity to examine the importance that can be attached to customer evaluations of mobile phone companies' websites at these different stages. This approach can be applied to other e-retailers where the e-retailer can classify the transaction into: pre-sales products/services, at-purchase products/services and after-sales products/services. This will enable the e-retailer to control all the stages and therefore it will be easier to identify where problems occur and how to remedy the situation should problems occur.

### ➤ **Pre-purchase E-CRM Construct**

The features of pre-purchase E-CRM are still debatable and indefinable as shown in Table 3.1 of section 3.5.1 in chapter 3. However, following a comprehensive literature review (Khalifa and Shen, 2005; 2009; Lee and Joshi, 2006; Cheung and Lee, 2005; Wang and Hurang, 2004), this research classified pre-purchase E-CRM features into three factors, namely: (a) website presentation, (b) search capability, and (d) loyalty programme. This research concludes that customers' online satisfaction can be improved if these three features of pre-purchase E-CRM are satisfactory on a website.

### ➤ **At-purchase E-CRM Construct**

At-purchase E-CRM construct has been investigated in several studies (Feinberg *et al.*, 2002; Lu 2003, Cheung and Lee, 2005, Khalifa and Shen, 2005; 2009). For example, Khalifa and Shen (2005; 2009) deconstructed at-purchase E-CRM features into five constructs, while Liu *et al.*, (2008) also deconstructed at-purchase E-CRM features into four constructs. Following a comprehensive literature review (Khalifa and Shen, 2005; 2009; Lee and Joshi, 2006; Cheung and Lee, 2005; Wang and Hurang, 2004), this research deconstructed at-purchase E-CRM construct into two features, namely: (a) security/privacy, and (b) payment methods. Compared with the traditional retailing environment, online customers are more keenly aware of the need for privacy/security (Friedman *et al.*, 2000; Grewal *et al.*, 2004). Insufficient attention to privacy and security concerns often leads to lost sales (Yianakos, 2002; Grabner-Kraeuter, 2002). Thus, this research concludes that customers' online satisfaction can be improved if these two features of at-purchase E-CRM are present on websites.

### ➤ **Post-purchase E-CRM Construct**

The post-purchase E-CRM construct evaluation can be affected by the effectiveness of logistics and customer service. The features of the post-purchase E-CRM construct are still debated among researchers as shown in Table 3.2 of section 3.5.3. Following a comprehensive literature

review (Khalifa and Shen, 2005; 2009; Lee and Joshi, 2006; Cheung and Lee, 2005, Wang and Hurang, 2004), this research deconstructed the post-purchase E-CRM construct into three factors, namely: (a) order tracking, (b) on-time delivery, and (c) customer service. The most common types of complaint about Internet transactions include refund and billing disputes, return and exchange policies, faulty products, and poor customer service (Chen and Chang, 2003). Furthermore, late delivery may have a negative effect on satisfaction. Thus, this research concludes that customers' online satisfaction can be improved if these three features of post-purchase E-CRM are present on websites.

## **7.2.2 Implications for practice**

The results of this study have some implications for companies that use E-CRM as part of their marketing strategy. This research identifies the key attributes into which companies should invest resources to enhance E-Satisfaction and E-Loyalty thus leading to long-term relationships with customers.

### **7.2.2.1 Marketing management**

This research empirically explains the main E-CRM features of mobile company websites and its relationship with customer satisfaction and E-Loyalty. Marketing managers should find these results useful when attempting to attract new customers. The challenge for marketing managers is that E-CRM programs offer most benefit when integrated throughout the enterprise. Yet, in achieving new levels of E-CRM integration marketing managers must rely on changeable components (human and technological) for reliable delivery of customer relationships and financial performance.

Marketing managers have to assign their marketing budget to increase positive E-CRM factors and minimise negative factors to encourage a customer's intention to buy online. Some E-CRM factors are within a company's control while others are due to the characteristics of the Internet itself. In order to increase E-Satisfaction, companies must ensure that they provide enough

product variety for the consumer, and save them time by ordering mobile phone products/services online, loyalty programmes, provide a pool of mobile-related information to consumers, and finally, create an enjoyable two-way communication with customers who log on to the mobile company website.

Customer service, for example, is one of the E-CRM factors that influences a consumer's decision to buy a certain mobile phone products/services from a particular company website. It is important that marketing invests enough in advertising and promotion to increase the familiarity and popularity of both company and brand before going online. Marketing managers must also focus on the content of information to be placed on the web, presenting it in an enjoyable and interesting way. Their primary target should be customers of mobile phone products/services, who frequently surf company websites. These people will self-evidently have a higher tendency to buy mobile phone products/services online compared to those who use the Internet less frequently.

#### **7.2.2.2 E-CRM program within the transaction cycle**

Building relationships based on trust seems essential for business profitability. To remain competitive, mobile companies should understand the marketing activities an effective E-CRM program should adopt. This study identifies those Features that lead to increased satisfaction and loyalty.

The present study identified E-CRM features based on the three stages of the consumer buying process: 1. pre-sales stage; 2. sales stage; and 3. after-sales stage. Customers usually interact with E-CRM with goals associated with transactions, e.g. information searching, order taking/building, online payment and arranging delivery, which follows a cycle. The idea behind this cycle is that at each stage of the buying process, the customer needs to use a specific E-CRM feature. Thus, the mobile phone companies should design and adopt E-CRM programs to serve these three areas, i.e. pre-sales information, e-commerce services and post-sales support. As immediate evaluation objects, an E-CRM program reflects the company's efforts to fulfil customer's needs within these three stages of the transaction cycle.

Mobile companies should understand that Internet customers are looking for mobile websites that generally have high quality and capable E-CRM programs. Hence, companies who can respond to customers' enquiries immediately via their websites would be more likely to succeed in establishing a relationship with a customer in the online environment. It is expected that customer service representatives are 'well-informed' about each consumer's activities should there be any enquiry or problems in relation to a transaction.

Customers' pre-purchase evaluation of the company website is very important, as at this stage potential customers are mainly concerned with deciding whether or not to become a customer. Therefore, pre-purchase E-CRM features (e.g., search capability) are very important for providing resources for making considered decisions. Similarly, user friendliness and speed are vital site design consideration since customers would cancel their intention to purchase if presented with poor page loading and difficulty following site links.

Therefore, simple site design is sufficient so long as links are clearly displayed and the required information is easily accessible. Furthermore, at-purchase satisfaction occurs through personal interaction with the sales personnel and the capability of the selling website to meet the individual needs of customers, thus, E-CRM features at this stage can influence a customer decision to complete the online transaction. For example, site security is an important at-purchase E-CRM factor in consumers' decisions about whether or not to establish a relationship with a service provider. Customers seek reliable security on a website which leaves them almost worry-free whenever they decide to give their financial information on a site. Internet technology is supported with encryption technologies which integrate standards such as SET (Secured Electronic Transaction).

A customer's next purchase from the mobile company website can also depend on their post-purchase experience of the website. Many customers will be unaware of the fact that some post-purchase E-CRM features exist or not. So, it is important that mobile companies invest enough in advertising and promotion to increase popularity and awareness of the availability of these features. Customers now demand a 'complaining ability' and 'feedback channels' as well. Both these feature help managers to understand the problem areas in their services.

### **7.2.2.3 E-CRM influences E-Satisfaction and E-Loyalty**

This research shows that the effective use of an E-CRM program has an effect on E-Satisfaction level, which, in turn, is an antecedent of E-Loyalty. Most importantly, mobile phone companies are encouraged to continuously monitor customer satisfaction levels, due to the fact that the implementation of E-CRM, leading to loyalty, is through E-Satisfaction. That is, customers who have a satisfying encounter with a site tend to build trust and become committed to the site, and thus are more likely to return. Similarly, those who are not satisfied will not hesitate to switch to competitors. The Internet is huge and the search for alternative e-retailers is merely a mouse-click away. Therefore, it is more critical now than ever for mobile companies to improve and increase customer satisfaction in order to retain an edge and influence customers' loyalty.

Information security is critical in customers' opinion of E-Loyalty. Thus, although competition and marketing campaigns are vital, a customer would be likely to be more committed to a mobile company website that he/she acknowledges offers high security practices and good customer service.

Thus, this study provides a comprehensive understanding of the main E-CRM factors that encourage or discourage customers from buying mobile phone products/services online. The main practical contribution of this study is the separation of E-CRM features into three stages (transaction cycle) pre-purchase, at-purchase, and post-purchase, which make it possible for a company to test their individual effects on E-Loyalty.

