DETERMINANTS OF LOYALTY AND THE EFFECTS OF SWITCHING COST TOWARDS MOBILE TELECOMMUNICATION SERVICE PROVIDERS IN MALAYSIA

By

ARAVINDAN KALISRI LOGESWARAN

90862

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ABSTRACT

Customer loyalty has been a highly sought after topic among academicians and industry practitioners to enable growth and competitiveness enhancement. This research investigated the challenges plaguing the mobile telecommunication industry, namely fluctuating revenue despite growth in the number of users, sliding average revenue per user (ARPU) and reduced repeat purchase, in addition to scarcity in analysing switching cost's mediating effect. These impose serious concerns that link to dwindling customer loyalty. This research also compared the preferences of postpaid and prepaid users pertaining to satisfaction, trust, service quality and switching cost towards customer loyalty. This study utilized a quantitative approach where the stratified systematic random sampling was employed and data was collected in the Klang Valley over a time frame of 105 days. The instrument used was a self-administered questionnaire whereas structural equation modelling (SEM) was exercised for statistical analysis. The findings revealed that service quality and switching costs were the driving forces of loyalty while service quality, too, advocates switching cost. Moreover, service quality and loyalty were found to be the only constructs mediated by switching cost. Satisfaction and trust were however, found not to predict loyalty and switching cost. In fact, there were no mediating effects of switching cost on satisfaction and loyalty relationship, similar to trust and loyalty relationship. Meanwhile, service quality and loyalty relationship were found to be important among postpaid users, contrary to prepaid users. The overall findings affirmed service quality as the key component of customer loyalty and switching cost; likewise they clarified that loyalty does not need to transpire in a continuum manner. These outcomes are immensely valuable to practitioners for strategizing and executing tailor-made plans while enhancing knowledge pertaining to switching cost and customer loyalty.

Keywords: customer loyalty, switching cost, service quality, mobile telecommunication industry

ABSTRAK

Kesetiaan pelanggan merupakan topik yang kerap mendapat perhatian dalam kalangan ahli-ahli akademik dan pengamal industri untuk pertumbuhan serta peningkatan daya saing. Oleh yang demikian, kajian ini mengkaji cabaran-cabaran yang membebankan industri telekomunikasi mudah alih, iaitu penguncupan ARPU dan penurunan pembelian semula, serta ketandusan dalam menganalisis kos pemindahan sebagai pengantara. Kesemua cabaran ini dilihat berkait rapat dengan penurunan kesetiaan pelanggan. Selain itu, kajian ini cuba untuk membandingkan kecenderungan pengguna pasca bayar dan pra bayar mengenai kepuasan, kepercayaan serta kualiti perkhidmatan dan kos pemindahan terhadap kesetiaan pelanggan. Kajian ini menggunakan pendekatan kuantitatif iaitu persampelan rawak sistematik berstrata dan data diperoleh dari Lembah Klang dalam tempoh 105 hari. Instrumen yang digunakan adalah borang soal selidik kendiri manakala permodelan persamaan struktur (SEM) telah digunakan untuk menganalisis data secara statistik. Dapatan kajian ini memaparkan bahawa kualiti perkhidmatan dan kos pemindahan merupakan penggerak kepada kesetiaan, di samping itu, kualiti perkhidmatan juga menyokong kos pemindahan. Tambahan pula, kualiti perkhidmatan dan kesetiaan hanya menjadi pengantara kepada kos pemindahan. Sebaliknya, kepuasan dan kepercayaan didapati tidak signifikan terhadap kesetiaan dan kos pemindahan. Malah, kos pemindahan tidak mempunyai kesan perantara terhadap hubungan kepuasan dan kesetiaan, perihal yang sama didapati dalam hubungan antara kepercayaan dan kesetiaan. Sementara itu, hubungan kualiti perkhidmatan dan kesetiaan dilihat amat penting kepada pengguna pasca bayar berbanding dengan pengguna pra bayar. Secara keseluruhannya, dapatan kajian mengesahkan bahawa kualiti perkhidmatan merupakan komponen utama dalam kesetiaan pelanggan dan kos pemindahan, dan turut menjelaskan bahawa kesetiaan pelanggan tidak perlu berlaku secara berterusan. Hasil kajian ini amat berharga kepada pengamal industri dalam membentuk strategi dan merangka pelan yang bersesuaian serta menambahkan pengetahuan terhadap kos pemindahan dan kesetiaan pelanggan.

Kata kunci: kesetiaan pelanggan, kos pemindahan, kualiti perkhidmatan, industri telekomunikasi mudah alih

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TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

1.1 Background

Customer loyalty topic has attracted much interests in the past, prompting multi-definitions in the quest to understand the crux of it. Nevertheless, it was Oliver (1999), who gave a more meaningful understanding to loyalty by highlighting the multi-facets of loyalty while defining it as 'a deeply held commitment to repurchase and repatronize a preferred product or service consistently in future causing repeat purchases,' despite situational influences and marketing efforts having the potential to influence switching behaviour. Loyalty is obviously of greater interest among academicians and practitioners for, its proximity to profitability (Chadha & Kapoor, 2009; Cheng, Lai & Yeung, 2008) especially in highly competitive markets because acquiring customers alone is viewed as not a guarantee of long-term success (Brunh & Grund, 2000; Cheng et al., 2008), but gaining customers loyalty would surely encourage continued patronage as loyal customers will not hesitate to pay premium prices, eventually promoting the business while fostering a firm's survival (Aydin & Ozer, 2005; Cheng et al., 2008). In a highly competitive industry such as mobile telecommunication, one of the ways to maintain a profitable business lies in offering products that fit the customers' tastes and preferences, skewing the offerings to each category of customers such as postpaid and prepaid is deemed more beneficial as each group have shown a tendency to behave differently (Galperin & Marsical, 2007; Shrivastava & Israel, 2010). Furthermore, one must also be sure that these offerings are done and delivered better than competing providers, to ensure that the company

enjoys the fruits of loyalty (Bharadwaj, Varadarajan & Fahy, 1993; Lee, Lee & Feick, 2001; Reichheld & Sasser, 1990; Shrivastava & Israel, 2010).

Telecommunication is a unique industry in many ways for the changes it underwent since inception in 1876. In fact, it is not an exaggeration to state that telecommunication played vital roles in many areas, especially the mobile telecommunication industry, which has spurred a nation's growth, allowing seamless connectivity everywhere, anywhere and at anytime besides playing the traditional role of enhancing social ties (Galperin & Mariscal, 2007; Shrivastava & Israel, 2010; Zita, 2004). The telecommunication industry is also closely knitted into the market structure and as the structure changes, telecommunication companies throughout the globe are transformed towards privatisation and corporatisation where competition becomes inevitable. Malaysia, with accelerated technology diffusion where 3rd Generation (3G) mobile was upgraded to 4th generation (4G), allowing long time evolution (LTE) in a short span of six years, was not spared from intense competition among players in mobile the telecommunication industry which is also clouded with challenges as follows:

1.1.1 Revenue-users disparity

Improvements and changes have taken place in the Malaysian mobile telecommunication industry, which has given more choices and applications to users. On the other hand, it has proved to be detrimental to the revenue of incumbent mobile service providers in Malaysia. It can be seen by the fact that even though mobile phone users, postpaid and prepaid included, grew more than 100% from 19.4

million users in year 2006 to 43.1 million users in first quarter 2014 (Cheah & Chiang, 2011; Cheah & Chua, 2010; Lee, 2013; MCMC, pocket book of statistics, Q1 2014), revenue growth did not reflect the same enthusiasm, but fluctuated between 2007 till 2013 when it dipped to negative 1.5% growth (de-growth) in 2009 compared to a positive 24.1% growth in year 2007 followed by 17%, 3.6%, 6.0% and 0.5% growth in subsequent years beginning year 2010 till 2013 (Cheah & Chua, 2010; Cheah & Chiang, 2011; Chin, 2014). The fluctuating nature is deemed unhealthy especially when the number of subscribers was showing a steadily increasing mode (MCMC Q1, 2014) coupled with the introduction of new technology such as 4G LTE which was supposed to enhance revenue. In fact, a more excruciating point to note is the presence of fluctuations despite experiencing migration of fixed line users to mobile in an accelerated manner beginning year 2004 (Mokhtar, Maiyaki & Noor, 2011). Similarly, mobile revenue forecasted for year 2014 and 2015 has also anticipated the status quo to continue, seen from a very conservative revenue growth of between 1.8% and 2.0% growth (Cheah & Chang, 2011).

1.1.2 Declining repeat purchase

The improvements in technology and telecommunication have obviously opened the floodgates and attracted other nimble, alternative medium providers to jump on the waggon of the connectivity business and grab the opportunities, made available by features of smartphones which have multifunction capabilities such as calls, text messages, emails and broadband download (Kumar, 2004). The effect is clearly seen in the reduction of text message (sms), initiated from incumbent mobile providers

whereby the number of sms sent decreased from 96.7 million in year 2010 to 93 million in year 2011 followed by 87 million in 2012 before reducing further to 76.9 million in year 2013 (MCMC, Q4 2012 & MCMC Q1, 2014). The reduction transpires, despite the fact that sms was the highest component of usage (49%) in mobile phones (Namin, Vahid & Aidin, 2012) besides being the preferred mode of communication among youths that they can handle sms even with their eyes closed (Lenhart, Ling, Campbell & Purcell, 2010).

Malaysian government's incentive to promote smartphone adoption (Lee, 2013) which comes with RM 200.00 rebate for users belonging to the age group between 21 and 30 years and the campaign by mainstream media such as the "Say no to sms" trend' had certainly encouraged smartphone users to engage in alternative texting, either through WhatsApp, Viber, Facebook Chat, Skype or BlackBerry Messenger to save costs (Chandreasekar, Zulzaha & Lim, 2011). It is also noted that IP-based services have their own quality challenges such as delay, loss and jitters (Cherry, 2005; Hobfeld & Binzenhofer, 2008; Kruse, 2008).

The existence of 13.5 million Facebook users in Malaysia (Socialbakers, 2013) will encourage chat activities among them without incurring text message charges; likewise they can get connected to the worldwide network of 800 million active users and chat without incurring additional costs. It is also noted that 56% of Facebook users in Malaysia are in the age group of between 18 and 34 years, making Gen Y cohort the highest Facebook users in Malaysia. Coincidentally, it is almost the same age group of 15 to 34 years who make up the highest percentage (62.5%) of handphone users in Malaysia (MCMC Q4, 2009), heightening the risk of channelling

calls to other connectivity media. As such, services rendered with connection flexibilities, from a single point to multi-media such as WhatsApp, Viber, Facebook, Skype and other house of internet protocol (IP) services is a threat to the three main mobile telecommunication providers, Celcom, MAXIS and DIGI. This three main mobile telecommunication provider do not only compete among themselves to survive, but also with alternative medium providers such as WhatsApp, Viber, Blackberry Messenger, Skype and Facebook. These alternative connectivity medium providers could entice customers, especially youth and eventually affect repeat purchase hence posing further threat to the mobile revenue and dampen customers' loyalty.

An initial interview conducted in 2013 by the researcher on 10 mobile phone customers, belonging to Celcom, MAXIS and DIGI reveals that all of them have established calls from alternative communication providers. In fact, 70% of them have engaged in more than one alternative service provider whereas among the alternative communication providers, WhatsApp and Viber were highly sought after, recording 38% each followed by Blackberry messenger and Skype scoring 12% each. Twenty five percent (25%) of the users have resorted to establish less than 10% of total calls through alternative communication providers whereas 20% of users have established more than 40% of calls through alternative communication providers. The 10 users however agreed collectively on quality challenges pertaining to using alternative media.

1.1.3 Average Revenue Per User downtrend

Average revenue per user (ARPU) is also another indicator of the mobile telecommunication industry in general and reflects the condition of loyalty specifically. The three main mobile service providers experienced volatile ARPU trend and even though it increased from RM 50.30 to RM 51.60 between year 2010 and 2011, the increment was contributed purely by MAXIS's initiatives to increase mobile usage (Cheah, 2011). Beyond year 2011, the overall ARPU dropped continuously from RM 49.40 in 2012 to RM 47.0 in 2013 and is forecasted to dwindle further to RM 41.90 by 2017 (Malaysian Telecommunication Report 2013). The ARPU trend in actual fact, speaks a lot about the users behaviour of repeat usage which is diminishing due to call leakages, being channelled elsewhere, causing defection or switching that goes back to deter revenue growth.

1.1.4 Constrained concoction

The landscape of the Malaysian mobile phone industry is not clouded with fierce competition alone, but more alarming is the high penetration mode it sits on. The world's mobile users were reaching seven billion in May 2014 (ITU report, 2014) and in year 2013, penetration rate in Malaysia which is 143.7% (MCMC, Q1 2014) was among the highest in Southeast Asia besides Singapore (iDA, 2014), which scored a whopping penetration rate of 156 %. Although mobile penetration rate in Malaysia is considered an encouraging rate as average mobile penetration per country is 133.3% (Khoo, 2012), the reducing rate of revenue growth in tandem with reducing ARPU, with more than 143.7% penetration rate reflects upward rigidity and

stickiness, yet overcoming the stickiness would not guarantee encouraging revenue growth. In addition, the high penetration rate shows that the Malaysian mobile market is not only reaching maturity, but without any other choice, the three main providers, Celcom, MAXIS and DIGI have to compete intensively to improve their market share while U-Mobile is trying hard to sneak in with 1% mark (Cheah, 2011). As such, expecting growth in the number of users to improve revenue would be a myopic mission even though diffusion rate in Malaysia, which is an emerging market, is far larger than that of developed countries (Kalba, 2007).

1.1.5 The occurrence of switching

Stiff competition among providers and the existence of alternative medium have created a very liquid mobile telecommunication industry in Malaysia where switching occurs easily and is detected as the main cause for the reduction in growth rate (Kuusik & Varblane, 2009). Previous literatures have also noted various determinants of customer loyalty such as satisfaction, perceived service quality, trust, switching cost, corporate image, price and brand (Aydin & Ozer, 2005; Hafeez & Hasnu, 2010; Hu & Hwang, 2006; Mokhtar et al., 2011; Vanniarajan & Gurunathan, 2009), however, switching cost has continued to stay on course. This reflects the importance of switching cost whereas other element, such as price war is almost eliminated (Chua, 2010) and brand advantage is diluted under mobile number portability (MNP) environment. One of the main reason is, even though switching has been noticed to affect many industries such as automobile (Anton, Camarero & Carrero, 2007) hypermarkets (Danesh, Nasab & Kwek, 2012), energy (Ibanez, Hartmann & Calvo, 2006), banks (Tong, Wong & Lui, 2012), it has always been

more rampant in the mobile telecommunication industry (Aydin & Ozer, 2005; Kaur & Soch, 2012; Lee & Murphy, 2005; Oyeniyi & Abiodun, 2010). Mobile telecommunication providers do confront switching or churn regularly at the rate of between 10% and 67% as mentioned in the work of Habib, Salleh and Abdullah (2011). In Malaysia, where 1362 porting was requested at the end of year 2013 (MCMC Q1, 2014) in actual fact, speaks volume on switching activities among the incumbent mobile service providers, does not take into account the switching activities from incumbent to alternative mobile providers. Therefore, erecting switching barriers such as switching cost is vital.

Switching cost can be grouped into positive and negative switching costs (Burnham, Frels & Mahajan, 2003; Ghazali, Arnott & Mutum, 2011; Jones, Mothersbaugh & Beatty, 2002; Jones, Reynolds, Mothersbaugh & Beatty, 2007; Kaur & Soch, 2012; Klemper, 1995). Positive switching costs are shown to influence repurchase behaviour especially when satisfaction is low (Jones et al., 2007) whereas negative switching costs result in non-voluntary loyalty, proving to be detrimental in the long run (Graf, Durif & Belzile, 2008). Despite this, most of the switching cost studies engaged negative switching cost (Aydin, Ozer & Arasil, 2005; Chadha & Kapoor, 2009; Edward & Sahadev, 2011; Islam, 2010; Lee & Murphy, 2008) instead of positive switching cost hence, the question remains on how adequate and exhaustive are the current studies on analysing positive switching cost especially as a mediator (Edward & Sahadev, 2011) in service industries such as the mobile telecommunication industry.

The challenges highlighted provide clear evidence of the stiff competition among the service providers and switching prevalence hence it is not surprising to note that the telecommunication industry suffers high churn and there is a need for quality services in the mobile telecommunication industry. Similarly, Vikas Chanani, an industry analyst with Frost and Sullivan's Asia Pacific ICT Practice (mobile and wireless), cited in Teo (2012), reiterates that the presence of many players will keep the Malaysian telecommunication industry highly competitive, and as such, returns from voice and short messaging services (sms) are expected to take a plunge. Mobile service providers have no choice but to strive their best in order to maintain customers.

In a competitive environment where competition shifts from a local to a global and borderless market, many small but flexible and nimble players are giving the existing providers enormous challenges. As such, existing providers have to rely on delivering excellent service quality, greater customer satisfaction without compromising trust and erect switching barriers, namely switching cost, as a prerequisite to survival and growth (Boohene & Agyapong, 2011; Danesh et al., 2012; Seth, Momaya & Gupta, 2005). Similarly, importance of switching cost was also mentioned in the work of Santouridis and Trivellas (2010),

"Another addition that could possibly lead to a model that better explains customer loyalty is the incorporation of switching cost….therefore, future research could look into possible mediation role of switching cost…" (Santouridis & Trivellas, 2010, p.341).

Gaining insights into these elements is important in order to formulate and execute tailor-made strategies for loyalty so that eventually, customers would fervently desire the product or services in a prohibitive and exclusive relationship, in a natural manner (Oliver, 2010).

1.2 Problem Statement

This study has identified the problem statement, which comprises the following aspects:

1.2.1 Lack of loyalty

Fierce competition and switching among users to alternative medium provider in the mobile telecommunication industry of Malaysia indicate a lack of loyalty, clearly seen in the declining number of text messages initiated. In addition, switching activities among incumbent mobile service have been further encouraged under MNP environment which soared from 325 porting requests in 2008 to 1362 porting requests at the end of year 2013 (MCMC Q1, 2014) besides transpiring in a conventional way, through subscription of new numbers via different service providers while maintaining existing numbers to a dormant level. Switching to alternative communication media such as WhatsApp, Viber and BBM does also pose a serious threat to mobile service providers as a whole. As such, the impact is seen in fluctuating growth rate of revenue, despite having a steady growth in the number of users (Cheah & Chiang, 2011; Cheah & Chua, 2010). This scenario, coupled with high penetration rate and sliding ARPU clearly indicates a lack of loyalty.

1.2.2 Limited avenues to strategize postpaid and prepaid users

The incumbent mobile service provider's references and guidelines were mainly derived from existing materials in the mobile telecommunication industry. Apparently, the existing literature on the mobile telecommunication industry has certain drawbacks, one of which is contributed by the lack of comparative studies on postpaid and prepaid users. As a result, mobile service providers, when referring to the literature, face vulnerability and most often short changed due to the use of a generic strategy for postpaid and prepaid users. It is because the existing studies failed to acknowledge the types of users and hence resorted to research on a general basis by placing postpaid and prepaid users in a homogenous group by default (Hu & Hwang, 2006; Islam, 2010; Kumar & Lim, 2008; Lee et al., 2001; Lee & Murphy, 2008; Mokhtar et al., 2011), ignoring the fact that prepaid and postpaid users have different characteristics affecting the industry. For example, low income earners prefer prepaid and would consider a hybrid call plan such as a fixed monthly commitment to a point and prepaid structure beyond that threshold (Galperin & Mariscal, 2007). In addition, users with lower academic qualifications have been shown to shy away from making text messages even though they preferred the prepaid call plan (Shrivastava & Israel, 2010). Similarly, this researcher's interview with 10 mobile phone users between August and November 2013 revealed that all users who were employed, subscribed to postpaid in contrast to non-income earners such as students and housewives who resorted to using prepaid plans, therefore users of prepaid and postpaid have different characteristics and have high tendency to affect loyalty differently.

There were some studies which compared postpaid and prepaid (Akin, 2011; Aydin & Ozer, 2006; Lee, Murphy & Dickinger, 2006), but with generalizability demerits. The same situation was seen where previous studies in Malaysia were either centred on postpaid users or done on a generic basis (Habib et al., 2011; Mokhtar et al., 2011) without distinguishing the type of users despite the revelation of differences in revenue contribution in each segment (Cheah & Chua, 2010) in addition to different characteristics portrayed by prepaid and postpaid users (Lee et al., 2006). In fact there were also studies which, despite distinguishing samples in terms of prepaid and postpaid users, however, failed to skew findings towards comparing postpaid and prepaid mobile users (Aydin, & Ozer, 2005; Aydin et al., 2005; Vanniarajan & Gurunathan, 2009). Moreover, a fragment of studies, in spite of having analysed demographic factors and their influence on type of connections, including choice of mobile service provider (Akin, 2011; Galperin & Mariscal, 2007; Shrivastava & Israel, 2010), have overlooked service quality, satisfaction, trust, switching cost and its impact on loyalty, focusing instead on the dual call plan, postpaid and prepaid users. Therefore, the lack of studies, distinguishing postpaid and prepaid mobile phone users attitudes towards loyalty could be a contributing factor to lack of loyalty as both users portray different characteristics and preferences regarding service providers. As such, further investigations on comparing postpaid and prepaid users from the perspective of satisfaction, trust, service quality and switching cost will strengthen knowledge on the mobile telecommunication industry.

This study which is set to investigate respondents belonging to diverse backgrounds such as race, education, income and profession would produce a better representation as compared to existing research which had skewed analysis to university students

alone, thus analysing it in the Malaysian context, resided by multi ethnic would lead to the discovery of tailor made strategies.

1.2.3 Theoretical problems on antecedents of loyalty

The existence of various antecedents of loyalty such as satisfaction, trust, switching cost, switching barriers, corporate image, price, relative attitude, recommendation, service personalisation, value, attitudinal loyalty, repurchase intention, cognitive, affective and conative loyalty (Aydin & Ozer, 2005; Boohene & Agyapong, 2011; Cheng et al., 2008; Hamidizadeh et al., 2011; Han, Kwortnik, & Wang, 2000; Ibanez et al., 2006; Lee & Murphy, 2008; Mokhtar et al., 2011; Santouridis & Trivellas, 2010; Tong et al., 2012; Tsai & Tsai, 2010; Wong & Sohal, 2003; Yaacob, Ismail, & Ismail, 2008) in actual fact, reflect the intensity of fragmentation in loyalty models especially in the mobile telecommunication industry, hence triggering the need to examine only the highly relevant direct and indirect antecedents of customer loyalty in a more crystalised manner. The problem is also seen in existing research which had shortcomings to develop an integrated loyalty model. This is despite the fact that such research, are designed with elements which are theoretically related but rarely examined together. (Han et al., 2008). Therefore, further validation is needed in order to seek the significance of antecedents in an integrated representation model.

Satisfaction, trust, perceived service quality and switching cost have been important elements, leveraged by practitioners to gain loyalty especially in a highly competitive industry (Gomes & Maicas, 2011; Macintosh & Lockshin, 2007; Mokhtar et al., 2011; Teo, 2012), such as mobile telecommunication (Alnsour, Tayeh & Alzyadat,

2014; Boohene & Agyapong, 2011; Edward & Sahadev, 2011; Kuusik & Varblane, 2009; Mokhtar et al., 2011; Roy, Eshghi & Quazi, 2014; Tarus & Rabach, 2013; Yang, 2015; Zhou, Li & Liu, 2010) and in non- telecommunication industries (Al-Hawari, 2014; Hamidizadeh, Jazani, Hajikarimi & Ebrahimi, 2011; Han & Hwang, 2014; Izogo & Ogba, 2015; Park, Park & Li, 2014; Ruiz-Mafe, 2014; Sumaedi et al., 2014; Tong et al., 2012; Zaman, Bibi, Arshad & Shahzad, 2012), but these predictors have however, produced inconsistent results in past studies.

Satisfaction has been proven to be positive and significant to loyalty in telecommunication industry (Aydin et al., 2005; Balaji, 2009; Chadha & Kapoor, 2009; Gurunathan & Vanniarajan, 2009; Hafez & Hasnu, 2010; Kumar & Lim, 2008; Liu, Guo, & Lee, 2011; Mokhtar et al., 2011); on the other hand, the same antecedent proved to be insignificant in non-telecommunication settings such as in the work of Sivadass and Prewitt (2000), among retailers and the study of Adoyo et al. (2012) on the pharmaceutical industry. A similar condition was also seen to be clouding the non-telecommunication industry, which reveals inconsistencies when they are compared, such as a departmental store reporting a positive relationship between satisfaction and loyalty (Reynolds & Arnold, 2000; Tsai et al., 2010) only to see another study indicating that a departmental store reporting insignificant results (Sivadass & Prewitt, 2000) followed by an array of studies on other service industries which reported positive and significant results such as internet service provider (Cheng et al., 2008), energy (Ibanez et al., 2006), internet banking (Tong et al., 2012), fast moving consumer goods (Zaman et al., 2012) in contrast to the insignificant results of Adoyo et al. (2012) study of the pharmaceutical industry.

Perceived service quality resulted in the same outcome too, whereby it has produced significant result in quite a few studies (Adoyo et al., 2012; Aydin & Ozer, 2005; Boohene & Agyapong, 2011; Edward & Sahadev, 2011; Sivadass & Prewitt, 2000; Lee, Chu, & Chao, 2011) in contrast to other studies which had revealed insignificant results (Cheng et al., 2008; Tu, Li & Chih, 2011; Yaacob et al., 2008). Furthermore, past studies on SERVQUAL which is often tagged as superior (Gul & Banu, 2010) have also revealed the inconsistency of results pertaining to the service quality dimension. For instance, empathy was shown to be significant towards loyalty (Adoyo et al., 2012; Malik et al., 2011; Wong & Sohal, 2003) and also shown as insignificant (Mokhtar et al., 2011), including the empathy satisfaction link (Ahmed et al., 2010). There are other dimensions in SERVQUAL, such as responsive which have significant outcomes (Ahmed et al., 2010; Mokhtar et al., 2011) and insignificant results (Malek, et al., 2011; Wong & Sohal, 2003). In fact, service quality's expectation and perception, which hold varying importance among customers were shown clearly when customers' perception of service quality among different service providers and types of services varies (Johnson & Sirikit, 2002; Rahman, 2006), clinically exposing the inconsistencies clouding perception of service quality.

There were also other studies that examined the indirect effect of service quality, on various types of service quality such as core service quality, network service quality, value-added service quality, service process quality, and technical quality (Ibanez et al., 2006; Kim et al., 2004; Santouridis & Trivellas, 2010) which more frequently ignore the definition of each besides omitting the highly acclaimed SERVQUAL. There would therefore be more value adding to investigate SERVQUAL, which has

proved important in service quality research (Ahmed et al., 2010; Johnson & Sirikit, 2002; Mokhtar et al., 2011; Rahman, 2006; Sivadass & Prewitt, 2000).

Trust element has been shown to be significant in almost every loyalty study (Aydin & Ozer, 2005; Hamidizadeh et al., 2011; Ibanez et al., 2006; Zaman et al., 2012), hence it implies that trust is a vital element and antecedent of loyalty that should not be ignored. Nevertheless, Edward and Sahadev (2011) have excluded trust as part of their investigation model despite testing switching cost as the mediator towards loyalty. Therefore, a gap exists in trust having switching cost as a mediator study in the mobile telecommunication industry.

Switching activities have been more rampant in telecommunication industry (Hughes, 2007; Thomas, Blattberg & Fox, 2004) but the existing studies pertaining to switching cost have constraints. The study on impact of switching cost as the mediator in mobile telecommunication industry is scarce as most switching cost studies have either analysed the direct effect (Aydin & Ozer, 2005; Aydin & Ozer, 2006; Caruana, 2004; Chadha & Kapoor, 2009; Hu & Hwang, 2006; Islam, 2010; Lee & Murphy, 2008; Sathish, Kumar, & Jeevanantham, 2011; Shin & Kim, 2007) or as a moderator (Aydin, Ozer & Arasil, 2005; Habib et al., 2011; Lee et al, 2001; Oyeniyi & Abiodun, 2010; Shi, Chen & Ma, 2011) and limited studies on the mediating effects (Edward & Sahadev, 2011) especially in light of satisfaction and service quality.

The study done by Edward and Sahadev (2011) among mobile users in India was however inclined to analysing negative switching cost as a mediator among mobile phone users and apparently, the researchers' efforts were met with setbacks due to unqualified mediation pre-requisites (Baron & Kenny, 1986) of switching costs between service quality and loyalty link, even though switching cost did partially mediate the satisfaction and loyalty link, hence leaving a gap. Moreover, since trust was also not part of the investigative model, it has created a void. Meanwhile, studies done on various non-mobile telecommunication industries such as energy (Ibanez, Hartmann, & Calvo, 2006), e-commerce (Yen, 2010), followed by health centres, city theatre, fast food, supermarkets, amusement parks (Ruyter, Wetzels, & Bloemer, 1998) had also undertaken direct and moderating effect of switching costs, reflecting the inadequacy of the study on mediating effects of switching cost especially in the mobile telecommunication industry under MNP environment.

It is important to note that moderator and mediator are different in nature and the tendency to be mis-interpreted can be quite high. Hair, Black, Babin, and Anderson (2010) pointed out that mediator facilitates the relationship between two constructs, hence mediation happens when a third variable or construct intervenes between two related constructs. Mackinnon, Coxe, and Baraldi (2012) simplify the definition of mediation by suggesting that the mediator transmits the effect of independent variable to dependent variable similar to the study by Preacher and Hayes (2008), which confirms the existence of mediation when a predictor affects an independent variable indirectly, via at least one intervening variable. Mediation's common role is to explain why a relationship between two constructs exists. As such, mediators explain how external events take on internal psychological significance and can

surface between the time the independent variables start operating to influence the dependent variable and the time their impact is felt (Baron & Kenny, 1986; Sekaran, 2003). Moderators on the other hand, take a qualitative stance such as race, sex, class, etc. besides a quantitative stance such as rewards, which occur when a third variable changes the relationship between two related variables (Hair et al., 2010). Therefore, inclusion of switching cost, especially from a positive perspective, as the mediator will throw more light and provide solid evidence due to its relevancy towards the mobile telecommunication industry. In fact, MNP, which was introduced in Malaysia in 2008, was initially aimed at reducing switching cost but since subsequent strings of research have proved MNP's ambiguity and insignificance towards reducing switching barriers (Aoki & Small, 2010; Buehler & Haucap, 2004; Kim, Park & Jeong, 2004; Shin & Kim, 2007), analysing switching cost under MNP environment would address the need for further investigations on switching cost and its effects on mobile telecommunication loyalty (Habib et al., 2011).

1.3 Research Questions

The framework of this study based on Loyalty Theory (Oliver, 1999), and further extended by incorporating switching costs as a mediating variable. As such, the research questions of the study that emerge are:

1. What is the direct relationship between satisfaction, trust, perceived service quality, and switching cost to loyalty in mobile telecommunication?
2. What is the direct relationship between satisfaction, trust and perceived service quality to switching cost in mobile telecommunication?

3. Does switching cost mediate the relationships between satisfaction and loyalty, trust and loyalty and perceived service quality and loyalty in mobile telecommunication?
4. What are the differences between the two segments, postpaid and prepaid users for satisfaction and switching cost, trust and switching cost, perceived service quality and switching cost, switching cost and loyalty, satisfaction and loyalty, trust and loyalty followed by perceived service quality and loyalty relationships?

1.4 Research Objectives

The objectives of the research are:

1. To examine the direct relationship between satisfaction, trust, perceived service quality, switching cost and loyalty in mobile telecommunication.
2. To examine the direct relationship between satisfaction, trust, perceived service quality and switching cost in mobile telecommunication.
3. To examine the mediating effect of switching cost on satisfaction and loyalty, trust and loyalty followed by perceived service quality and loyalty relationships in mobile telecommunication.
4. To compare the differences between postpaid and prepaid users pertaining to satisfaction and switching cost, trust and switching cost, perceived service quality and switching cost, switching cost and loyalty, satisfaction and loyalty, trust and loyalty followed by perceived service quality and loyalty relationships.

This research is also designed to develop an integrated model in order to achieve a holistic representation by examining the relevant antecedents (satisfaction, perceived service quality, and trust) simultaneously with positive switching cost, being a mediator towards customer loyalty in the Malaysian mobile telecommunication industry. In addition, postpaid and prepaid customers are investigated as two groups to ascertain the differences between these two groups pertaining to identified antecedents of loyalty so that relevant strategies and tactics could be developed to each user group with the intention of arresting the declining rate of revenue growth.

The data is analysed with structural equation modelling (SEM), a multivariate technique which enables path and factor analysis to be conducted concurrently (Rahman, 2012). Other antecedents of loyalty such as price, corporate image and brand were dropped from the investigative model in response to the changes in the mobile telecommunication market structure where these antecedents are of minimum relevance. This research will also investigate Oliver's (1999) underpinning theory as non- continuum path sequence in the mobile telecommunication industry.

1.5 Significance of the Study

This study provides impetus in loyalty initiatives to practitioners by contributing towards identifying key elements to achieve loyalty in the mobile telecommunication industry. The predictors are also expected to reveal the evidence of its impact on loyalty hence, it will be a guiding principle to mobile network operators towards channelling their resources.

The comparison study, between prepaid and postpaid users will also enable mobile service operators to formulate and implement tailor-made marketing programmes according to the need of consumers, belonging to these two segments, besides establishing remedial measures accordingly, in the quest to achieve elevated revenue and customer loyalty. Furthermore, outcome of this study, especially on postpaid and prepaid customers would act as a guiding principle for the Malaysian government, particularly, the Malaysian Communication and Multimedia Commission (MCMC). It will enable MCMC to devise, develop and fine tune existing policy according to the needs of the changing environment, likewise addresses the heterogeneity of postpaid and prepaid users and facilitates development of new call plans. In a nutshell, the outcome of this study, which will assist mobile network operators and government, would eventually benefit customers who will be positioned to receive the preferred type of services rendered by service providers, under the purview of MCMC. Moreover, one should not discount the possible establishment of new call plans such as hybrid call plan, which may combine postpaid and prepaid package in responding to the needs of customers.

To academicians, the theoretical perspective of loyalty studies is enriched, especially in the study of the mobile telecommunication industry. The outcome of investigated constructs is expected to contribute towards customer loyalty in mobile telecommunications and related fields. As such, this study is also expected to further strengthen the direct determinants of loyalty and switching costs. Meanwhile, positive switching costs as a mediator in loyalty studies would pave a more focused and niche analysis, thereby contributing towards switching cost analysis in the mobile telecommunication industry. In addition, comparison study between prepaid

and postpaid users would address the shortcomings in the theoretical perspective, where the postpaid and prepaid users are more frequently taken for granted as having homogenous behaviour, thereby ignoring the fact that these groups have different preferences that may affect loyalty in their own unique ways. The methodological contribution such as utilising positive switching costs and SEM is expected to provide guidelines and new validation of existing instruments employed to measure variables in the study and therefore a more holistic loyalty model of mobile telecommunication, comprising switching cost as mediator is expected to contribute towards the mobile telecommunication industry.