Based on this categorisation, post-purchase E-CRM features emerged as the key determinants of customer repeat purchase intention from an online store. By adopting a richer E-CRM framework, this study has taken one of the first steps to determine what might be the most important E-CRM features in an online context. This approach is useful from a practical perspective as it identifies to managers those aspects of an E-CRM program they need to focus on.

#### **7.2.2.4 Loyalty programme**

Offering point redemption, cash rebate or gifts in return for a purchase or visits increases the possibility of repeat purchases/visits (Winer, 2001). However, this reward/loyalty programme needs to be well managed so as to target consumers who are less likely to default on the rewards offered to them. Lastly, there is a strong and growing need for synchronised online-offline channels. For example, orders that are placed online are made available for pick-up at a nearby physical store. Similarly, information about products and promotions in a physical store can also be found online. There are an increasing number of ‘brick-and-click’ companies in the market today. Providing these features on firms’ sites may improve their relationship with consumers and gain competitive edge.

### **7.3 Limitations and Future Research**

#### **7.3.1 Limitations of the study**

The researcher tried to develop an understanding of E-CRM factors influencing customers’ E-Satisfaction and E-Loyalty towards online purchase of mobile phone products/services in the UK. Although the attempt was valuable, it was not without its limitations. However, the limitations of the study offer opportunities for future research.

First, this thesis uses a non-probability convenience sampling technique. Some argue that a convenience sample does not represent the characteristics inherent in the general population. Despite the relatively large sample size of this research, and although it was statistically found that the sample characteristics satisfied the criteria for the target population, the generalisation of the results should be treated with caution beyond the scope of this sample. Future empirical work is needed to demonstrate that these findings are not unique to this particular sample.

Second, the sample for this study came from Internet users in a business-to-customers context. The results are limited to the e-tailing environment and may not be applicable to business-to-business relationships. As the growth of Internet transactions in the business-to-business sector

is escalating, studies designed to investigate the relationship between E-CRM and customer satisfaction and loyalty in a business-to-business environment may well be worthwhile.

Third, this research is conducted exclusively on Internet mobile phone products/services shoppers in the UK; it is possible that this introduces a bias. For example, the field of the study is restricted to those UK customers who do their mobile phone products/services shopping online. It is unclear at this stage whether the same pattern would occur in the Internet mobile phone market in other cultures and whether the results obtained from this sample apply to other populations due to the cultural difference. Future research could conduct a cross-cultural study on the topic to find out to what extent these results are country specific or can be extrapolated to other countries.

Fourth, another limitation is the cross-sectional design of the study. Because data was collected at a single point in time, one is unable to establish cause-and-effect relationships among the variables of interest. Future research that looks to develop a longitudinal design in order to collect predictor and criterion variables before and after the change would be much stronger. Longitudinal studies may be particularly useful to understand the relationships between E-CRM features and E-Loyalty at different stages of transaction cycle.

Fifth, there might be reliability and validity issues with the information obtained from the questionnaires used in this study because they were self-reported by the respondents. According to (Park and Kim, 2009, p-34) self-survey data may produce high correlations among measures, in part, because the data shared common method variance and thus errors in measurement are correlated with each other.

Finally, the applicability of the results is limited by the student sample and cannot be generalised to all online customers. However, it is argued that students represent the shoppers of tomorrow (Algharabat and Dennis, 2009b; Balabanis and Reynolds, 2001). Furthermore, student samples are appropriate to online shopping research (e.g., Fiore *et al.*, 2005; Kim *et al.*, 2007).

However, further research may investigate our model by using a non-student sample. Moreover, further research could be applied in a non-electronic context (e.g., the clothing industry).

These limitations do not reduce the significance of the results or findings in this study. The above points are mentioned in order to direct future research by identifying and supporting further improvement in this area. Next, the implications for future research are discussed.

### **7.3.2 Future research opportunities**

This study was the first study on the topic of E-CRM features within the transaction cycle as antecedents of E-Satisfaction when buying mobile phone products/services online in the UK. Some suggestions for future research are now described. First, this study is concerned with E-CRM programs and their effect on E-Satisfaction and E-Loyalty. Although companies are advised to adopt an E-CRM strategy, its implementation may vary depending on the scale of the business. For example, small businesses may not be able to fully utilise the potential of Internet technology due to resource constraints. Hence, E-CRM implementation in various business scenarios merits further investigation.

Second, while this research posits a positive relationship between E-CRM and E-Satisfaction and E-Loyalty, E-CRM features may change rapidly since the point in time at which this study was conducted. Therefore other research may be necessary to incorporate other 'new' factors of E-CRM not included in this study.

Third, this research could be applied more widely to verify the extent to which the results can be transposed to other regions of the world. Potential areas of study are whether other factors of E-CRM, which influence assessment of E-Satisfaction and E-LOYalty, can be identified in regions where consumers' behaviour may differ depending on culture, beliefs and technology acceptance level.

Fourth, future studies should also incorporate additional factors such as age and income into the model (Citrin *et al.*, 2000) as well as education and gender.

Finally, the results of this cross-sectional study would be more open to generalisation if supported by a longitudinal study to assess the relationship between E-CRM features and E-Satisfaction and E-Loyalty within different stages of the transaction cycle.

#### **7.4 Statement of the Research Novelty**

The different components of this research were the basis for each individual element of the contributions produced in this thesis. Thus, Chapters 1, 2 and 3 considered related information and proposed a conceptual model for the research methodology presented in Chapter 4, while the development and demonstration of the survey as data collection method was presented in Chapters 4 and 5 and, finally, the practical data analysis and the redevelopment of conceptual model were presented in both Chapters 5 and 6. The result of this thesis has produced a novel contribution to the subject of electronic customer relationship management (E-CRM) and has expanded knowledge of the subject in terms of the following:

- The comprehensive novel model for the implementation and evaluation of E-CRM features presented in Figure 6.1 is the main contribution of this thesis. This model is presented to address a lack of theoretical models explaining the relationships between E-CRM features and E-Loyalty at different stages of transaction cycle as reported in Chapters 2 and 3. This model was developed as a conceptual model in Chapter 3 and empirically investigated in Chapter 5. The results of this investigation were the basis for evidence and model modifications in Chapter 6.
- There are two levels of novel contribution in this model. Firstly, the proposed model takes account of previous studies in E-CRM and its factors and this supports the conceptual level of this contribution. The researcher involved these studies and extended them to merge the factors recognised in the normative literature. In addition, factors from empirical work have also been combined in the proposed model, thus developing a consistent model for adoption and evaluation of E-CRM. Secondly, the concept and process of the proposed model can be applied

as a map for the evaluation process of electronic customer relationships management as a learning process.

- Nevertheless, this model contains a proposed framework for evaluation of online customer relationship strategic planning techniques as a factor that influences the adoption of E-CRM. This framework is novel since it is part of the proposed model as well as a classification of online customer relationship planning techniques. This framework supports decision-makers' understanding and evaluation of planning techniques during the adoption of E-CRM.

## **7.5 Conclusions**

This research is the first empirical study of its type in UK. It follows the basic principle that more complex phenomena require more accurate interpretation. This study highlights the fact that mobile phone companies striving to retain their online customers need a good understanding of those E-CRM features that will help them build and maintain customer relationships on the Internet. Although basic traditional marketing principles apply to the Internet environment as well, the differences in consumer behaviour that emerge as a result of interaction with 'new' technology should be recognized. However, the requirement for E- Loyalty is E-Satisfaction.

The findings of this study have important implications for UK mobile companies wishing to sell mobile phone products/services online. Marketing managers must find the right E-CRM programme combined with the right marketing mix to increase the likelihood of customers buying mobile products/services online. Understanding a customer's needs at each step of a purchase would help companies to tailor their E-CRM features according to these needs, and increase customer purchase intention when buying mobile products/services online. Furthermore, web developers can use knowledge from this study as an input in their design process for website and homepages particularly for mobile companies in UK.

In brief, the effect of E-CRM features on E-Loyalty is contingent upon the levels of online customer satisfaction. A well integrated E-CRM program will not be effective unless companies fully understand and observe the drivers of E-Satisfaction and E-Loyalty.

This study contributes by identifying E-CRM features that affect E-Satisfaction and E-Loyalty at different stages of the transaction cycle. Certainly, on the Internet, customers who are dissatisfied may easily switch to another provider, thus customers must at least be satisfied with the service before making a decision to revisit. Thereafter, superior service quality and trust will influence his/her intention to revisit and/or to remain loyal.

This thesis is organised into six chapters. It began with an introductory chapter which described the background of the research, and the research problem. Thereafter, the research issues, objectives, research method and data analysis as well as the potential outcomes of the study. Chapter 2 presented a critical literature review of CRM, E-CRM, and their relation to online customer satisfaction and online loyalty. It also presented a deeper understanding of the main aspects surrounding the relationship between E-CRM, online customer satisfaction and E-Loyalty. Next, chapter 3 focused on the investigation of the research issues derived from Chapter 2. It is mainly to (a) develop a comprehensive conceptual model that explains the effects of various types of E-CRM features in the context of online shopping; and within the transaction cycle; on E-Satisfaction and E-Loyalty, and (b) present the hypotheses of this study, and (c) investigate the relationships between E-CRM features, E-Satisfaction and E-Loyalty in the mobile phone field.

Chapter 4 described and justified the methodology used in this study: including the research design, sampling technique and the design (as well as the administration) of the survey. The data analysis methods and the appropriate statistical techniques adopted were also presented in this chapter. Detailed descriptions of the analysis of data were presented in chapter 5 and the findings of this research were examined, interpreted and reported.

Finally, chapter 6 discussed the research findings in the light of implications for theory and practice. This study proposes an E-CRM model that emphasises the relationship between E-CRM, effective implementation and increased E-Satisfaction, and E-Loyalty. In addition, this concluding chapter also discussed the study's limitations and potential directions for further research.



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# Appendices

## Appendix 2 Questionnaire Covering Letter



### Business and Management School

**Dear Sir/Madam,**

I am a PhD research student at Brunel Business School, Brunel University. I am conducting a study to “investigate consumers’ E-LOYalty with respect to Mobile Commerce website” This research has approval from a Business School Research Ethics Committee, Brunel University.

If you have used the internet to purchase mobile phone products/services, I would be very grateful if you could participate in this study by filling out this questionnaire.

Your participation is voluntary and you can choose to decline to answer any question or even to withdraw at any point. Responses will be completely unknown; your name will not appear anywhere on the survey. Completing and returning the questionnaire figure your agreement to participate. All of the information you kindly provide will be treated as completely confidential and it will not be possible for anyone to identify the information you supply.

The questionnaire will only take 10-15 minutes of your time to fill out. Your corporation is highly appreciated and will contribute to the success of this study.

If you have any queries or would like further information about this research, please contact me:

[T.Alhaiou@brunel.ac.uk](mailto:T.Alhaiou@brunel.ac.uk)

Yours Sincerely,

Talhat Alhaiou  
PhD Researcher  
Brunel Business School,  
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### Appendix 3 The Correlation Matrix between The Items

**Table 5.7.1 : Correlations Matrix for Website Design**

Items	B2	B4
B2	1	0.78
B4	0.78	1

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

**Table 5.7.2: Correlation Matrix for Search Capabilities**

Items	B10	B11	B12	B13
B10	1			
B11	0.69	1		
B12	0.53	0.67	1	
B13	0.70	0.63	0.54	1

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

**Table 5.7.3 : Correlation Matrix for Loyalty Programme**

Items	B6	B7	B8	B9
B6	1			
B7	0.62	1		
B8	0.38	0.42	1	
B9	0.51	0.46	0.71	1

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

**Table 5.7.4 : Correlation Matrix for Security/Privacy**

Items	B14	B15	B16	B17
<b>B14</b>	1			
<b>B15</b>	0.89	1		
<b>B16</b>	0.52	0.48	1	
<b>B17</b>	0.47	0.49	0.30	1

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

**Table 5.7.5 : Correlation Matrix for Payment Methods**

Items	B18	B19	B20
<b>B18</b>	1		
<b>B19</b>	0.81	1	
<b>B20</b>	0.71	0.82	1

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

**Table 5.7.6 : Correlation Matrix for Order Tracking**

Items	B25	B26	B28
<b>B25</b>	1		
<b>B26</b>	0.71	1	
<b>B28</b>	0.66	0.67	1

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

**Table 5.7.7: Correlation matrix for on-time delivery**

Items	B21	B22	B23	B24
<b>B21</b>	1			
<b>B22</b>	0.62	1		
<b>B23</b>	0.62	0.66	1	
<b>B24</b>	0.50	0.40	0.48	1

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

**Table 5.7.8: Correlation Matrix for Customer Service**

Items	B29	B30	B31	B32
<b>B29</b>	1			
<b>B30</b>	0.70	1		
<b>B31</b>	0.55	0.51	1	
<b>B32</b>	0.51	0.63	0.58	1

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

**Table 5.7.9: Correlation Matrix for E-Satisfaction**

Items	B33	B34	B35	B36	B37
<b>B33</b>	1				
<b>B34</b>	0.81	1			
<b>B35</b>	0.59	0.48	1		
<b>B36</b>	0.39	0.51	0.47	1	
<b>B37</b>	0.48	0.50	0.54	0.71	1

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

**Table 5.7.10: Correlation Matrix for E-Loyalty**

Items	B38	B39	B40	B41	B42	B43	B44
<b>B38</b>	1						
<b>B39</b>	0.77	1					
<b>B40</b>	0.49	0.52	1				
<b>B41</b>	0.45	0.37	0.62	1			
<b>B42</b>	0.48	0.65	0.55	0.59	1		
<b>B43</b>	0.55	0.59	0.57	0.61	0.75	1	
<b>B44</b>	0.52	0.48	0.53	0.56	0.68	0.61	1

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

## Appendix 4 Pilot Study Results

Item-Total Statistics (Website Design)

<b>Items</b>	<b>Corrected Item-Total Correlation</b>
Web/Appearance	.553
Web/Colour Combinations	.553

Item-Total Statistics (Loyalty programme)

<b>Items</b>	<b>Corrected Item-Total Correlation</b>
Loy/Cash	.546
Loy/Points	.617
Loy/Coupons	.563
Loy/gifts	.712

Item-Total Statistics (Security)

<b>Items</b>	<b>Corrected Item-Total Correlation</b>
Security/feel Safe	.804
Security/personal Information	.787
Security/consumer privacy	.533

Item-Total Statistics (Payment Methods)

	<b>Corrected Item-Total Correlation</b>
Payment/Payment Options	.854
Payment/accept payment	.898
Payment/Convenient Payment	.793

Item-Total Statistics (On- time Delivery)

	<b>Corrected Item-Total Correlation</b>
Delivery/ delivered Right	.535
Delivery/As Promised	.669
Delivery/well packaged	.661
Delivery/delivery Mode	.734

Item-Total Statistics (Order Tracking)

	<b>Corrected Item-Total Correlation</b>
Ability to Track	.740
Tracking Number	.801
Tracking Tools	.716

Item-Total Statistics (Customer Service)

	<b>Corrected Item-Total Correlation</b>
Customer/Return/complaints	.768
Customer/Willing to Help	.671
Customer/Solving Problem	.512
Customer/After-Sale Service	.585

Item-Total Statistics (Satisfaction)

	<b>Corrected Item-Total Correlation</b>
Pre-Purchase Sa	.796
At-Purchase Sa	.788
Post-Purchase Sa	.705
Wise Choice	.707
Overall Sa	.802

	<b>Corrected Item-Total Correlation</b>
Next time	.720
recommend	.687
change beliefs	.535
visit frequently	.537
prefer this site	.727
intend	.790
changing this site	.695

Item-Total Statistics (E-Loyalty)

<b>Items</b>	<b>Corrected Item-Total Correlation</b>
Easily Search	.741
Searching Facilities	.766
little Effort	.688
Search System	.768

Item-Total Statistics (Search Capabilities)