The existing studies on telecommunication's price component, despite revealing mixed results (Hafez & Hasnu, 2010; Karine, Laine, & Frank, 2004; Santouridis & Trivellas, 2010; Shih & Kim, 2007), is not included in this study. Stiff competition in a liberalised, yet regulated market of mobile telecommunication, minimises price difference (Hu & Hwang, 2006) as mobile providers are expected to follow the price reduction of competitors, making price behaviour excessively homogeneous, thus ensuring that price reduction is no guarantee of loyalty (Karine et al., 2004; Munukka, 2005). Moreover, price has always been a component of the marketing mix, therefore employing suggestions by Hu and Hwang (2006) in Taiwan to drop financial competition behaviour which is at a stage of uniformity; price is excluded from this study. It is deemed justifiable as both countries, Malaysia and Taiwan, share similar attributes in terms of the mobile telecommunication industry, whereby mobile penetration rate is more than 100% besides operating in an oligopoly structured industry.

1.6 Scope and Limitations of the Study

The scope of study covers Malaysian mobile telecommunication market, including both postpaid and prepaid users mainly due to the fact that the majority (62.5%) of mobile phone users in Malaysia are in the 15 to 34-year age group bracket that are vulnerable to the attractions of alternative medium. Besides that, postpaid and prepaid users are deemed to have different preferences and tastes; hence there is a need for careful attention to be paid on loyalty studies of mobile telecommunication.

This study location is confined to Klang Valley as the majority of mobile phone users, 31.7% or 13.6 million reside in Selangor and Kuala Lumpur. Meanwhile, both the urban and rural respondents are taken into consideration to obtain a better representation, therefore users from Subang Jaya (urban) and Dengkil (rural) are analysed in this study. In order to have a better composition of respondents, the majority of whom are Malays followed by Chinese and Indian, respondents from residential areas were approached. As such respondents living in two residential areas of Subang which are USJ2 and Taman Tanamera followed by another two residential areas of Dengkil, namely Kota Warisan and Taman Dengkil Jaya were surveyed.

1.7 Organisation of the Thesis

This study, which is designed to examine the factors of customer loyalty in Malaysian mobile telecommunication industry, comprises five chapters, commencing with Chapter One and ending with Chapter Five.

Chapter One provides the background of the study, encapsulating issues that cloud the topic of research. This is further funnelled towards antecedents of loyalty in the mobile telecommunication industry, covering practitioners and academic concerns before proceeding with the problem statement, research objectives, research questions, significance of the research followed by the scope and limitations of the study.

Chapter Two provides an extensive literature review of the telecommunication industry followed by customer loyalty evolution and various loyalty theories. In addition, customer loyalty models in the mobile telecommunication and non-mobile telecommunication industries are discussed which include respective antecedents and the prevailing direct and indirect relationship of loyalty and switching cost. This chapter provides relevant and important knowledge on loyalty and switching cost by discussing the results and implications of past studies.

Chapter Three focuses on explanation of research methodology, which begins by providing the research framework and hypotheses derived from the literature and theories, for the purpose of meeting objectives of the study. Operational definition and justification for the selection of instruments, associated with each variable are provided before proceeding with discussions on sampling, data collection procedure,

and data analysis method.

Chapter Four delivers the data analysis and findings in relation to each hypothesis identified in Chapter Three. The findings are accompanied with tables, figures and charts based on the study objectives. This chapter delivers the verdict on the hypotheses based on research findings which will eventually corroborate the problem statement and research objectives.

Chapter Five concludes the research findings for each objective, as indicated by the respective hypotheses. Evaluation of each outcome is discussed, including the mediation verdict and the comparison results of the study between postpaid and prepaid plan types. Implications of the findings to academicians and practitioners are deliberated before concluding with a presentation of the limitations of the study and providing suggestions for future study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Chapter Overview

This chapter discusses literature review, commencing with the telecommunication industry of Malaysia and followed by definitions of loyalty. Subsequently, the origin of underpinning theory is deliberated before proceeding further to various antecedents of customer loyalty. Among the various antecedents to be discussed are satisfaction, service quality and trust, including their effects on loyalty. This study also proceeds to discuss switching costs as the mediator of loyalty besides exploring factors that affect customer loyalty in the Malaysian mobile telecommunication industry.

2.2 Telecommunication industry overview

Telecommunication is undeniably, one of the key industries in the world today and as highlighted by McGowan (1976), the former CEO of MCI, one of the leading telecommunication companies in the United States, telecommunication is important towards fostering development and growth. Consequently, it has been a tool for effective information transmission and in the process, has moulded and created a society inclined towards sophistication. The credit obviously goes to founder, Alexander Graham Bell, whose breakthrough technology on 10 March 1876, enabled voice transmission through a single line and ever since then, the telecommunication industry has never looked back in its quest to embrace progress and improvement. In

addition, it has undergone remarkable advances and today, it has wireless transmission capabilities and converged into many devices and platforms. Despite the advancement of the telecommunication industry in most developing economies, stringent competition exists among the service providers, resulting in switching activities. This scenario is further supported by a study done by Hughes (2007) and Thomas et al. (2004) among five service segments which revealed switching or defection, being more prevalent in telecommunication industry, especially mobile telecommunication (refer Table 2.1).

Table 2.1

Switching rate of various industries

Segment	**Switching rate (%)**
Internet service provider	22%
Telecommunication (mobile & long distance)	10 % to 67%
Clothing catalogs	25%
Residential tree & lawn care	32%
Newspaper subscription	66%

Adapted from: Hughes (2007) & Thomas et al. (2004)

Taking a closer look at the inception of telecommunication industries globally, it reflects a consistent pattern in the form of a monopoly market it originated, for instance, in the United Kingdom, where the General Post was the primary telecommunication provider in 1912 besides being the world's oldest telecommunication company. It did start as a monopoly company after acquiring smaller providers such as National Telephone Company. General Post was re-branded in 1991 as British Telecom (BT). A similar scenario was seen in the United

States of America where American Telecom and Telegraph (AT&T) gained a monopoly status in 1907 and remained as a monopoly till 1982 when the settlement of an antitrust suit against AT&T took place, liberalising the market. In Asia, namely in Japan, Nippon Telegraph and Telecom (NTT) was established in 1953 as a monopoly and wholly government-owned company. It was privatised in 1985, whereas in Singapore, the landscape was slightly different with Singapore Telephone Board incorporated as a statutory body in 1955 and given exclusive rights to operate telephone service within Singapore, co-existing with Telecom Authority of Singapore (TAS) who provided international service only to have them both merged in 1974 and operated as a monopoly before Singtel was finally privatised in 1993.

The Korean telecommunication environment on the other hand, is quite unique for most of its early days were greeted with hiccups due to the Japanese occupation and Civil war until the formation of Korean Telecom Authority (KTA) in 1981, which started as a monopoly. De-regularization was apparently introduced in 1985 and implemented in stages, adopting principles of competition encouragement in the domestic market and later opening the floodgates to foreign competitors, thus full-fledged competition took place in from 1997 when the Korean government allowed the entry of new players who were able to offer comprehensive range of services to customers.

The scenario in Malaysia never deviated from pattern displayed by other telecommunication companies in the world. Telecommunication facilities in Malaysia date back to 1946 with the birth of Telecommunication Department Malaya. A notable pattern is seen when services offered are at the discretion of the

Department, under the purview of the Malaysian government, and acted as the sole provider which also meant that customers' loyalty and service quality were not paramount. The department underwent a change in name after merging with Telecommunication Department of Sabah and Sarawak in 1968. It was renamed as Telecommunication Department of Malaysia or Jabatan Telekom Malaysia (JTM), before eventually being renamed Telekom Malaysia Berhad (refer Figure 2.1).

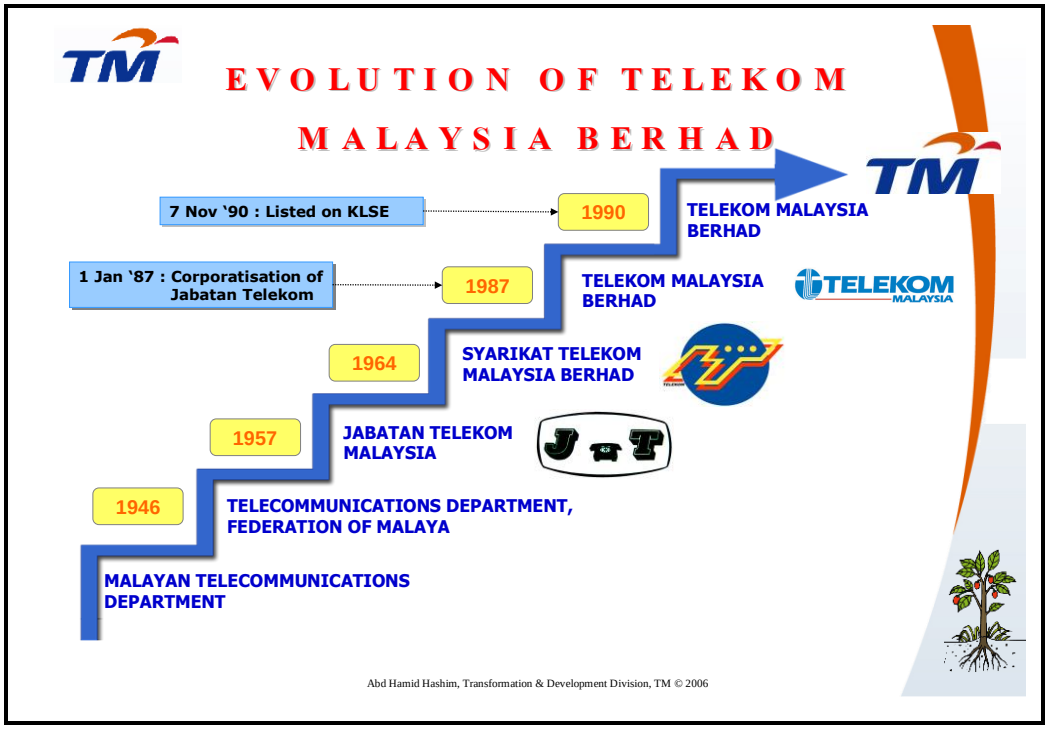

Figure 2.1
Telekom Malaysia Evolution.
Source: Hashim (2006), Transformation, Learning and Development, TM

In the early days, the environment of telecommunication in Malaysia was set on a monopoly platform, which could not be sustained as the trend throughout the world was towards globalisation and liberalisation. In fact, Malaysia's telecommunication liberalisation was accelerated by the privatisation policy, initiated by former Prime Minister, Mahathir Mohamed (Jomo & Tan, nd). It resulted in the de-regulation of telecommunication services in Malaysia which kicked off with the formation of

Syarikat Telekom Malaysia (STM) in 1984. STM was formed as a state-run telecommunication monopolist, incorporated as a separate entity by the then, Ministry of Energy, Post and Telecommunication and renamed Telekom Malaysia Berhad (TM) in year 1990. Malaysia's telecommunication industry did finally end its monopoly status in year 1993 by submitting Time Telekom which was part of Time Engineering Group under Renong Holdings to the telecommunication foray. The mobile phone market, on the other hand, was having TM (ATUR 450) and Celcom as the incumbents. MAXIS and DIGI made their respective entries when the cellular market was opened in 1995. In line with decisions to liberalised telecommunication industry, Malaysian Communication and Multimedia Commission (MCMC) was established in 1998 as an independent regulator replacing JTM.

Taking a broader look at development of telecommunication in Malaysia, what can be clearly seen is the linkage between the government's effort under national policy to make Malaysia an IT savvy society and the catalytic growth in the telecommunication industry. As such, Malaysia was poised to grow the telecommunication sector in line with the overall industrial planning, guided by Vision 2020's Blueprint of achieving developed country status by year 2020 (Zita, 2004). In view of the objective to grow telecommunication sector, MCMC's main task is to oversee the activities of telecommunication providers while acting as the regulatory body. In fact, forming MCMC to oversee the activities of telecommunication providers itself, speaks volume about the government's intention to expand telecommunication sector, paving the way for not only Time Telekom to join the foray but also for the emergence of other communication providers, especially mobile players. The proliferation of mobile phone services were made

available after the end of monopoly power in the telecommunication industry. In short, de-regularisation has encouraged mobile services to mushroom, hence the emergence of MAXIS and DIGI to join incumbents, Telekom Malaysia and Celcom in the Malaysian telecommunication scene was not a surprise, nor the appearance of other players like U Mobile in 2007. This situation has made mobile telecommunication market very competitive as providers are constantly trying to outdo one another to sustain customers' loyalty. In fact, mobile service providers face a two-sided competition. One is from competing mobile service providers the other comprise providers who capitalize on the 'Internet Protocol'(IP) to provide communication services such as Facebook, Skype, WhatsApp, Viber, Google chat, Yahoo and BlackBerry Messenger. Malaysia's Facebook users, for example, were reported to have 13.5 million in 2013 (Socialbakers, 2013).

The competition between mobile service providers could be seen from switching or defection rate (refer Table 2.1), nevertheless a more fascinating point to note is more than 50% of Facebook users in Malaysia resides in age group between 18 to 34 years old, mostly in Gen Y cohort (Socialbakers, 2013), coincidentally highest percentage of mobile phone users in Malaysia (62.5%) belongs to age group between 15 to 34 (handphone users survey, 2009) as such, mobile phone market of Malaysia is truly surrounded by vulnerable customers who might have or could switch any moment. Moreover, the flexible nature of alternative providers in offering multi-platform connectivity, where calls and messages can be initiated from personal computers, laptops, iPad and also smartphones coupled with services which are more frequently provided as free of charge, users belonging to this age group could be lured away easily, thereby imposes serious threat to incumbent mobile service providers such as

Celcom, MAXIS, Digi and U Mobile. The pattern of revenue growth which is at the declining rate despite excellent growth in number of users over the years (Table 2.2 & 2.3) coupled with declining ARPU trend (Table 2.4), are good indicators of challenges faced by incumbent mobile service provider, such as failure to engage in uplifting service experience continuously to gain loyalty (Cheah & Chiang, 2011; Cheah & Chua, 2010; Lee, 2013). This could be one of the reason contributing towards the intensity of competition in telecommunication market, especially the mobile segment. As such, these users may have embraced alternative medium of communication otherwise can also be lured away easily to alternative medium.

Table 2.2

Mobile phone subscribers

Year/Plan	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**Q1, 2014**
Postpaid	5,396	6,298	6,718	7,060	7,375	7,763	35,232
Prepaid	21,851	23,829	27,142	28,240	33,950	35,233	7,880
Total	27,247	30,127	33,860	35,300	41,325	42,996	43,112

Source: 1. Cheah & Chuah (2010), Cheah & Chiang (2011)
2. MCMC confident of hitting smartphone target: The Star, 10 February 2013, p.18
3. MCMC, pocket book of statistics, Q1, 2014

Table 2.3

Mobile phone revenue

Revenue (RM mil) 2006 to 2013								
Type/year	2006	2007	2008	2009	2010	2011	2012	2013
Post paid	3334	4025	4881	5739	7012	7392	8232	8333
Prepaid	7479	9397	10599	9498	10818	11088	11368	11367
Total	10813	13421	15480	15237	17830	18480	19600	19700

Source: 1. Cheah & Chua (2010); Cheah & Chiang (2011)
2. Performance Reports (Celcom, MAXIS & DIGI)

Table 2.4

ARPU trend of mobile telecommunication providers and market average

Provider/ Year	**2010**	**2011**	**2012**	**2013**	**2014f**	**2015f**	**2016f**	**2017f**
Celcom	50.0	51.0	48.6	46.0	44.5	43.1	42.0	41
MAXIS	49.0	54.0	51.7	47.0	47.8	46.8	45.6	44
DIGI	52.0	50.0	47.9	48.0	44.3	43.3	42.2	40.8
Market avg	50.3	51.6	49.4	47.0	45.5	44.4	43.2	41.9

Source: Malaysian Telecommunication Report 2013

The subsequent discussion will follow through customer loyalty and the importance of customer relationship management towards achieving the continued business, mainly the repeat purchase behaviour.

2.3 Customer loyalty

Globalization and liberalization have set a totally unique market structure globally, therefore it is not an exaggerated statement to say globalization is a forceful element that has changed the market. The visible outcome of globalization is global trade liberalization and regional economic cooperation (Gan & Ganguli, 2003). These activities were seen to have intensified in the 90's where market structure coincides with a rise in activity which goes under the banner of customer relationship management (CRM). So at this point, one would surely be curious to know the connections between globalization and liberalization towards CRM, which is none other than heightened open market activities which in return, encourages competition in the quest to uplift value to customers whereas CRM fosters improvement of customer service through effective management of customer service (Christopher, Payne & Ballantyne, 1999) as cited in Chen and Popovich (2003).

A review of literature did also suggest that type of economic ideology to influence liberalization. Apparently, economic reformation from centrally planned economy to market driven economy have catalyst liberalization and globalization (Ognivtsev, 2005), thus opens up competition. Competition, on the other hand, can act as a double edged sword whereby at one end, it drives performance improvement and eventually loyalty in the quest to sustain advantages and reap the fruits of loyalty (Brunh & Grund, 2000; Caruana, 2004; Chadha & Kapoor, 2009; Cheng et al., 2008), meanwhile at the other extreme end, it has also enhanced defection or churn, which has adverse impact on loyalty especially in mobile telecommunication industry (Kaur & Soch, 2012). Therefore loyalty, as much as it has been understood, is strategically far more important as compared to customers' acquisition (Brunh & Grund, 2000).

Concept of customer acquisition prevails due to the fact that customers may end up subscribing a service as there is no other providers or perhaps due to emergency reasons and most likely transpires through a single transaction or until other providers or similar services are discovered, hence categorizing them as customer acquisition. Customer loyalty, on the other hand, transpires when a customer repeatedly subscribe a service due to liking the services or providers even in the presence of alternative providers or services. These fundamentals are divinely sculpted in relationship marketing's pillars, being the main reason for Relationship Marketing's change of focus from transactions to relationships which also reiterates that a stable customer base is an important business asset (Rowley, 2005) whereby the core essence and nature of relationship is encapsulated in the concept of customer loyalty, and its associated literature. This can be seen in CRM adoption whereby

customer loyalty remains an undeniably critical factor (Rigby, Reichheld, & Dawson, 2003), echoing past loyalty studies which reveals positive correlation to revenue (Lee-Kelley, Gilbert, & Mannicom, 2003; Mokhtar et al., 2011; Reichheld & Sasser, 1990). In fact, past researchers have also advocated that five percent change in customer retention or loyalty will yield an elevated profitability of between 25% to 95% (Reichheld & Sasser, 1990; Reichheld & Schefter, 2000) thus making loyalty a profitable affair. The enthusiasm towards loyalty is due to the notion that new customers have tendency towards buying smaller amount (Tong et al.,2012), whereas loyal customers have higher tendency to resist change should competitor's offer comes even with price reduction; therefore loyal customers will still continue to purchase with incumbent provider (Reichheld & Schefter, 2000; Yaya, Marimon & Casadesus, 2011). On the other hand, losing customers to other providers or services will negatively impact revenue.

It can be seen that in a highly personalized service, where interaction matters, interpersonal loyalty takes precedence as compared to firm's loyalty due to factors of trust and commitment channelled towards an individual (Iacobucci & Ostrom, 1996; Macintosh & Lockshin, 1997), but it is also true that companies are formed by individuals hence, trust to individual have impact on companies eventually. Meanwhile, extreme interpersonal loyalty coupled with elevated satisfaction and loyalty scores can also be a deceiving factor to loyalty as it may be the symptom for sweethearting (Brady, Voorhees, & Brusco, 2012) which is identifiable by certain traits of customers and employees. Nevertheless, when loyalty's coverage is expanded, it was revealed that loyalty to an object (brand, store, service or company) is reflected through the propensities towards that object. Those propensities may be

behavioural or attitudinal. In industrial and service marketing, behavioural loyalty is viewed as retention of the brand (Reinartz & Kumar, 2000) in addition to behavioural measure through portfolio size, whereby larger the number, the lower is the loyalty (Hauser & Wernerfelt, 1990). Similarly, for services particularly in semi-continuous use such as mobile phone air time, retention can be measured by the duration of time that the customer has used the service and for durables, by the customer's repeat purchase of the brand (Baldinger & Rubinson; 1996; Bhattacharya, Fader, Lodish & Desarbo, 1996; Deighton, Henderson & Neslin, 1994). Nevertheless, the more significance area of concern about loyalty is to find out customers preference which includes the way they interact with the organization and the key element that attracts customer towards organization as highlighted in the work of Agustin and Singh (2005).

"Managers are likely to have the urge to sort through our results to address the bottom- line question: Which loyalty determinant is most important. Our response is that they all are." (Agustin & Singh, 2005, p.107)

Similarly, Mokhtar et al. (2011) have also reiterated the need to understand mobile phone users' requirement in the quest to attain customers' loyalty. The relationship between mobile phone users and mobile phone providers, once uncovered, can frequently be exploited by cross-selling, up-selling or by some other transaction, offering additional revenue to the organization. In the end, it is designed to give satisfaction to customers and in return gain their loyalty. This will reflect the impetus of customer loyalty especially in mobile telecommunication market where service providers realized that customer loyalty and retention are crucial towards competitive advantage besides being vital goal, fostering economic success (Mokhtar et al., 2011;

Seth et al, 2005). As such, it was not surprising to encounter researchers intensifying the study on loyalty, resulting in tenfold increase from year 1995 to 2005 (Han et al., 2008). This trend has been clearly anticipated with prior initiatives, targeted towards loyalty, presenting abilities to resist counter persuasion and encourage a suppressed churn rate such as switching cost. In fact, it is a known truth that economic reformation has align the changes of marketing ideology from transaction based to relationship, purely reiterating loyalty's status as being paramount importance (Morgan & Hunt, 1994).

Loyalty and retention have always been used simultaneously and past studies have also shown mixed sentiments on customer loyalty and retention. One school of thought was referring both as the same condition (Danesh et al., 2012; Ranaweera & Neely, 2003; Reichheld & Schefter, 2000; Zeithaml, Berry & Parasuraman, 1996) whereas another school of thought did distinguish it (Mahalakshmi & Saravanaraj, 2011; Seth et al., 2005). In fact some studies have seen loyalty as closely tied to the psychological state of customer whereas retention as the strategy the firm implements such as efforts to maintain business relationship established between a service provider and customer in two ways, which can also be involuntary due to presence of high switching barriers, government regulation and proprietary technology (Caruana, 2004; Gerpott et al., 2001; Jones & Sasser, 1995; Khatibi, Ismail & Thyagarajan, 2002) which can also be a phenomenon of spurious loyalist (Day, 1969).

This study would view loyalty and retention as the same mainly due to the fact that loyalty and retention are inter-changeably used in literatures (Reichheld & Schefter,

2000; Zeithaml et al., 1996) besides retention most often being viewed as behavioural intention (Danesh et al., 2012; Ranaweera & Neely, 2003) in addition to the fact that loyalty and retention are strongly related in term of cause and effect (Seth et al., 2005). It also encapsulates initiative towards acquiring and maintaining the customers, be it from attitudinal or behavioural perspective of loyalty, in line with Oliver (1999) underpinning theory which stress on both. In addition, loyalty could also be understood as covering both, customer loyalty and service loyalty given the fact that past study have define customer loyalty as a feeling of attachment to or affection for a company's people, products or services (Jones & Sasser, 1995) whereas service loyalty is define as potential determinants of customer loyalty to service providers (Lee & Cunningham, 2001) and degree to which a customer exhibits repeat purchase behaviour towards a service provider, besides having positive attitudinal inclination to this particular provider and resort to utilizing this provider solely when the need arises (Gremler & Brown, 1996). As such, it reveals the attitudinal side of loyalty, such as intentions to repatronize current service provider, judging from past experience. Given the setting of Malaysian mobile telecommunication, whereby there are only three main providers who are almost homogenous, especially post MNP, any study on individual provider would give high probability to generalize.

There were also various thoughts and definitions established pertaining to loyalty in the past however in a nutshell, researchers centred their attention to four types of loyalty in the likes of attitudinal loyalty, behavioural loyalty, composite loyalty and contemporary loyalty (Eakuru, 2010). In the beginning of documented loyalty studies, which goes way back to 1940's, the ideology were uni-dimensional

construct, which was related to the measurement perspective taken by researchers which is either attitudinal loyalty, understood as brand preferences (Rundle-Thiele, 2005) or share of market which was later referred as behavioural loyalty (Caruana, 2004). Nevertheless, behavioural loyalty took the centre stage (Ruyter et al., 1988) and defined purely through the eyes of behavioural loyalty preachers, strictly measuring the prevailing outcomes. Therefore it was quite a norm to have definition of loyalty flexed towards such a notion as mentioned by Tucker (1964), cited in Pantouvakis and Lymperopoulos (2008):

"No consideration should be given to what the subject thinks nor is what goes on in his central nervous system, his behaviour the full statement of what brand loyalty is."(Pantouvakis & Lymperopoulos, 2008, p. 625)

In this manner, the actions of repeated purchase counts the most but yet, the other definition by Caruana (2004), did shed more lights to loyalty by counting in the attitudinal side of loyalty when probability of purchase is included, although one could not discount it being a blanket definition of behavioural loyalty.

The sole behavioural perspective on loyalty did reveal shortcomings due to the stochastic nature (Bass, 1974; Odin, Odin, & Valette-Florence, 2001) resulting in spurious loyalty (Day, 1969; Dick & Basu, 1994). As such, even though prior studies were worshipping behavioural loyalty, it must have surely been very intriguing to accept the shortcomings and simplicity, therefore it was not a surprising phenomenon to see that attitude and intention as an important component of loyalty did slowly made headways, which was also reiterated by Day (1969) that loyalty theorizes

combination of attitudes and intentions, as such including behaviour element altogether.

The two-dimensional concept of loyalty were later merged under the name of composite loyalty (Jacoby, 1971) and further suggested to be presence under six conditions namely biased (non-random), behavioural response (purchase), time, decision making unit, presence of alternative brands and psychological process (Jacoby & Kyner, 1973). This can be considered a landmark suggestion, much to the relieve of loyalty researchers as any behaviour patterns, if mistakenly understood to reflect actual behaviour can be misleading without the support of favourable attitudes.

The composite definition of loyalty was a breakthrough then, became the pillar for subsequent studies on loyalty (Bennett, 2001; Dick & Basu, 1994; Garland & Gendall, 2004; Malik et al., 2011; Reynolds & Arnold, 2000; Sivadass & Prewitt, 2000; Tong et al., 2012; Zaman et al., 2012) championing the fact that loyalty should always comprise favourable attitudes, intentions and repeat purchase or share of purchase. The composite loyalty underwent fine tuning and was conceptualized as contingency approach with the inclusion of moderating factors that could possibly enhance the attitude and behavioural relationship. Researchers, Dick and Basu (1994) have included moderators such as social norms and situational factors to the core of relative attitude and repeat patronage characteristics which also suggested few outcomes as a result of loyalty such as positive word of mouth, resistance to counter persuasion and search motivation. Among the other elements counted in were purchase, attitude, cognition, current circumstances and characteristics

(Gremler & Brown, 1996; Uncles, Dowling & Hammond, 2003) followed by Zins (2001) who identified behavioural, attitudinal and a composite of both as the fundamentals to loyalty definition.

The contingency approach of loyalty derived from mix of attitudinal and behavioural elements were well accepted by loyalty advocaters as other important elements were incorporated, having attitude and behavioural as the platform for loyalty. At the core of the matter, where attitude and behaviour is concern, a study done by East, Gendall, Hammond and Lomax (2005) in supermarkets to determine how well a singular measure such as attitude or behaviour could predict loyalty followed by a combination of attitude and behaviour towards measuring loyalty has resulted in combination being the significant factor for loyalty outcome. Meanwhile a study done by Wang and Wu (2011) in hair stylist industry to determine the effect of relationship length reveals that antecedents of loyalty such as corporate image and perceived value are in actual fact, influenced by length of relationship which also probably meant repurchase. Perceived value and corporate image were reported as having stronger positive effect on loyalty in short term relationship, furthermore corporate image was also positively associated with switching costs in short term, however, in the long term relationship, value is appreciated more as compared to corporate image, providing meaningful insights on contingency approach of loyalty and the dynamism related to loyalty's antecedents. The study employed also reiterated that concept of loyalty and their associated measures are valuable if it predicts behaviour, likewise have shed important point that behaviours cut across various nature such as reduced search for alternatives, which indirectly bear the effect of high switching cost. Nevertheless, attitude as an important pillar of loyalty

is still very much relevant as it forms a part of meaningful measurement of loyalty (Gremler, 1995) while being reflected in various studies, measuring attitude such as liking the brand (Baldinger & Rubinson, 1996), satisfaction (Shankar, Smith & Rangaswamy, 2003), commitment (Pritchard, Havitz & Howard, 1999) and trust (Ennew & Binks, 1996; Morgan & Hunt, 1994). However, it was Oliver's (1999) study on loyalty that presented a more integrated perspective of loyalty by defining it as:

"Deeply held commitment to repurchase and repatronize a preferred product or service consistently in future causing repeat purchase despite situational influences and marketing efforts having the potential to cause switching behaviour." (Oliver, 1999, p.34)

The loyalty concept suggested by Oliver (1999) was drawn from four phases beginning from cognitive, affective, conative and action loyalty which has also been the pillar of many past studies (Blut, Evanschitzky, Vogel, & Ahlert, 2007; Han et al, 2008; Harris & Goode, 2004; Sivadass & Prewitt, 2000).

2.4 Underpinning Theory of Loyalty

This study intends to employ the four stage loyalty model which is discussed below.

2.4.1 Four stages loyalty model.

Four stages loyalty model is fundamentally laid on a continuum of loyalty platform whereby each phase represents greater degree of loyalty which surfaces

consecutively over a period of time (Blut et al., 2007; Oliver, 1999; Sivadass & Prewitt, 2000). The continuum of loyalty according to respective sequence are cognitive loyalty, affective loyalty, conative loyalty and action loyalty with the first three type of loyalty formed by attitude and action loyalty, purely behavioural, refer figure 2.2.

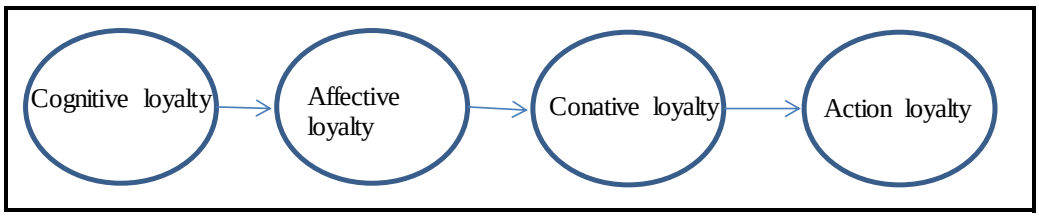

Figure 2.2.
Oliver Four Stage Loyalty
Source: Oliver (1999), Journal of Marketing, 63.

Cognitive loyalty is the first phase in Oliver's four stage loyalty. Cognitive loyalty is merely related to functional characteristics such as service quality, price as well as brand belief (Blut et al., 2007; Chadha & Kapoor, 2009; Mokhtar et al., 2011; Oliver, 1999; Sivadass & Prewitt, 2000). It is build based on prior experience, knowledge and can never be separated from thought process, thus how customers comprehend and represent the outside world within themselves and how their ways of thinking can influence them in return, which occurs before the response to the external stimuli (Schiffman & Kanouk, 2000). Customers at this stage is believed to build loyalty based on information about the brand (Yang & Peterson, 2004) as such, loyalty is considered very minimal, hence weakest type of loyalty (Blut et al., 2007; Oliver, 1999). As such, customers are expected to switch when faced with non-competitive performance (Sivadass & Prewitt, 2000) or when another provider provides superior services. As proposed by Oliver (1999) and adopted by Sivadass & Prewitt (2000),

this study will position perceived service quality as the indicator for cognitive loyalty.

The second type of loyalty in the continuum is affective loyalty. Loyalty at this stage is supposedly stronger than the cognitive type. Affective loyalty is derived from cognitive factor, given the fact that it resides in the final phase of cognitive processes (Anand, Holbrook, & Stephens, 1998; Oliver, 1999). As such, affective loyalty uncovers favourable attitude towards the brand as an outcome of satisfying usage occasions. Similarly, satisfaction is defined as global affect evaluation or feeling state which can be predicted from perceived performance namely service quality. Therefore, satisfaction does in actual fact, fits perfectly in affective loyalty category (Mokhtar et al., 2011; Oliver, 1999; Phillips & Baumgartner, 2002; Tong et al., 2012; Westbrook & Oliver, 1991). Affective loyalty is also part of reflective factor in telecommunication industry (Aydin & Ozer, 2006), literally explaining that an operator should improve customers' satisfaction to create loyalty. This study, therefore, defines satisfaction as an affective component. Nevertheless, this type of loyalty is subjected to switching and considered weak, as past studies have shown satisfied customers need not necessary remain loyal (Boohene & Agyapong, 2011; Khatibi et al., 2002; Sivadass & Prewitt, 2000).

The third type is conative loyalty. The conative type of loyalty encapsulates attitudinal loyalty, supported with desire to intend an action (Blut et al., 1997; Zaman et al., 2012) which can also be due to an outcome of repeated positive affect, towards a provider (Adoyo et al., 2012; Oliver, 1999). Taking a cue from previous work on trust (Giffin, 1967; Schlenker, Helm, & Tedeschi, 1973; Zand, 1972) followed by

Deutsch (1962) and Coleman (1990) as cited in Moorman, Despande and Zaltman (1993), trust is derived from three important elements of behaviour intention, reliance on a partner and the vulnerability of trustor. Similarly, Nooteboom, (1996) reiterated trusts' as behaviour intention hence posits,

"trust may concern a partner's ability to perform according to agreement, or his intentions to do so." (Nooteboom, 1996, p.990).

The definition brings a wider meaning whereby each party, the trustor and trustee expect their respective counterpart to fulfil their duty, hence one party believing that the other party will fulfil the former's need (Liu et al., 2011).

This study posits trust to be a component of conative, as trust itself stems from positive attitude, which transpires after cognitive and affective experience as highlighted by researchers, Adoyo et al. (2012), Liu et al. (2011) and Moorman et al. (1993) that one can have confidence about an exchange partner's trustworthiness that stems from their expertise and reliability. As such, definition of trust, as maintaining and preserving relationship by collaborating with exchange partners, likewise willingness to rely and expecting that the pact will yield intended positive outcome, does in actual fact reflecting the conative side of loyalty. In fact, importance of trust which stems from the experience of patronizing products/ services such as cognitive and affective loyalty was also stressed by Reichheld and Schefter (2000) as:

"loyalty is still about earning the trust of the right kinds of customers, customers for whom you can deliver such a consistently superior experience that they will want to do all their business with you" (Reichheld & Schefter, 2000, p.106).

This notion has also been mentioned in the work of Caruana (2004) who adopted Oliver's theory of continuum loyalty, whereby conative loyalty is regarded as:

"strong intentions of future exchange based on a favourable evaluation of the current experience that is accompanied by a willingness to make efforts at maintaining a relationship."(Caruana, 2004, p.259)

Researchers, Kim, Zhao and Yang (2008) in analysing online shopping among university students in Korea have also adopted Gefen, Karahanna and Straub (2003) definition of trust as:

"set of specific relationship intentions dealing primarily with integrity, benevolence, competence and predictability of an internet online retailer."(Kim et al., 2008, p. 5)

Based on the various definition of trust which concerns intentions indefinitely, this study undertakes trust as conative component of loyalty. Moreover, arguments that trust is an important component before action loyalty can also be seen in past studies which have shown spurious loyalty happens without attitudinal factor (Day, 1969; Dick & Basu, 1994). Correspondingly, presence of stochastic phenomenon which is unexplainable behaviour pattern towards purchase (Odin et al., 2001), prevails due to the lack of understanding micro level behaviour of consumer, resulting in absence of trust (Bass, 1974). As such, this study takes into understanding that existence of trust would obviously be shown through meaningful intentions and probably minimizes the stochastic and spurious type of loyalty eventually. Furthermore, it also reflects the 'deeply held commitment' part of loyalty definition which is a good intention (Yang & Peterson, 2004), clearly showing the desire to repurchase such as recommending to others, even though actual repurchase activities may not transpire

(Oliver, 1999; Yang & Peterson, 2004). As such trust would be a perfect ingredient for conative loyalty in this study. Conative loyalty is deemed to be stronger than the other two types of loyalty, nevertheless still subject to vulnerabilities as other detrimental factors such as repeated fault could negatively affect the trust hence conative loyalty (Blut et al., 2007).

The fourth type of loyalty is action loyalty whereby the subject would translate behaviour intentions to actual behaviour together with willingness to overcome hindrances to such action (Blut et al., 2007; Han et al., 2008; Harris & Goode, 2004; Kaur & Soch, 2012). Customers, once achieve the action loyalty phase, are expected to 'tune out' competitive messages or go in search of alternative brands, leave aside testing it (Oliver, 2010). In view of the full- fledged action loyalty, it was also observed that past studies were overwhelmed with contradicting revelation. Behaviour intentions may not necessarily transformed into actions, thus three stages of loyalty may form readiness to act but need not necessarily resulting towards actions. Nevertheless, the more important issue that have been nodded in previous literatures were about measurement challenges of action loyalty, even though closest measurement such as buying, repeat purchases, preference over competitors and switching avoidance were established (Anderson & Srinivasan, 2003; Harris & Goode, 2004; Han et al., 2008; Tong et al., 2012). As such, researchers have resorted to compromise and employ behaviour intention measures towards measuring action loyalty which were successful towards measuring the construct (Brady et al., 2012; Caruana, 2004; Kaur & Soch, 2012; Vanniarajan & Gurunathan, 2009). As such, this study gravitates along Oliver's (1999) theory, but will not follow suit a continuum as there are studies suggestive of loyalty being more complex thus, single loyalty study

can't examine all predictors simultaneously and loyalty need not be purely linear (Agustin & Singh, 2005; Aydin & Ozer, 2005; Blut, et al., 2007). Therefore, each loyalty stage predicts subsequent loyalty is highly questionable especially when conative is laid to predict action loyalty as no single definition of loyalty can predict loyalty outcomes of recommendation, search and retention (East et al., 2005). Evidently, studies on mobile telecommunication, airlines and beauty salon industries have shown unexpected significant relationship between cognitive and conative. Hotels and airlines have shown significant relationship between cognitive and action loyalty (Han et al., 2008) concurring with the notion that loyalty need not follow an array of sequence, hence inclined to multidimensional complexity, being concurred by Oliver, 1999 as cited in Han et al. (2008).

Table 2.5

Summary of studies leveraging Oliver's (1999) Underpinning theory

Author	**Country**	**Industry**	**Responden**	**Method**	**Findings**	
					Supported	**Nt supported**
Aydin & Ozer (2005)	Turkey	Mobile phone	1662 (postpaid & prepaid)	SEM	SQ-loy, trust, CI, SC trust-SC, loy SC-loy	CI-loy
Cheng et al.(2008)	Hongkong	ISP	737 internet users	SEM	SQ-sat, CI Sat-loy SC-loy	SQ-loy CI-loy
Caruana (2004)		Mobile phone	200	Cannonical correlation	SC-loy contractual SC-cog loy relational SC-affective, conative loy	informational SC-action loy
Liu et al. (2011)	Taiwan	Mobile phone	311	SEM	Sat-loy Trust-loy Swcng barrier-loy playfullness-sat SQ-sat, trust intimacy-trust	

Table 2.5 (continued)

Author	Country	Industry	Responden	Method	Findings	
					Supported	**Nt supported**
Sivadass & Prewitt (2000)	USA	Departmental store	542	SEM	SQ-sat, recommending, relative attitude sat-relative attitude, repurchase intention, recommending relative attitude-recommending repurchase intention - loy cognitive- affective affective-conative conative- action loy	sat-loy relative attitude-repurchase intention, loyalty
Tsai et al. (2010)	Taiwan	Hypermarket	236	Regression	cust value- loy, sat sat-loy sat (well rounded perf) - SC(non-monetary) - loy	sat (prod & svc appearance) - SC (monetary & non) - loy sat (well rounded performance) - SC (monetary)-
Blut et al. (2007)	Germany	DIY retailer	589	SEM	Social benefit increase, cognitive & affective strong Attractiveness of competing alternative decrease, affective & conative strong swcng cost increase, conative & action loyalty strong	Attractiveness of competing alternative decrease, cognitive & affective strong
Han et al. (2008)	China	airlines, banks, beauty salons, hospitals, hotels & mobile phone	3578	SEM	cognitive- affective affective-conative conative- action loy Unexpected significant path : 1.cognitive and intention loy - airline, mobile phone and 2. cognitive and behavioural loy- hotels and airlines	

Table 2.5 (continued)

Author	Country	Industry	Responden	Method	Findings	
					Supported	Nt supported
Harris & Goode (2004)		Online: online book purchasing & online flight booking	498: online book = 294. online flight booking = 204	SEM	cognitive- affective- conative - action supported in both studies trust-loy sat-loy (online book) perceived value - loy (both studies) SQ - trust (online book)	sat - loy (online flight) SQ- trust (online flight)

2.5 Customer loyalty models in mobile telecommunication industry

Customer loyalty in mobile telecommunication industry presents a very interesting and unique proposition due to the existence of prepaid and postpaid service category. The prevailing models, however, lack clarity in terms of distinguishing prepaid and postpaid predictors, bearing the fact that these users have different preferences (Mariscal, 2009; Shrivastava & Israel, 2010). Moreover, the existing research have in many occasions, been too diversified with researchers undertaking various stance, yet unable to precisely differentiate the loyalty's predictors of mobile phone users in the likes of prepaid and postpaid users which in return affects loyalty. The lack of clarity is also compounded with many previous studies ranging from simple to complex loyalty models, being done in a fragmented manner, producing inconsistent results followed by the lack of study on mediating effect of switching costs. In view of the shortcomings, ten loyalty models in mobile telecommunication industry were evaluated.

The first loyalty model being evaluated is work done by Mokhtar et al. (2011). Their model was developed and unveiled six hypotheses to be tested in a direct manner (Figure 2.3). This research is straight forward and direct in nature, employing five SERVQUAL's dimension by Parasuraman, Zeithaml and Berry (1988) to measure service quality towards loyalty, followed by satisfaction towards loyalty, resulting in an overall, seven research factors. The current study proposed by researcher will follow suit SERVQUAL model developed by Parasuraman et al. (1988) since a string of research in mobile telecommunication industry have operationalize the scale (Ahmed et al., 2010; Johnson & Sirikit, 2002; Rahman, 2006). In addition, it does also compare postpaid and prepaid users, hence sampling will be clearly defined upfront while SEM is employed to analyse the relationship, in contrary to Mokhtar et al. (2011) where respondents were not categorize according to plan or user type in addition to engaging regression as analysis method.

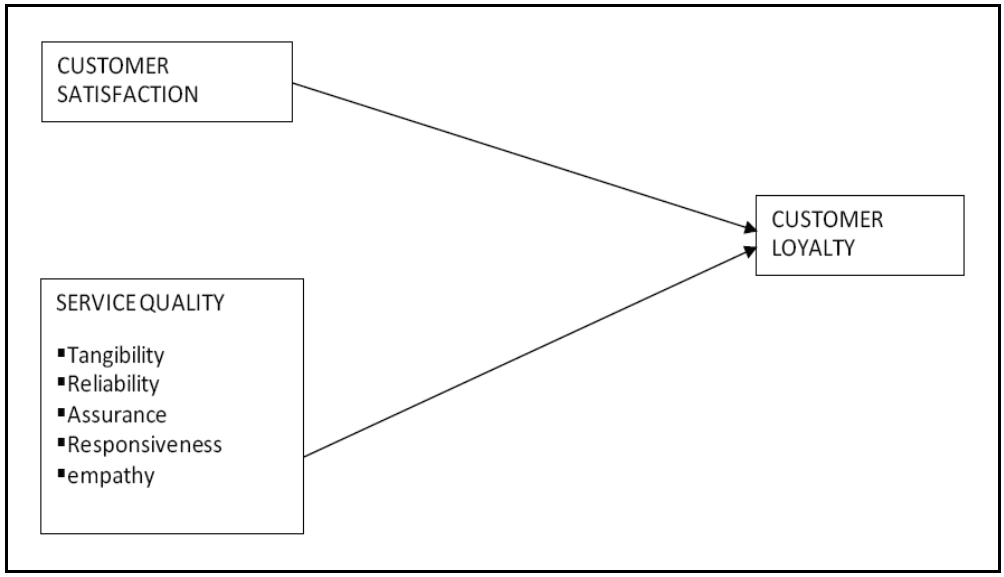

Figure 2.3
Loyalty Model 1. *"The relationship between service quality and satisfaction on customer loyalty in Malaysian Mobile Communication industry."*
Source: Mokhtar et al. (2011), European Union Journal.

Santouridis and Trivellas (2010) analysed two antecedents of loyalty namely service quality dimensions and satisfaction (Figure 2.4). The researchers also introduced mediating effect, thus the antecedents were established with direct and indirect factors. Service quality dimensions to satisfaction linkage and service quality dimensions to loyalty linkage were set as direct path. Meanwhile, mediating effect of satisfaction on service quality dimensions towards loyalty was analysed, bearing indirect linkage. The current study proposed by researcher is set on an entirely different path as compared to Santouridis and Trivellas (2010) service quality dimension. Service quality dimension in Santouridis and Trivellas (2010) model is influenced by Choi, Kim, Sung and Park (2007), ranging from network, value-added services, mobile devices, customer service, pricing structure and billing system whereas in this study, service quality scale, SERVQUAL developed by Parasuraman et al. (1998) will be operationalize. In fact this study's intention to utilize SERVQUAL is probably appropriate as the service quality dimensions suggested by Choi et al. (2007) were mostly insignificant when operationalize in Santouridis and Trivellas (2010) study, be it towards loyalty (value-added services and mobile devices), satisfaction (network, value-added services and mobile devices) or when it's mediated by satisfaction (network, valued-added services, mobile devices, pricing structure and billing system). In addition, the indirect path, proposed in this study has switching costs as the mediator, opposing to Santouridis and Trivellas (2010) model where element of satisfaction undertook mediating role. Nevertheless, the two antecedents of loyalty are maintained, being the factors investigated in this study as it represents cognitive and affective type of loyalty.

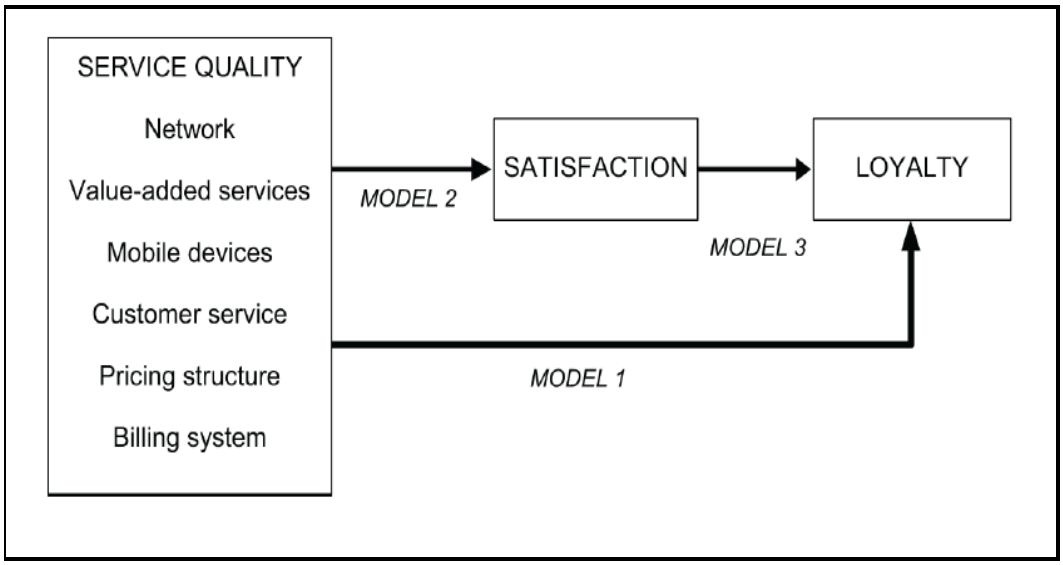

Figure 2.4.
Loyalty Model 2. *"Investigating the impact of service quality and customer satisfaction on customer loyalty in mobile telephony in Greece."*
Source: Santouridis and Trivellas (2010), The TQM Journal, 22(3).

Subsequently, Shi et al. (2011) develop a model on the basis that satisfaction does not always propagate loyalty directly, hence suggested intervening factors. Their model proposes three factors (satisfaction, switching costs and brand attachment), thereby investigating satisfaction as direct antecedent to loyalty followed by emulating past studies on switching costs as moderator (Aydin et al., 2005; Habib et al., 2011; Lee et al., 2001; Oyeniyi & Abiodun, 2010). Nevertheless Shi et al. (2011) employed only procedural and financial type of switching cost dimensions instead of the full-fledged switching cost dimension suggested by past researchers (Burnham et al., 2003; Jones et al., 2002; Klemper, 1995). In addition to switching cost as a moderator, Shi et al. (2011) introduced brand attachment dimension which consist of affection bind, trust and brand self- connectedness as an additional moderator thus, the researchers have introduced two moderating variables and subsequently tested co-moderating effect of both moderators. Furthermore, qualifying elements in co-moderators were chosen based on their significance at single moderator level itself,

thereby excluding procedural switching cost and brand self-connectedness respectively from switching costs and brand attachment dimensions due to their insignificance. In this proposed study however, a single intervening factor is included which is switching costs' and analyse from the mediating perspective instead of moderator. Mediating role is studied due to the scarcity in mobile telecommunication studies whereas trust which was part of brand attachment's dimension in Shi et al. (2011) research will be positioned as antecedent in this study, analysing direct effect to loyalty likewise indirect effect too, having switching costs as a mediating factor. This study does employ SEM as an analysis tool as compared to Shi et al. (2011) where regression analysis was done to examine the relationship.

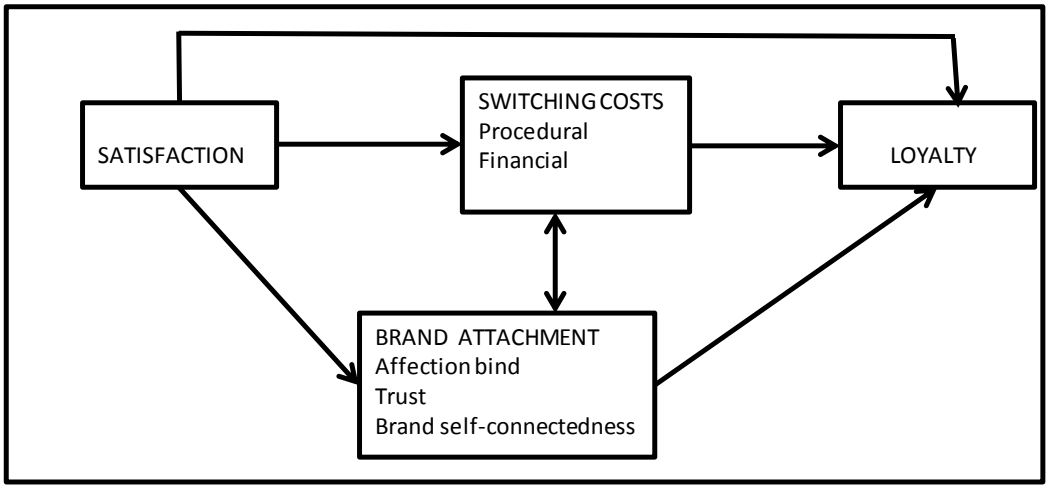

Figure 2.5.
Loyalty model 3. "*A study of customer loyalty based on switching cost and brand attachment."*
Source: Shi et al. (2011), The Journal of China Universities of Posts and Telecommunications, 18(1).

Aydin and Ozer (2005) had apparently proposed four factors (perceived service quality, trust, corporate image and perceived switching costs) as direct antecedents of loyalty while another four indirect relationships were also studied such as perceived service quality, analysed as indirect predictor of loyalty through corporate image,

trust and perceived switching cost. In addition, trust was also analysed as an indirect predictor of loyalty through perceived switching cost (Figure 2.6). The respondents were taken from four big cities of Turkey (Istanbul, Ankara, Izmit and Bursa) and cut across 1662 mobile phone users with the sample being categorized as 724 postpaid users and the remaining respondents of 938 belonging to prepaid category. Even though the model is apparent to suggesting intervening variable such as corporate image, trust and perceived switching costs, the analysis on the other hand, is entirely different than of that proposed in this study. The analysis did not skew towards investigating the mediator or moderating effect. Meanwhile, the eight hypotheses were tested using SEM is adopted in this study, deriving samples from postpaid and prepaid users, however Aydin and Ozer (2005) did not compare between postpaid and prepaid users. This void will be fulfilled in this study where comparisons are made, however switching costs measurement through seven items adapted from Burnham (2003), Guiltinan (1989) and Jones et al. (2002) covering monetary cost, uncertainty cost, evaluation cost, learning cost and set up cost will not be leveraged in this study but on the other hand, positive switching costs is analysed besides comparing prepaid and postpaid, thereby reflecting the enthusiasm of these two groups towards variables in test.

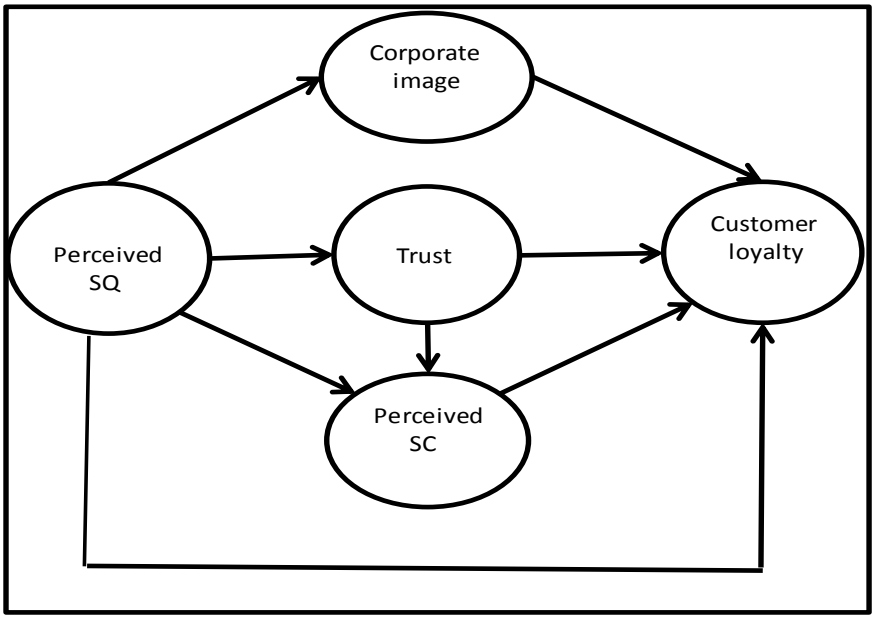

Figure 2.6
Loyalty Model 4. *"The analysis of antecedents of customer loyalty in the Turkish mobile telecommunication market."*
Source : Aydin & Ozer (2005), European Journal of Marketing, 39(7/8).

Subsequently, Aydin et al. (2005) extended the study by utilizing existing respondent of the four cities in Turkey and proceeded to investigate effect of switching cost as moderator with the inclusion of new variable, satisfaction while eliminating perceived service quality and corporate image from previous study (Figure 2.7). The researchers engaged in multi-group analysis and tested switching cost role as a moderator by comparing customers with high perceived switching costs against low perceived switching cost, using regression analysis. The results clearly indicated presence of direct relationship of satisfaction, trust and switching costs (high) towards loyalty. In contrary, there was no effect between customers of low perceived switching cost and loyalty being reported. The researchers also found switching costs to moderate satisfaction and loyalty relationship, followed by trust and loyalty relationship, however strength of relationship is weaken in high switching cost customers as compared to low switching cost. This indicates that high perceived

switching cost reduces customer sensitivity in satisfaction and trust, probably due to intentions to remain patronizing existing services, thus other factors of loyalty such as satisfaction and trust, not being the predominant factors in the event of high perceived switching cost.

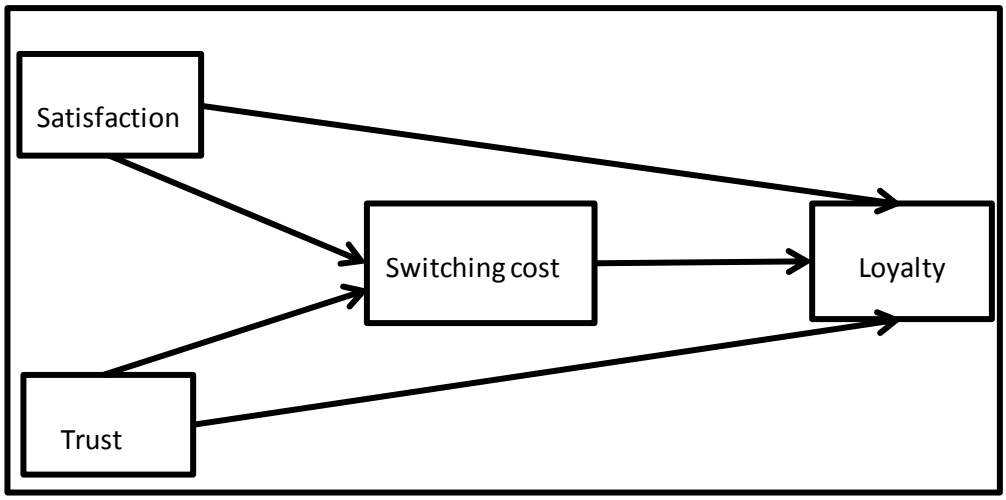

Figure 2.7.
Loyalty Model 5. *"Customer loyalty and the effect of switching costs as a moderator variable."*
Source: Aydin et al. (2006), Market Intelligence and Planning, 23(1).

Kim et al. (2004) hypothesized 15 relationships between variables in the model. The loyalty model (Figure 2.8) comprising two direct antecedents of loyalty (satisfaction and switching barrier) and eleven indirect predictor which stems from service quality (call quality, value-added services, customer support, pricing structure, mobile device and convenience in procedure), switching cost (loss cost, adaptation cost and move-in cost) followed by attractiveness of alternatives and interpersonal relationship. The researchers have actually expanded service quality and switching cost variables to the respective dimensions and have additionally encapsulated switching costs, attractiveness of alternatives and interpersonal relationship under

switching barrier which makes it different than the current proposed study which analyses switching costs dimension alone. However, the attractiveness of alternatives is defined as service quality, reputation and image of replacing provider in which, this study foregoes except for service quality dimension of SERVQUAL (Parasuraman et al., 1988) which actually stems from comparison between perceptions of service quality against expectation of service quality. Nevertheless, the service quality dimension of Kim et al. (2004) is quite similar to Santouridis and Trivellas (2010) deriving from its operational definition whereby it has all the elements of pricing structure, mobile devices, value-added services, customer support, convenience in procedure and call quality even though some of the variables are named differently as compared to Santouridis and Trivellas (2010). Kim et al. (2004) have also included care, trust, intimacy and communication as the recipe for interpersonal relationship whereas other studies have either place these elements, especially trust as a standalone factor such as independent variable (Aydin et al., 2005; Islam, 2010; Kuusik & Varblane, 2009), moderator (Aydin & Ozer, 2005; Liu et al., 2011) or as a facet of brand attachment in Shi et al. (2011).

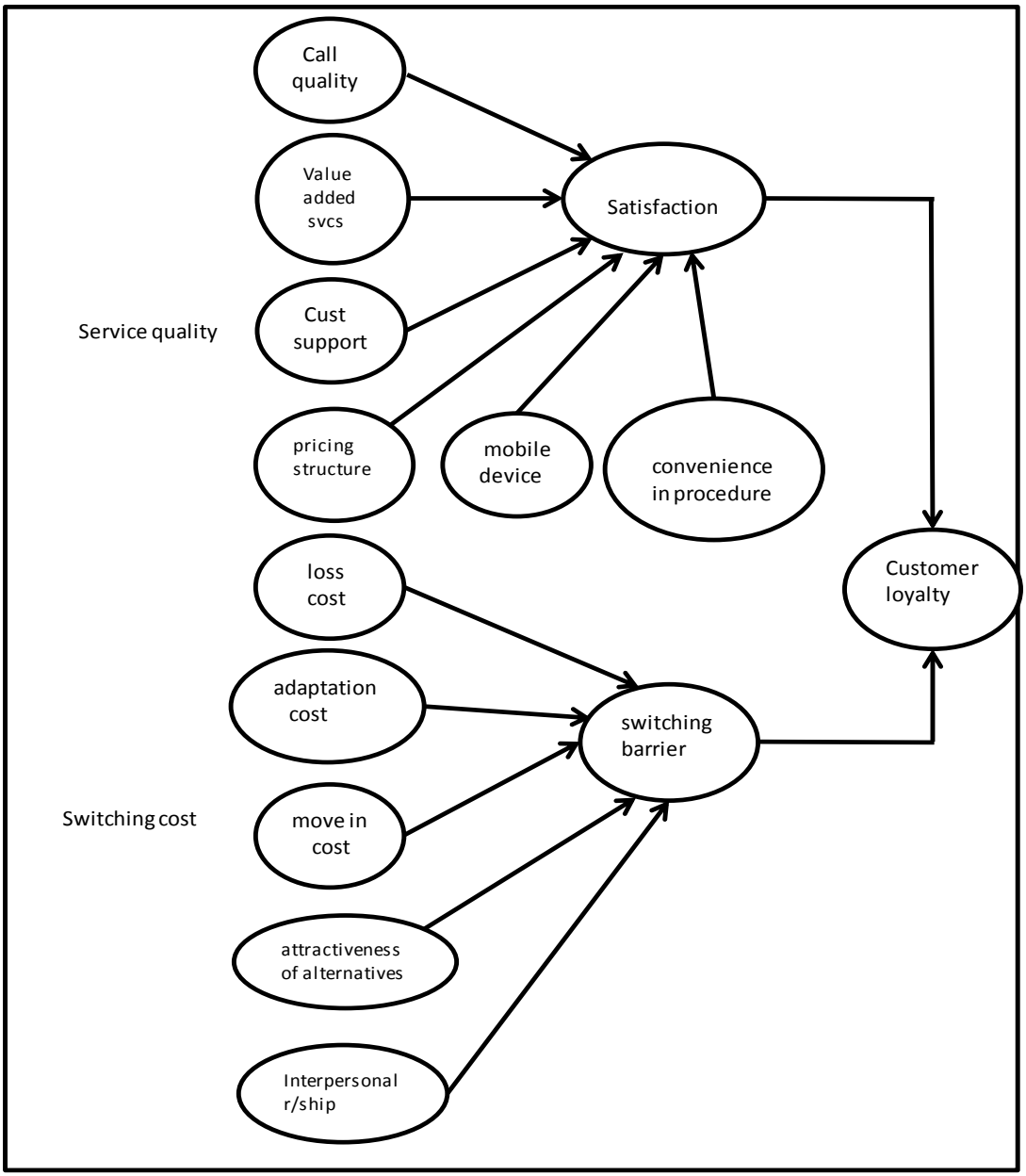

Figure 2.8
Loyalty Model 6. *"The effects of customer satisfaction and switching barrier on customer loyalty in Korean mobile telecommunication services."*
Source: Kim et al. (2004), Telecommunication Policy, 28.

Boohene and Agyapong (2011) advocated a three predictor model of loyalty and tested mobile service users of Vodafone in Ghana. The antecedents developed were service quality, satisfaction and corporate image (Figure 2.9). The model was designed with four hypotheses whereby satisfaction and corporate image are

hypothesized having direct impact on loyalty. Service quality, on the other hand undertook double role, as directly affecting loyalty and indirectly affecting loyalty through satisfaction. Similarly, the service quality and satisfaction variables were undertaken in this proposed study; nevertheless it functions as direct antecedent of loyalty and indirect when it is hypothesized to be mediated by switching costs, in contrary to satisfaction as the moderator. In addition, Boohene and Agyapong (2011) conducted the analysis using multiple regression method and resorted to logistic model as an additional tool to overcome possible challenges pose by ordinary least square towards results interpretation. In the current study, SEM is employed, which enables testing of overall model instead of individual coefficients. SEM does also enable attractive graphical modelling interface.

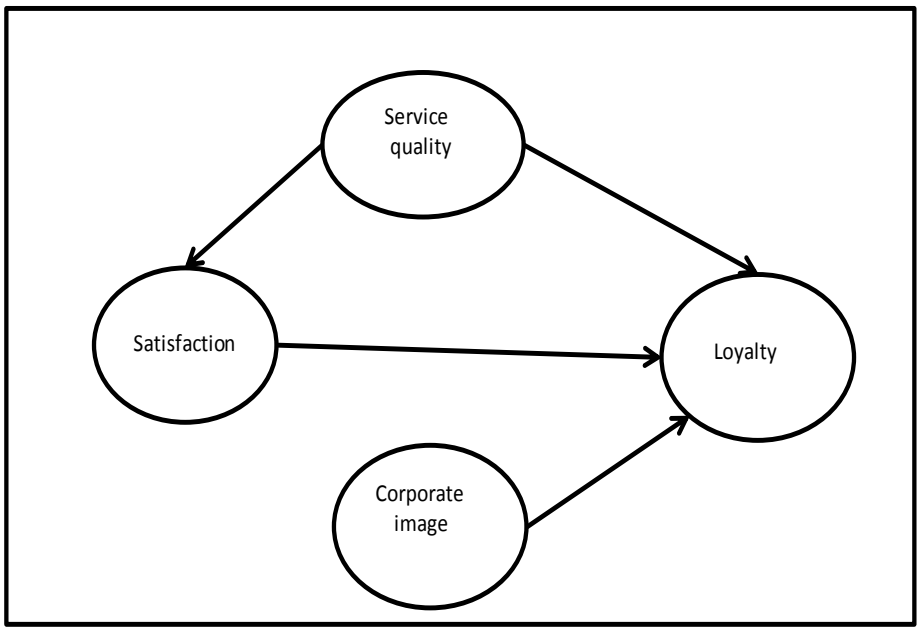

Figure 2.9.
Loyalty Model 7. "Analysis of the antecedents of customer loyalty of telecommunication industry in Ghana."
Source: Boohene & Agyapong (2011), International Business Research, 4(1).

Similarly Yaacob et al. (2008) investigated three antecedents of loyalty which are service quality, price and corporate image. The researchers have resorted to examining direct path alone as compared to Boohene and Agyapong (2011) and also Aydin and Ozer (2005) whose models were included with indirect path's investigation. Apparently, Yaacob et al. (2008) research were targeted at mobile users but it has however, selected customers of only one cellular provider in Malaysia which is MAXIS communication instead of cutting across all three main provider as suggested in this research, where all users of various cellular providers in Klang Valley, Malaysia are selected as a subject matter in this study. In fact the researchers have narrowed their study perspective to postpaid users alone in contrary to this proposed study which will target postpaid and prepaid users.

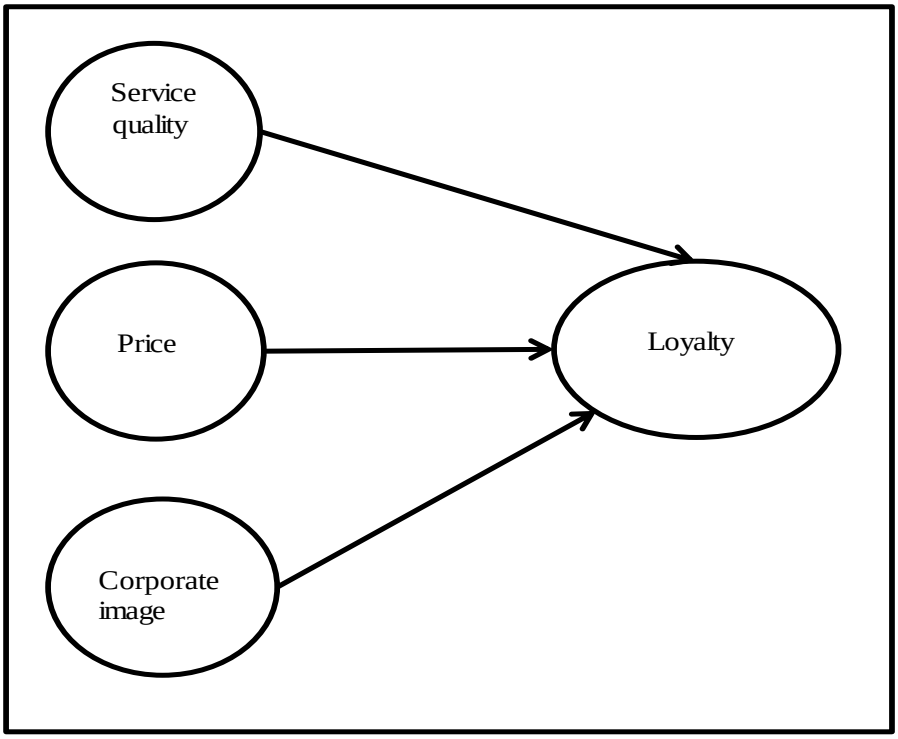

Figure 2.10.
Loyalty Model 8. *"An investigation of the determinants of customers' loyalty of the MAXIS communication Berhad."*
Source: Yaacob et al. (2008).
http://internationalconference.com.my/proceeding/icber

Lee et al. (2006) developed a simpler model of one to one relationship, having attitudinal loyalty's direct relationship to behavioural loyalty (Figure 2.11). The research, even though analyses a very basic linear relationship, the actual contribution stems from the comparison made between prepaid and postpaid mobile customers, very similar to the proposed study in this research where the comparison study between prepaid and postpaid users is engaged. This proposed study however, includes service quality, trust and satisfaction as the attitude side of loyalty towards behavioural loyalty which is measured through repeat purchase whereas Lee et al. (2006) have designed attitudinal loyalty from a mixture of value, trust and satisfaction. The researchers have in addition, chosen part time university student in Singapore as the sample and employed Spearman's correlation method to test the hypotheses, in contrary, this study leverages SEM to test the hypotheses.