## Appendix 5 Telecoms - UK - April 2009

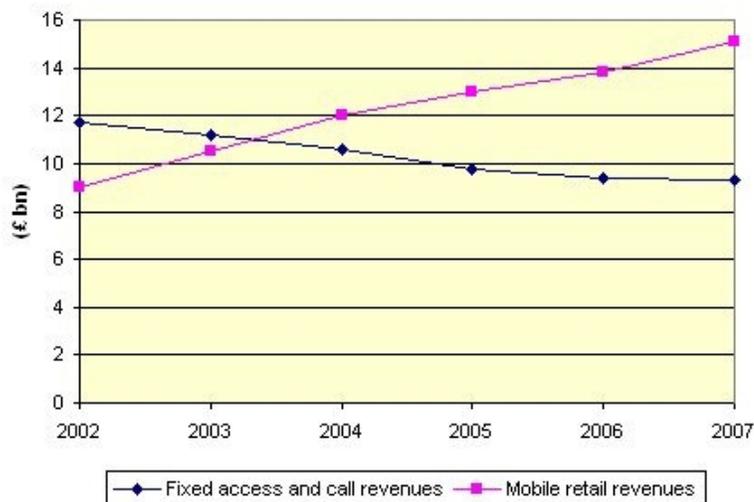
### Internal Market Environment

#### Key points

- **With 70% (OFCOM) of mobile users now using their mobiles at home, mobile call revenue growth continues to outpace that of fixed line.**
- **This behaviour is being encouraged by flat-rate pricing, with few customers ever using all their allocated minutes.**
- **Retailers need to adapt their in-store proposition to this changing behaviour by promoting mobile phone use within the home.**
- **These developments, combined with the growth of mobile broadband, will also affect the way in which mobile phone contracts are packaged and sold.**
- **Retailers and service providers have been successful in converting PAYG customers to contracts with the offer of free gifts and free (often upgraded) contracts.**

#### Gap between mobile and fixed-line revenues broadens

**FIGURE 1:** UK: Fixed access and call revenues and mobile revenues, 2002-07



SOURCE: OFCOM/Mintel

The gap between fixed-line and mobile revenues continues to broaden for a number of reasons:

- Cheaper mobile phone call costs
- Inclusive minutes encourage consumers to use their mobiles at home
- Fewer calls from fixed lines (fixed voice call minutes down 11% over five years, according to OFCOM)

However, fixed-lines still account for the majority of calls made from the home and the

market has proved surprisingly robust, perhaps due to the adoption of fixed-price and all-you-can-eat packages, a tactic borrowed from the mobile sector.

Fixed-line service providers are likely to take a further hit from the growth of mobile broadband. As more and more people do more online through their mobile, the need for separate broadband contracts at home and on the move will reduce.

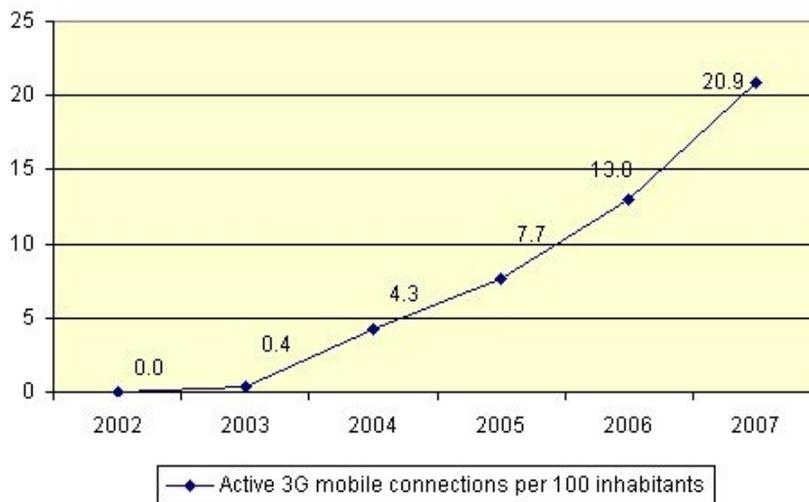
**Key analysis: We have yet to see a combined mobile and home broadband package, yet it seems the natural extension of current quad-play deals. It would provide a unique opportunity for the major players to own their customers, reducing churn and increasing customer LTV.**

**For retailers this would mean adapting their format to take account of a more complicated product to sell and incorporating an element of home entertainment into their in-store offer (ie, they would be selling digital TV, fixed line and home broadband as well.)**

### 3G connections rising

The Figure below shows why we are only just beginning to see the start of the “3G revolution”, since the installed base remains relatively low. It’s a chicken and egg scenario in which the more customers there are, the more services will be offered.

**FIGURE 2:** UK: Number of active 3G mobile connections per 100 inhabitants, 2002-07



SOURCE: OFCOM/Mintel

However, the latest 3G phones (particularly smartphones), including a 3G version of the iPhone, definitely seem to have captured consumers’ imagination. The uptake curve is starting to steepen and therefore revenue growth should start to accelerate.

**Key analysis: Selling high-spec multimedia products and services requires a certain environment and a certain level of expertise, one that is seldom found on the UK high street. For now, retailers may be able to hide behind the fact that only a relatively small proportion of customers (a) have access to these devices and (b) use them, however, over the next five years this is set to change and retailers will need to adapt their retail strategies to take account of this.**

## *Telecoms - UK - April 2009*

### *Market Size and Forecast*

#### Key points

- **The mobile phone market is saturated; with 76 million subscribers in the UK in 2008.**
- **Handset subsidies and free gifts such as PS3 or Wii consoles and LCD TVs have encouraged consumers to view mobile phone contracts as a way to obtain credit.**
- **Mobile phone specialists are increasingly being repositioned as technology stores.**
- **Mintel forecasts that during 2009, deflation driven by retailer competition and weakening demand will drive prices down and impact value sales.**
- **Looking forward, volume growth should slow as penetration levels plateau and growth is likely to be focused on upgrades to more expensive smartphones once the economy shows some signs of recovery.**

#### **Multiple phone subscriptions**

The fact that there are now more mobile phone subscribers than there are people in the UK suggests that multiple phone subscriptions are already a significant part of the market. It also shows that the UK market is already approaching saturation.

Upgrading is an increasingly important motivation behind new subscriptions and this in part explains multiple ownership, with some choosing to take out a new contract with a different supplier before their old one has run out, in order to get a new handset at a reduced cost.

***Key analysis: The phone subsidy issue has provoked feverish debate. There are obvious issues with transparency, ie how much does a free phone actually cost? But there is also the emerging trend of offering other free gifts with a phone subscription, which means that some consumers are starting to treat phone subscriptions almost as high interest loans.***

**FIGURE 7:** Mobile phone subscribers, 2003-08

	<b>Millions</b>	<b>Year on year growth (%)</b>	<b>Total population</b>	<b>% of total population</b>
2003	52.8	-	59.6	89
2004	59.7	13.1	59.8	100
2005	65.5	9.7	60.2	109
2006	69.8	6.6	60.6	115
2007	73.5	5.3	61.0	121
2008	76.0	3.4	61.4	124

SOURCE: Ofcom/Mintel

#### **Market size and forecast**

- **Mintel forecasts growth of 22% between 2008 and 2013 in current price terms, rising to £1.8bn.**

- However, deflation will continue to be a major factor in the market place and will impact value sales.
- Consequently, at constant prices, forecast growth would stand at 127% between 2008 and 2013, putting the market size at £3.3bn.
- Unit growth of 5.3% in 2009 and value growth of 1.3% points to the expected deflation in the marketplace driven by competition and weakening demand.
- Mintel expects consumers to delay upgrading to potentially more expensive contracts if they can, until they are more confident about their personal financial prospects.
- However, for many, the lure of the latest smartphone may prove too strong.
- Growth is expected to pick up in 2010 driven by technological innovation in terms of handset functionality (improved web browsing speeds and navigation and GPS integration) and the expected improvements in the macro-economic outlook.
- Looking further ahead, Mintel expects volume growth to slow as the already high levels of penetration really start to plateau.
- Mintel forecasts growth of 23% over the next five years compared with growth of 51% from 2003-08.
- Increases in functionality and more people wanting to trade up their phones should keep growth of handsets stable however.