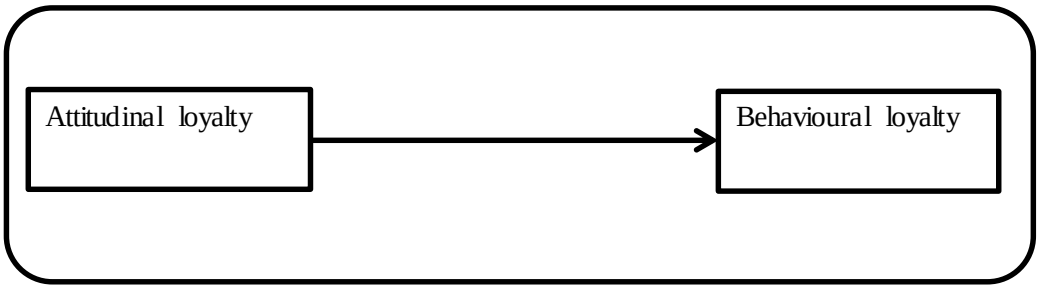

Figure 2.11.
Loyalty Model 9. *"Investigating the loyalty of prepaid and postpaid mobile customer."*
Source: Lee et al. (2006), International Conference on Business and Information, Singapore.

The tenth model suggested in mobile telecommunication industry is by Lee et al. (2001) who has proposed satisfaction and switching costs as predictors of loyalty. Nevertheless, the researchers have tailored their study towards investigating switching cost as moderator as compared to other studies which has switching costs

functioning as an independent variable (Chadha & Kapoor, 2009; Shin & Kim, 2007). Even though Aydin and Ozer (2005) investigated indirect effect of switching cost, their study merely employed negative switching cost, leaving aside the positive switching cost which is a pulling factor to remain in a relationship.

This proposed study does position switching cost as a mediator, contradicting to previous studies done by Chadha and Kapoor (2009), Shin and Kim (2007) and Aydin and Ozer (2005). Lee et al. (2001) have operationalize satisfaction as a combination of pricing, overall core services (area coverage and clarity of sound) and overall value added services (access to provider and precision of billing service) whereas switching cost were measured using uni-dimensional construct. This study, on the other hand, adapts satisfaction's instrument from a combination of researchers (Habib et al., 2011; Mokhtar et al., 2011; Tong et al., 2012) in order to evaluate satisfaction. Similarly, switching cost is measured by adapting scale developed by various researchers (Burnham et al., 2003; Ghazali et al., 2011; Jones et al., 2007; Kaur & Soch, 2012; Meng & Elliott, 2009), measuring the positive side of switching cost. In fact price would not be an antecedent in this proposed study as it is a component of marketing mix and in mobile telecommunication setting, price becomes a homogenous factor, hence would not impact loyalty (Hu & Hwang, 2006; Reichheld & Schefter, 2000; Yaya et al., 2011). Finally, Lee et al. (2001) developed the above model to investigate attitudinal loyalty and stops at behaviour intention, in contrary to this proposed study which will strive to behavioural loyalty by additionally investigating repeat purchase behaviour.

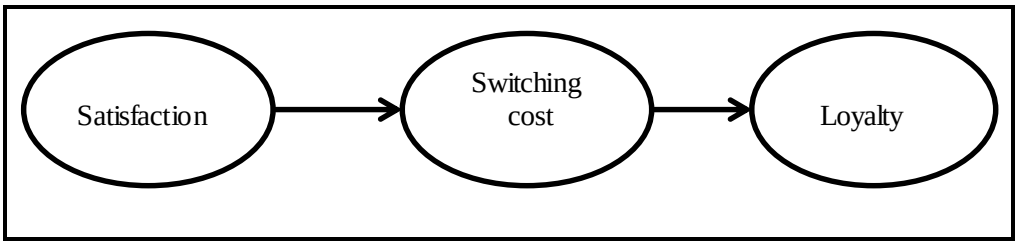

Figure 2.12
Loyalty Model 10. *"The impact of switching costs on the customer satisfaction-loyalty link: mobile phone service in France."*
Source: Lee et al. (2001), Journal of Services Marketing, 15(1).

In view of the models discussed above which clearly shows the presence of diverse thinking among past researchers, it can be concluded that previous loyalty models were fragmented. Therefore it is envisaged that loyalty models in mobile telecommunication setting needs further investigation based on Oliver (1999) underpinning theory, discounting the continuum and empirically test using SEM.

2.5.1 The antecedents of customer loyalty in mobile telecommunication industry

Antecedents of customer loyalty, especially in mobile telecommunication industry were mainly stemming from satisfaction, trust, perceived service quality and also switching costs (Table 2.6), nevertheless, their relationship with loyalty is more often, ambiguous. This ambiguity could most likely intensified due to the fact that the unit of research, the respondents itself, were not being clearly categorized, whether they belong to prepaid or postpaid users. Distinguishing the user's segments is important as past research have shown both groups demonstrate heterogeneity within and between, hence may have different preferences with regards to loyalty (Shrivastava & Israel, 2010; Galperin & Mariscal, 2007), therefore distinguishing the

users followed by comparison study would give a valuable insight on both groups and provide impetus to growth. Among other variables being investigated in mobile telecommunication industry were corporate image, value, brand attachment (affection bind, brand connectedness), brand equity, attractiveness of alternatives, interpersonal relationship, pricing structure, network, value-added services, mobile devices, customer service, playfulness, intimacy, billing system, perceived expectations, convenience in procedure, call clarity and user friendliness. These variables are not directly included in this proposed study as it has either indirectly address as sub-segments of other variables or excluded as not being part of Oliver's (1999) loyalty model.

Table 2.6.

Antecedent of customer loyalty in mobile telecommunication

Antecedents	**Author**	**Country**	**Analysis method/ Scale**	**Respondent**	**Underpinning**
1. Satisfaction 2. Service quality dimension a. Reliability b. Assurance c.Tangibility d. Assurance e. Responsiveness	Mokhtar et al. (2011)	Malaysia	Regression/ 7 Point likert	Students/general	Composite
1. Service quality dimension (direct & indirect) a. Network b. Value-added services c. Mobile devices d. Customer service e.Pricing structure f. Billing system 2. Satisfaction (mediator)	Santouridis & Trivellas. (2010)	Greece	Regression/ 5 Point Likert	Personal users/ prepaid & postpaid	Composite

Table 2.6 (continued)

1. Satisfaction (direct & indirect) 2. Switching cost dimension (moderator) a. Procedural switching cost b. Financial switching cost 2. Brand attachment dimension (moderator) a. Affection bind b. Trust c. Brand self-connectedness	Shi et al. (2011)	China	Regression/ 5 Point likert	General	Composite
1. Perceived service quality (direct & indirect) 2. Corporate image 3. Trust (direct & indirect) 4. Perceived switching cost	Aydin & Ozer (2005)	Turkey	SEM (LISREL)/ 5 Point Likert	Prepaid & postpaid	Oliver (1999)
1. Satisfaction 2. Trust 3. Switching cost (moderator)	Aydin et al. (2005)	Turkey	Moderated regression/ 5 Point	Prepaid & postpaid	Oliver (1999)
1. Service quality dimension (indirect) a. Call quality b. Value-added services c. Customer support d. Pricing structure e. Mobile device f. Convenience in procedure 2. Switching cost dimension (indirect) a. Loss cost b. Adaptation cost c. Move in cost 3. Attractiveness of alternatives (indirect) 4. Interpersonal relationship (indirect) 6. Satisfaction 7. Switching barrier	Kim et al. (2004)	Korea	SEM (AMOS) / 7 Point Likert	General	Composite

Table 2.6 (continued)

1. Service quality (direct & indirect) 2. Satisfaction 3. Corporate image	Boohene & Agyapong (2011)	Ghana	Regression/ 7 Point Likert	Vodafone customers/ general	Oliver (1999)
1. Perceived service quality 2. Price 3. Corporate image	Yaacob et al. (2008)	Malaysia	Regression/ 7 Point Likert	MAXIS customers/ postpaid	Composite
1. Attitude	Lee et al. (2006)	Singapore	Spearman correlation/ Attitude : 7 Point semantic differential scale. Behavior : 7 Point Scale	Part time University student/ Prepaid & postpaid	Composite
1. Satisfaction 2. Switching cost (moderator)	Lee et al. (2001)	France	Regression/ 5 Point likert	Personal users/ general	Attitudinal

2.6 Customer loyalty model in non- mobile telecommunication

Customer loyalty models in non- mobile telecommunication industry was also done extensively in the past, echoing the importance of loyalty. Among the studies settings taken into considerations were banking and financial (Garland & Gendall, 2004; Lee & Cunningham, 2001; Lee et al., 2011; Malek et al., 2011; Tong et al., 2012), departmental store (Reynolds & Arnold, 2000; Sivadass & Prewitt, 2000; Tsai et al., 2010; Wong & Sohal, 2003), transport (Pantouvakis & Lymperopoulos, 2008), insurance (Anton et al., 2007) online purchase (Harris & Goode, 2004; Yen, 2010), energy (Ibanez et al., 2006), fast moving consumer goods (Zaman et al., 2012), pharmaceuticals (Adoyo et al., 2012), hairstylist (Wang & Wu, 2011), internet service provider (Cheng et al., 2008), DIY retailer (Blut et al., 2007), advertising

agency (Caceres & Paparoidamis, 2005) and multiple services category such as East et al. (2005), (supermarket, car and services), Ruyter et al. (1998), (health centres, city theatre, fast food, supermarkets and amusement parks), Tu et al. (2011), (computer, communication and consumer electronic). As such, ten models were studied in non-mobile telecommunication; refer Loyalty Model 11 to 20, Appendix 1 (figure 2.13 till 2.22)

The outcome reveals similar pattern of fragmentation, still prevailing in the non-mobile telecommunication setting, for instance, Sivadass and Prewitt (2000) analysed customer loyalty towards departmental store in USA by having service quality as the indirect path (relative attitude, satisfaction, recommendation and repurchase) towards loyalty. Even though the service quality instrument is adopted from modified version of Parasuraman et al. (1988), it did not clearly categorize the five dimensions in the likes of reliability, empathy, responsiveness, assurance and tangibility. Meanwhile, the fragmentation is intensified as the researchers have resort to employing four point likert scale to measure satisfaction. On the other hand, Ibanez et al. (2006), in studying energy markets, have operationalized Gronroos (2001) to measure service quality which stems from technical peripheral quality, technical core quality and service process quality and instead of employing the popular five or seven point likert scale, the researchers have employed ten point likert scale to measure service quality and satisfaction. The presence of fragmentation, diversity and inconsistencies could be clearly seen when the models are skewed to direct and indirect relationship towards loyalty.

Table 2.7

Antecedents of loyalty in non-mobile telecommunication industries

Antecedents	**Author**	**Country**	**Industry**	**Analysis method/ Scale**	**Respondent**	**Theory**
1. Service quality (indirect) 2. Relative attitude (direct & indirect) 3. Satisfaction (direct & indirect) 4. Recommendation (direct & indirect) 5. Repurchase (direct) 6. Cognitive - affective 7. Affective - conative 8. Conative - action loyalty	Sivadass & Prewitt (2000)	USA	Departmental store	SEM (Lisrel) Service quality: 7 point Likert Satisfaction; 4 Point Likert Loyalty : ratio Others : 5 Point Likert	Head of households	Oliver
1. Satisfaction (mediator) 2.Technical quality core services (indirect) 3. Technical quality peripheral services (indirect) 4. Service process quality (indirect) 5. Trust 6. Perceived switching cost	Ibanez et al. (2006)	Spain	Energy	SEM Technical q of core svcs, tech q of peripheral svcs & svc process q = 10 Point Likert Satisfaction = 10 Point Likert Scale Trust & SC = 5 Point Likert	15 years and above : decision makers on selecting energy provider	Composite
1. Switching costs 2. Perceived risks (moderator) 3. Loyalty a. Preference loyalty b. Dissatisfaction response	Yen (2010)	USA	e-commerce	Regression/ 7 Point Likert Scale	online shopping customers	Attitudinal
1. Service quality (direct & indirect) 2. Corporate image 3. Satisfaction 4. Switching costs 5. Price perception	Cheng et al. (2008)	Hongkong	ISP	SEM (AMOS)/ 5 Point Likert Scale	Internet users	Oliver
1. Satisfaction 2. Trust 3. Corporate reputation	Zaman et al. (2012)	Pakistan	FMCG	Regression/ 5 Point Likert Scale	FMCG customers	Composite

Table 2.7 (continued)

1. Service personalization (direct & indirect) 2. Satisfaction 3. Switching costs (moderator)	Tong et al. (2011)	Hongkong	Internet banking	Regression / 7 Point Likert Scale	Internet banking users	Composite
1. Customer value 2. Satisfaction 3. Switching costs (moderator)	Tsai et al .(2010)	Taiwan	Hypermarket	Regression / 7 Point Likert Scale	Shoppers in hypermarket	Oliver
1. SERVQUAL a. Tangibles b. Empathy c. Reliability d. Responsiveness e. Assurance	Malik et al. (2011)	Pakistan	Banks	Regression / 5 Point Likert Scale	Bank customers	Composite
1. Cognitive loyalty 2. Affective loyalty 4. Action loyalty 5. Social benefits (moderator) 6. Attractiveness of alternatives (moderator) 7. Switching cost (moderator)	Blut et al. (2007)	Germany	DIY retailer	Multigroup SEM/ 7 Point Likert Scale	Customers of a particular DIY retailer	Oliver
1. Service fairness 2. Service quality (indirect) 3. Commercial friendship 4. Trust 5. Satisfaction 6. Calculative commitment 7. Affective commitment 8. Cognitive loyalty 9. Affective loyalty 10. Intention loyalty	Han et al. (2008)	China	Service industries: hotels (21), airlines (1), hospitals (2), banks (5), mobile phone company (1), beauty salons (5)	SEM / 7 Point Likert Scale	3578 customers from six industries	Oliver

2.7 Antecedents of loyalty: Direct relationship

In a nutshell, relationships in loyalty models of mobile telecommunication and non-mobile telecommunication setting present a very diverse pattern. For instance, the direct relationship itself (Table 2.8) stems from various, fragmented antecedents such as satisfaction, service quality, trust, switching cost, switching barriers, corporate image, price, relative attitude, recommendation, service personalization, value, attitudinal loyalty, repurchase intention, cognitive, affective and conative loyalty likewise produces inconsistent results.

Table 2.8

Summary of direct antecedents of loyalty

Antecedents	**Author**	**Industry**	**Findings**
Satisfaction	Mokhtar et al. (2011)	Mobile telephony	positive, sig: B= 0.843, t=28.910
	Roy et al. (2014)	Mobile telephony	positive, sig: B=0.153, p<0.05.
	Tarus & Rabach (2013)	Mobile telephony	nt supported: B= 0.083, p>0.05
	Santouridis & Trivellas (2010)	Mobile telephony	positive, sig: B= 0.397, p < 0.001
	Edward & Sahadev (2011)	Mobile telephony	positive, sig: B=0.317, p<0.05
	Shi et al. (2011)	Mobile telephony	positive, sig: B= 0.667, p=0.00
	Aydin et al. (2005)	Mobile telephony	positive, sig: B= 0.321, t=14.179
	Kim et al. (2004)	Mobile telephony	positive, sig: B= 0.797, t=0.885, p<0.01
	Boohene & Agyapong (2011	Mobile telephony	nt supported: B= - 1.537, sig, p<0.005
	Sumaedi et al. (2014)	Health care	nt supported: B= 0.048, t= 0.559, p=0.577
	Sivadass & Prewitt (2000)	Retailer	nt sig: path coefficient = - 0.01

Table 2.8 (continued)

Antecedents	Author	Industry	Findings
Satisfaction	Ibanez et al. (2006)	Energy	positive, sig: B=0.29
	Cheng et al. (2008)	ISP	positive sig: path coefficient= 0.726, t= 6.55, p=0.000
	Zaman et al. (2012)	FMCG	positive sig: B= 0.048, t=2.741, p=0.001
	Tong et al. (2012)	Internet Banking	positive, sig: B= 0.623, t=13.881, p=0.000
	Hamidizadeh et al. (2011)	Banking	supported: B= 0.336, p < 0.001
	Han & Hwang (2014)	Low cost airline industry	positive sig: B= 0.842, t=12.101, p<0.01
	Chou et al. (2014)	e-commerce	positive, sig: B=0.894,
	Tsai et al. (2010)	Hypermarket	positive, sig: p<0.01
	Adoyo et al. (2012)	Pharmaceuticals	nt sig: B=0.019, t=0.074, p=0.943
Service quality	Mokhtar et al. (2011)	Mobile telephony	SERVQUAL Tangibility: positive, sig:B=0.365, t= 6.394 , p=0.00 Reliability: positive, nt sig: B= 0.074, p=0.249 Responsiveness: positive, nt sig: B=0.024,t= 0.346, Assurance: positive, sig:B=0.376,t= 5.866, Empathy: negative,sig: B= -0.376, t=- 2.673, p=0.008 SQ: positive, sig: R^2=0.51,
	Alnsour et al. (2014)	Mobile telephony	p<0.05 Tangible: supported: t= -2.47, p <0.05 Responsiveness: positive, sig: t=2.73, p<0.05 Reliability: positive, sig: t=2.96, p<0.05 Empathy: positive, sig: t=3.92, p<0.05 Assurance: positive, sig: t=4.80, p<0.05

Table 2.8 (continued)

Antecedents	Author	Industry	Findings
Service quality	Santouridis & Trivellas (2010)	Mobile telephony	Network : positive, sig: B= 0.148, p< 0.05 Vads: positive, nt sig: B= 0.067, p>0.05 Mobile dev: positive, nt sig: B= 0.090, p >0.05 Cust svc: positive, sig: B= 0.262, p <0.001 Pricing structure: positive, sig: B= 0.232, p < 0.001 Billing syst: positive, sig: B= 0.159, p < 0.05
	Edward & Sahadev (2011)	Mobile telephony	not supported: B=0.061, p>0.05
	Roy et al. (2014)	Mobile telephony	positive, sig: B=0.159, p<0.05.
	Aydin & Ozer (2005)	Mobile telephony	positive, sig, B=0.14, t= 5.02, p< 0.01
	Boohene & Agyapong (2011	Mobile telephony	positive, sig:B=1.760, p= 0.00(
	Ishaq (2012)	Mobile telephony	SQ: supported, B= 0.37, t= 9.3, p< 0.001
	Blery et al. (2009)	Mobile telephony	SQ supported, r= 0.451,
	Yaacob et al. (2008)	Mobile telephony	positive, nt sig: r = 0.168, p = 0.068)
	Cheng et al. (2008)	ISP	positive, nt sig: B=0.109, t= - 0.68, p >0.05
	Han & Hwang (2014)	Low cost airline industry	positive, nt sig: B=0.066, t=0.312
	Izogo & Ogba (2015)	Automobile industry	SERVQUAL Tangible: positive, sig, G=0.389, p<0.01 Reliability: positive, sig: G=0.425, p<0.01 Responsiveness: positive, sig: G=0.410, p<0.01 Empathy: positive, sig: G=0.426, p<0.01 Commitment: positive, sig: G=0.442, p<0.01
	Malik et al. (2011)	Banks	Tangibility: positive, sig:B=0.29, t= 3. 63 , p Empathy: positive, sig: B=0.17, t=2.81, p=0.005 Assurance: positive, sig: B=0.18, t= 2.17, p=0.03

Table 2.8 (continued)

Antecedents	Author	Industry	Findings
Service quality	Wong & Sohal (2003)	Departmental store	SQ- Loy to employee Reliability: not supported, B=0.03, t=0.77, p > 0.05 Responsiveness: not supported, B=-0.03, t= -0.72, p > 0.05 Assurance: supported, B=0.14, t= 2.52, p< 0.05 Empathy: supported, B=0.30, t=5.71, p<0.001 Tangible: supported, B=0.07, t=2.31, p<0.05) SQ- Loy to company Reliability: supported, B=0.12, t= 3.32, p<0.001 Responsiveness: not supported, B= 0.01, t=0.06, p >0.05 Assurance: supported, B=0.15, t=2.73, p<0.01 Empathy: supported, B=0.18, t=4.04, p <0.001 Tangible: supported, B= 0.21, t=6.20, p<0.001
	Pearson et al. (2012)	e-loyalty (website)	PSQ : positive, sig: B=0.160, p< 0.05.
	Yu et al. (2006)	Leisure industry	Tangibility: positive, sig: r = 0.535, p=0.000 Reliability: positive, sig: r = 0.356, p=0.000 Assurance:positive sig: r = 0.483, p=0.000 No analysis developed for responsiveness & empathy

Table 2.8 (continued)

Antecedents	Author	Industry	Findings
Trust	Zhou et al. (2010)	Mobile telephony	supported, B= 0.2, p < 0.01
	Aydin & Ozer (2005)	Mobile telephony	positive, sig: B= 0.59, t= 13.87, p<0.01
	Aydin et al. (2005)	Mobile telephony	positive, sig, B=0.436, t=19.275, p < 0.01
	Roy et al. (2014)	Mobile telephony	positive, sig: B= 0.669, p<0.001
	Sumaedi et al. (2014)	Health care	positive, sig: B=0.569, t=5.616, p <0.001.
	Carla et al. (2014)	Facebook fan page	positive, sig: B=0.236, t=4.601, p<0.001
	Ibanez et al. (2006)	Energy	positive, sig: B= 0.30, t=2.23
	Hamidizadeh et al. (2011)	Banking	supported, B= 0.114, p < 0.1
	Zaman et al. (2012)	FMCG	positive, sig: B=0.083, t=3.761, p=0.000
Corporate image	Aydin & Ozer (2005)	Mobile telephony	positive,not sig: B= 0.07, t=1.83, p >0.05
	Boohene & Agyapong (2011)	Mobile telephony	positive, sig, B=1.143, p= 0.000
	Yaacob et al. (2008)	Mobile telephony	positive, sig: r= 0.452, p<0.01
	Cheng et al. (2008)	ISP	positive, not sig: path coefficient= 0.134, t =1.48, p=0.168
	Zaman et al. (2012)	FMCG	positive, sig: B=0.013, t=1.882, p<0.001
Price	Yaacob et al. (2008)	Mobile telephony	positive, sig: r=0.512, p<0.01
	Cheng et al. (2008)	ISP	positive, sig: path coefficient= 0.130, t= 2.57, p= 0.000
Attitudinal loyalty	Lee et al. (2006)	Mobile telephony	positive , sig: r = 0.66, p< 0.001

Table 2.8 (continued)

Antecedents	Author	Industry	Findings
Switching cost	Yang (2015)	Mobile telephony	positive, sig: B=0.451, p<0.001
	Sujatha & Chandrika (2013)	Mobile telephony	positive, sig: B= 0.505, t=13.045, p=0.000
	Aydin & Ozer (2005)	Mobile telephony	positive,sig: B= 0.14, t=5.88, p<0.01
	Aydin & Ozer (2006)	Mobile telephony	Monetary cost: positive, nt sig: phi=0.03 Benefit loss cost: positive, sig, phi=0.35, p<0.01 Uncertainty cost: positive, sig: phi=0.36, p<0.01 Learning cost: positive sig: phi=0.31, p<0.01 Evaluation cost: positive sig: phi=0.23, p<0.01 Set up cost: positive, sig: phi=0.22, p<0.01
	Chadha & Kapoor (2009)	Mobile telephony	positive, sig: B=0.238, t= 3.853, p=0.000
	Caruana (2004)	Mobile telephony	Contractual & Relational SC supported. Informational SC: Economic risk cost & evaluation cost supported. Learning cost & set up cost not supported
	Aydin et al. (2005)	Mobile telephony	positive, sig: B=0.090, t= 4.90, p <0.01
	Lee & Murphy (2008)	Mobile telephony	positive,sig: B =0.166, t=3.037,p = 0.003
	Islam (2008)	Mobile telephony	positive, sig: B= 0.839, p<0.01
	Oyeniyi & Abiodun (2010)	Mobile telephony	sig: p < 0.005; R^2=0.329
	Liu et al. (2011)	Mobile telephony	positive,sig: B= 0.21,t= 3.05
	Edward & Sahadev (2011)	Mobile telephony	positive, sig: B= 0.289, p < 0.05
	Ruyter et al. (1998)	Services industries (3 low SC & 2 high SC)	supported: B= 0.6135, t=21.546, p < 0.0001
	Ibanez et al. (2006)	Energy	positive, sig: B=0.29

Table 2.8 (continued)

Antecedents	Author	Industry	Findings
	Yen (2010)	Online shopping	positive, sig :B=0.239, t=5.072, p=0.000
	Cheng et al. (2008)	ISP	positive, sig: path coefficient =0.176, t=3.99, p < 0.05
	Tong et al. (2012)	Internet Banking	positive, sig: B=0.288, t=5.250, p =0.000
Switching barriers	Kim et al. (2004)	Mobile telephony	positive, sig: estimates= 0.195, t=2.214, p< 0.05
Relative attitude	Sivadass & Prewitt (2000)	Retailer	positive, nt sig: B= 0.06, p>0.05
Recommendation	Sivadass & Prewitt (2000)	Retailer	positive, sig: B=0.04, p<0.05
Repurchase intention	Sivadass & Prewitt (2000)	Retailer	positive, sig: B=0.13, p<0.05
Conative	Sivadass & Prewitt (2000)	Retailer	positive, sig: B= 0.36, p<0.05
	Blut et al. (2007)	Retailer	positive, sig: B= 0.604, p < 0.01
	Han et al. (2008)	six industries	all industries positive and sig, p <0.01
cognitive	Han et al. (2008)	3 & 4 stars hotels, airlines	unexpected sig path: 3 stars hotel (B= 0.21, t=3.48, p < 0.01), 4 stars hotel (B=0.21, t=2.75, p < 0.05) & airlines (B= 0.17,t = 2.31, p < 0.05)
Affective	Han et al. (2008)	Banks	unexpected sig path: banks (B= 0.19, t= 2.77, p < 0.05)
Service personalization	Tong et al. (2012)	Internet Banking	positive, sig: B=0.48, t= 9.725, p=0.000
Value	Tsai et al. (2010)	Hypermarket	positive, sig: prod value B=0.266; svc value, B=0.382, F= 46.665, p <0.01

2.7.1 Satisfaction and loyalty

Satisfaction, an important pillar in relationship quality has shown to be the guiding principle in most loyalty study (Han & Hwang, 2014; Kuusik & Varblane, 2009;

Oliver, 2010; Roy et al., 2014), therefore it strongly grants empirical investigation in a loyalty study. Even though past literature on satisfaction have garnered two important conceptualizations, namely transaction specific and cumulative, mobile telecommunication services, where the consumptions are continuous instead of a one–off usage, have in fact reflect measurement appropriateness by cumulative, thus overall indicator of past, current and future performances (Anderson et al., 1994). Among the definitions encapsulating cumulative type of satisfaction have in fact an overall element such as overall post-purchase evaluation, overall evaluation on achieving customers' expectation and company's performances against other providers, likewise users' personal evaluation of pleasure with service providers which is seen as a cumulative experience. This type of satisfaction has been used in numerous studies, be it in mobile telecommunication industry or non-mobile telecommunication setting (Adoyo et al., 2012; Bayraktarogly & Atrek, 2011; Fornell, 1992; Habib et al., 2011; Han & Hwang, 2014; Kaur & Soch, 2012; Mokhtar et al. 2011; Tarus & Rabach, 2013). Meanwhile, transaction specific explains satisfaction after each or specific purchase occasion through an assessment made after purchase by comparing expected performance with actual performance, which most of the time is a factor of cost being incurred, quality and price (Churchill & Suprenant, 1982; Parasuraman et al., 1994; Santouridis & Trivellas, 2010).

Satisfaction, being an element closely tied to consumers' specific and consumer's expectation has in fact been lifted to higher standards due to globalization and open competition, therefore satisfaction, besides being a desirable end state of consumption, it is also reinforcing pleasurable experience (Oliver, 2010), revealing

cumulative satisfaction. As such, it is worth to note the broader definition of satisfaction as mentioned in the work of Oliver (2010) as:

"consumer's fulfillment response, a judgment that product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfillment, including levels of under or over fulfillment." (Oliver, 2010, p.8)

Cumulative type of satisfaction which is laid on overall evaluation of total purchase and consumption experience with a good or bad service over time does also concurs with satisfaction, being viewed as an affective state with positive feelings (Cronin, Brady & Hult, 2000; Dick & Basu 1994). This state, in actual fact, explains the way customer reacts to the state of fulfilment and customer judgment of the fulfilled state (Oliver, 2010) besides being an important determinant of customer loyalty. The cumulative type of satisfaction, being operationalized in past research, laid on economic-psychological fundamentals, has been shown to be more important as it emblems historical evidences, current state of affair and also the future performances (Anderson et al., 1994; Johnson, Gustafsson, Andreassen, Lervik, & Cha, 2001), therefore this study leverages on cumulative type of satisfaction. This perspective is undertaken as several past studies have adopted cumulative type of satisfaction in their operational definition, especially in service industries such as mobile telecommunication where services are continuously utilized (Aydin et al., 2005; Kim et al., 2004; Kuusik & Varblane, 2009; Mokhtar et al., 2011; Roy et al., 2014; Tarus & Rabach, 2013).

2.7.1.1 Study on satisfaction and loyalty

Satisfaction has been found to be play a central role in loyalty's study (refer Table 2.9) and most often, its an indicator of customers' spending, financial health and economy condition (Hamidizadeh et al., 2011). Despite all these, the prediction power on loyalty, had however, revealed inconsistencies. Should one analyse satisfaction in mobile telecommunication industry, it prove to be significant at one end (Aydin et al., 2005; Kim et al., 2004; Mokhtar et al., 2011; Roy et al., 2014; Santouridis & Trivellas, 2010; Shi et al., 2011) whereas on the other end, researchers such as Boohene and Agyapong (2011) found that satisfaction could not predict loyalty in Ghana, similar to study done in Kenya by Tarus and Rabach (2013). Furthermore, similar outcome have been observed in other industries too whereby Adoyo et al. (2012) and Sivadass and Prewitt (2000) have found satisfaction as insignificant predictor in pharmaceuticals and retailer segment. On the other hand, researchers have also found significant relationship between satisfaction and loyalty such as Zaman et al. (2012) in fast moving consumer goods, Tong et al. (2012) on internet banking, Tsai et al. (2010) in hypermarket, Cheng et al. (2008), among internet service provider and Ibanez et al. (2006) in an energy industry.

There was also methodological uniqueness in satisfaction and loyalty studies, one of which experienced by researchers, Izogo and Ogba (2015) whose effort to examine satisfaction and loyalty relationship in automobile industry went futile as satisfaction and loyalty loaded in a single factor, post factor analysis. The inconsistencies were further brought to light with the presence of diverse results, even though similar analysis method was operationalize at recently concluded studies. In one instance,

study undertaken by researchers who employed regression method with seven point likert scale as measurement tool, found positive and significant relationship between satisfaction and loyalty (Mokhtar et al., 2011; Shi et al., 2011; Tarus & Rabach, 2013), meanwhile Boohene and Agyapong (2011), when employed the same regression and seven point likert scale, found that satisfaction and loyalty relationship not bearing significant outcome.

SEM method did also revealed inconsistency whereby researchers, Lee and Chen (2014) tested satisfaction towards continuance intention, underpinned by Technology Acceptance Model (TAM) in mobile commerce of Taiwan. The researchers found satisfaction to advocate continuance intention (B= 0.66, p<0.001) among mobile phone users, whereas Sivadass and Prewitt (2000) who tested satisfaction and loyalty relationship through SEM in retail industry found insignificant result. As such, the equivocal standing of satisfaction does obviously warrant further confirmation.