**Key analysis: Mobile phone retailers face challenging market conditions over the next couple of years as they have to find a way to sell increasingly complicated, expensive and technology-laden phones (and the accompanying data service packages) to cash-strapped consumers. While we have already seen the introduction of some new low-entry price point packages or "recession phones", the profits are to be made at the top end of the market.**

**FIGURE 8:** UK retail sales of mobile phone handsets (including contract), by volume and value, 2003-13

	Units			Handsets (including contract)		Handsets (including contract)		Year-on-year growth	
	(000)	Index	%	£m	Index	%	£m at 2008 prices	Index	%
2003	15,998	66	-	884	61	-	417	29	-
2004	18,077	75	+13.0	995	68	+12.6	542	37	+29.8
2005	19,704	81	+9.0	1,085	74	+9.0	695	48	+28.3
2006	21,475	89	+9.0	1,224	84	+12.8	897	61	+29.1
2007	23,081	95	+7.5	1,380	95	+12.7	1,173	80	+30.8
2008	24,230	100	+5.0	1,460	100	+5.8	1,460	100	+24.5
(est)									
2009	25,508	105	+5.3	1,484	102	+1.6	1,658	114	+13.6
(fore)									
2010	26,512	109	+3.9	1,557	107	+4.9	2,000	137	+20.6
(fore)									
2011	28,121	116	+6.1	1,627	111	+4.5	2,322	159	+16.1
(fore)									

## *Telecoms - UK - April 2009*

### *Sector Sales and Forecasts*

#### Key points

- **Total retail sales are forecast to rise by 10% between 2009 and 2013 as the recession continues to bite.**
- **However, the other non-specialists category, which includes mobile phone retailers, is poised to outperform the retail market and is forecast to climb by 13%.**
- **The outlook for 2009 remains fairly bleak, with consumer spending and GDP forecast to decline.**
- **Even though consumers appear committed to maintaining their spending on mobile phones, it looks like being a difficult year for mobile phone retailers as much of their recent growth has been based on upgrades.**
- **Growth in the sector will continue to be driven primarily by the physical expansion of the major mobile phone specialists.**

#### **Economic outlook**

- The UK economy contracted by 1.5% in the fourth quarter of 2008, and Mintel forecasts that it will continue to fall during 2009, ending the year 2.4% down.
- Credit will have to be eased, but the dilemma for the major banks is for them to increase capital but at the same time lend.
- Growing unemployment, downward pressure on wages and lower returns on investment will dampen PDI, but inflation will have dropped so there will be marginal growth.
- Real PDI already under pressure and growth will be close to zero in 2009.
- Despite a return to low inflation in 2009, consumer confidence has been undermined and expenditure will be reined in. The savings ratio is set to rise during 2009 and Mintel is forecasting a decline in consumer spending in real terms. However, the impending end of the 15% VAT rate may boost expenditure slightly.
- Interest rates could see a further cut before reaching a base – if only because there is not much farther to go. But later in 2010 they are likely to be higher than they would have been as the government reins in expenditure after its 2009 splurge.

#### **Retail prospects**

Retail sales declined in December 2008 as a late rush failed to make up for the slow start to the holiday period. However, consumers were out in force again in January, shopping the sales for bargains and with total sales growth helped by food price inflation.

- The British Retail Consortium claimed that much of the growth in retail sales in January 2009 was down to consumers shopping to replace household goods and bag a bargain.
- This kind of opportunistic behaviour, combined with high food price inflation, has contributed to a view of the health of the high street that is perhaps far from the truth.
- February 2009 will have been a difficult month for retailers as the bad weather forced many consumers to stay at home and some shops to close, hitting their like-for-like figures.

#### **Actions speak louder than words?**

Recent consumer research commissioned by Mintel for its report *Mobile Phones and*

- *Networks – UK, November 2008* has suggested that consumers remain committed to their mobile phones, with over 60% claiming that the current economic situation would have no impact on their mobile phone spending.

**Key analysis: Retailers will be hoping that this is true, but they are still preparing for the worst and that would mean large numbers of defaults and many more consumers downgrading to PAYG.**

### Mobile phone specialists

- Mobile phone specialists are the dominant channel of distribution for mobile phone handsets and contracts.
- However, within this category Mintel estimates (based on its consumer and trade research) that online sales growing at the fastest rate.
- Supermarkets, most notably ASDA and Tesco, which both run their own MVNOs, are emerging as an important channel and are taking an increasing share of the market.
- ASDA and Tesco could be the main beneficiaries of any trading down within the marketplace.
- Growth in the sector will continue to be driven primarily by the physical expansion of the major mobile phone specialists, with most planning to add large numbers of stores during 2009.

### ONS retail sales data

The ONS does not break its retail sales data down sufficiently to publish data for mobile phone specialists. However, even if it did, it would not necessarily give a full picture of the size of the UK mobile phone retail market, as many of the larger players do not have a “retail division” filling accounts at Companies House.

The data below cover the categories in which mobile phone retailers are included. At the lowest level, these are the data for other non-food specialists, a category that also includes jewellers, sports goods retailers and toy retailers among others.

- Shown here are the data for all retail sales, miscellaneous specialists’ sales and the relevant sub-category of this, other non-specialist retailers’ sales.
- The latter is the category that includes mobile phone retailers.
- The sector outperformed the market in 2008, which was dragged down by household goods specialists.
- The forecast for 2009 is for the sector to continue to outperform the retail market as a whole but for growth to slow.

**FIGURE 9: UK: Miscellaneous specialist retailers’ sales, 2004-13**

(£bn excl. VAT)	2004	2005	2006	2007	2008	2009 (f)	2010 (f)	2011 (f)	2012 (f)	2013 (f)
Miscellaneous specialists	31.4	31.4	31.7	32.7	34.1	34.2	35.0	35.9	36.8	37.7
Annual % change	3.9	-0.6	3.5	4.8	5.6	1.7	3.0	3.2	3.2	3.1
Other specialists	19.9	19.8	20.5	21.5	22.7	23.1	23.8	24.5	25.3	26.1
Annual % change	3.9	-0.6	3.5	4.8	5.6	1.7	3.0	3.2	3.2	3.1

All retail sales	221.4	223.9	230.3	238.8	246.5	247.7	253.1	259.3	265.7	272.4
Annual % change	4.5	1.1	2.9	3.7	3.2	0.5	2.2	2.4	2.5	2.5
Miscellaneous specialists (€bn)	46.3	46.0	46.4	47.7	42.7	42.8	43.7	44.8	46.0	47.2
All retail sales (€bn)	326.2	327.2	337.6	348.7	308.1	309.7	316.4	324.1	332.1	340.5

SOURCE: ONS/Mintel

## *Telecoms - UK - April 2009*

### *Retail Competitor Analysis*

#### Key points

- **O2 is the market leader in terms of consumer penetration while Carphone Warehouse operates the largest network of stores.**
- **O2s strong performance during 2008 was driven by physical expansion, the success of its Simplicity SIM-only product and appeal of the iPhone.**
- **Vodafone has announced job cuts but plans to continue with its store expansion programme as it looks to make up ground on O2.**
- **Orange hopes to emulate the success of O2's iPhone exclusive by signing a deal with LG to be the sole distributor in Europe of its new "watch-phone".**
- **Carphone Warehouse continues with its evolution into a portable technology store, leveraging the expertise of new partner Best Buy.**

#### Leading mobile phone retailers

**FIGURE 10:** Leading mobile phone retailers, 2008

<b>Company</b>	<b>No. outlets</b>	<b>Consumer penetration (%)</b>	<b>Notes</b>
<b>Network stores:</b>			
O2	450	13	e
Orange	336	10	
Vodafone	350	9	
T-Mobile	255	6	
3	300	5	a
<b>Multiple specialists:</b>			
Carphone Warehouse	808	9	
Phones 4U	440	1	e
Jag Mobiles	75	na	
Fonehouse	30	na	
<b>Supermarkets:</b>			
Tesco Mobile	500+	6	
ASDA Mobile	300+	3	
<b>Others:</b>			
Virgin Mobile	22	na	a, b

(a) Standalone and stores online

(b) Also distributed through concessions in Woolworths & Zavvi stores prior to their collapse

(e) Estimate

SOURCE: Company reports and accounts/Mintel

## Telecoms - UK - April 2009

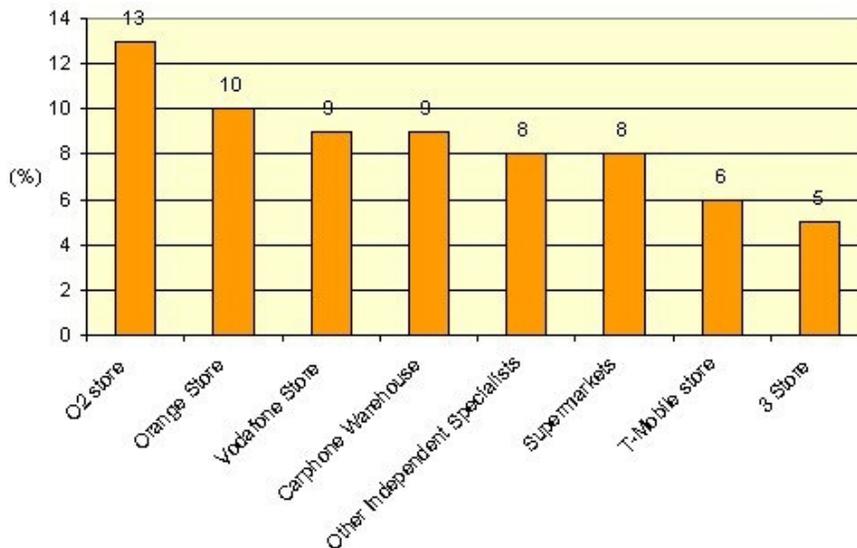
### Where do Consumers Buy Mobile Phones?