Table 2.9

Summary of satisfaction and loyalty

Author/ Country	**Industry**	**Analysis method**	**Scale**	**Respondent**	**Findings**
Roy et al.(2014)/ India	Mobile telephony	SEM	Sat: 3 items Loy: 3 items 11 Point Likert	681	positive, sig: B=0.153, p<0.05.
Tarus & Rabach (2013)/ Kenya	Mobile	Regression	Sat: 2 items Loy: 2 items 5 P Likert	140	nt supported: B= 0.083, p>0.05
Mokhtar et al. (2011)/ Malaysia	Mobile telephony	Regression	Sat: NA Loy: NA 7 P Likert	350 university students	positive, sig: B= 0.843, t=28.910, p=0.000
Shi et al. (2011)/ China	Mobile telephony	Regression	Sat: 4 items Loy: 3 items 5 P Likert	212	positive, sig: B= 0.667, p=0.00

Table 2.9 (continued)

Author/ Country	Industry	Analysis method	Scale	Respondent	Findings
Boohene & Agyapong (2011)/ Ghana	Mobile telephony	Regression	Loy: 3 items Sat: 4 items 7 P Likert	460	not supported: B= - 1.537, sig, p<0.000
Santouridis & Trivellas (2010)/ Greece	Mobile telephony	Regression	Sat : 1 item Loy: 3 items 5 P Likert	250 residential mobile users	positive, sig: B= 0.397, p < 0.001
Aydin et al. (2005)/Turkey	Mobile telephony	Regression	Loy: 4 items Sat: 4 items 5 P Likert	1662 mobile phone users postpaid: 724 prepaid: 938	positive, sig: B= 0.321, t=14.179
Kim et al. (2004)/ Korea	Mobile telephony	SEM	Loy: 2 items Sat: 2 items 7 P Likert	306	positive, sig: B= 0.797, t=0.885, p<0.01
Lee & Chen (2014)	Mobile telephony	SEM	Continuance intention: 3 items Sat: 3 items 5 P Likert	406	positive, sig: B=0.66, p<0.001
Han & Hwang (2014)/ Korea	Low cost airline industry	SEM	Loy: 4 items Sat: 3 items 5 P Likert	425	positive sig: B= 0.842, t=12.101, p<0.01
Sumaedi et al. (2014)/ Indonesia	Health care	Regression	Loy: 4 items Sat: 3 items 7 P Likert	165	not supported, B= 0.048, t= 0.559, p= 0.577
Adoyo et al. (2012)/ Kenya	Pharmaceuticals	Regression	Loy: NA Sat: NA 5 P Likert	52	not supported, B=0.019, t=0.074, p=0.942
Zaman et al.(2012)/ Pakistan	FMCG	Regression	Loy: 5 items Sat: 3 items 5 P Likert	200	positive sig: B= 0.048, t=2.741, p=0.001
Tong et al. (2012)/ Hongkong	Internet Banking	Regression	Loy: 6 items Sat: 5 items 5 P Likert	306	positive, sig: B= 0.623, t=13.881, p=0.000

Table 2.9 (continued)

Author/ Country	Industry	Analysis method	Scale	Respondent	Findings
Hamidizadeh et al. (2011)/ Iran	Banking	SEM	Loy: 6 items Sat: 3 items 7 P Likert	551	supported, B= 0.336,p < 0.001
Tsai et al. (2010)/ Taiwan	Hypermarket	Regression	Loy: NA Sat: NA 7 P Likert	236	positive, sig: p<0.01
Cheng et al. (2008)/ Hongkong	ISP	SEM	Loy: 3 items Sat: 3 items 5 P Likert	737	positive sig: B= 0.726, t= 6.55, p=0.000
Ibanez et al.(2006)/ Spain	Energy	SEM	Loy: 4 items/ 10 P Likert Sat: 1 item 10 P Likert	2020 : above 15 years old	positive, sig: B=0.29
Sivadass & Prewitt (2000)/ USA	Retailer	SEM	Loy: ratio scale Sat: 1 item 4 P Likert	542 households	not sig: B= - 0.01

2.7.2 Trust and loyalty

Trust has been shown to highly correlate with loyalty due to the fact that customers who trust the organization will remain loyal (Garbarino & Johnson, 1999; Reichheld & Schefter, 2000). As such, one cannot deny the importance of trust towards predicting loyalty besides being one of the basic ingredients of human interactions as prescribed by Gundlach and Murphy (1993, p.41) that, *"the variable most universally accepted as a basis of any human interaction or exchange is trust"* this notion has been agreed by numerous literatures, that trust is a vital element to maintaining relationship and loyalty (Akbar & Parvez, 2009; Aydin & Ozer, 2005; Lui et al., 2011; Zaman et al., 2012). In fact, it is not an exaggeration to say that trust

has catalyst customer loyalty. It is because when trust is established with an individual, the fundamentals of interpersonal loyalty take place, which in return gives greater impact on consumer behaviour towards the company (Iacobucci & Ostrom, 1996; Macintosh & Lockshin, 1997). Similarly, past studies have proven that trust towards sales person or in supplier is closely related to intentions to use the service in future (Crosby, Evans & Cowles, 1990; Doney & Cannon, 1997). Even though in some service industries such as telecommunication, trust towards the institution or service provider which is categorized as the second level (Rauyruen, Miller & Barrett, 2007) as compared to trust towards a particular sales representative (first level), service delivery, transactions and focal contact with service providers are indeed done through human being, inevitably. Therefore trust towards service providers in actual fact, established with individuals who represents the company thereby trust is developed towards a service providers through the individuals who act for the company. Among the definition of trust have been operationalized is,

"One party believing that the other party will fulfill his or her needs."(Liu et al., 2011, p.72)

Many researchers in the past have preached that customers' confidence in a supplier who exhibits expertise and reliability is reflected through trust (Adoyo et al., 2012; Ha, Karande, & Singhapakdi, 2004; Liu et al., 2011; Moorman et al., 1993). Therefore these researchers have automatically operationalized the concept of preserving relationship investment by cooperating with exchange partners, willingly rely and expect that the supplier will act to customers' best interest towards resulting positive outcome. Similarly, these researchers have adopted definition of trust advocated by Morgan and Hunt (1994);

"trust works at preserving relationship investment by cooperating with exchange partner, resist attractive short term alternatives in favor of the expected long term benefits of staying with existing partners." (Morgan & Hunt, 1994, p.22).

There are also some strings of researchers who viewed existence of trust being showed as intention to act or conative side of loyalty such as Aydin and Ozer (2005, p. 912) who have operationalized and define trust as "when one party trust another it is likely to develop some form of positive buying intention towards the other party" followed by Mayer, Davis and Schoorman (1995, p. 712), "willingness of a party to be vulnerable to the actions of another party based on expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party."

This proposed study proceeds by positioning trust as a conative component due to the fact that one need positive attitude in order to have trust. Meanwhile, positive attitude could develop from confidence and it's shown after cognitive and affective stages. Furthermore, the researcher's proposition that customers' disposition of trust is reflected after cognitive and affective experiences are also in line with Morgan and Hunt (1994, p. 23) who stressed that "willingness to act is implicit in the conceptualization of trust" and further reiterate that service provider is not considered trustworthy if a customer is not willing to act or intend to continue patronizing. In addition, absence of attitude factor would surely hinder loyalty initiatives and perhaps, this is glaringly seen in stochastic phenomenon (Odin et al., 2001) which resulted in spurious loyalty (Day, 1969; Dick & Basu, 1994), all transpired in the absence of trust. As such, this study posits that existence of trust is

crucial for loyalty and could probably minimize the stochastic and spurious type of loyalty eventually.

2.7.2.1 Study on trust and loyalty

Trust has been predominantly a significant predictor of customer loyalty in several studies (Aydin et al., 2005; Aydin & Ozer, 2006; Ruiz-Mafe, Marti-Parreno & Sanz-Blas, 2014; Islam, 2010; Liu et al., 2011; Roy et al., 2104; Sumaedi et al., 2014; Zaman et al., 2012). This could probably be due to the fact that for any transaction to be initiated, trust plays a central role, given the nature of being the most universally accepted basis for human interaction (Gundlach & Murphy, 1993).

Trust's position in mobile telecommunication setting can never be underrated. This can be seen in various studies whereby trust has stamped its mark as the predictor of loyalty. Similarly, Roy et al. (2014) found that trust is significant predictor of loyalty in mobile telecommunication industry of India, meanwhile a study done by Zhou et al. (2010) among university students in China, has in fact, produced significant outcome between trust and loyalty. Aydin and Ozer (2006), on the other hand, went one step further to analyse relationship of trust towards loyalty on both, prepaid and postpaid users of Turkey with 1662 respondents, prepaid users being 938 and postpaid, 724. Although the test of hypotheses were done based on phi correlation, the researchers have proved that trust is a significant predictor for both user group albeit phi correlation's ability to measure linear relationship alone. The results of trust and loyalty relationship (refer table 2.10) could imply that trust is in fact a

strong predictor of loyalty in mobile telecommunication industry and this goes back to the propensity of trust, being the basic essence in human interactions.

Studies on trust in non-mobile telecommunication industry have revealed a scenario where it could not conclusively predict loyalty. For instance Ruiz-Mafe et al. (2014) have found that trust is important antecedent of Facebook fan page loyalty in Spain, followed by a study by Sumaedi et al. (2014) in healthcare industry of Indonesia which resulted in an outcome similar to Ruiz-Mafe et al. (2014). Additionally, Zaman et al. (2012) have concluded trust as a strong predictor among fast moving consumer good segment of Pakistan, but in spite of trust being a strong antecedent of loyalty, it has on few occasions, failed to be a significant variable to loyalty such as in a study done in Kenya on pharmaceutical industry by researchers, Adoyo et al. (2012).

It is therefore, strongly believed that trust is too good to be ignored in any mobile telecommunication studies. Furthermore, the equivocal findings among other industries, does in actual fact, warrants further investigation even in mobile telecommunication industry. Consequently, in line with suggestion for future studies by Aydin and Ozer (2006), this research employs SEM methods of analysis besides adopting seven point likert scale.

Table 2.10

Summary of trust and loyalty

Author/ Country	Industry	Analysis method	Scale	Respondent	Findings
Roy et al.(2014)/ India	Mobile telephony	SEM	Loy: 4 items Trust: 3 items 5 P Likert	681 mobile telephony	positive, sig: B= 0.669, p<0.001
Zhou et al. (2010)/ China	Mobile telephony	SEM	Loy: 3 items Trust: 3 items	305 university	positive, sig: B=0.2, p<0.01
Aydin & Ozer (2005)/ Turkey	Mobile telephony	SEM	Trust: 5 items Loy: 5 items 5 P likert	1662 Mobile telephony users (postpaid: 724 prepaid: 938)	positive, sig: B= 0.59, t= 13.87, p<0.01
Aydin et al.(2005)/ Turkey	Mobile telephony	Regression	Trust: 5 items Loy: 5 items 5 P likert	1662 Mobile telephony users (postpaid: 724 prepaid: 938)	positive, sig, B=0.436, t=19.275, p< 0.01
Aydin & Ozer (2006)/ Turkey	Mobile telephony	phi correlation	Trust: 5 items Loy: 5 items 5 P likert	1662 Mobile telephony users (postpaid: 724. prepaid: 938)	positive, sig, phi=0.77, p<0.01: prepaid:0.78, postpaid:0.76, both sig
Islam (2009)/ Bangladesh	Mobile telephony	Regression	NA	150	positive, sig, p<0.01, B=0.939
Liu et al. (2011)/ Taiwan	Mobile telephony	SEM	Loy: 2 items Trust: 3 items 5 P likert	311	positive,sig: B=0.26, t= 3.75, p < 0.05
Sumaedi et al. (2014)/ Indonesia	Health care	Regression	Loy: 4 items Trust: 3 items 7 P likert	165	positive, sig: B=0.569, t= 5.616, p < 0.001

Table 2.10 (continued)

Author/ Country	Industry	Analysis method	Scale	Respondent	Findings
Ruiz-Mafe et al. (2014)/ Spain	Facebook fan	SEM	Loy: 4 items Trust: 3 items 5 P Likert	691	positive, sig: B=0.236, t=4.601, p<0.001
Ibanez et al. (2006)/ Spain	Energy	SEM	Loy: 4 items Trust: 2 items 5 P Likert	2020 (above 15 years old)	positive, sig: B= 0.30, t=2.23
Hamidizadeh et al. (2011)/ Iran	Banking	SEM	Loy: 6 items Trust: 3 items 7 P Likert	551	supported, B= 0.114, p < 0.1
Zaman et al. (2012)/ Pakistan	FMCG	Regression	Loy: 5 items Trust: 5 items 5 P likert	200	positive, sig: B=0.083, t=3.761,
Adoyo et al. (2012)/ Kenya	Pharmaceuticals	Regression	Loy: NA Trust : 6 items 5 P likert	52	not supported: B=0.466, t=-1.650, p=0.150

2.7.3 Service quality and loyalty

The existing bodies of knowledge on loyalty have proven that service quality is another important element, besides satisfaction to pave business performance especially in the long run, likewise to reduce churn and eventually gain loyalty (Alnsour et al., 2014; Izogo & Ogba, 2015; Johnson & Sirikit, 2002; Santouridis & Trivellas, 2010; Srinuan et al., 2011). In fact, achieving loyalty in a competitive industry through service quality has been the guiding principle of service industry such as telecommunication. As such service, quality has been more frequently leveraged to form stronger bonding with customers (Zeithaml et al., 1996), hence reflects that success of service quality is very much customer dependent. This

inclination is also crafted clearly in the service quality definition by Parasuraman et al. (1988) as;

"…is a global judgment or attitude, relating to the superiority of the service."(Parasuraman et al., 1988, p.16) followed by Zeithaml (1988) as,

"consumers' judgment about the overall excellence or superiority of a service." (Zeithaml, 1988, p. 3).

Previous studies on service quality have stressed that SERVQUAL is not only a prominent scale, but also widely used, accepted and good service quality model, successfully operationalized in several loyalty studies (Chadha & Kapoor, 2009; Khan, 2010; Lai, Hutchinson, Li & Bai, 2005; Santouridis & Trivellas, 2010; Wong & Sohal, 2003). SERVQUAL, initially developed on the basis of gap analysis was derived through exploratory study of Parasuraman et al. (1985) which revealed clearly how customers make assessment of service quality, by developing ten determinants as follows.

1. Access: easy to contact and approachable
2. Competence: possession of required skills and knowledge to perform the work
3. Courtesy: attitude, demeanour of contact personnel
4. Communication: listening and informing customers
5. Reliability: consistency of performance and dependability
6. Responsiveness: timeliness of service and willingness of employees
7. Credibility: trustworthiness and honesty
8. Security: freedom from danger, risk or doubt

9. Tangibles: physical evidence of service

10. Understanding and knowing the customers: making the effort to understand customers' needs.

The ten determinants went through series of refinement and produce Parasuraman et al. (1988) scale, where the ten determinants were condensed to five by maintaining original determinants of tangibles, reliability and responsiveness whereas remaining seven determinants were regroup as assurance and empathy. Even though Parasuraman et al. (1988) SERVQUAL's instrument were highly operationalized (Caruana, 2002; Mokhtar et al., 2011), subsequent literatures have in fact, criticized SERVQUAL. The criticism were mainly focused to shortcomings in defining baseline of good service quality, measurement of expectations, gap score and theoretical assumptions to operational perspective besides challenges to generalize (Buttle, 1996; Carman, 1990; Cronin & Tailor, 1992; Teas, 1994). Oliver (2010) has also touched the concept of quality; prescribe in SERVQUAL by highlighting the several issues surrounding gap analysis. One of which is the measurement of perception against the expectation of quality where consumers can always seek for better quality instead of clinging on the perceived real-world offerings, hence posing challenges to measure the gap. Therefore, merger of expectations and perceptions of SERVQUAL is more meaningful which were devise through numerous studies, successfully operationalize in various study settings such as mobile telecommunication (Khan, 2010; Khan & Manthiri, 2012; Lai et al., 2005; Wang et al., 2004), banks (Ladhari, Souiden & Ladhari, 2011; Malik et al., 2011), departmental store (Wong & Sohal, 2003), five service industries categorize as low switching cost such as fast food, amusement park and supermarket, not forgetting,

the high switching cost segment, in the likes of health centres and city theatres (Ruyter et al., 1998). The modified version, perceived service quality has gain better clarity, elevated reliability, validity and have continuously evolve to match various study settings and time dimension.

There are also other service quality models such as SERVPERF which takes performance approach and eliminates expectations (Blery et al., 2009; Cronin & Taylor, 1992) followed by models which measure service quality through an array of elements such as network quality, value added services, mobile devices, customer service, pricing structure, billing system, technical quality, service process quality and convenience in procedure (Ibanez et al., 2004; Kim et al., 2004; Santouridis & Trivellas, 2010) or even from a global evaluation perspective of service quality where it is about overall superiority or excellence of as service (Aydin & Ozer, 2005; Ishaq, 2012; Zeithaml, 1988). Anyhow, in a highly competitive environment such as mobile telecommunication industry, customers' perception of service quality, thereby perceived service quality is very vital given the fact that it is about customers' judgment (Zeithaml, 1988) and has been acknowledge for contributing towards business competitiveness. As such, this study leverages on perceived service quality by merging expectations and perceptions into a single measure, likewise overcoming the challenges pose by gap analysis altogether. In short, the base of Parasuraman et al. (1988) SERVQUAL dimension is still maintained except for gap scores whereby this study will merge expectations and perceptions. Meanwhile, SERVQUAL is preferred after viewing previous study by Bayraktaroglu et al. (2010) in comparing SERVQUAL and SERVPERF that showed even though both methods

have good model fit, it was SERVQUAL that had an excellent model fit as compared to SERVPERF.

2.7.3.1 Study on service quality and loyalty

Study on service quality and loyalty's link have not been straight forward most of the time due to presence of diverse background in measurement models which can be seen in Parasuraman et al. (1988) five dimensions of SERVQUAL (Boohene & Agyapong, 2011; Malik et al., 2011; Mokhtar et al., 2011) and also in Cronin and Taylor's (1992), twenty-two items SERVPERF (Blery et al., 2009; Cheng et al., 2008; Ranaweera & Neely, 2003). In addition, combinations of dimensions is also seen, such as network quality (Kim et al., 2004; Lim et al., 2006), value-added services, mobile devices and pricing structure (Kim et al., 2004), customer service and billing system (Lim et al., 2006), being operationalized by Santouridis and Trivellas (2010). Furthermore, there were also studies that engaged other elements as the dimension of service quality such as study by Pearson, Tadisina and Griffin (2012) which had operationalize efficiency, system availability, fulfilment and privacy as the dimension to measure e-service quality. Apparently, a study done by Sutanto and Minantyo (2014) in retail industry of Indonesia had split qualities into two types, in the likes of service quality by using SERVQUAL dimension at one end followed by product quality with eight dimensions such as performance, durability, aesthetics, reliability etc. at the other end. Nevertheless, the researchers decision to include reliability as part of product quality does in actual fact, revealed ambiguities in their study as reliability is also a dimension of SERVQUAL being investigated under service quality by the same study.

There were past studies which had operationalized a modified SERVQUAL dimension, one of which is by researchers, Izogo and Ogba (2015). The researchers, in analysing automobile repairs of Nigeria, have omitted assurance dimension and replace it with commitment. Subsequently, the researchers had to combine satisfaction and loyalty in a single factor, as suggested by factor analysis, loading both variables into a single factor.

Service quality has been also found to produce mixed results when tested using overall evaluation of customers. In the study done by Alnsour et al. (2014), it was found that overall service quality had significant impact towards loyalty in mobile telecommunication industry of Jordan and subsequent test of each SERVQUAL dimension's impact towards loyalty, prove the dimension to be significantly affecting loyalty. Similarly, Roy et al. (2014) tested overall service quality in Indian mobile telecommunication industry and found that service quality is positively significant with loyalty, meanwhile Aydin and Ozer (2005) research on mobile users of Turkey revealed similar outcome where service quality is a significant predictor of loyalty, also acknowledged by Boohene and Agyapong (2011) in measuring service quality's significance towards mobile loyalty of Ghananian customers. There were also other string of researchers, providing the same significant outcome in mobile telecommunication industry, such as Ishaq (2012) and Blery et al. (2009) likewise in other industry too, such as website where Pearson et al. (2014) investigated e-service quality towards website loyalty, producing significant outcome. Nevertheless, a study done by Yaacob et al. (2008) towards testing service quality among MAXIS's postpaid customers in Malaysia have reported service quality's inability to predict loyalty, likewise other industries too have revealed insignificant outcome of service

quality towards loyalty such as Han and Hwang (2014), in low cost airline industry followed by Cheng et al. (2008) in an internet industry.

Service quality models such as SERVQUAL have also reported inconsistencies among the dimensions when operationalized in different study settings. For instance, Mokhtar et al. (2011) analysis in mobile telecommunication users of Malaysia found that reliability was not a significant predictor of loyalty but in contrary, Alnsour et al. (2014) found that reliability is advocating loyalty in mobile telecommunication setting of Jordan and this was further supported by a study done in Nigeria by Izogo and Ogba (2015) under automobile repair setting, similar to banking industry in Pakistan by Maliki et al. (2011) and Yu et al. (2006) in a leisure industry of Taiwan.

SERVQUAL's empathy dimension was also found to be inconsistence in terms of direction towards loyalty where it was negative in Mokhtar et al. (2011), despite being significant predictor to loyalty and positive and significant in numerous study (Alnsour et al., 2014; Izogo & Ogba, 2015; Malik et al., 2011). The inconsistencies were also seen when the dimensions are put to test at different loyalty levels within an industry, namely departmental store by Wong and Sohal (2003). The study was poised to investigate impact of service quality dimensions to employee (interpersonal loyalty) as comparison to company (customer loyalty). It is quite interesting to note that although four dimensions were revealing consistent results for interpersonal loyalty and customer loyalty; significant (assurance, empathy tangible), not significant (responsiveness), reliability proved to be insignificant for employee while at the same time being significant for loyalty towards the company (customer loyalty).

The inconclusive findings of service quality, coupled with inconsistent results of SERVQUAL's dimension (refer Table 2.11), in actual fact, grants further research on service quality relationship towards loyalty in mobile telecommunication industry.

Table 2.11

Summary of service quality and loyalty

Author/ Country	**Industry**	**Analysis method**	**Scale**	**Respondent**	**Findings**
Mokhtar et al. (2011)/ Malaysia	Mobile telephony	Regression	SQ: NA Loy: NA 7 P Likert	350 university students	Tangibility: positive, sig:B=0.365,t= 6.394, p=0.00 Reliability: positive, not sig: B= 0.074, p=0.249 Responsiveness: positive, nt sig: B=0.024,t= 0.346, p=0.730 Assurance: positive, sig:B= 0.376, t= 5.866, p=0.000 Empathy: negative, sig: B= - 0.376, t=- 2.673, p=0.008
Alnsour et al. (2014)/ Jordan	Mobile telephony	Pearson correlation		377 mobile users	Tangibility: supported: t= -2.47, p<0.05 Reliability: positive,sig: t= 2.96, p<0.05 Responsiveness: positive,sig: t=2.73, p<0.05 Assurance: positive, sig: t= 4.80, p<0.05 Empathy: positive, sig: t= 3.92, p<0.05

Table 2.11 (continued)

Author/ Country	Industry	Analysis method	Scale	Respondent	Findings
Santouridis & Trivellas (2010)/ Greece	Mobile telephony	Regression	Loy: 3 items Network: 2 items VAS: 3 items Mobile dev: 3 items Cust svc: 4 items Pricing structure: 3 items Billing syst: 3 items 5 P likert	250 residential mobile telephone users	Network : positive,sig: B= 0.148, p< 0.05 Vads: positive, nt sig: B= 0.067, p>0.05 Mobile dev: positive, not sig: B= 0.090, p >0.05 Cust svc: positive, sig: B= 0.262, p <0.001 Pricing structure: positive, sig: B= 0.232, p < 0.001 Billing syst: positive, sig: B= 0.159, p < 0.05
Aydin & Ozer (2005)/ Turkey	Mobile telephony	SEM	Loy: 5 items SQ: 6 items 5 P Likert	1662 mobile phone users (postpaid: 724. prepaid: 938)	positive, sig, B=0.14, t= 5.02, p< 0.01
Boohene & Agyapong (2011)/ Ghana	Mobile telephony	Regression	Loy: 3 items SQ: 21 items 7 P Likert	460	positive, sig: B=1.760, p= 0.000
Yaacob et al. (2008)/ Malaysia	Mobile telephony	Regression	Loy: 3 items SQ: 3 items 7 P Likert	116 MAXIS postpaid users	positive, not sig: r = 0.168,p = 0.068

Table 2.11 (continued)

Author/ Country	Industry	Analysis method	Scale	Respondent	Findings
Izogo & Ogba (2015)/ Nigeria	Automobile	Regression	Loy: 5 items SQ: 22 items 7 P Likert	215	Tangible: positive, sig, G=0.389, p<0.01 Reliability: positive, sig: G=0.425, p<0.01 Responsiveness: positive, sig: G=0.410, p<0.01 Empathy: positive, sig: G=0.426, p<0.01 Commitment: positive, sig: G=0.442, p<0.01
Cheng et al. (2008)/ Hongkong	ISP	SEM	Loy: 3 items SQ: 22 items 5 P Likert	737 internet users	positive, not sig: B=0.109, t= - 0.68, p >0.05
Yu et al. (2006)/ Taiwan	Leisure industry	Regression	Loy: 1 item SQ: 21 items Tangibles: 6 items Reliability: 5 items. Assurance: 3 items Responsiveness: 4 items Empathy: 3 items	182	Tangibility: positive, sig: r = Reliability: positive, sig:r = 0.356, p=0.000 Assurance: positive sig:r = 0.483, p=0.000 No analysis developed for responsiveness & empathy

Table 2.11 (continued)

Author/ Country	Industry	Analysis method	Scale	Respondent	Findings
Malik et al. (2011)/	Banks	Regression	Loy: 3 items SQ: 5 dimensions 5 P Likert	244 Bank customers	Tangibility: positive, sig: B=0.29, t= 3. 63, p =0.000 Empathy: positive, sig: B=0.17, t=2.81, Assurance: positive, sig: B=0.18, t= 2.17, p=0.03 Responsiveness: not supported Reliability: not supported
Wong & Sohal (2003)/ Australia	Departmental store	Regression	Loy to employee: 2 items Loy to company: 10 Reliability: 5 items Responsiveness: Assurance: 5 items Empathy: 5 items Tangibles:10 items 7 P Likert	1261 shoppers	SQ- Loy to employee Reliability: not supported, B=0.03, t=0.77, p >0.05 Responsiveness: not supported, B=-0.03, t=-0.72, p >0.05 Assurance: supported, B=0.14, t= 2.52, Empathy: supported, B=0.30, t=5.71, Tangible: supported,

Table 2.11 (continued)

Author/ Country	Industry	Analysis method	Scale	Respondent	Findings
Wong & Sohal (2003)/ Australia					SQ- Loy to company Reliability: supported, B=0.12, t= 3.32, p<0.001 Responsiveness: not supported, B= 0.01, t=0.06, p >0.05 Assurance: supported, B=0.15, t=2.73, p<0.01 Empathy: supported, B=0.18, t=4.04, p <0.001 Tangible: supported, B= 0.21, t=6.20, p<0.001

2.7.4 Switching cost and loyalty

Switching costs have gained enormous interest in the past due to the influence towards company's performance (Gomez & Maicas, 2011; Lee & Cunningham, 2001) and due to the impact of churn, which nearly all industries suffers (Kuusik & Varblane, 2009). Services industry is no left-over in this manner, especially telecommunication sector which had in past, recorded between 10% to 67% defection and churn rate (Hughes, 2007) which made service providers to lose 30% of subscribers annually while being slapped with high customer acquisition expenditure (Lee et al., 2001). As such, switching costs have generally been

leveraged as a tool to gain customer loyalty especially in a competitive environment through various relationship such as direct relationship (Aydin & Ozer, 2005; Chadha & Kapoor, 2009; Cheng et al., 2008; Edward & Sahadev, 2011; Ibanez et al., 2006; Islam, 2010; Liu et al., 2011; Oyeniyi & Abiodun, 2010; Tong et al., 2012; Wang & Wu, 2011; Yang, 2015), indirect (Lee & Murphy, 2008; Yen, 2010) or even intervening, as a matter of fact (Aydin & Ozer, 2005; Aydin et al., 2005; Blut et al., 2007; Edward & Sahadev, 2011; Kim et al., 2004; Lee at al., 2001; Oyeniyi & Abiodun, 2010; Ruyter et al., 1998; Shi et al., 2011; Tong et al., 2012; Tsai et al., 2010). Therefore it is not surprising to have multi facets of definition pertaining to switching costs which can be as simple as, cost involved in changing from one service provider to another (Chadha & Kapoor, 2009) and other string of definitions as follows,

"costs that incur when customer change from one service provider to another."(Porter, 1998, cited in Islam, 2010, p.132)

"the onetime costs that customers associate with the process of switching from one provider to another." (Burnham et al., 2003, p.110)

Murray (1991) has gone further and included perceived risk as part of switching cost towards testing service consumers, altogether adding to the richness of switching cost. Nevertheless, it was Jones et al. (2007), who took cue from Burnham et al. (2003), shed more meaningful points by proposing three major type of switching cost stemming from procedural switching cost (negative type) and positive type (social switching cost and loss benefit cost).

1. Procedural switching cost – “the time, effort and hassle of finding and adapting to a new provider"

2. Social switching cost- “potential loss of a personal bond or friendship with the service provider when switch"

3. Loss benefit cost- "potential loss of benefits such as special deals or concession received from the service provider when switch."

(Jones et al., 2007, p. 337)

2.7.4.1 Study on switching cost and loyalty

Past studies that investigated direct relationship between switching cost and loyalty, although had in many occasions, produced significant outcome towards loyalty, a fraction of studies have proved otherwise. The inconsistent results have transpired in both, mobile telecommunication and non-mobile telecommunication industries. In a study by Yang (2015) on mobile telecommunication of China, switching cost has proven to advocate loyalty among content providers, similar to research done by Sujatha and Chandrika (2013) who tested switching cost and loyalty relationship among 500 Airtel customers of India, but as much as switching cost is believed to support loyalty, study done by Aydin and Ozer (2005) among mobile phone users in Turkey has proven otherwise. In fact, subsequent research by Aydin and Ozer (2006) by splitting switching cost to six dimensions has revealed that monetary cost is insignificant predictor of loyalty. Caruana (2004), on the other hand, found contractual and relational switching cost, supporting loyalty but not for dimensions of informational switching cost which are learning cost and set up costs. Both these costs, failed to obtain significant outcome towards loyalty in mobile

telecommunication industry. Studies done in other industries such as by researchers, Park, Park and Lee (2014) in an information system industry of Korea followed by other string of research in banks (Al-Hawari, 2014; Hamidizadeh et al., 2011; Tong et al., 2012), online shopping (Yen, 2010), internet service provider (Cheng et al., 2008), fast food, supermarket, health centre and theatres (Ruyter et al., 1998) resulted in switching costs significance towards loyalty as compared to Wang and Wu (2011) research on hairstyling industry which was greeted by non-significant nature of switching cost towards loyalty in a short term relationship (refer Table 2.12).

Given the fact that switching cost could promote financial gain, one can never understate the importance of switching cost especially in mobile telecommunication industry where it could correspond with the dynamic changes experience by the industry. As such, analysing the more value adding side of switching cost, such as positive switching cost would prove more beneficial to the industry. Skewing from methodological perspective, past studies had also revealed fragmentations. Some studies had distinguish respondents in mobile phone users as prepaid or postpaid (Aydin et al, 2005; Aydin & Ozer, 2006; Chadha & Kapoor, 2009) whereas other studies in mobile telecommunication setting did not distinguish the respondents' call plan clearly (Caruana, 2004; Edward & Sahadev, 2011; Lee & Murphy, 2008; Liu et al., 2011; Oyeniyi & Abiodun, 2010) henceforth posing difficulties to generalize the result and would be misleading too, as both these group behaves differently (Lee et al., 2006). Meanwhile Aydin and Ozer (2006) were also noted for engaging comparison study by slicing switching costs to its core dimension, however, their study did ignored other hygiene factors such as service quality, satisfaction and trust.

In terms of analysis method, it is clearly seen that methods such as regression, SEM, canonical correlation to partial least square were being employed in recent studies. Most of the switching cost and loyalty analysis through regression method were however resulting positive and significant outcome in past studies, be it mobile telecommunication or other industry (Aydin & Ozer, 2005; Chadha & Kapoor, 2009; Ibanez et al., 2006; Islam, 2010; Lee & Murphy, 2008; Oyeniyi & Abiodun, 2010; Ruyter et al., 1998; Tong et al., 2012; Yen, 2010) but studies done through SEM did not reflect similar enthusiasm. Studies utilizing SEM methodology by Liu et al. (2011), Aydin and Ozer (2005), Ibanez et al. (2006), Cheng et al. (2008), Edward and Sahadev (2011) resulted in positive and significant outcome whereas Aydin and Ozer (2006), in their quest to establish switching costs dimension and test its role towards loyalty by comparing prepaid and postpaid users, had eventually, revealed mixed results. Mixed results were also seen in study by Caruana, (2010) who adopted canonical correlation analysis method, thereby warranting further investigations.

Table 2.12

Summary of switching cost and loyalty

Author/ Country	**Industry**	**Analysis method**	**Scale**	**Respondent**	**Findings**
Yang (2015)/ China	Mobile telephony/ B2B	Partial least square (PLS)	Loyalty: 3 items switching cost: 3 items 7 P Likert scale	129 content providers	positive, sig: B=0.451, p<0.001
Sujatha & Chandrika (2013)/ India	Mobile telephony	Regression	Loyalty: 4 dimensions Switching cost: 2 items 5 P Likert scale	500 : Airtel customers	sig: B= 0.505, t=13.045, p=0.000

Table 2.12 (continued)

Author/ Country	Industry	Analysis method	Scale	Respondent	Findings
Liu et al. (2011)/Taiwan	Mobile telephony	SEM	Loyalty: 2 items Switching barriers: 2 items 5 P Likert	311	positive,sig: B= 0.21, t= 3.05
Edward & Sahadev (2011)/ India	Mobile telephony	SEM	Retention: 3 items SC: 4 items	200	positive, sig: B= 0.289, p < 0.05
Oyeniyi & Abiodun (2010)/Nigeria	Mobile telephony	Regression	Retention: 2 SB (exit): 1 item 5 P Likert	263	sig: p < 0.005; R^2=0.329
Chadha & Kapoor (2009)/ India	Mobile telephony	Regression	Loyalty: 4 items switching cost: 9 items	300 prepaid users	positive, sig: B=0.238, t=3.853, p=0.000
Aydin & Ozer (2005)/ Turkey	Mobile telephony	SEM	SC: 7 items. Loy: 5 items 5 P likert	1662 mobile telephony users (postpaid:43.6 %. prepaid; 56.4%)	positive,sig: B= 0.14, t=5.88, p<0.01
Islam (2008)/ Bangladesh	Mobile telephony	Regression	NA	150	positive, sig: B= 0.839, p<0.01
Lee & Murphy (2008)/ Australia	Mobile telephony	Regression	Loyalty: 1 item SC: 3 items 7 P Likert	244	positive,sig: B =0.166, t=3.037, p = 0.003
Caruana (2004)	Mobile telephony	Canonical correlation	Loyalty: 10 SC : 29 items 7 P Likert	200	Contractual & Relational SC supported. Informational SC: economic risk cost & evaluation cost supported; learning cost & set up cost not supported

Table 2.12 (continued)

Author/ Country	Industry	Analysis method	Scale	Respondent	Findings
Aydin & Ozer (2006)/ Turkey	Mobile telephony	SEM	Loyalty: 5 items Monetary cost: 4 items Benefit loss cost: 2 items Uncertainty cost: 3 items Learning cost: 3 items Evaluation cost: 3 items Set up cost: 3 items 5 P Likert	1662 mobile telephony users (postpaid:43.6 %. prepaid; 56.4%)	positive, not sig: phi=0.03. eventhough: postpaid positive, sig: phi=0.12: prepaid negative, not sig: phi= -0.05 positive, sig, phi=0.35, p<0.01: prepaid: 0.36, postpaid:0.30, both positive, sig: phi=0.36, p<0.01: prepaid:0.36, postpaid: 0.35 both sig positive sig: phi=0.31, p<0.01: prepaid:0.20, postpaid: 0.27, both sig positive sig: phi=0.23, p<0.01: prepaid:0.36, postpaid: 0.30, both sig positive, sig: phi=0.22, p<0.01: prepaid:0.30, postpaid: 0.29, both sig
Park et al. (2014)/ Korea	Information systems	PLS	Loyalty: 3 items switching cost: 4 items 7 P Likert	102 company supervisors	positive, sig: B=0.304, p<0.01
Al-Hawari (2014)/ UAE	Bank	SEM	Loyalty: 3 items switching cost: 3 items 5 P Likert	413 bank customers	positive, sig: B=0.229, p< 0.01

Table 2.12 (continued)

Author/ Country	Industry	Analysis method	Scale	Respondent	Findings
Ibanez et al. (2006)/ Spain	Energy	SEM	Loyalty; 4 items SC: 1 item 5 P Likert	2020: all, age of 15 and above.	positive, sig: B=0.29
Yen (2010)/ USA	Online shopping	Regression	Loyalty: 9 items SC : 4 items 7 P Likert	425	positive, sig: B =0.239, t=5.072, p=0.000
Cheng et al. (2008)/ Hongkong	ISP	SEM	Loyalty: 3 items SC: 3 items 5 P Likert	737 internet users	positive, sig: B =0.176, t=3.99, p < 0.05
Hamidizadeh et al. (2011)/ Iran	Banking	SEM	Loy: 6 items SC: 10 items 7 P Likert	551	supported, B= 0.190, p < 0.001
Tong et al. (2012)/ Hongkong	Internet Banking	Regression	Loyalty: 6 items SC: 4 items 5 P Likert	306 internet bank users	positive, sig: B=0.288, t=5.250, p =0.000
Ruyter et al. (1998)/ Belgium	Services : Low SC (fast food, supermarkets, amusement parks).High SC: (health centres, city theatre)	Regression	Loy: 13 items Svc quality: 1 item Preference loyalty: 6 items 9 Point Likert	612	supported: B= 0.6135, t=21.546, p < 0.0001
Wang & Wu (2011)/ Taiwan	Hairstylist/ Barber	SEM	Loy: 5 items SC: 3 items 7 P Likert	279 non students	Short term r/ship: nt sig: B= 0.11, p > 0.05: Long term r/ship: sig:B= 0.15, p < 0.05

2.7.5 Other antecedents of loyalty not selected in the present study

Among other variables not included in this study are corporate image, price, service personalization and value. These variables are omitted in this study, either due to insignificance under current context or have been included as a sub- segment to other main variable. For instance, corporate image is nearly dissolved among mobile telecommunication users due to the impact of mobile number portability which enables number retention when switching providers (Buehler & Haucap, 2004; Shin & Kim, 2007) thereby prefix is not align to a fix service providers who inherently dispose an image. Price element have also been dropped from this study as mobile telecommunication industry is laid on an intense competition platform, triggering minimum price difference among service providers in addition to mobile number portability which equally makes consumer unaware of call charges prior to initiating a call (Buehler & Haucap, 2004). Therefore, employing suggestion by Hu and Hwang (2006) at Taiwan to drop financial competition behaviour which is claimed to be at a stage of uniformity, price is dropped from this study. It is deemed justifiable as both the countries, Malaysia and Taiwan share similar attributes in terms of mobile telecommunication industry, whereby mobile penetration rate is more than 100% besides being in an oligopoly structured industry. Furthermore, price is always positioned as a component of marketing mix instead of Oliver's (1999) underpinning theory, as such pricing element is ignored in this study.

2.8 Indirect relationship of loyalty

Indirect relationships of loyalty were seen as not being exempted too from the diversity surrounding loyalty's antecedents (Table 2.13). Besides having various antecedents of loyalty such as service quality, cutting across from SERVQUAL to combined dimensions, indirect relationship of service quality to loyalty have also been measure through technical quality of core and peripheral services (Ibanez et al., 2006). The diversity did also transpire in satisfaction, which has introduced product or service appearance and well-rounded performance, as the elements of satisfaction (Tsai et al., 2010). It is also revealed that even though each predictor passes through an intervening variable, the same predictor was seen undertaking intervening function in another study setting towards loyalty's subject matter, altogether heightening the fragmentation. Satisfaction, for example, have been operationalized as predictor of loyalty in past studies (Kim et al., 2004; Lee et al., 2001; Matos, Henrique, & Rosa, 2013; Tsai et al., 2010) while satisfaction too, have undertaken role as an intervening variable, yet still producing mixed outcome such as positive and significant (Ibanez et al., 2006; Santouridis & Trivellas, 2010) followed by negative significant outcome (Boohene & Agyapong, 2011), not significant (Ibanez et al., 2006).

There were also a handful of study that have been laid with the absence of intervening results, even though the model was suggestive of an intervening relationship (Cheng et al., 2008; Kim et al., 2004; Sivadas & Prewitt, 2000; Tsai et al., 2010). The same pattern was also noticed in trust and switching costs which had undertaken dual role of predictor and intervening (Aydin & Ozer, 2005),

nevertheless, switching cost is more often seen undertaking intervening role such as mediator and moderator (Edward & Sahadev, 2011; Kim et al., 2004; Lee et al., 2001; Stan, Caemmerer, & Cattan-Jallet, 2013; Matos et al., 2009; Tong et al., 2011; Tsai et al., 2010) except for Lee and Murphy (2008) and Yen (2010) where switching cost indirectly predict loyalty through enjoyment and perceived risks. As such, switching cost is more appropriate to be an intervening factor (Aydin et al., 2005; Edward & Sahadev, 2011), therefore this study maintains switching cost as an intervening variable. In addition, it will also address the gap left in Edward and Sahadev (2011) studies by operationalising positive switching cost, analysing mediating effect of switching cost between service quality and loyalty followed by trust and loyalty relationships.

Table 2.13

Summary of indirect antecedents of loyalty

Antecedents	**Author**	**Industry**	**Findings**
Satisfaction (sat)- switching cost (sc)- loyalty(loy)	Matos et al. (2013)	Bank	B=-0.07, t=-2.63, p= 0.01. Indicates sat influence on loyalty is low for high sc and vice versa
Sat-sc-loy	Matos et al. (2009)	Bank	B=0.79, t=17.46, p=0.000 Sc mediates sat & loy relationship
Sat - sc(mod) - loy	Stan et al. (2013)	Bank	B=-0.597, p=0.000 Relationship between sat &loy weakens when sc is high and vice versa
Service quality (SQ)-sc(mod) - loy	Stan et al.(2013)	Bank	B=-0.042, p=0.840 not supported
Sat - sc- loy	Edward & Sahadev (2011)/ India	Mobile telephony	Sat- SC (partial mediator). B=0.317, p<0.05 to B=0.440

Table 2.13 (continued)

Antecedents	Author	Industry	Findings
SQ-sc-loy	Edward & Sahadev (2011)/ India	Mobile telephony	Didn't qualify for Baron & Kenny (1986) mediation pre-requisite
Sat-sc (mod)-loy	Tong et al. (2011)	Internet banking	not sig: B = 0.059, t=1.309, p=0.192
SQ- sc- loy	Aydin & Ozer (2005)	Mobile telephony	intervening result not established
SQ - sc-loy	Ruyter et al. (1998)	Services : Low SC (fast food, supermarkets, amusement parks). High SC: (health centres, city theatre)	weak r/ship SQ & loy when SC (low): supported vs SC (high)
Trust- sc-loy	Hamidizadeh et al. (2011)	Banking	intervening result not established
Trust - sc- loy	Aydin & Ozer (2005)	Mobile telephony	intervening result not established
Trust - sc(mod)-loy	Aydin et al. (2005)	Mobile telephony	sig : B= - 0.248, t=- 3.309 (moderated)
Sat - sc (mod)- loy	Aydin et al. (2005)	Mobile telephony	sig : B= - 0.266, t=- 3.478 (moderated)
Sat - sc (mod)-loy	Lee et al. (2001)	Mobile telephony	Overall sig: B=0.05, p =0.000. By plan type ; Sig: moderation established in economy and standard group users (p <0.05). not sig: no moderation effect for users of > 4 hours

Table 2.13 (continued)

Antecedents	Author	Industry	Findings
Sat: prod/svc appearance - sc: monetary sc(mod)- loy	Tsai et al. (2010)	Retailer	not sig ; B= - 0.052
Sat: prod/svc appearance - sc: non-monetary sc(mod)- loy	Tsai et al. (2010)	Retailer	not sig: B = 0.068
Sat: well rounded performance - sc: monetary sc(mod)- loy	Tsai et al. (2010)	Retailer	not sig: B =0.003
Sat: well rounded performance - sc: non monetary sc(mod) - loy	Tsai et al. (2010)	Retailer	sig moderation effect: B= 0.164, $p < 0.05$
Conative - sc- action loy	Blut et al. (2007)	Retailer	positive, sig: X^2 =6.841, $p<0.01$
Service personalization - sc (mod)- loy	Tong et al. (2012)	Internet banking	not sig: B= - 0.049, p=0.375
Sat - sc: loss cost - loy	Kim et al. (2004)	Mobile telephony	sig : adjustment effect of loss cost is established: t=2.840, p=0.005
Sat- sc:move-in cost - loy	Kim et al. (2004)	Mobile telephony	not sig: adjustment effect of move-in cost is not established: t= 0.849, p= 0.396 ie p>0.05
Sat- sc: adaptation cost- loy	Kim et al. (2004)	Mobile telephony	intervening result not established
Sat-sc: interpersonal relationship- loy	Kim et al. (2004)	Mobile telephony	sig; adjustment effect of interpersonal r/ship is established: t= 2.396, p =0.017.
Sat - switching barrier(sb) - loy	Kim et al. (2004)	Mobile telephony	sig : adjustment effect of sb is established: t=2.608, p=0.010.
Value added service- sat- loy	Kim et al. (2004)	Mobile telephony	intervening result not established

Table 2.13 (continued)

Antecedents	Author	Industry	Findings
Mobile device-sat- loy	Santouridis & Trivellas (2010)	Mobile telephony	positive, not sig: B=0.045
Mobile device - sat- loy	Kim et al. (2004)	Mobile telephony	intervening result not established
Customer service - sat- loy	Santouridis & Trivellas (2010)	Mobile telephony	positive, sig : B=0.174, $p < 0.01$(partially mediated)
Customer support - sat- loy	Kim et al. (2004)	Mobile telephony	intervening result not established
Pricing structure - sat- loy	Santouridis & Trivellas (2010)	Mobile telephony	positive, not sig: B= 0.106 (fully mediated)
Pricing structure - sat- loy	Kim et al. (2004)	Mobile telephony	intervening result not established
Billing system - sat- loy (mediator)	Santouridis & Trivellas (2010)	Mobile telephony	positive, not sig: B= 0.072 (fully mediated)
SQ- sat-loy	Kim et al. (2004)	Mobile telephony	intervening result not established
SQ- sat-loy	Boohene & Agyapong (2011)	Mobile telephony	negative, sig, B= -0.075, t= - 7.952; not supported
SQ- sat- loy	Sivadas & Prewitt (2000)	Retailer	intervening result not established
SQ- sat-loy	Cheng et al. (2008)	ISP	intervening result not established
SQ- sat-loy	Ibanez et al. (2006)	Energy	mediation supported
Technical quality core svcs-sat- loy	Ibanez et al. (2006)	Energy	mediation not supported

Table 2.13 (continued)

Antecedents	Author	Industry	Findings
Technical quality peripheral svcs- sat- loy	Ibanez et al. (2006)	Energy	mediation not supported
Convenience in procedure - sat- loy	Kim et al. (2004)	Mobile telephony	intervening result not established
Customer value - sat- loy	Tsai et al. (2010)	Retailer	intervening result not established
SQ- trust- loy	Aydin & Ozer (2005)	Mobile telephony	intervening result not established
SQ- corporate image- loy	Aydin & Ozer (2005)	Mobile telephony	intervening result not established
SQ- corporate image- loy	Cheng et al. (2008)	ISP	intervening result not established
SQ- relative attitude-loy	Sivadas & Prewitt (2000)	Retailer	intervening result not established
SQ- recommendation-loy	Sivadas & Prewitt (2000)	Retailer	intervening result not established
Sat- trust-loy	Shi et al. (2011)	Mobile telephony	supported: B=0.378, t=3.657,p< 0.001
Sat- trust- loy	Hamidizadeh et al. (2011)	Banking	intervening result not established
Sat - attractiveness of alternatives- loy	Kim et al. (2004)	Mobile telephony	intervening result not established
Sat- customer complaints- loy	Hamidizadeh et al. (2011)	Banking	intervening result not established
Sat- recommendation- loy	Sivadas & Prewitt (2000)	Retailer	intervening result not established
Sat- repurchase-loy	Sivadas & Prewitt (2000)	Retailer	intervening result not established

Table 2.13 (continued)

Antecedents	Author	Industry	Findings
Sat- relative attitude- loy	Sivadas & Prewitt (2000)	Retailer	intervening result not established
Relative attitude- recommendation- loy	Sivadas & Prewitt (2000)	Retailer	intervening result not established
Relative attitude- repurchase- loy	Sivadas & Prewitt (2000)	Retailer	intervening result not established
Recommendation - repurchase- loy	Sivadas & Prewitt (2000)	Retailer	intervening result not established
cognitive-affective - conative	Sivadas & Prewitt (2000)	Retailer	continuum result established (sig: 0.61, 0.87, 0.36), p =0.00
cognitive-affective - conative	Blut et al. (2007)	Retailer	continuum result established (sig: 0.786, 0.799, 0.604), p < 0.01
cognitive-affective - conative	Han et al. (2008)	Multi-industry	continuum result established for all industry (p < 0.05 & p < 0.01).
cognitive - conative- loy	Han et al. (2008)	3 stars hotel, airlne, mobile phone company, beauty saloon	unexpected sig path: hotel 3 stars (B= 0.14, t=2.03,p =0.03) airline (B=0.33, t=6.58, p < 0.01), mobile phone (B=0.18, t=2.05, p< 0.05) and beauty saloon (B=0.22, t= 3.69, p < 0.01)
cognitive - action loyalty	Han et al. (2008)	3 & 4 stars	unexpected sig path: 3 stars hotel (B= 0.21, t=3.48,p < 0.01), 4 stars hotel (B=0.21, t=2.75, p < 0.05) and airlines (B= 0.17,t = 2.31, p< 0.05)
Affective - action loyalty	Han et al. (2008)	Banks	unexpected sig path : banks (B= 0.19, t= 2.77,p < 0.05)

Table 2.13 (continued)

Antecedents	Author	Industry	Findings
Sc- enjoyment- loy	Lee & Murphy (2008)	Mobile telephony	High enjoyment: hedonic users (sig:B=0.269, p = 0.016 Low enjoyment: utilitarian users (not sig: B= 0.161, p > 0.05)
Sc- perceived risk- loy	Yen (2010)	On line shopping	preference loyalty (indirect effect established: B=-1.246, t = -8.371, p=0.00). Dissatisfaction response (indirect effect established, sig, B= - 0.842, t = -5.260, p=0.000)

2.9. The Antecedents of Switching Cost

There have been quite a number of variables predicting switching cost such as service quality (Aydin & Ozer, 2005; Edward & Sahadev, 2013; Edward & Sahadev, 2011; Meng & Elliot, 2009), satisfaction (Aydin & Ozer, 2006; Edward & Sahadev, 2013), price (Shi et al., 2007), trust (Aydin & Ozer, 2005; Aydin & Ozer, 2006; Hamidizadeh et al., 2011) followed by perceived value and corporate image (Edward & Sahadev, 2011; Wang & Wu, 2011), refer (Table 2.14).

Table 2.14

Antecedents of switching cost

Antecedents	**Author**	**Industry**	**Analysis method/ Scale**	**Respondent**	**Findings**
Service quality	Edward & Sahadev (2013)/ India	Mobile telephony	SEM SQ: 6 items SC: 4 items Scale: NA	220 (postpaid;75, prepaid:145)	not sig: B=-0.12. p>0.05
Service quality	Edward & Sahadev (2011)/ India	Mobile telephony	SEM SQ: 6 items SC: 3 items Scale: NA	200	not sig: B= -0.11, p > 0.05
Service quality	Aydin & Ozer (2005)/ Turkey	Mobile telephony	SEM SQ: 5 items SC: 7 items 5 P Likert	1662 (postpaid: 724, prepaid: 938)	positive, sig: y=0.09, p<0.05
Service quality	Meng & Elliot (2009)/ USA	NA	SEM Svc quality: 22 items Social SC: 3 items lost benefit SC: 3 items Procedural SC: 3 items 5 P Likert	525 (264, positive feeling group: 261, negative feeling group)	Social SC: positive, sig: y=0.44, p<0.01 (both groups) Lost benefit: positive, sig: y= 0.24, p< 0.01 (both groups) Procedural SC: positive, sig: y=0.21,p < 0.01 (positive group). Not sig: y= - 0.03 (negative group)
Satisfaction	Edward & Sahadev (2013)/India		SEM Sat: 3 items SC: 4 items	220 (postpaid;75, prepaid:145)	positive, sig: B=0.296, p<0.01

Table 2.14 (continued)

Antecedents	Author	Industry	Analysis method/ Scale	Respondent	Findings
Satisfaction	Aydin & Ozer (2006)/Turkey		SEM Sat: 3 items SC(uncertainty): 3 items 5 P Likert	1662 (postpaid: 724, prepaid:938)	positive, sig: phi estimate=0.33, p<0.01
Price	Shin et al. (2007)/ Korea	Mobile telephony	SEM Price : 4 items Switching barriers: 2 items	490	supported, mean difference=0.289, t=3.182, p< 0.05
Trust	Aydin & Ozer (2005)/ Turkey	Mobile telephony	SEM Trust: 5 items SC: 7 items 5 P Likert	1662 (postpaid: 724. prepaid: 938)	positive sig: B= 0.30, t=7.44, p < 0.01
Trust	Aydin & Ozer (2006)/ Turkey	Mobile telephony	SEM Trust: 5 items uncertainty (SC): 3 items 5 P Likert	1662 (postpaid: 724. prepaid: 938)	positive, sig: phi=0.36, p<0.01: prepaid:0.36, postpaid: 0.35, both sig
Perceived value	Edward & Sahadev (2011)/ India	Mobile telephony	SEM Perceived value: 3 items SC: 3 items	200	not sig: B= -0.06, p > 0.05
Trust	Hamidizadeh et al. (2011)/ Iran	Banking	SEM Trust: 3 items SC: 10 items 7 P Likert	551	positive, sig: B= 0.114,p < 0.1
Perceived value	Wang & Wu (2011)/ Taiwan	Hairstylist/ barber	SEM PV: 2 items SC: 3 items 7 P Likert	279 (62 < 1 year; 217 > 1 year	not sig in short term, B= -0.20, p > 0.05 positive, sig in long term: B= 0.48, p< 0.05 Overall : not supported

Table 2.14 (continued)

Antecedents	Author	Industry	Analysis method/ Scale	Respondent	Findings
Corporate image	Wang & Wu (2011)/Taiwan	Hairstylist/ barber	SEM CI: 5 items SC: 3 items 7 P Likert	279 (62 < 1 year; 217 > 1 year)	positive sig in short term: B=0.92, p <0.05 not sig in long term: B= 0.00,p>0.05 Overall : not supported

2.9.1 Study on satisfaction and switching cost

Satisfaction and switching cost relationship have resulted in significant relationship and more often, positively correlated in mobile telecommunication setting (Aydin & Ozer, 2006; Edward & Sahadev, 2013), refer Table 2.14. These imply that satisfaction is an important determinant in switching cost studies. Furthermore, both studies employed SEM but yet, there were gaps not being addressed in the literatures and methodological perspective whereby Aydin and Ozer (2006) analyse negative type of switching costs such as uncertainty cost, leaving out the positive switching cost such as social switching cost and loss benefit switching cost. Meanwhile, Edward and Sahadev (2013), even though embarked with postpaid and prepaid respondents, results were reported on a general basis, combining both these group.

The outcome, classified by users are important towards subsequent deduction of strategy as users, postpaid and prepaid portray different characteristics and preferences (Galperin & Mariscal, 2007; Shrivastava & Israel, 2010). Aydin and

Ozer (2006), on the other hand, despite distinguishing respondents in terms of prepaid and postpaid, employed phi correlation method of analysis which has limitations (Mislevy, 1986) besides employing five point likert scale. This study is aimed to close these gaps by conducting full-fledged SEM under comparison study, postpaid and postpaid user groups while leveraging seven point likert scale. As a comparison base, a reversely positioned relationship whereby switching cost as the predictor of satisfaction did not bear fruitful outcome when Meng and Elliot (2009) attempted to investigate this relationship in service industries, therefore intention of this study to investigate satisfaction as an antecedent of switching cost is appropriate and justifiable.

2.9.2 Study on trust and switching cost

Trust has shown to be switching cost predictor in mobile telecommunication (Aydin & Ozer, 2006) and banking industries (Hamidizadeh et al., 2011), refer Table 2.14. In fact, the relationship between trust and switching cost is undeniably positive. Therefore, conducting investigation of similar relationship in Malaysia's mobile setting is expected to further enrich the generalizability of trust towards switching cost and as such, this study will remain trust as an important predictor of switching cost.

2.9.3 Study on service quality and switching cost

Service quality has been mostly investigated towards satisfaction (Hafeez & Hasnu, 2010; Vanniarajan & Gurunathan, 2009) and not forgetting the service quality and

loyalty relationship too. Nevertheless, service quality and switching cost relationship can never be underestimated as improved service quality is known to advocate heightened switching cost, hindering customers from defecting (Aydin & Ozer, 2005). Edward and Sahadev (2013) investigated this relationship in India's mobile phone users and found insignificant relationship meanwhile study done by Meng and Elliot (2009) which operationalize combination of positive and negative switching cost found that service quality is significantly related to switching cost in service industry. The limited research, especially in mobile telecommunication setting, warrants further investigations. Therefore, this study is designed to analyse relationship between service quality and switching cost. Other antecedents of switching costs namely corporate image, perceived value and price are left out in this study. These antecedents are not investigated due to justifications given earlier whereby under MNP environment, corporate image tend to be diluted likewise perceived value can probably be at equal par among competitors. Price, besides being a component of marketing mix instead of Oliver (1999), is also an insignificant predictor of mobile phone usage at the entry level itself (Karine et al., 2004).

2.10 Switching cost as the mediator

Switching cost has also been analysed by researchers in the past but was noted mainly as a moderator instead of mediator, be it in mobile telecommunication setting (Aydin et al., 2005; Kim et al., 2004; Lee et al., 2001; Oyeniyi & Abiodun, 2010; Shi et al., 2011) or in non-mobile telecommunication setting such as in fast food, supermarkets, health centres and city theatre (Ruyter et al, 1998), internet

banking (Tong et al., 2012), hypermarket (Tsai et al., 2010) and do - it- yourself retailer (Blut et al., 2007).

Research on switching cost as the mediator in mobile telecommunication industry is still scarce, thus lacks extensive investigation. Among the studies done, Edward and Sahadev (2011) have explored switching cost as the mediator in India, only to find that satisfaction and loyalty relationship is partially mediated by switching costs. Even though service quality was included in their theoretical framework, test on mediating effect could not be conducted as service quality did not qualify the criteria for mediation study (Baron & Kenny, 1986). Nevertheless, it was work done by Picon, Castro and Roldan (2014) that had shed more meaningful understanding towards mediation test. The researchers were noted for employing bootstrapping method for mediation as suggested by Preacher and Hayes (2008) which uses Percentile Bootstrap of 95% confidence interval. The outcome reveals switching cost as the mediator between satisfaction and loyalty in an insurance industry of Spain (B=0.11, LL=0.09; UL=0.14) but their study had two common shortcomings alongside Edward and Sahadev (2011) study. Those shortcomings were the absence of switching cost mediation between service quality and loyalty likewise trust and loyalty, in addition to the researchers' decision to skew their study from attitudinal loyalty perspective and stop at intentions which altogether, reveals a void of switching cost as the mediator towards action loyalty. Meanwhile, other attempts by researchers, such as Aydin and Ozer (2005), failed in their quest to established an indirect results even though their framework was suggestive of a mediation test by clearing the first hurdle of which service quality was found to be significant to switching cost ($B = 0.09$, $t=2.39$, $p < 0.05$), similar to switching cost and loyalty

relationship (B= 0.14, t =5.88, p < 0.01). In fact a study by Hamdizadeh et al. (2011) in Iran on banking industry did also produce similar shortcomings where their framework was indicative of a possible mediation test of switching cost between trust and loyalty, coupled with significant results between trust and switching cost (B=-0.461, p<0.001) and switching cost to loyalty (B=0.190, p<0.001), but the mediation test were however, not undertaken in their research, refer Table 2.15.

Table 2.15

Summary of switching cost as mediator

Author/ Country	**Industry**	**Path**	**Analysis method**	**Scale**	**Findings**
Edward & Sahadev (2011)/India	Mobile telephony	Sat-SC-Loy	SEM	Sat: 3 items SC: 4 items loy: 3 items	SC partially mediates sat & loy
		SQ-SC-Loy		SQ: 6 items	Findings not established as SQ-SC(not sig), didn't qualify for mediation analysis
Picon et al. (2014)/Spain	Insurance	Sat-SC- Loy	PLS	Sat:7 items SC: Second order: 6 dimensions Loy: 3 dimensions 7 P likert	SC mediates Sat & loy
Aydin & Ozer (2005)/Turkey	Mobile telephony	SQ-SC-Loy	SEM	SQ: 6 items SC: 7 items Loy: 5 items 5 P Likert	Mediation results not established eventhough SQ - SC sig (B=0.09, t=2.39, p<0.05) & sc-loy sig, (B=0.14, t=5.88, p<0.01)

Table 2.15 (continued)

Author/ Country	Industry	Path	Analysis method	Scale	Findings
Aydin & Ozer (2005)/Turkey	Mobile telephony	Trust-SC-Loy	SEM	Trust: 5 items SC: 7 items Loy: 5 items 5 P likert	Mediation results not established eventhough trust-sc, sig(B=0.3, t=7.44, p<0.01) & sc-loy,sig (B=0.14, t=5.88, p<0.01)
Hamidizadeh et al. (2011)/Iran	Bank	Trust-SC-Loy		Trust: 11 items SC: 10 items Loy: 6 items 7 P Likert	Mediation results not established eventhough trust-sc, sig, (B=-0.461, p<0.001) & sc - loy, sig(B=0.190, p<0.001)

It can be seen clearly that past literatures were clouded with scarcity on mediating effect of switching costs on loyalty and as suggested by Picon et al. (2014), where switching cost professes as mediator rather than moderator, this study examines switching cost's mediation effect on satisfaction, trust and service quality towards loyalty. It is also worth to note that even though switching cost lacked mediating study, it has on the other hand gain enormous momentum on other areas. One of which is besides investigating various switching costs (Aydin & Ozer, 2006), the researchers have also extended switching costs' capacity by creating a concoction through additional variables such as attractiveness of alternatives, interpersonal relationship, opportunity cost, value-added services and customer support to erect switching barrier (Kim et al., 2004; Shin & Kim, 2007). Anyhow, switching costs itself are most often viewed to be sufficient enough to represents strong and

significant barrier to switching as reiterated by Fornell (1992) as,

"all costs associated with deserting one supplier in favour of another constitute switching barrier." (Fornell, 1992, p.11)

This was also seen in Liu et al. (2011) work, which employed two items instrument, consists of economic loss and psychological burden to measure switching barrier, and altogether reiterates switching cost's function as the sufficient switching barrier.

In view of the lack of mediation studies of switching costs and taking into considerations of mobile telecommunication industry in Malaysia, post MNP era where consumers have easy access to the three main players, including alternative medium provider, negative switching cost as proposed by Jones et al. (2007, p. 336), "time and hassle of finding a new provider." would probably not materialize. On the other hand, positive switching cost such as lost benefit switching cost (loss of special discounts) and social switching cost (loss of personal bonds) have shown to be primary value drivers in service industry. This type of switching cost transpires out of familiarity with incumbent provider, creating a level of comfort, not easily available with new service providers (Burnham et al., 2003; Jones et al., 2007). As such, it is highly relevant in mobile telecommunication setting and a worthwhile subject to embark.

2.11 Chapter summary

Customer loyalty study presents a very diverse interest with satisfaction, service quality and trust taking central role in predicting loyalty. In addition, switching cost

from positive perspective is also expected to elevate relevancy under MNP environment and since switching cost as a mediator lacks extensiveness, this study proceeds and analyse mediating effect of switching cost. This study does also approach switching cost as the barrier to switch from positive side of switching and when coupled with analysing the mediating effect, it acts as a two prong strategy where it is expected to drive mobile providers towards enhancement or improvement as the guiding principle to retain or lock customers and enrich the body of knowledge in mobile telecommunication literatures.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Chapter Overview

This chapter discusses the research design, theoretical framework, research hypotheses, operational definition and measurement of variables. It will also include the development of questionnaire followed by data collection method and finally the technique of data analysis.

3.2 Research Framework

This research developed a framework based on the literature review as discussed in previous chapter, followed by a conceptual model of the relationships, undertaken as the crux of this study. The conceptual model represents a logically derived network of linkages, all positioned to be relevant to the problem statement as a basis of analysis (Sekaran, 2003; Hair et al., 2007). It also details out elements, being leveraged to set the conceptual perspective towards establishing research model. As such, the research framework is conceptually, a model that explains the theorising or logically sets out the relationships between various factors that have been determined as significant to the problem (Sekaran, 2003). Conceptualisation, in actual fact, gravitates along three main tasks namely, identifying variables and constructs, specifying hypotheses and relationships followed by the preparation of a diagram, visually in line with the respective relationships (Hair et al., 2007).

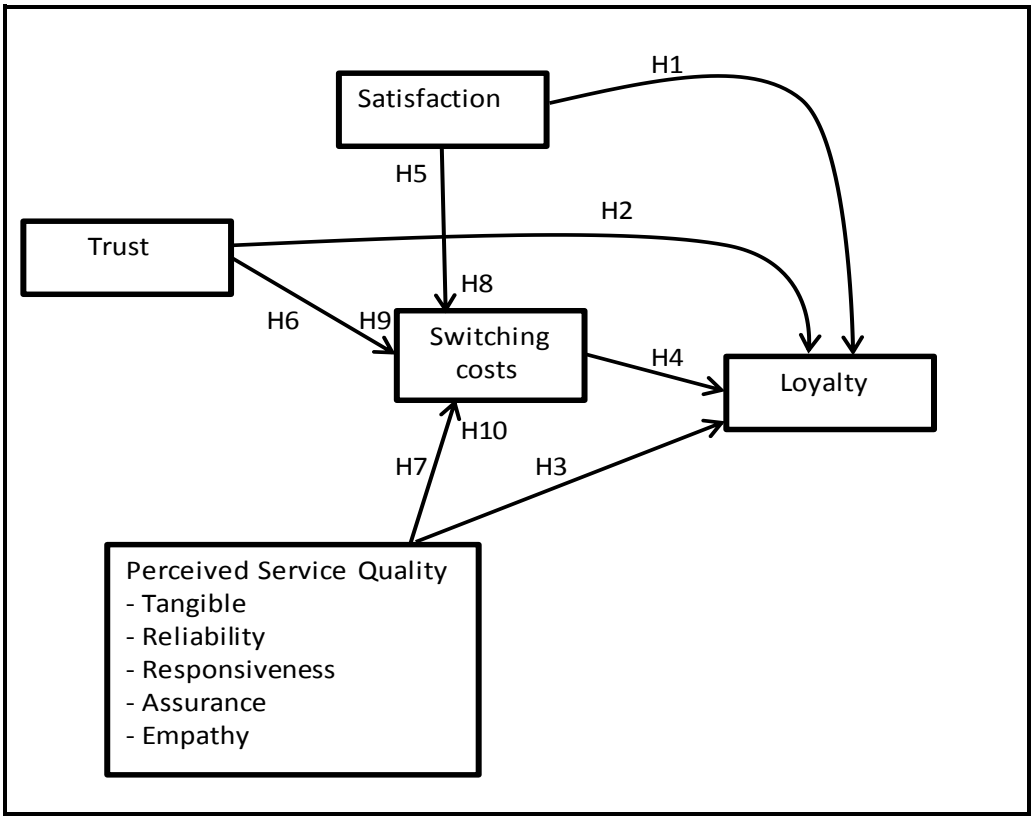

Figure 3.1
Research framework

Figure 3.1 displays a framework that has been developed in this study. The framework illustrates exogenous variables, namely satisfaction, trust, perceived service quality, measured through five dimensions followed by switching cost as the mediator and endogenous variables which consist of loyalty.

3.2.1. Direct antecedents of loyalty

The study proposes four direct antecedents of loyalty (satisfaction, trust, perceived service quality, and switching cost). Satisfaction has been proven to be a significant predictor of loyalty in past studies (Aydin et al., 2005; Hamidizadeh et al., 2011; Kim et al., 2004; Mokhtar et al., 2011; Roy et al., 2014; Santouridis & Trivellas,

2010; Shi et al., 2011; Tong et al., 2012; Zaman et al., 2012) and at the same time, has proven insignificance towards loyalty (Adoyo et al., 2012; Boohene & Agyapong, 2011; Sumaedi et al., 2014; Tarus & Rabach, 2013), hence further validation of satisfaction is enthusiastically done in this study.

Trust has shown mixed results as an antecedent of loyalty in past studies (Adoyo et al., 2012; Aydin & Ozer, 2005; Ruiz-Mafe et al., 2014; Hamidizadeh et al., 2011; Islam, 2009; Liu et al, 2011; Zaman et al., 2012; Zhou et al., 2010), similar to perceived service quality, which has revealed mixed results towards influencing loyalty (Alnsour et al., 2014; Aydin & Ozer, 2005; Boohene & Agyapong, 2011; Izogo & Ogba, 2015; Malik et al., 2011; Wong & Sohal, 2003; Yaacob et al., 2008; Yu et al, 2006).

This study is set to approach perceived service quality via SERVQUAL dimension and instead of looking at gap studies, it progresses by merging expectations and perception. Service quality studies, in retrospective, have operationalised a similar concept successfully (Khan, 2010; Khan & Manthiri, 2012; Lai et al., 2005; Wang et al., 2004). This study will therefore, be conducted through second order confirmatory analysis, having perceived service quality measured through the five dimensions of SERVQUAL, namely reliability, tangibility, assurance, responsiveness and empathy.

Switching cost is hypothesised as having significant relationship with loyalty (Aydin & Ozer, 2005; Chadha & Kapoor, 2009; Edward & Sahadev, 2011; Lee & Murphy, 2008; Sujatha & Chandrika, 2013; Yang, 2015). Based on justifications provided earlier on the appropriateness of switching cost measurement, this study therefore,

adopts positive switching cost which includes loss of special discounts and personal bonds (Burnham et al., 2003; Ghazali et al., 2011; Jones et al., 2007; Kaur & Soch, 2012; Meng & Elliott, 2009). The analysis is designed on overall positive switching cost instead of splitting it into various dimensions.

3.2.2. Direct antecedents of switching costs

The research model also hypothesises three antecedents of switching cost (satisfaction, trust, and perceived service quality). Satisfaction is expected to have a significant relationship with switching cost (Aydin & Ozer, 2006; Edward & Sahadev, 2013), likewise trust is hypothesised as having a significant relationship with switching cost (Aydin & Ozer, 2006; Hamidizadeh, 2011) and the same goes to perceived service quality, whereby it is expected to be significantly correlated with switching cost (Aydin & Ozer, 2005; Meng & Elliot, 2009). As discussed earlier, the nature of switching cost' is most of the time unique, whereby services should be patronised first before elements of switching come into effect. This could probably have made switching more popular as the intervening variable, be it mediator or moderator (Aydin et al., 2005; Edward & Sahadev, 2011; Lee at al., 2001; Shi et al., 2011) thus, this study positions switching cost as a mediating variable.

3.2.3. Mediating effect of switching cost

This research is set on switching cost as the mediator between exogenous and endogenous variables. Switching cost in the mobile telecommunication industry has in fact, landed as a mediating variable between satisfaction and loyalty relationship,

seen in a study done by Edward and Sahadev (2011), among mobile phone users in India, however the switching cost dimensions contended by the researchers were clinging onto negative switching elements, gravitating around efforts needed to evaluate a new service provider through procedural, uncertainty and evaluation cost. This study is set to address the gap by analysing positive switching cost. Furthermore, based on arguments presented, switching cost's mediating impact on service quality and loyalty relationship will also be undertaken. This was omitted by Edward and Sahadev (2011). Similarly, mediating effect of switching cost towards trust and loyalty relationship which was not included in Edward and Sahadev (2011) is also positioned as part of the research framework. In a nutshell, this study is poised to address the gap by analysing both elements in the mobile telecommunication setting of Malaysia which is expected to be a new contribution, not only in Malaysian setting but also in an overall mobile telecommunication setting.