#### Key points

- **The leading network operators dominate distribution through their large networks of own-branded stores.**
- **O2 is the largest player in term of consumer penetration, with 13% of the market.**
- **Network brands are relatively stronger online, particularly 3, which has a bias towards the key e-commerce demographic.**
- **Women show a greater preference for shopping instore, yet few concessions seem to have been made in terms of store design, merchandising or service.**
- **Half of all 25-34-year-olds bought their latest mobile phone online.**
- **E-commerce has already become a key channel for the distribution of mobile phones with over a quarter of consumers shopping online without reference to a store.**

**FIGURE 24:** Stores where internet respondents purchased their latest main mobile from, December 2008

Base: 2,000 internet users aged 16+



SOURCE: GMI/Mintel

#### **Networks dominate distribution**

The top three UK network operators – O2, Orange and Vodafone – dominate distribution, with the other two licence holders (T-Mobile and 3) also featuring in the top ten outlets for mobile phone purchases.

- This situation reflects the networks' strategy of controlling their distribution through the establishment of large chains of mono-branded stores in preference to independents.
- However, comments made by leading industry figures suggest that maybe this process has gone to far and that there are actually benefits for the networks from having a

healthy independent sector.

- O2 is the leading retailer in terms of consumer penetration, reflecting its flexible pricing mobile and high-profile ad campaigns and its coup in securing the UK licence for the iPhone.

**FIGURE 25:** Stores where internet respondents purchased their latest main mobile from, December 2008

Base: 2,000 internet users aged 16+

	<b>Total %</b>	<b>Online %</b>	<b>In store %</b>
O2 store	13	16	15
Orange store	10	13	12
Vodafone store	9	10	12
T-Mobile store	6	8	7
3 Store	5	12	1

SOURCE: GMI/Mintel

**Independents and supermarkets stronger in-store than online**

- Carphone Warehouse and other independents account for a combined 18%
- Mintel’s consumer research shows that leading independent retailer Carphone Warehouse has a much higher penetration level for in-store purchases than for online.
- This doesn’t take into account the fact that Carphone Warehouse also operates several specialist online businesses such as: Onestopphonestop.co.uk, mobiles.co.uk etc
- It may also reflect a slight bias towards the older end of the age spectrum for Carphone Warehouse’s customers.

***Key analysis: The results could also be interpreted to suggest that the networks are better suited to e-commerce, since customers going direct to the 3, Orange, O2, Vodafone website have essentially already made a decision and aren’t looking for advice or help with choosing which provider.***

**FIGURE 26:** Stores where internet respondents purchased their latest main mobile from, December 2008

Base: 2,000 internet users aged 16+

	<b>Total %</b>	<b>Online %</b>	<b>In store %</b>
Carphone Warehouse	9	6	16
Other independent specialists	8	9	10
Supermarkets	8	4	15

SOURCE: GMI/Mintel

- Perhaps unsurprisingly, the supermarkets are also stronger in store than online, nearly four times more so.
- This reflects the USP of the supermarkets as mobile phone retailers, ie the

convenience of picking up a mobile, topping it up or buying it as a gift while shopping for food.

- It also reflects the strength of the supermarket brands and the trust they generate based on their ubiquity and their reputation for value for money.

**Women show greater preference for shopping in store**

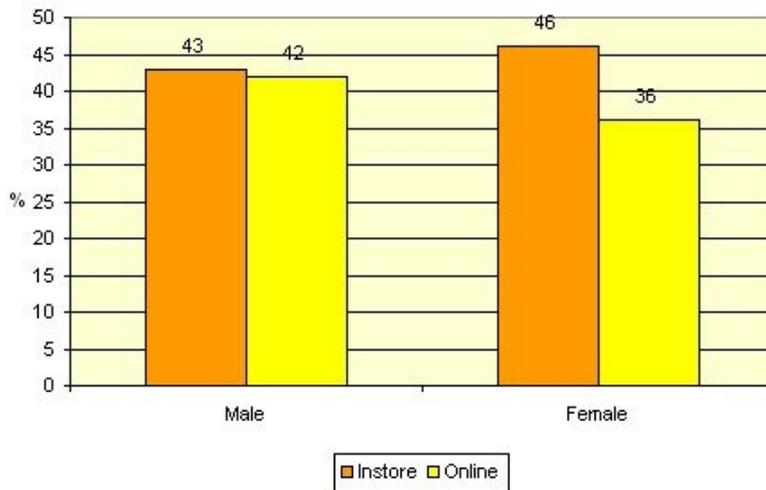
While men showed little preference in terms of shopping channel, women showed a bias towards shopping in store.

To some extent this reflects the difference between male and female attitudes to online shopping, however, it also offers the opportunity for Telecoms retailers to create a e-commerce proposition that is more inclusive.

**Key analysis: Mintel's latest consumer research for its report Home Shopping - UK, March 2009) suggests that women's clothing is now the top online category for online shopping. So there are no more excuses for retailers that are failing to attract the female spend online. Mintel believes that the experience needs to become more interactive, perhaps even more style- than functionality-led. Think ASOS rather than Phones4U.**

**FIGURE 27:** Comparison between those buying their latest main mobile via online and offline channels, December 2008

Base: 2,000 internet users aged 16+



SOURCE: GMI/Mintel

**Younger consumers buying phones online**

Half of all 25-34-year-olds bought their most recent mobile phone online. Response rates were also higher than average among all those under 44.

**FIGURE 28:** Comparison between those buying their latest main mobile via online and offline channels, by detailed demographics, December 2008

Base: 2,000 internet users aged 16+

	<b>In store %</b>	<b>Online %</b>
<b>Total</b>	<b>44</b>	<b>39</b>
<b>Age:</b>		
16-19	43	41
20-24	39	47
25-34	41	50
35-44	43	43
45-54	49	32
55+	48	27

SOURCE: GMI/Mintel

It seems that the over-45s also have strong preference for shopping in store rather than online, while the 20-34s gave the highest response rates for shopping online.

***Key analysis: Is this a gradual separation in terms of behaviour? And therefore should retailers mirror this in terms of their proposition? While it would be patronising to suggest that all over-45s and all women would appreciate demystification of the mobile phone buying process, Mintel’s research suggests that it would appeal to a significant proportion of these consumers.***

**FIGURE 29:** Comparison between those buying their latest main mobile via online and offline channels, by detailed demographics, December 2008

Base: 2,000 internet users aged 16+

	<b>In store %</b>	<b>Online %</b>
<b>Total</b>	<b>44</b>	<b>39</b>
<b>Age:</b>		
16-19	43	41
20-24	39	47
25-34	41	50
35-44	43	43
45-54	49	32
55+	48	27

SOURCE: GMI/Mintel

**Customers of 3 nearly twice as likely to have bought online**

Some 70% of customers of 3 bought their most recent mobile phone online, compared to an average of 39%. This is perhaps hardly surprising for a company that in its own words is

"focused on bringing the benefits of the internet to mobile communications".