Past literatures have also revealed scarcity in switching cost as the mediator. Switching cost studies in the past had the tendency to be a moderator in mobile telecommunication (Lee et al., 2001; Kim et al., 2004; Shi et al., 2011) and non-mobile telecommunication settings (Ruyter et al., 1998; Tong et al., 2012; Tsai et al., 2010) and the negative side of switching cost was the subject of analysis. Due to these reasons, investigating switching cost, especially the positive switching cost as the mediator for satisfaction, trust and perceived service quality towards loyalty would fill the existing gap in mediating research in mobile telecommunication. Furthermore, a comparison study among postpaid and prepaid users is expected to contribute new knowledge about mobile telecommunication industry of Malaysia.

3.3 Research Hypotheses

The next step in this research is development of hypotheses. Hypotheses are assumptions about the nature of particular situation and researchers normally undertake hypotheses testing to ascertain that a relationship is true and not merely by the game of chance (Hair et al., 2007). Subsequently, research hypotheses for this study were derived based on the research framework (Figure 3.1) and posits 17 hypotheses as follows:

H1: Satisfaction has significant relationship with loyalty.

H2: Trust has significant relationship with loyalty.

H3: Perceived service quality has significant relationship with loyalty.

H4: Switching cost has significant relationship with loyalty.

H5: Satisfaction has significant relationship with switching cost.

H6: Trust has significant relationship with switching cost.

H7: Perceived service quality has significant relationship with switching cost.

H8: Switching cost mediates the relationship between satisfaction and loyalty.

H9: Switching cost mediates the relationship between trust and loyalty.

H10: Switching cost mediates the relationship of perceived service quality and loyalty.

H11: Satisfaction and loyalty relationships are different between postpaid and prepaid users.

H12: Trust and loyalty relationships are different between postpaid and prepaid users.

H13: Perceived service quality and loyalty relationships are different between postpaid and prepaid users.

H14: Switching cost and loyalty relationships are different between postpaid and prepaid users.

H15: Satisfaction and switching cost relationships are different between postpaid and prepaid users.

H16: Trust and switching cost relationships are different between postpaid and prepaid users.

H17: Perceived service quality and switching cost relationships are different between postpaid and prepaid users.

3.4 Research Design

This study is designed to undergo quantitative analysis, thus empirically test prevailing research questions through primary data collection, all in the quest to achieve research objective. The data is collected using structured questionnaire on both postpaid and prepaid mobile phone users of Malaysia, particularly in Klang Valley before proceeding with analysis via structural equation modelling method.

This research is also set on Oliver's (1999) underpinning theory of loyalty to investigate mobile telecommunication's loyalty and determine the relationship between units of study in the likes of exogenous and endogenous variables, namely satisfaction, perceived service quality, trust, switching cost and loyalty. Even though it is set on Oliver's underpinning theory by fulfilling the components of cognitive (perceived service quality), affective (satisfaction), conative (trust) and action

loyalty, on the other hand, this study does not follow the continuum. The non-continuum decision is made after observing existence of numerous studies that defies the continuum of cognitive-affective-conative and action, in addition to believe that loyalty need not be purely linear (Agustin & Singh, 2005; Aydin & Ozer, 2005; Blut et al., 2007; Han et al., 2008). Moreover, the purpose of this research is also to develop a generalisation that can be used more widely, as much as able to contribute towards predicting, explaining and understanding mobile telecommunication loyalty among postpaid and prepaid customers.

3.5 Operational Definition

Operational definition construes variables of the research questions being identified and measured, done by looking at behavioural dimensions of the concept (Sekaran, 2003). The operational definition of this study is as described in Table 3.1

Table 3.1

Operational Definition

Variables	**Definition**	**Source**
Satisfaction	Customers' personal overall evaluation of pleasure with the mobile phone's service provider and viewing it as a cumulative experience.	(Tong et al., 2012; Mokhtar et al.,2011; Habib et al., 2011; Anderson & Srinivasan, 2003)
Trust	Preserving relationship investment through cooperation between users and mobile service provider likewise resist short-term alternative in favour of long term benefits of staying with existing mobile service provider	(Adoyo et al., 2012; Liu et al., 2011; Ha et al., 2004; Morgan & Hunt, 1994; Moorman et al., 1993)

Table 3.1 (continued)

Variables	Definition	Source
Perceived service quality	Customers' judgement about product and services of mobile phone by merging expectation and perception based on five dimensions of service ie tangibility, empathy, assurance, responsiveness and reliability.	(Chadha & Kapoor, 2009; Vanniarajan& Gurunathan, 2009; Khan, 2010; Lai et al., 2005; Mokhtar et al., 2011; Parasuraman et al., 1988; Wang et al., 2004)
Switching costs	Positive switching cost experience by customers namely potential loss of benefits and loss of personal bonds when switching provider	(Ghazali et al., 2011; Kaur & Soch, 2012; Meng & Elliott, 2009; Jones et al., 2007; Burnham et al., 2003
Loyalty	Actual and repeated usage of mobile services accompanied by willingness to overcome prevailling hindrances to purchase/repeat purchase	(Tong et al., 2012; Kaur & Soch, 2012; Brady et al., 2012; Oliver, 1999; Yen, Y-S, 2010; Anderson & Srinivasan, 2003; Ruyter et al.,1998; Zeithaml et al., 1996)

3.6 Measurement of variables

This study shows three exogenous variables namely, satisfaction, trust and perceived service quality followed by two endogenous variables stated as switching cost and customer loyalty. The measurements of these variables are done by engaging structured questionnaires, whereby the instruments were developed from the literature and studies, found in the existing body of knowledge, before administering to mobile phone customers, to gather and analyse their responses. The minimum number of four were needed, thus relevant items have been taken from several authors. Furthermore, majority of these measurements have been tested in the mobile telecommunication industry and those instruments from other industries were modified and adapted to suit the mobile telecommunication industry. All measures have been established with high reliability (Cronbach alpha) value of above 0.6.

Table 3.2 depicts the five latent constructs leveraged in this study (satisfaction, trust, perceived service quality, switching cost, and customer loyalty).

3.6.1 Satisfaction

Measurement of satisfaction is done through six items which were established from a combination of scales developed by various researchers. Two items were adapted from Tong et al. (2012) followed by two items adopted from Habib et al. (2011) and another two items adopted from Mokhtar et al. (2011). The respective items are expected to produce valid outcomes due to relevancy in the study setting whereby Mokhtar et al. (2011) and Habib et al. (2011) have tested the instruments in the mobile telecommunication industry whereas Tong et al. (2012) have in fact tested it in banking environment.

3.6.2 Trust

Measurements for trust are established by referring to existing scales on trust by researchers, Ha et al. (2004) which was also operationalised by Adoyo et al. (2012) in pharmaceutical industries followed by Liu et al. (2011) and Moorman et al. (1993). Three items were adapted from Ha et al. (2004). The remaining two items were adopted from Liu et al. (2011), back dropped by the mobile telecommunication industry. The reliability readings were of acceptable level as the researchers, namely Ha et al. (2004) had a Cronbach alpha reading of 0.88, similar to 0.88 value, observed in Liu et al. (2011) study.

3.6.3 Perceived service quality

Perceived service quality is measured by 26 items from a combination of various studies, however the source remains the same from Parasuraman et al. (1988). Tangible dimension is measured through five items in total, whereby three items were adopted from Mokhtar et al. (2011) and one each, adapted from Chadha and Kapoor (2009) and adopted from Lai et al. (2005). Similarly, reliability is measured through five items whereby among three items, two were adopted and another, adapted from Chadha and Kapoor (2009) while the remaining two items were adapted from Vanniarajan and Gurunathan (2009).

Responsiveness, on the other hand is measured through six items, with two items adopted from Mokhtar et al. (2011), another two adopted from Chadha and Kapoor (2009) followed one item adapted from Chadha and Kapoor (2009) and finally another item, adapted from Yu et al. (2006).

Assurance dimension is measured using five items which were all adapted from previous studies, one each from Wang et al. (2004), Vanniarajan and Gurunathan (2009), Mokhtar et al. (2011) and two items from Chadha and Kapoor (2009).

The fifth dimension in SERVQUAL, empathy is measured using five items, whereby two items were adapted from Chadha and Kapoor (2009) followed by another two from Vanniarajan and Gurunathan (2009) and one item adapted from Mokhtar et al. (2011).

The perceived service quality, applying five dimensions of SERVQUAL, was tested using second order confirmatory analysis. In order to enhance validity, reverse questions were included in reliability, responsiveness, assurance and empathy dimension. One item from assurance was dropped from the original scale of Parasuraman et al. (1988) as it depicts similarity with another construct in this study (trust) which may pose multi-collinearity challenges. Meanwhile, another item from empathy was also dropped as it may raise confusion between 'individual attention' and personal attention (Lai et al., 2005). As such, the remaining 26 items are expected to have high internal validity and reliability as they were tested in previous studies, mainly mobile telecommunication (Chadha & Kapoor, 2009; Lai et al., 2005; Mokhtar et al., 2011; Vanniarajan & Gurunathan, 2009; Wang et al., 2004) where Cronbach alpha value was all above 0.7, reflecting accepted reliability readings. In fact, Yu et al. (2006) did record above 0.7 reliability value for four dimensions except for the reliability dimension where the Cronbach alpha value was 0.62, still in an acceptable level.

In summary, these items were chosen due to their significance in the mobile telecommunication settings and supported with adequate Cronbach alpha values of above 0.6. Subsequently, five dimensions were selected instead of six dimensions (Lai et al., 2005; Wang et al., 2004) due to the fact that this study attempts to test SERVQUAL's five dimensions (Parasuraman et al., 1988) meanwhile, modified scales were chosen as they were operationalised in mobile telecommunication and other industries too. Meanwhile, perceived service quality along the five dimensions is measured directly, instead of resorting to gap analysis, emulating a similar concept

adopted in mobile telecommunication setting (Chadha & Kapoor, 2009; Khan, 2010; Khan & Manthiri, 2012; Lai et al., 2005; Wang et al., 2004).

3.6.4 Switching cost

Switching cost is measured purely from the positive side of switching cost, based on relevancy in Malaysian mobile telecommunication industry, as discussed in the literature. The construct is developed to include benefit loss cost and social switching cost, which overall make up the positive switching costs. Measurement for benefit loss cost is done through two items adapted from Ghazali et al. (2012) followed by one item from Kaur and Soch (2012). The social switching costs consist of four items. Two items were adapted from studies done by Meng and Elliott (2009), which was sourced from Jones et al. (2007) whereas the remaining two items were adopted from Burnham et al. (2003).

3.6.5 Customer loyalty

Measurements for loyalty were selected, based on those operationalised by researchers such as Brady et al. (2012), Kaur and Soch (2012), Tong et al. (2012) and Yen (2010). A total of seven items were established, whereby one item was adapted from the work of Tong et al. (2012) in an internet banking industry. Similarly, two items were adapted and one item adopted from Kaur and Soch (2012) research among mobile phone users of Northern India. Meanwhile one item was adapted from the work of Yen (2010), done among online shopping customers in Taiwan. The remaining two items were adapted from the work of Brady et al. (2012) in service

industries of the United States of America. All the researchers have recorded Cronbach alpha value of more than 0.8 for loyalty's items; hence it is expected to fit accordingly when operationalised in Malaysia's mobile telecommunication context.

Table 3.2

Measurement of construct

Measurement	**Items**	**Adopted/ Adapted**	**Reliability**	**Industry**
Satisfaction	6	Tong et al. (2012): adapted 2 items.	Tong et al. (2012) : 0.79	e-Commerce
		Habib et al. (2011): adopted 2 items	Habib et al. (2011): 0.94	Mobile telephony
		Mokhtar et al. (2011): adopted 2 items	Mokhtar et al. (2003): NA	Mobile telephony
Trust	5	Ha et al. (2012): adapted 3 item	Ha et al. (2004): 0.88	Foreign trading
		Liu et al. (2011) : adopted 2 items	Liu et al. (2011): 0.88	Mobile telephony
Perceived Service Quality SERVQUAL 5 dimensions	5	Chadha & Kapoor (2009); adopted 1 item. Lai et al. (2005): adopted 1 item. Mokhtar et al. (2011); adopted 3 items	Tangible: 0.78	Mobile telephony & others
	5	Chadha & Kapoor (2009); adopted 3 items. .Vanniarajan & Gurunathan (2009); adopted 2 items.	Reliability: 0.75	Mobile telephony

Table 3.2 (continued)

Measurement	Items	Adopted/ Adapted	Reliability	Industry
	6	Chadha & Kapoor (2009); adopted 2 item, adapted 1 item. Mokhtar et al. (2011), adopted 2 items. Yu et al. (2006),	Responsiveness: 71	Mobile telephony & others
	5	Chadha & Kapoor (2009); adapted 2 items. Mokhtar et al.(2011); adapted 1 item. Vanniarajan & Gurunathan (2009); adapted 1 item. Wang et al.(2004); adapted 1 item	Assurance: 0.8	
	5	Chadha & Kapoor (2009); adapted 2 items.Mokhtar et al. (2011); adapted 1 item. Vanniarajan &	Empathy: 0.72	
Switching costs	7	Ghazali et al. (2011); adapted 2 items	Ghazali et al (2011): 0.8	online purchase
		Kaur & Soch (2012); adapted 1 item	Kaur & Soch (2012): 0.686	Mobile telephony
		Meng & Elliott (2009); adopted 2 items	Meng & Elliott (2009):0.72 to 0.93	multiple service providers; banks, cable tv, mobile telephony, physicians, hairstylists and retail stores
		Burnham et al. (2003): adopted 2 items.	Burnham et al. (2003): 0.69 to 0.92	Credit card & long distance telephony

Table 3.2 (continued)

Measurement	Items	Adopted/ Adapted	Reliability	Industry
Loyalty	7	Tong et al. (2012); adapted 1 item.	Tong et al. (2012) : 0.897	Internet banking
		Kaur & Soch (2012); adopted 1 item & adapted 2 items	Kaur & Soch (2012): 0.92	Mobile telephony
		Yen (2010); adapted 1 item	Yen (2010): 0.88	online shopping / e-commerce
		Brady et al. (2012): adapted 2 items	Brady et al. (2012): 0.95	Service industries

Table 3.2.1

Satisfaction construct

STATEMENT	SOURCE
1.I am satisfied about my decision to purchase from this mobile service provider 2.My choice to use mobile services from this service provider was a wise one	Tong et al. (2012)
3. When I have experienced unforseen or critical situations, my service provider has managed these in a satisfactory manner 4.I am happy with the efforts this service provider is making towards regular customers like me	Habib et al. (2011)
5.The mobile service provider has met my expectations. 6. Overall, I am satisfied with this mobile service provider	Mokhtar et al. (2011)

Table 3.2.2

Trust construct

STATEMENT	SOURCE
1. I believe that I can trust this service provider will always be honest to me 2.I trust this service provider keeps my best interest in mind. 3. I believe the information provided by my mobile service provider	Ha et al. (2004)
4.My mobile service provider can be relied upon to keep promises 5. I have full confidence in my mobile service provider	Liu et al. (2011)

Table 3.2.3

Perceived Service Quality construct

STATEMENT	SOURCE
a.Tangible 1) The mobile service provider is equipped with the latest information technology 2) The physical facilities are visually appealling 3) The employees are well dressed and appear neat to show professionalism 4) Materials associated with the mobile service (such as pamphlets etc) are visually appealling 5) Appearance of physical facilities is in keeping with the type of services provided	Chadha & Kapoor (2009); Lai et al. (2005); Mokhtar et al. (2011)
b. Reliability 6) When a service provider promises to do something by certain time, it does so 7) When customers have problem, the service provider shows a sincere interest in solving it 8) The service provider seldom deliver it's services at the time it promises to do so (-) 9) The service provider able to connect calls during peak hours 10) The service provider always able to connect calls at the first attempt	Chadha & Kapoor (2009); Vanniarajan & Gurunathan (2009)

Table 3.2.3 (continued)

STATEMENT	SOURCE
c. Responsiveness	
11) The employees tell me exactly when the services will be performed	Chadha & Kapoor (2009); Mokhtar et al. (2011); Yu et al. (2006)
12) The employees give me a prompt service	
13) The employees are always willing to help me	
14) The employees are always too busy to respond to my requests (-)	
15) Employees takes my queries seriously	
16) Employees always share the new product offering	
d. Assurance	
17) I feel safe in transactions with the service provider	Chadha & Kapoor (2009); Mokhtar et al. (2011); Vanniarajan & Gurunathan (2009); Wang et al. (2004)
18) I experience very high premature termination of calls (-)	
19) The employees are consistently courteous with customers	
20) The employees have knowledge to answer customers' questions	
21) Employees get adequate support from the company to do their jobs well	
e. Empathy	
22) The service provider gives customers' individual attention	Chadha & Kapoor (2009); Mokhtar et al. (2011); Vanniarajan & Gurunathan (2009)
23) The employees understand customers' specific needs	
24) The service provider has operating hours and location convenient to all it's customers	
25) The employees seldom give individual attention (-)	
26) The employees supply details on calls if required	

Table 3.2.4

Switching cost construct

STATEMENT	SOURCE
Benefit loss cost	
1) I will lose discounts and special deals if I switch mobile service provider	Ghazali et al. (2011)
2) I hesitate to switch from my existing provider because I enjoy certain privileges, I would not receive elsewhere	
3) I will not lose benefits of being a loyal customer if I switch to a new mobile telecommunication provider(-)	Kaur & Soch (2012)
Social switching cost	
4) If I switched, I may lose the friendship I have developed	Meng & Elliott (2009); Jones et al. (2007)
5) If I switched, I might lose an important personal relationship	
6) I am more comfortable interacting with the people working for my service provider than I would be if I switched service providers	Burnham et al. (2003)
7) I would miss working with the people at my service provider if I switched providers	

Table 3.2.5

Customer loyalty construct

STATEMENT	SOURCE
1. As long as the present service is given, I would always continue to choose my current service provider	Tong et al. (2012); Anderson & Srinivasan (2003)
2. I will surely patronize same service provider if I need a new line in future	Kaur & Soch (2012)
3. I will use more from this service provider in future	
4. I would readily pay more for the same service	
5 When I have to establish a call/text, this service provider is not my first choice (-)	Yen (2010)
6. I consider myself to be a loyal customer of this service provider	Brady et al. (2012); Zeithaml et al. (1996)
7. I'm dedicated to be a customer of this service provider	

Table 3.2.6

Demographic profile

STATEMENT
a) Your mobile service provider 1. Celcom ( ) 2. MAXIS ( ) 3. DIGI ( ) 4. Others ( ) Pls specify……..
b) Subscription type 1. Prepaid ( ) 2. Postpaid ( )
c) Monthly bill/top up (RM)……
d) Mobile phone brand 1. Iphone ( ) 2. Samsung ( ) 3. Nokia ( ) 4. Blackberry ( ) 5. HTC ( ) 6. Alcatel ( ) 7. Others ( ) pls specify ……
e) Select if you have connected to other web based connectivity from your handphone? (You may tick more 1. WhatsApp ( ) 2. Viber ( ) 3. Skype ( ) 4. iTalk ( ) 5. Others ( ) Pls specify……
f) Gender 1. Male ( ) 2. Female ( )
g) State your age ……

Table 3.2.6 (continued)

STATEMENT
h) Race 1. Malay ( ) 2. Indian ( ) 3. Chinese ( ) 4. Others ( ) Pls specify……
i) Education level 1. Primary ( ) 2. Secondary ( ) 3. Diploma ( ) 4. Bachelor's degree ( ) 5. Master's degree ( ) 6. PhD/DBA ( ) 7. Others ( ) Pls specify……
j) Monthly income (RM) 1. Less than 1000 ( ) 2. 1001 till 3000 ( ) 3. 3001 to 5000 ( ) 4. 5001 to 10,000 ( ) 5. More than 10,000 ( ) 6. Not relevant ( )
k) Profession 1. Clerical/ non clerical ( ) 2. Executive ( ) 3. Manager ( ) 4. Head ( ) 5. CEO/President/Director ( ) 6. Others ( )

The 51 questions are measured through interval scale of Seven-Point Likert Scale with 1- strongly disagree, 2- disagree, 3- slightly disagree, 4- neutral, 5- slightly agree, 6- agree, 7- strongly agree. Demographic profile is measured through combination of ratio and nominal scale. Ratio scale is employed to measure age and monthly bill or top up, followed by nominal scale, measuring the remaining nine questions pertaining to demographic profile. The questionnaire is presented in Appendix 2.

3.7 Questionnaire Pre-test

A pre-test was done on the questionnaire to ensure accuracy and consistency. It enables detection of problems so that remedial measures can be undertaken by researchers before the actual data collection. Consequently, clarity of questions and instructions are achieved after pre-test (Hair et al., 2007; Sekaran, 2003). Pre-test activity was conducted with six respondents. The six respondents were one each from executive level, non–executive level, businessman, teacher, student (above 15 years old) and retiree. This study derives six respondents for pre-test as the acceptable number suggested by Hair et al. (2006) for pre-test activity. Pre-test activity confirms clarity and understood clearly by all the respondents hence no changes were made to the questionnaires.

3.7.1 Pilot test

Pilot test is done as the final health check before the full-fledged data collection activity. Pilot test in this study consists of 100 respondents, fifty each from prepaid and postpaid. The respondents were randomly selected in Bangsar, Kuala Lumpur, namely Kerinchi and Lucky Garden in Bangsar. The pilot test took one month. Data collected for the pilot study was tested through SPSS software to gather reliability.

The outcome of the pilot study reveals good reliability value, confirming internal consistencies and precision. The Cronbach alpha value for each variable is above 0.7 (Table 3.3). The exogenous variables were also tested through exploratory factor analysis (EFA) to obtain the feel of data as the actual treatment is administered

through the more rigorous confirmatory analysis (Byrne, 2009). The outcome of exploratory factor analysis, using varimax rotation extracted eight factors with eigenvalues greater than one, which explains the prevailing factors with variances accounted for. This result, does in actual fact, confirms eight factors which are consistent with the exogenous variables in this research (satisfaction, trust, five dimensions of perceived service quality, and switching cost). The total variance explained by the eight factors is 71.83% with acceptable value of 0.874 for Kaiser Meyer Olkin's measure of sampling adequacy and significant Bartlett's Test of Spherecity. As such, total number of 51 questions were retained to measure each variable (satisfaction, trust, perceived service quality, switching cost, and loyalty) followed by 11 questions on respondent's profile.

Table 3.3

Reliability of pilot study

Variable	**Coefficient reliability**
Satisfaction	0.930
Trust	0.928
Tangible	0.898
Reliability	0.839
Responsiveness	0.872
Assurance	0.793
Empathy	0.835
Switching cost	0.848
Loyalty	0.894

3.8 Data collection

Data in this study is gained through primary and secondary sources. Secondary sources were derived from journals, periodicals, books, government publications, and databases, whereas questionnaires were employed to gather primary data.

3.8.1 Population frame

Population of this study is the total mobile phone users in Malaysia. Based on statistics released by the Malaysian Communication and Multimedia Commission (Communication & Multimedia, Pocket book of Statistics, Q1, 2014), the total mobile phone users in Malaysia as of March 2014 is 43.1 million. The population frame of Malaysia's mobile phone users is governed under MCMC's non-disclosure act, nevertheless, reaching out to the respondents is not expected to pose any major challenges. This is because mobile phone penetration in Malaysia is 143.7%, as such mobile phone users are generally, more than population of Malaysia, which was recorded at 28.3 million in 2010 (Department of Statistics Malaysia).

3.9 Sampling

3.9.1 Unit of analysis

Unit of analysis in this study is mobile telecommunication users who belong to postpaid and prepaid call plans. Since details on mobile users are governed under MCMC's non-disclosure act alongside high penetration rate (147.3%), a person

could have at least one phone, hence households were taken into account as the unit of analysis. Based on distribution statistics of mobile phone telecommunication users (Lee, 2013), top three highest percentage of mobile phone users resides in Selangor (20.7%) followed by Johor (11.7%) and Kuala Lumpur (11%), (refer Table 3.4). Furthermore, mobile users of urban and rural areas were taken into account for better representation due to the fact that mobile phone is now made available and affordable to everyone, unlike before the 90s, where only the rich businessmen, mostly residing in urban areas, had the luxury to own a mobile phone (Eriksson, 2008). The proliferation of mobile phones have been so great that even nomadic tribes in Kenya, 'Maasais' who linger in the rural areas, have embraced the mobile phone aggressively beginning year 2002 (Eriksson, 2008) and beyond that, 'Nayu', a migrant group from Thailand to Malaysia, has resorted to not only embrace hand phones, but also to use expensive mobile phone models (Bunmak, 2012) as such, having urban and rural mix gives a better picture of mobile phone users.

Table 3.4

Distribution of mobile phone users

State	**2010 (%)**	**2011 (%)**
Johor	11.3	11.7
Kedah	7.0	6.4
Kelantan	4.2	4.8
Malacca	3.0	3.9
Negeri Sembilan	4.6	4.5
Pahang	4.7	3.9
Perak	8.0	8.2
Perlis	0.7	0.8
Penang	6.1	5.5
Selangor *	21.4	20.7
Terengganu	3.4	3.7
Sabah **	9.2	8.2
Sarawak	5.6	6.6
Kuala Lumpur	10.8	11.0

Source: Lee, P. (The Star, 10 Feb 2013, pp 18)

3.9.2 Sample size

Sample size for this study is derived from Klang Valley (Selangor and Kuala Lumpur). Selangor and Kuala Lumpur were selected as the majority, 31.7 % (13.6 million) mobile telecommunication users reside in the Klang Valley (refer table 3.4). Based on the recommendation by Krecjie and Morgan (1970), for population which is more than one million, it is sufficiently measured with a sample size of 384, refer Table 3.5 nevertheless, this research was initially designed to achieve 500 respondents, split equally into postpaid and prepaid segments to avoid type two error while accomplishing a comparison study between these two user segments. Taking into consideration of mobile phone service, which is demarcated on call plan basis, past records showed that majority mobile users reside in prepaid category which is 75% and the remaining 25% users fall under postpaid category. Given this snapshot followed by 80% response rate, 1250 survey questions were distributed in order to achieve 250 postpaid users and the remaining 750, prepaid users. The sample, on the other hand, is derived from households, which have in the past, contributed to market researchers, government agencies such as statistics department and not forgetting, social scientists too, in their quest to gauge characteristics of the human population (Clark & Steel, 2007). Meanwhile, reaching out to users through households should be less challenging, given the penetration rate of mobile telecommunication users in Malaysia being more than 100%.

Table 3.5

Sample size rule of thumb

Population (N)	Sample size (s)
10,000	370
15,000	375
20,000	377
30,000	379
40,000	380
50,000	381
75,000	382
1,000,000	384

Source: Krecjie and Morgan (1970)

3.9.3 Sampling method

Stratified systematic random sampling was employed in this research. In summary, there were five steps involved. Firstly, administrative districts in Klang Valley were stratified into urban and rural layers based on DOSM's guidelines. Urban is defined as an area with population of more than ten thousand and rural, with a population of less than ten thousand. Secondly, one administrative district was randomly selected from each stratum as a similar number was operationalised successfully in a past study (Chia, Chia, & Tan, 2000). The third step involved references being made to the local authority of each administrative district (Frazer, Glacken, Couhlan, Staines & Daly, 2011; Hobbs, 2010; McClung & Gayle, 2010; Siri et al., 2008) to get details on residencies (Taman). The fourth step, focused on the selection of two residencies (Taman) from each housing area and finally, a systematic data collection plan was used to reach the respondents.

Reports from Department of Statistics Malaysia (DOSM) on Population and Housing Census of Malaysia, 2010 revealed the presence of 103 administrative districts in Klang Valley, with 72 urban and 31 rural districts. Upon drawing lots at the urban strata, Subang Jaya administration district was chosen. Similarly, Dengkil was selected for the rural strata. The researcher also made further references to DOSM in order to gauge ratio of respondents. Based on DOSM vital statistics, Subang Jaya has a population of 40,779 with 10,139 houses followed by Dengkil which has 6066 population with 1386 houses. After excluding age group of 0 to 14 years due to possible status of non-mobile users, each stratum showed three users per house (refer Table 3.6). Since the penetration rate of mobile phones in Malaysia is 143.7% (Khoo, 2012; MCMC, Q1, 2014), it is expected that each member of the household, to own a mobile phone. This study did also expect a minimum of two respondents at each house, assuming that not all members of a house are reachable during the time of survey.

Table 3.6

Vital statistics: Department of Statistics Malaysia

Administration District	Total population	Houses	AGE				Usable population	Average usable population
			0-14	15-34	35- 54	55 and above	15 above	15 above/ household
Subang Jaya	40779	10139	10305	15742	10693	4039	30474	3
Dengkil	6066	1386	1444	2375	1524	723	4622	3

Source: Population and housing census of Malaysia

Subsequent references were made at local councils which is Majlis Perbandaran Subang Jaya (MPSJ) for Subang Jaya and Majlis Perbandaran Sepang for Dengkil. There were 42 residential areas in Subang Jaya and 20 in Dengkil, including villages and high rise such as condominiums and apartments. Villages and high rise residences were excluded in order to overcome security obstacles and difficulties posed by houses in villages, which are not be in proper array to survey, leaving the number of residential areas as 38 in Subang Jaya whereas Dengkil remained as 20. Meanwhile, it was also a part of the Malaysian Government's initiative under the New Economy Policy and subsequent National Development Policy to restructure the communities besides eradicating poverty. As such, residential areas (Taman) would reflect actual composition of ethnic groups in Malaysia, which is majority Malay followed by Chinese and Indians.

Random sampling was done to select residential areas, two each in Subang Jaya and Dengkil. Upon drawing lots, two randomly selected residences in Subang Jaya were USJ2 and Taman Tanamera which has a total of 2850 houses, whereas Kota Warisan and Taman Dengkil were randomly selected for Dengkil, which has a total of 2236 houses, (refer Table 3.7).

Table 3.7

Total houses

Strata	**Residential area**	**Total houses**
Urban (Subang Jaya)	USJ2	2702
	Tmn Tanamera	148
Rural (Dengkil)	Kota Warisan	1851
	Tmn Dengkil Jaya	385
Total		5086

Source: Local council (MPSJ & MPS)

Given the nature of Malaysian mobile telecommunication market which has 25% postpaid and 75% prepaid (Cheah & Chua, 2010; Cheah & Chiang, 2011), it can be counted that one in every four users, subscribes to postpaid. Moreover, to fulfil the comparison study between postpaid and prepaid users, in addition to 80% of average response rate in mobile telecommunication studies (Aydin & Ozer, 2005; Edward & Sahadev, 2011; Hafeez & Hasnu, 2010), this research needs to contact at least 1250 users or 625 houses, going by the assumption of two users in every house. Therefore, a stratified systematic random sampling was done, in which 635 houses were sampled, 316 houses in urban and 319 in rural (refer Table 3.8).

Table 3.8

Stratified systematic random sampling

Residential (houses)	**Data collection (nth)**	**Total houses sampled**	**Total respondents**	**Response rate (80%)**	**Postpaid (25%)**	**Prepaid (75%)**	**Prepaid (every 3rd)**
USJ2 (2702)	9th	300	600	480	120	360	120
Tmn Tanamera (148)		16	32	26	7	19	6
Kota Warisan (1851)	7th	264	528	422	105	317	106
Tmn Dengkil Jaya (385)		55	110	88	22	66	22

Urban stratum (USJ2 and Taman Tanamera) were expected to survey 316 houses, derived through systematic sampling (2850/313) of every ninth house. Meanwhile, for rural stratum (Kota Warisan and Taman Dengkil Jaya), 319 houses were expected to be surveyed through a systematic sampling (2236/319) of every seventh house.

3.10 Data collection procedures

Data collection activities commenced with ninth house in USJ2 and surveyed 300 houses eventually. Taman Tanamera's data collection started with the seventh house, considering two balance houses (2701 and 2702) from USJ2 and continued with every ninth from there on, surveyed 16 houses. Meanwhile, rural strata's data collection started with Kota Warisan, surveying 264 houses followed by Taman Dengkil Jaya's data collection, starting with the fourth house, given the fact that three balance houses (1849, 1850 & 1851) from Kota Warisan and subsequently proceeded with every seventh house, eventually surveying 55 households in Taman Dengkil Jaya. Total houses surveyed for this study is 635. Even though the initial plan was to survey an average of two users in each house, this research also included an additional household member in order to eliminate bias, and strive towards cost effectiveness and achieve better sampling (Clark & Steel, 2007).

The questionnaires were delivered personally and researcher waited for the respondents to complete the questionnaire. Each questionnaire took approximately, 10 to 15 minutes to complete and upon receiving a completed questionnaire, the researcher categorised it according to plan type (postpaid or prepaid) and assigned a code in an ascending manner. It took 105 days to complete data collection process

3.11 Data analysis

The data was analysed using SPSS followed by SEM, AMOS. The data was edited first to ensure completeness and consistency (Hair et al., 2007).

3.11.1 Analysis procedure for screening

Data screening activities were done to ensure responses were correctly input, without missing value and this was followed through with response bias test. Response bias test is conducted to ascertain any changes in response due to different conditions (Vukovic et al., 2014). It is also done to detect potential bias, which may occur due to sampling (Hsu, 2014), therefore a comparison of early and late respondents was done. In this research, the time taken to collect data from respondent one to the last respondent was 105 days. Outlier test was also conducted in this study. Outlier is the observation that is different from other observations. Mahalanobis Distance test was conducted to detect the outliers. Mahalanobis Distance helps to ascertain abnormality within the data by segregating normal and abnormal groups (Nie, Azarian, Keimasi, & Pecht, 2007). Subsequently, normality test was conducted for data in this study by examining critical ratio value. Any value below 2 or slightly above 2 is accepted. In order to normalise data, cumulative distribution function (cdfnorm) was applied whereby the transformed data were labelled T and subsequently labelled TT onwards when transformed twice and above.

3.11.2 Validity

This study undertook convergent and discriminant validity test, while fit indices were reported too, pre and post-cfa. Convergent validity is supported when indicators of specific constructs share a high proportion of variance in common meanwhile discriminant validity is where a latent is different or discriminates from another latent, in the sense that the construct is distinct from another construct (Farrell &

Rudd, 2009; Hair et al., 2010; Talaja, 2012). Convergent validity was tested through three elements namely reliability, factor loadings, and average variance extracted (AVE).