**Telecoms - UK - April 2009**

**Appendix - Where Do Consumers Buy Their Mobile Phone?**

**FIGURE 68:** Outlets (online and offline) internet respondents purchased their latest main mobile from, by detailed demographics, December 2008

Base: 2,000 internet users aged 16+

	<b>O2 store</b>	<b>Orange store</b>	<b>Vodafone store</b>	<b>Carphone Warehouse</b>	<b>Other shop</b>
	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>
Total	13	10	9	9	9
<b>Gender:</b>					
Male	12	11	10	8	9
Female	13	10	9	10	10
<b>Age:</b>					
16-19	22	11	8	7	9
20-24	17	10	11	7	7
25-34	16	14	9	10	10
35-44	9	11	9	7	12
45-54	10	9	8	10	10
55+	10	8	9	12	7
<b>Region:</b>					
Inner and Greater London	17	11	6	8	8
South East/East Anglia	11	9	11	10	10
South West	6	13	12	8	8
Wales	15	11	3	10	10
East and West Midlands	12	12	10	8	9
North West	16	10	8	14	9
Yorkshire and Humberside	13	5	9	12	10
North*	11	9	10	7	6
Scotland	16	14	6	8	11
<b>Working status:</b>					
Employee full-time	13	11	9	9	9
Employee part-time	12	8	8	7	10
Self-employed	12	13	8	10	7
In full-time education	17	13	10	8	8
Retired/not working	10	8	9	12	10
<b>Socio-economic group:</b>					

AB	12	11	12	10	8
C1	14	12	8	9	8
C2	13	10	7	8	9
D	13	9	8	9	14
E*	7	5	4	15	10

**Daily newspaper readership:**

Mid-market tabloid	14	9	10	10	7
Popular tabloid	15	10	10	9	9
Broadsheet	13	10	10	9	8

**Sunday newspaper readership:**

Popular tabloid	16	11	10	10	7
Mid-market tabloid	13	10	9	9	7
Broadsheet	14	11	10	10	8

**Gross annual household income:**

Under £9,499	15	10	7	8	12
£9,500-15,499	9	8	8	11	9
£15,500-24,999	13	11	7	8	9
£25,000-49,999	13	10	12	9	10
£50,000 or over	12	12	9	13	7

**Age of children in household:**

Aged 0-4	11	12	11	6	12
Aged 5-9	15	10	12	10	9
Aged 10-15	13	11	11	9	11
No children in household	12	10	9	10	9

**Number of people in household:**

1	11	12	7	11	10
2	12	8	9	9	9
3	14	11	8	10	8
4	13	12	11	9	9
5 or more	14	11	10	7	12

**Marital status:**

Single	15	12	9	8	10
Married/civil partnership/living as married	12	10	9	9	9
Separated/divorced/widowed	10	8	8	12	8

**Daily personal internet usage:**

Up to one hour*	14	7	6	10	11
1-3 hours	12	10	9	9	9
4-6 hours	13	11	10	10	10
7+ hours	14	11	9	7	9

**Supermarkets used:**

Asda	14	11	8	9	9
Co-op	11	13	10	9	9
Marks & Spencer	15	12	11	10	6
Morrisons	11	10	8	10	10
Sainsbury's	13	11	10	10	9
Tesco	13	11	10	9	9
Waitrose	11	11	8	10	5
Discounter eg Aldi, Lidl, Netto etc	11	10	9	9	8

**Mobile phone network:**

O2	46	1	0	12	9
Orange	1	48	1	10	7
Vodafone	-	-	48	5	11
T-Mobile	0	-	0	14	9
Virgin Mobile	1	2	2	9	24
Three	1	-	-	3	5
Other (eg Tesco)	-	1	-	7	7

**TV viewing:**

I have digital satellite (BSkyB)	14	12	10	10	8
I have digital cable (Virgin Media)	11	8	10	8	11
Freeview digital box/TV	13	10	8	9	9
Other digital TV service (eg free-to-view digital satellite, BT Vision, Homechoice)	13	10	9	7	6
Terrestrial TV only	5	12	6	11	8

\* low sample size  
SOURCE: GMI/Mintel

**FIGURE 69:** Outlets (online and offline) internet respondents purchased their latest main mobile from, by detailed demographics, December 2008

Base: 2,000 internet users aged 16+

	<b>T-Mobile store</b>	<b>Tesco</b>	<b>3 Store</b>	<b>I received my main mobile phone as a gift</b>
	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>
Total	6	6	5	13
<b>Gender:</b>				
Male	6	5	5	11
Female	6	6	5	15

**Age:**

16-19	5	2	7	15
20-24	7	4	7	12
25-34	8	3	6	6
35-44	8	7	6	10
45-54	4	6	5	15
55+	5	8	2	20
<b>Region:</b>				
Inner and Greater London	12	6	6	11
South East/East Anglia	6	6	4	14
South West	4	7	5	16
Wales	3	6	6	15
East and West Midlands	7	5	6	12
North West	3	2	6	12
Yorkshire and Humberside	6	7	7	15
North*	9	6	3	14
Scotland	4	8	4	13
<b>Working status:</b>				
Employee full-time	7	5	7	8
Employee part-time	7	8	6	18
Self-employed	6	9	2	11
In full-time education	4	2	6	17
Retired/not working	5	7	3	18
<b>Socio-economic group:</b>				
AB	7	5	4	11
C1	7	6	5	12
C2	6	6	6	13
D	4	7	7	16
E*	4	3	1	24
<b>Daily newspaper readership:</b>				
Mid-market tabloid	6	7	6	11
Popular tabloid	7	5	6	11
Broadsheet	9	7	6	10
<b>Sunday newspaper readership:</b>				
Popular tabloid	8	5	6	9
Mid-market tabloid	6	7	6	10
Broadsheet	8	6	6	11
<b>Gross annual household income:</b>				
Under £9,499	6	4	3	15
£9,500-15,499	5	4	5	22
£15,500-24,999	6	9	5	12
£25,000-49,999	7	5	6	10
£50,000 or over	7	5	5	7
<b>Age of children in household:</b>				

Aged 0-4	8	6	6	7
Aged 5-9	7	7	4	8
Aged 10-15	6	10	6	9
No children in household	6	5	5	15

**Number of people in household:**

1	6	4	3	15
2	7	6	5	14
3	6	5	6	14
4	6	7	6	10
5 or more	6	4	3	9

**Marital status:**

Single	7	3	7	11
Married/civil partnership/living as married	6	7	4	13
Separated/divorced/widowed	5	4	4	18

**Daily personal internet usage:**

Up to one hour*	6	9	3	20
1-3 hours	6	6	5	13
4-6 hours	7	4	5	11
7+ hours	7	6	7	12

**Supermarkets used:**

Asda	7	5	5	12
Co-op	5	6	6	12
Marks & Spencer	8	7	5	11
Morrisons	5	6	6	12
Sainsbury's	6	5	6	12
Tesco	6	7	5	11
Waitrose	13	6	3	14
Discounter eg Aldi, Lidl, Netto etc	6	5	6	14

**Mobile phone network:**

O2	1	3	1	13
Orange	1	2	-	14
Vodafone	1	2	0	12
T-Mobile	43	4	0	16
Virgin Mobile	3	5	-	18
Three	-	1	72	5
Other (eg Tesco)	1	54	-	15

**TV viewing:**

I have digital satellite (BSkyB)	6	4	7	10
I have digital cable (Virgin Media)	7	7	6	12
Freeview digital box/TV	6	6	5	13

Other digital TV service (eg free-to-view digital satellite, BT Vision, Homechoice)	7	9	3	14
Terrestrial TV only	4	4	4	22

\* low sample size  
SOURCE: GMI/Mintel

**FIGURE 70:** Comparison between those buying their latest main mobile via online and offline channels, by detailed demographics, December 2008

Base: 2,000 internet users aged 16+

	<b>In store %</b>	<b>Online %</b>
Total	44	39
<b>Gender:</b>		
Male	43	42
Female	46	36
<b>Age:</b>		
16-19	43	41
20-24	39	47
25-34	41	50
35-44	43	43
45-54	49	32
55+	48	27
<b>Region:</b>		
Inner and Greater London	47	39
South East/East Anglia	44	38
South West	46	34
Wales	45	41
East and West Midlands	41	44
North West	44	39
Yorkshire and Humberside	41	41
North*	36	45
Scotland	52	32
<b>Working status:</b>		
Employee full-time	42	45
Employee part-time	45	35
Self-employed	51	36
In full-time education	41	42
Retired/not working	48	29
<b>Socio-economic group:</b>		
AB	44	41
C1	44	40
C2	44	39
D	45	37
E*	47	20

**Daily newspaper readership:**

Mid-market tabloid	45	40
Popular tabloid	45	42
Broadsheet	47	40
<b>Sunday newspaper readership:</b>		
Popular tabloid	44	45
Mid-market tabloid	45	41
Broadsheet	45	41
<b>Gross annual household income:</b>		
Under £9,499	42	38
£9,500-15,499	43	33
£15,500-24,999	48	37
£25,000-49,999	41	45
£50,000 or over	47	40
<b>Age of children in household:</b>		
Aged 0-4	39	50
Aged 5-9	47	42
Aged 10-15	47	42
No children in household	44	37
<b>Number of people in household:</b>		
1	42	38
2	47	34
3	41	43
4	44	43
5 or more	45	43
<b>Marital status:</b>		
Single	41	46
Married/civil partnership/living as married	46	37
Separated/divorced/widowed	44	33
<b>Daily personal internet usage:</b>		
Up to one hour*	41	30
1-3 hours	45	37
4-6 hours	43	44
7+ hours	44	41
<b>Supermarkets used:</b>		
Asda	46	40
Co-op	47	37
Marks & Spencer	47	41
Morrisons	47	37
Sainsbury's	44	40
Tesco	46	40
Waitrose	49	34
Discounter eg Aldi, Lidl, Netto etc	45	37
<b>Mobile phone network:</b>		
O2	45	40
Orange	48	37
Vodafone	48	36
T-Mobile	46	36

Virgin Mobile	34	48
Three	25	70
Other (eg Tesco)	62	22

**TV viewing:**

I have digital satellite (BSkyB)	43	43
I have digital cable (Virgin Media)	45	39
Freeview digital box/TV	44	41
Other digital TV service (eg free-to-view digital satellite, BT Vision, Homechoice)	45	34
Terrestrial TV only	44	25

\* low sample size

SOURCE: GMI/Mintel

**FIGURE 71:** Comparison between those buying their latest main mobile from a network store, independent specialist and supermarkets, by detailed demographics, December 2008

Base: 2,000 internet users aged 16+

	<b>Mobile network store</b>	<b>Independent mobile phone specialist</b>	<b>Supermarkets</b>
	<b>%</b>	<b>%</b>	<b>%</b>
Total	44	18	8
<b>Gender:</b>			
Male	44	17	8
Female	43	18	8
<b>Age:</b>			
16-19	53	14	3
20-24	52	16	6
25-34	53	19	4
35-44	44	15	10
45-54	37	20	8
55+	34	19	11
<b>Region:</b>			
Inner and Greater London	52	16	6
South East/East Anglia	41	17	8
South West	40	15	9
Wales	39	18	10
East and West Midlands	46	18	8
North West	43	21	5
Yorkshire and Humberside	39	19	9
North*	43	17	7
Scotland	44	16	8
<b>Working status:</b>			
Employee full-time	48	18	7
Employee part-time	41	16	10
Self-employed	42	18	13
In full-time education	49	16	3
Retired/not working	35	19	9

**Socio-economic group:**

AB	46	19	6
C1	47	18	8
C2	42	15	10
D	40	14	9
E*	22	26	6

**Daily newspaper readership:**

Mid-market tabloid	46	19	9
Popular tabloid	49	16	8
Broadsheet	48	18	9

**Sunday newspaper readership:**

Popular tabloid	51	17	7
Mid-market tabloid	45	20	9
Broadsheet	48	17	8

**Gross annual household income:**

Under £9,499	41	16	6
£9,500-15,499	36	17	9
£15,500-24,999	43	17	11
£25,000-49,999	47	16	6
£50,000 or over	46	26	7

**Age of children in household:**

Aged 0-4	49	15	9
Aged 5-9	48	18	10
Aged 10-15	46	15	12
No children in household	42	18	7

**Number of people in household:**

1	40	19	6
2	42	17	8
3	45	18	8
4	48	17	8
5 or more	44	18	8

**Marital status:**

Single	50	16	6
Married/civil partnership/living as married	42	18	9
Separated/divorced/widowed	36	20	6

**Daily personal internet usage:**

Up to one hour*	37	14	9
1-3 hours	42	18	8
4-6 hours	45	20	6
7+ hours	49	13	9

**Supermarkets used:**

Asda	44	18	8
Co-op	45	16	8
Marks & Spencer	50	19	9
Morrisons	41	20	9
Sainsbury's	46	18	6
Tesco	46	17	9
Waitrose	47	19	8
Discounter eg Aldi, Lidl, Netto etc	43	17	7

**Mobile phone network:**

O2	49	18	3
Orange	51	19	4
Vodafone	49	13	7
T-Mobile	44	18	7
Virgin Mobile	8	36	8
Three	73	14	2
Other (eg Tesco)	2	11	57

**TV viewing:**

I have digital satellite (BSkyB)	49	18	6
I have digital cable (Virgin Media)	42	17	10
Freeview digital box/TV	43	19	8
Other digital TV service (eg free-to-view digital satellite, BT Vision, Homechoice)	42	16	10
Terrestrial TV only	31	18	7

\* low sample size

SOURCE: GMI/Mintel

**FIGURE 72:** Method internet respondents used when it came to buying their latest main mobile, by detailed demographics, December 2008

Base: 2,000 internet users aged 16+

	<b>Bought direct from an online retailer without going to a store to look first</b>	<b>Bought direct from a shop/department store without looking online first</b>	<b>Looked around online first, then went to a shop/department store to buy</b>	<b>Looked in a shop/department store first, then bought online</b>	<b>I use my mobile phone every day</b>
	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>
Total	27	27	17	7	43
<b>Gender:</b>					
Male	29	26	17	7	38
Female	25	29	17	7	48

<b>Age:</b>					
16-19	26	26	21	8	55
20-24	35	26	18	7	54
25-34	35	25	20	8	54
35-44	30	26	17	6	44
45-54	22	28	17	6	43
55+	21	30	12	6	23
<b>Region:</b>					
Inner and Greater London	27	29	19	8	49
South East/East Anglia	27	27	14	8	40
South West	25	29	16	6	36
Wales	27	31	18	5	53
East and West Midlands	29	25	18	8	41
North West	27	26	17	6	43
Yorkshire and Humberside	35	22	15	5	40
North*	24	24	16	6	47
Scotland	21	30	20	6	44
<b>Working status:</b>					
Employee full-time	32	25	16	8	47
Employee part-time	27	26	20	6	45
Self-employed	23	33	19	5	38
In full-time education	28	26	20	7	58
Retired/not working	20	29	14	6	28
<b>Socio-economic group:</b>					
AB	30	27	18	6	44
C1	29	26	18	8	46
C2	24	27	14	8	44
D	26	28	16	5	41
E*	14	29	10	6	18
<b>Daily newspaper readership:</b>					
Mid-market tabloid	29	27	18	8	44
Popular tabloid	28	27	18	8	49
Broadsheet	29	29	18	7	45
<b>Sunday newspaper readership:</b>					
Popular tabloid	31	24	18	9	48
Mid-market tabloid	30	26	18	8	43
Broadsheet	30	29	18	6	45
<b>Gross annual household income:</b>					
Under £9,499	28	24	15	8	41
£9,500-15,499	22	30	11	8	33
£15,500-24,999	25	32	16	7	42
£25,000-49,999	33	23	17	7	46
£50,000 or over	27	27	22	8	50

**Age of children in household:**

Aged 0-4	38	23	16	6	53
Aged 5-9	34	28	16	7	50
Aged 10-15	28	31	18	6	50
No children in household	25	27	17	7	40

**Number of people in household:**

1	24	25	15	9	32
2	24	27	16	6	38
3	31	25	19	5	49
4	30	30	18	6	47
5 or more	27	28	17	10	55

**Marital status:**

Single	29	27	18	10	47
Married/civil partnership/living as married	27	28	16	6	42
Separated/divorced/widowed	23	25	17	3	36

**Daily personal internet usage:**

Up to one hour*	24	27	13	4	35
1-3 hours	27	28	16	7	41
4-6 hours	29	26	18	9	48
7+ hours	28	26	20	5	41

**Supermarket used:**

Asda	28	26	19	7	46
Co-op	25	28	18	6	42
Marks & Spencer	27	29	18	9	49
Morrisons	27	27	19	7	44
Sainsbury's	29	27	17	7	43
Tesco	28	29	18	8	46
Waitrose	23	28	18	7	54
Discounter eg Aldi, Lidl, Netto etc	25	27	18	7	39

**Mobile phone network:**

O2	25	27	18	9	50
Orange	28	29	18	6	41
Vodafone	27	28	17	7	42
T-Mobile	26	28	18	8	45
Virgin Mobile	36	22	15	6	31
Three	44	20	11	7	58
Other (eg Tesco)	18	41	20	3	24

**TV viewing:**

I have digital satellite (BSkyB)	30	26	17	8	48
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I have digital cable (Virgin Media)	27	27	18	7	44
Freeview digital box/TV	27	28	16	8	43
Other digital TV service (eg free-to-view digital satellite, BT Vision, Homechoice)	28	27	23	4	43
Terrestrial TV only	20	25	15	5	20

\* low sample size

SOURCE: GMI/Mintel