Reliability test, in actual fact, is done to ensure items in the variables are in a consistent manner and hang together as a set, therefore any value of 0.6 and above is an acceptable value (Hair et al., 2007; Sekaran, 2003). It is important to conduct reliability test in this study due to existence of multi-item scale; thereby to ensure individual items are related to one another. As such, reliability readings were ascertained through coefficient reliability (Cronbach alpha) and composite reliability to reflect internal consistency (Sekaran, 2003) for each variable (satisfaction, trust, perceived service quality, switching cost, and loyalty). Cronbach alpha reading is readily available in SPSS but composite reliability is established from the squared sum of factor loadings (fL) for each construct and the sum of error variance terms (e), formularised as follows,

$$\text{CR} = \frac{(\sum fL)^2}{(\sum fL)^2 + \sum e}$$

Subsequently, factor loading measures how far a latent construct is correlated to respective indicators or observed variable as they are theoretically related. Factor loading readings were derived from measurement model of individual variables, exogenous and endogenous constructs.

AVE, on the other hand, reveals the average amount of variation a latent construct is able to explain through its indicator or observed variables which are theoretically

related (Farrell & Rudd, 2009). AVE is calculated as the mean variance extracted for the items loading on a construct, of which, the value is calculated from standardised loading ($L_¡$), formularised as follows;

$$\text{AVE} = \frac{\sum_{i=1}^{n} L_1^2}{n}$$

Convergent validity is supported when reliability value is more than 0.6, while factor loading value of above 0.5 is considered a good value (Hair et al., 2010) even though some studies have accepted values above 0.3 and 0.45 as significant and reasonable (Demo, Neiva, Nunes, & Rozzett, 2012; Moffett & McAdam, 2009). As for AVE, any value of 0.5 and above is acceptable.

Discriminant validity is undertaken in this study to ascertain whether constructs are mutually exclusive. Discriminant validity acts to bestow uniqueness between constructs (Hair et al., 2006) and it is obtained when average variance extracted (AVE) is greater than squared correlation (Fornell & Larcker, 1981; Hair et al., 2006). The squared correlation is in actual fact, the shared variance between constructs (Farrell & Rudd, 2009).

3.11.3 Goodness of fit indices

Goodness of fit indices indicate how well a model describes sample data or how well the model reproduces observed covariance matrix among the indicator items (Byrne, 2010, Hair et al., 2010). Should the indices fall out of the acceptable level, confirmatory factor analysis (cfa) is undertaken to delete the items that do not synchronise well with the model's integrity towards matching theoretical factors and

actual data (Hair et al., 2010). The deletion is done, taking modification indices (MI) as the basis, whereby large MI indicates presence of factor cross loadings and error covariances (Byrne, 2010). In another word, modification index is calculated for every possible relationship that is not estimated in a model. Therefore, deletion is done based on modification index after which, X^2 value is reduced, likewise acceptable fit indices are achieved. Fit indices are established in two categories which are absolute fit and incremental fit.

Absolute fit indices reveal how well a model or the proposed theory fits sample data (Hooper, Coughlan, & Mullen, 2008). Chi square (X^2), degree of freedom (df), ratio, root mean square error of approximation (RMSEA) and GFI tests were also undertaken. Chi-square evaluates the discrepancy between sample and fitted covariance matrices, therefore a low X^2 is much preferred to reflect the model's representation of data (Hair et al., 2010) subsequently, a p value of more than 0.05 and ratio below 5.0 is acceptable (Awang, 2013). RMSEA indicates how well a model fits the population and not purely due to the game of chance by sample used for estimation. RMSEA value of below 0.08 is acceptable (Awang, 2013; Hair et al., 2010) meanwhile, GFI reflects the proportion of variance that is accounted for by estimated population covariance. GFI typically produces a fit statistic, discounting sensitivity to sample size. GFI value of above 0.9 is acceptable but 0.95 and above reflects a good fit (Awang, 2013; Hair et al., 2010).

Incremental fit indices evaluate the tendency of model to fit versus alternative base model. This study did analyse Tucker Lewis Index (TLI) and Comparative Fit Index (CFI). TLI compares X^2 value between model and null model whereas CFI, featuring

the same and additionally, takes sample size into consideration, expected to perform well even under small sample size. Value above 0.90 is acceptable for TLI and CFI whereas above 0.95 is considered a good fit (Awang, 2013; Hair et al., 2010).

3.11.4 Structural equation modelling

Structural equation modelling technique was employed in this study. SEM, even though has the same capacity of a multiple regression equation in terms of ability to simultaneously estimate multiple dependence relationship, has additional dexterity to correct measurement error, hence the strength of relationships between two factors can be assessed in a more accurate manner (Hair et al., 2010). As such, SEM is a multivariate procedure for testing both, construct validity and theoretical relationships among a set of concept, represented by multiple measured variables (Hair et al., 2010).

3.11.4.1 Hypotheses testing

Hypotheses are tested through a generated model which is derived after cfa. The main point of reference will be p value, whereby a value of less than 0.05 indicates rejection of null hypothesis or similarly $p < 0.05$ supports the alternative hypothesis as studied in this research. It is also stated as 0.05 level of significant or 95% confidence interval. The cut-off point 0.05 reflects the alpha level of 5% in tolerating error.

Standardised estimate value is also taken into account. Apparently, there are two types of estimates namely, standardised and unstandardized. Standardised estimate is derived after converting variables to a common scale thereby eliminate shortcomings due to different units of measurement (Hair et al., 2010). This research will report standardised value due to its multivariate nature of study. Standardised estimate value does indicate the effect on endogenous by exogenous variable, as such, higher value of standardised estimate (nearer to value 1) is always preferred to reflect strong significant relationship.

Subsequently, critical ratio value is reported. Critical ratio, which is also referred as t value is established by dividing unstandardized estimate with standard error. Standard error gives a picture of how much the coefficient varies between samples of the same size taken from population and as such, reflects the variation of estimated coefficient due to sampling error (Hair et al., 2010; Sekaran, 2003). The critical ratio for 0.05 significant level is equal to or more than 1.96 to support a hypothesis.

SEM is also apt to examine the mediating effect of a construct. Mediating effect is established when a third variable intervenes between two related constructs designed for investigation. As such, mediating effect of switching cost in this study is examined through bootstrapping method, which is available in structural equation modelling. Bootstrapping method is selected as it has proven to be a powerful way to test intervening effect, likewise to have the best type 1 error control (Hayes, 2009). Bootstrapping is also a preferred method against other mediation tests namely, Baron and Kenny likewise Sobel method, for it does not need to have assumption of normality on sampling distribution (Preacher & Hayes, 2008). In actual fact,

bootstrapping is conducted through repeated sampling of data set, normally 5000 repetitions whereby indirect effect is estimated from each resampled data which produces empirical approximation of indirect effects sampling distribution, employed to develop confidence interval for the indirect effect (Hayes, 2009; Preacher & Hayes, 2008).

3.12 Chapter Summary

Chapter three explains methodology and the theoretical framework of this study which has three exogenous variables, followed by one mediating variable and one endogenous variable. In addition to sampling, instrument was established based on validated past studies with excellent Cronbach alpha value, hence expects to deliver high reliability in this study too. This is followed by data collection method whereby sampling frame is determined in stratified manner before proceeding with the systematic data collection. Lastly, various data treatments were discussed in this chapter before wrapping up with data analysis method which is structural equation modelling.

CHAPTER 4

FINDINGS

4.1 Introduction

This chapter reports the statistical findings of analysis undertaken in this study. It commences with an overview of the response rate to the research survey, followed by demographic analysis, screening and then the data analysis.

4.2 Response Rate

A total of 1165 completed questionnaires were collected, recording a response rate of 91.7%. Of the 1165 questionnaires collected, 381 were from users of postpaid and 784 from prepaid users. After deducting the single U Mobile user which was from the postpaid group, and 16 from the prepaid group, the final questionnaires useable were 380 postpaid and 768 prepaid. In order to allow a comparison study between postpaid and prepaid, it is imperative to have number of respondents from postpaid and prepaid groups, equal or near to equal, thus to achieve better evaluation and representation (Rosenbaum & Spears, 2009). Furthermore, a large sample tends to pose problems, especially type 2 error (Sekaran, 2003), therefore postpaid users were scaled down further by selecting every other to achieve two-thirds of the postpaid group or 254 respondents. Similarly, 768 prepaid respondents were also scaled down to 256 by selecting every third respondent. In this way the final sample figure totalled 510 respondents comprising 254 postpaid and 256 prepaid respondents.

4.3 Demographic analysis

This section reveals characteristics of Malaysian mobile telecommunication users as presented in Table 4.1, which consists of 232 (45.5%) male and 278 (54.5%) female out of which, 3 (0.6%) have primary qualification, followed by the biggest group of 246 respondents (48.2%) with secondary qualification. Respondents with Diploma qualification is 53 (10.4%) followed by degree holders, 149 (29.2%), Masters qualification, 55 (10.8%) and PhD, 3 (0.6%). The remaining respondent, 1 (0.2%), belonged to another qualification group, such as a professional qualification. In terms of ethnicity composition, there were 212 (41.6%) Malay, followed by Chinese, 146 (28.6%), Indian, 125 (24.5%) and other races, 27 (5.3%).

Respondents were requested to state their age and later they were grouped into six intervals. The majority of respondents were in the age bracket of 26 to 35 years (41.4%) followed by a group from 16 to 25 years (26.5%), while 21.8% were in the age group of 36 to 45 years. The remaining three age groups of 46 to 55 years, 56 to 65 years and 66 to 75 years recorded 8.4%, 1.8% and 0.2% respectively. The biggest component of respondents (40%) earns between RM 1000.00 and RM 3000.00 monthly whereas respondents who obtained monthly income of between RM 3001.00 and RM 5000.00 constitute 28.2%. Respondents who earn between RM 5001 and RM 1000.00 monthly comprised 13.7% followed by 4.3% of respondents earning a monthly income of more than RM 10 000.00 while there were none earning below than RM 1000.00 monthly income. It was also noted that out of the 510 respondents, 13.7% did not earn any income as they were full time housewives, students and retirees. In terms of profession, 27.8% of respondents belonged to the

executive category, followed closely by non-executive group which recorded 27.1%, while 13.9 % of respondents were in the managerial category and 2.7% were Head of Department. The remaining 28.4% belonged to other categories such as students, retirees, etc.

Table 4.1

Demographic structure of respondents

Variables	**Frequency**	**Percentage**
Gender		
Male	232	45.5
Female	278	54.5
Education		
Primary	3	0.6
Secondary	246	48.2
Diploma	53	10.4
Degree	149	29.2
Masters	55	10.8
PhD	3	0.6
Others	1	0.2
Race		
Malay	212	41.6
Chinese	146	28.6
Indian	125	24.5
Others	27	5.3
Age		
16 - 25	135	26.5
26 - 35	211	41.4
36 - 45	111	21.8
46 - 55	43	8.4
56 - 65	9	1.8
66 - 75	1	0.2

Table 4.1 (continued)

Variables	Frequency	Percentage
Monthly income (RM)		
1000 - 3000	204	40
3001 - 5000	144	28.2
5001 - 10,000	70	13.7
More than 10,000	22	4.3
Not relevant	70	13.7
Profession		
Clerical/ non-clerical	138	27.1
Executive	142	27.8
Manager	71	13.9
Head of Department	14	2.7
Others	145	28.4

4.4 Usage Behaviour

This research has also gathered usage behaviour of mobile phone users through the questionnaires administered (refer Table 4.2). Among the 510 respondents, 39.4% were registered with MAXIS followed by 33.5% with Celcom and the remaining 27.1% respondents used DIGI as their mobile service provider. As far as plan type is concerned, prepaid which recorded 50.2% is the more common plan type compared to postpaid which recorded 49.8%. Samsung mobile phone model was the popular model among the respondents with 43.7% followed by iPhone and Nokia with 17.5% each. Blackberry users made up 7.6% followed by HTC, 2.7%, Alcatel 1.6% and other models occupying the remaining 9.4%.

The monthly mobile phone usage was also gathered whereby 35.1% of respondents were paying between RM 1 and RM 70.00 monthly followed by 34.5% paying between RM 71 and RM 140.00 monthly. This study also reveals that the remaining 30.4% of respondents have monthly bills of more than RM 141.00, such as 24.1%

paying between RM 141 and RM 210 monthly, 4.% between RM 211 and 280 monthly followed by 1.6% paying between RM 281 and RM 350 and 0.6% paying between RM 251 and RM 420.00 monthly.

The tendency of users to engage outgoing calls through alternative providers was also captured in the questionnaire. Among 510 respondents, 89% have resorted to leverage on web-based providers and 44.9% of the respondents have utilised more than one web-based provider. Apparently, WhatsApp has the highest percentage of respondents (32.5%) for single users followed by Viber (4.9%), Skype (2.4%), iTalk (1.6%) and others (2.7%). There were only 11% of respondents who refrained from engaging in web-based providers.

Table 4.2

Usage Behaviour

Variables	**Frequency**	**Percentage**
Service providers		
Celcom	171	33.5
MAXIS	201	39.4
DIGI	138	27.1
Plan type		
Postpaid	254	49.8
Prepaid	256	50.2

Table 4.2 (continued)

Variables	Frequency	Percentage
Phone Model		
iPhone	89	17.5
Samsung	223	43.7
Nokia	89	17.5
Blackberry	39	7.6
HTC	14	2.7
Alcatel	8	1.6
Others	48	9.4
Monthly Bill (RM)		
1 - 70	179	35.1
71 - 140	176	34.5
141 - 210	123	24.1
211 - 280	21	4.1
281 - 350	8	1.6
351 - 420	3	0.6
Web based connectivity		
WhatsApp	166	32.5
Viber	25	4.9
Skype	12	2.4
iTalk	8	1.6
Others	14	2.7
More than 1	229	44.9
None	56	11.0

4.5 Descriptive Results of Latent Variables

Descriptive variables' statistics were further gathered for overall latent variables and additionally, each call plan's statistics were derived altogether to provide a comparison snapshot.

4.5.1 Descriptive results of overall latent variables (N=510)

The descriptive variable is as shown in Table 4.3. The tangible construct, measured as a second order for perceived service quality, recorded highest mean (M=5.295, SD=0.751) followed by assurance (M=5.205, SD=0.744) and empathy (M=5.194, SD=0.818). Reliability and responsiveness did record lower mean than the overall perceived service quality (PSQ). Reliability (Mean=5.157, SD=0.853), responsiveness (M=5.108, SD=0.818) whereas PSQ had obtained higher mean (M =5.188, SD=0.657), similar to satisfaction which recorded mean value of 5.187 and standard deviation value of 0.937. After reliability and responsiveness, loyalty came in sequence (M= 4.980SD=0.986), trust (M=4.968, SD=0.997) and switching cost, recording lowest mean and highest standard deviation (M=4.623, SD=1.038) among all the other variables. The number of items ranges from five to seven in each variable.

Table 4.3

Descriptive statistic for overall latent variables (n=510)

Variables	Coding	Number of items	Minimum	Maximum	Mean	Std. Deviation
Loyalty	MLOY	7	1.43	7.00	4.980	0.986
Switching cost	MSC	7	1.29	6.86	4.623	1.038
Satisfaction	MSAT	6	1.17	7.00	5.187	0.937
Trust	MTRUST	5	1.40	7.00	4.968	0.997
Tangible	MTAN	5	1.00	7.00	5.295	0.751
Reliability	MREL	5	2.00	7.00	5.157	0.853
Responsiveness	MRES	6	1.67	7.00	5.108	0.818
Assurance	MASR	5	2.20	7.00	5.205	0.744
Empathy	MEMP	5	2.00	7.00	5.194	0.818
PSQ Overall	MPSQ	26	2.27	6.96	5.188	0.657

4.5.2 Descriptive statistics for latent postpaid (n=254) and prepaid (n=256) variables

Snapshot of descriptive variables categorised by call plan, postpaid and prepaid is undertaken in this study, shown in Table 4.4. The outcome reflects five out of nine variables, having better mean value for postpaid as compared to prepaid. The five variables are satisfaction, reliability, responsiveness, assurance, and empathy. In fact, overall perceived service quality which encapsulates five SERVQUAL dimensions revealed better mean value for postpaid (M=5.204) compared to prepaid (M=5.173). The remaining four variables which have higher mean value for prepaid are loyalty (M=4.988), switching cost (M=4.658), trust (M=4.981) and tangible (M=5.320).

Table 4.4

Descriptive statistics for postpaid and prepaid latent variables

Variables	**Number of items**	**Minimum**		**Maximum**		**Mean**		**Std Deviation**	
		Postpaid	Prepaid	Postpaid	Prepaid	Postpaid	Prepaid	Postpaid	Prepaid
Loyalty	7	1.43	1.57	7.00	7.00	4.971	4.988	0.958	1.014
Switching cost	7	1.29	1.71	6.86	6.86	4.587	4.658	1.034	1.042
Satisfaction	6	1.83	1.17	7.00	7.00	5.208	5.164	0.918	0.957
Trust	5	1.40	2.00	7.00	7.00	4.955	4.981	1.008	0.986
Tangible	5	1.00	3.00	7.00	7.00	5.270	5.320	0.800	0.699
Reliability	5	2.20	2.00	7.00	7.00	5.185	5.128	0.824	0.881
Responsiveness	6	2.17	1.67	7.00	7.00	5.120	5.096	0.815	0.821
Assurance	5	2.20	2.40	7.00	7.00	5.229	5.181	0.702	0.782
Empathy	5	2.00	2.20	7.00	6.40	5.234	4.638	0.792	0.608
PSQ Overall	26	2.27	2.35	6.96	6.92	5.204	5.173	0.655	0.661

4.6 Data Screening

The gathered responses were screened to ensure readiness for statistical analysis. Therefore, data screening activities were done, in the likes of missing data treatment, response bias, outlier and normality.

4.6.1 Missing data

There were no missing data, due to the fact that personally administered questionnaire allows researcher's detection of missing value upon questionnaire completion by respondents. Nevertheless 17 questionnaires were eliminated from this study as the respondents were customers of U Mobile, not a selected category in this study.

4.6.2 Response Bias

The response bias analysis was done by dividing respondents into two groups, labelling 1 for respondents 1 till 255 followed by label 2 for respondents 256 till 510. An independent sample t test conducted to ascertain existence of differences between group I and group 2 resulted in t value for all the variables, less than 1.96 and p value more than 0.05, hence clearly indicating no differences between group 1 and group 2 (refer Table 4.5).

Table 4.5

Response Bias

Variable	t value	p value
MSAT	0.669	0.826
MTRUST	0.346	0.589
MTAN	0.931	0.343
MREL	0.623	0.967
MRES	0.244	0.543
MASR	-0.250	0.645
MEMP	1.290	0.552
MSC	0.061	0.640
MLOY	1.917	0.561

4.6.3 Outlier

This research was conducted with 51 observed variables, therefore the recommended chi-square threshold is 87.968 (p = 0.001). As such, any value above 87.968 is to be deleted. However, the prevailing values were all below the stipulated threshold, hence none of the questionnaires were eliminated. The maximum Mahalanobis Distance value recorded in this study is 43.29759. Value for each respondent is presented in Appendix 3.

4.6.4 Normality assessment

The normality test done through cumulative distribution function has suggested maximum transformation of twice in this study as there were some items which did not bear the desired critical ratio value of ± 2 after first transformation. As such 'TT' is labelled for double transformation whereas 'T" represents single transformation.

The transformed items were fulfilling normality's assumption except for TTSC6 (refer Table 4.6), nevertheless for sample size of more than 200, non normal data will

have negligible impact (Hair et al., 2010). As such, this study will include TTSC6 in analysis. Similar comparison between multivariate normality indices, before and after transformation is presented in Appendix 4.

Table 4.6

Normality assessment (AMOS output)

Variable	**Item**	**skew**	**c.r**	**kurtosis**	**c.r**
Satisfaction	TTSAT1	-0.011	-0.100	-1.511	-6.967
	TSAT2	-0.137	-1.261	-1.038	-4.783
	TSAT3	-0.195	-1.798	-1.032	-4.759
	TTSAT4	-0.070	-0.642	-1.307	-6.025
	TTSAT5	-0.049	-0.449	-1.226	-5.650
	TSAT6	-0.198	-1.827	-0.920	-4.243
Trust	TTTRUST1	-0.169	-1.557	-1.128	-5.202
	TTTRUST2	-0.191	-1.759	-1.175	-5.415
	TTRUST3	-0.161	-1.487	-0.779	-3.590
	TTTRUST4	-0.179	-1.653	-1.086	-5.006
	TTTRUST5	-0.091	-0.843	-1.109	-5.114
Tangible	TTAN1	-0.085	-0.788	-1.083	-4.993
	TTAN2	-0.018	-0.163	-1.122	-5.172
	TTAN3	-0.107	-0.986	-1.090	-5.023
	TTAN4	0.038	0.351	-1.025	-4.725
	TTAN5	0.100	0.923	-1.157	-5.334
Reliability	TTREL1	-0.141	-1.303	-1.119	-5.159
	TREL2	-0.154	-1.417	-0.806	-3.714
	TTRREL3	-0.067	-0.618	-1.354	-6.243
	TREL4	-0.139	-1.285	-0.883	-4.069
	TREL5	-0.191	-1.764	-0.700	-3.225
Responsiveness	TTRES1	-0.227	-2.091	-1.161	-5.354
	TRES2	-0.160	-1.478	-0.633	-2.917
	TRES3	0.034	0.311	-0.847	-3.902
	TRRES4	-0.079	-0.732	-0.942	-4.341
	TRES5	-0.068	-0.623	-0.689	-3.174
	TTRES6	-0.170	-1.570	-1.311	-6.043

Table 4.6 (continued)

Variable	Item	skew	c.r	kurtosis	c.r
Assurance	TASR1	0.039	0.359	-0.887	-4.088
	TRASR2	-0.008	-0.075	-1.126	-5.192
	TASR3	0.083	0.763	-0.903	-4.161
	TASR4	-0.169	-1.557	-0.733	-3.379
	TASR5	-0.027	-0.251	-1.106	-5.099
Empathy	TTEMP1	-0.022	-0.202	-1.024	-4.721
	TEMP2	-0.204	-1.877	-0.650	-2.998
	TEMP3	-0.041	-0.376	-1.101	-5.076
	TREMP4	-0.155	-1.426	-0.992	-4.572
	TTEMP5	-0.128	-1.182	-1.180	-5.442
Switching Cost	TTSC1	-0.221	-2.037	-1.044	-4.810
	TTSC2	-0.160	-1.473	-1.194	-5.503
	TTRSC3	-0.169	-1.557	-1.263	-5.823
	TTSC4	-0.287	-2.646	-1.494	-6.887
	TTSC5	-0.275	-2.534	-1.504	-6.935
	TTSC6	-0.366	-3.376	-1.062	-4.895
	TTSC7	-0.187	-1.724	-1.481	-6.829
Loyalty	TLOY1	-0.089	-0.824	-0.831	-3.832
	TTLOY2	-0.088	-0.807	-1.140	-5.255
	TTLOY3	-0.105	-0.970	-1.148	-5.291
	TLOY4	-0.011	-0.103	-1.286	-5.928
	TTRLOY5	-0.111	-1.021	-1.453	-6.696
	TTLOY6	-0.075	-0.693	-1.323	-6.100
	TTLOY7	-0.063	-0.578	-1.200	-5.532

4.7 Convergent and discriminant validity

4.7.1 Reliability

Reliability test conducted in this study produced acceptable value for each construct.

The readings of Cronbach alpha are all above 0.7 (refer Table 4.7), reflecting good

convergent validity. Similarly, composite reliability for each construct also garnered acceptable value of above 0.7 (Hair et al., 2007; Sekaran, 2003).

Table 4.7

Reliability

Variable	Coefficient reliability	Composite reliability
Satisfaction	0.917	0.987
Trust	0.924	0.988
Tangible	0.849	0.974
Reliability	0.816	0.971
Responsiveness	0.845	0.978
Assurance	0.796	0.965
Empathy	0.810	0.947
Switching cost	0.843	0.943
Loyalty	0.886	0.983

4.7.2 Factor loadings and fit indices (individual construct)

The measurement model's (individual construct) factor loadings of initial and fit model are presented in Table 4.8. Meanwhile, the goodness of fit indices for measurement model (fit) is shown in Table 4.9. This is followed by the figures and indices, comparing initial and fit measurement model (refer Appendix 5). The initial factor loadings value in this study did fulfil loadings value above 0.5 for 46 items, supporting convergent validity except for 5 items. After cfa, a total of 13 items were deleted, consisting three items from initial low factor loadings value (TTSC1, TTSC2 and TLOY4). The remaining two items (TRASR2 and TTRSC3) still reported low

factor loading values of 0.376 and 0.332 each, were retained in this study and captured under watchful items for structural model cfa, as there were some studies suggesting factor loadings value above 0.3 and 0.45 as significant (Demo et al., 2012; Moffett & McAdam, 2009). Meanwhile, it was also noted that after 13 deletions, the overall indices for individual construct fulfilled the fit values except for tangible and reliability dimensions under perceived service quality construct. P value for tangible and reliability stood at 0.019 and 0.010 respectively which in actual fact, should be above 0.05. Similarly, RMSEA for reliability was reported as 0.085, higher than the recommended (below 0.08) nevertheless, these are the 'getting ready' phases towards structural model testing and therefore, only provide a rough feel of those indices before the overall measurement and model testing is conducted.

Table 4.8

Factor loadings of measurement model (before and after fit)

Variable name	**Code**	**Statement**	**Factor loading before fit**	**Factor loading after fit**
Satisfaction	TTSAT1	I am satisfied about my decision to purchase from this mobile service provider.	0.704	0.662
	TSAT2	I think I did the right thing by buying from this mobile service provider.	0.743	
	TSAT3	My choice to use mobile services from this service provider was a wise one.	0.67	0.657
	TTSAT4	I am happy with the efforts this mobile provider is making towards regular customers like me.	0.788	
	TTSAT5	The mobile service provider has met my expectations.	0.819	0.824
	TSAT6	Overall, I am satisfied with this mobile service provider.	0.877	0.896

Table 4.8 (continued)

Variable name	Code	Statement	Factor loading before fit	Factor loading after fit
Trust	TTTRUST1	I believe that I can trust this mobile provider will always be honest to me.	0.85	0.857
	TTTRUST2	I trust this mobile provider keeps my best interest in mind.	0.783	0.797
	TTRUST3	I believe the information provided by my mobile provider.	0.761	
	TTTRUST4	My mobile service provider can be relied upon to keep promises.	0.792	0.775
	TTTRUST5	I have full confidence in my mobile service provider.	0.876	0.871
Tangible	TTAN1	The mobile service provider is equipped with the latest information technology.	0.701	0.747
	TTAN2	The physical facilities are visually appealling.	0.758	0.833
	TTAN3	The employees are well dressed and appear neat to show professionalism.	0.597	0.591
	TTAN4	Materials associated with the mobile service (such as pamphlets etc) are visually appealling.	0.728	
	TTAN5	Appearance of physical facilities is in keeping with the type of services provided.	0.763	0.657
Reliability	TTREL1	When a service provider promises to do something by certain time, it does so.	0.676	0.749
	TREL2	When customers have problem, the service provider shows a sincere interest in solving it.	0.713	0.756
	TTRREL3	The service provider seldom deliver it's services at the time it promises to do so.	0.586	0.591
	TREL4	The mobile service provider able to connect calls during peak hours.	0.613	
	TREL5	The service provider always able to connect calls at the first attempt.	0.749	0.646
Responsiveness	TTRES1	The employees tell me exactly when the services will be performed.	0.713	0.645
	TRES2	The employees give me a prompt service.	0.836	
	TRES3	The employees are always willing to help me.	0.773	0.742
	TRRES4	The employees are always too busy to respond to my requests.	0.533	0.552
	TRES5	Employees takes my queries seriously.	0.651	0.721
	TTRES6	Employees always share the new product offering.	0.550	0.597

Table 4.8 (continued)

Variable name	Code	Statement	Factor loading before fit	Factor loading after fit
Assurance	TASR1	I feel safe in transactions with the service provider.	0.635	
	TRASR2	I experience very high premature termination of calls.	0.402	0.376
	TASR3	The employees are consistently courteous with customers.	0.719	0.663
	TASR4	The employees have knowledge to answer customers' questions.	0.749	0.796
	TASR5	Employees get adequate support from the company to do their jobs well.	0.685	0.705
Empathy	TTEMP1	The service provider gives customers' individual attention.	0.793	0.712
	TEMP2	The employees understand customers' specific needs.	0.818	
	TEMP3	The service provider has operating hours and location convenient to all it's customers.	0.534	0.577
	TREMP4	The employees seldom give individual attention.	0.558	0.597
	TTEMP5	The employees supply details on calls if required.	0.507	0.543
Switching cost	TTSC1	I will lose discounts and special deals if I switch mobile service provider.	0.373	
	TTSC2	I hesitate to switch from my existing provider because I enjoy certain privileges, I would not receive elsewhere.	0.389	
	TTRSC3	I will not lose benefits of being a loyal customer if I switch to a new mobile telecommunication provider.	0.403	0.332
	TTSC4	If I switched, I may lose the friendship I have developed.	0.872	0.894
	TTSC5	If I switched, I might lose an important personal relationship.	0.881	0.909
	TTSC6	I am more comfortable interacting with the people working for my service provider than I would be if I switched service providers.	0.612	
	TTSC7	I would miss working with the people at my service provider if I switched providers.	0.661	0.620

Table 4.8 (continued)

Variable name	Code	Statement	Factor loading before fit	Factor loading after fit
Loyalty	TLOY1	As long as the present service is given, I would always continue to choose my current service provider.	0.787	0.838
	TTLOY2	I will surely patronize same service provider if I need a new line in future.	0.779	0.801
	TTLOY3	I will use more from this service provider in future.	0.771	0.758
	TLOY4	I would readily pay more for the same service.	0.464	
	TTRLOY5	When I have to establish a call/text, this service provider is not my first choice.	0.556	0.563
	TTLOY6	I consider myself to be a loyal customer of this service provider.	0.790	0.731
	TTLOY7	I'm dedicated to be a customer of this service provider.	0.818	

Table 4.9

Goodness of fit indices for measurement model (individual constructs)

Variable name	X^2	DF	RATIO	GFI	CFI	TLI	RMSEA	P
Satisfaction	3.570	2	1.785	0.997	0.998	0.995	0.039	0.168
Trust	4.523	2	2.262	0.995	0.998	0.994	0.050	0.104
Tangible	7.906	2	3.953	0.993	0.991	0.972	0.076	0.019
Reliability	9.301	2	4.651	0.991	0.987	0.960	0.085	0.010
Responsiveness	10.479	5	2.096	0.992	0.991	0.983	0.046	0.063
Assurance	3.221	2	1.610	0.997	0.997	0.992	0.035	0.200
Empathy	2.785	2	1.392	0.997	0.998	0.993	0.028	0.248
Switching cost	1.711	2	0.855	0.998	1.000	1.001	0.000	0.425
Loyalty	6.217	5	1.243	0.995	0.999	0.998	0.022	0.286

4.7.3 Fit indices (exogenous construct)

The initial fit indices and after cfa fit indices are presented in Table 4.10. The initial

value, GFI (0.877) and p value (0.000) did not meet the minimum requirement for fit indices. After conducting cfa whereby 18 items were deleted, the fit value prevailed for each parameter. The initial and fit models are presented in Appendix 6.

Table 4.10

Goodness of fit for exogenous model

Variable name	X^2	DF	RATIO	GFI	CFI	TLI	RMSEA	P
Initial	1265.52	621	2.038	0.877	0.934	0.929	0.045	0.000
Fit	167.507	144	1.163	0.967	0.994	0.993	0.018	0.088

4.7.4 Fit indices (endogenous construct)

The initial and after cfa fit indices are presented in Table 4.11. Altogether, eight items were deleted to achieve the recommended fit indices, reflected at the fit endogenous model. The initial and fit models are both exhibited in Appendix 7.

Table 4.11

Goodness of fit for endogenous model

Variable name	X^2	DF	RATIO	GFI	CFI	TLI	RMSEA	P
Initial	833.665	76	10.969	0.783	0.789	0.747	0.14	0.000
Fit	12.070	8	1.509	0.992	0.996	0.993	0.032	0.148

4.7.5 Discriminant validity

The average variance extracted (AVE) in this study is greater than correlation square (refer Tables 4.12 and 4.13) thereby, confirming discriminant validity, likewise

explains the absence of multi-collinearity. The correlation validity is opted out in this research due to the fact that high correlations (0.9) produce significant differences in fit (Hair et al., 2007) hence may not provide strong evidence for discriminant validity.

Table 4.12

Average variance extracted (AVE)

Variable name	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Satisfaction (1)	1.000								
Trust (2)	0.996	1.000							
Tangible (3)	0.995	0.995	1.000						
Reliability (4)	0.995	0.995	0.994	1.000					
Responsiveness (5)	0.995	0.995	0.994	0.994	1.000				
Assurance (6)	0.994	0.995	0.993	0.993	0.993	1.000			
Empathy (7)	0.994	0.995	0.993	0.993	0.993	0.993	1.000		
Switching cost (8)	0.994	0.994	0.992	0.992	0.993	0.992	0.992	1.000	
Loyalty (9)	0.995	0.995	0.994	0.994	0.994	0.993	0.993	0.993	1.000

Table 4.13

Correlation and correlation squared

Variable name	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Satisfaction (1)	1.000	0.516	0.306	0.404	0.387	0.426	0.394	0.099	0.396
Trust (2)	0.718***	1.000	0.346	0.526	0.460	0.446	0.373	0.099	0.366
Tangible (3)	0.553***	0.588***	1.000	0.358	0.283	0.286	0.289	0.084	0.223
Reliability (4)	0.636***	0.725***	0.598***	1.000	0.729	0.623	0.529	0.122	0.477
Responsiveness (5)	0.622***	0.678***	0.532***	0.854***	1.000	0.689	0.593	0.116	0.423
Assurance (6)	0.653***	0.668***	0.535***	0.789***	0.830***	1.000	0.692	0.116	0.552
Empathy (7)	0.628***	0.611***	0.538***	0.727***	0.770***	0.832***	1.000	0.152	0.404
Switching cost (8)	0.314***	0.314***	0.289***	0.349***	0.341***	0.340***	0.390***	1.000	0.260
Loyalty (9)	0.629***	0.605***	0.472***	0.691***	0.650***	0.743***	0.636***	0.510***	1.000

Note: Lower diagonal is correlation statistics and upper diagonal is correlation squared.

4.8 Structural model

Hypothesised structural model is shown in Figure 4.1. The model's indices, GFI, CFI and TLI were slightly below recommended value except for RMSEA (0.051) which fell within the acceptable mark (below 0.08). As expected earlier, the generated model produced fit values after confirmatory factor analysis. The confirmatory factor analysis was done by following modification indices principles for deletion whereby 31 predictors were deleted. Figure 4.2 depicts generated structural model. The indices of the initial and generated model are shown in Table 4.14.

Table 4.14

Goodness of fit for structural model

Variable name	**X^2**	**DF**	**RATIO**	**GFI**	**CFI**	**TLI**	**RMSEA**	**P**
Initial	2783.651	1209	2.302	0.812	0.886	0.88	0.051	0.000
Generated	175.798	155	1.134	0.968	0.995	0.994	0.016	0.121

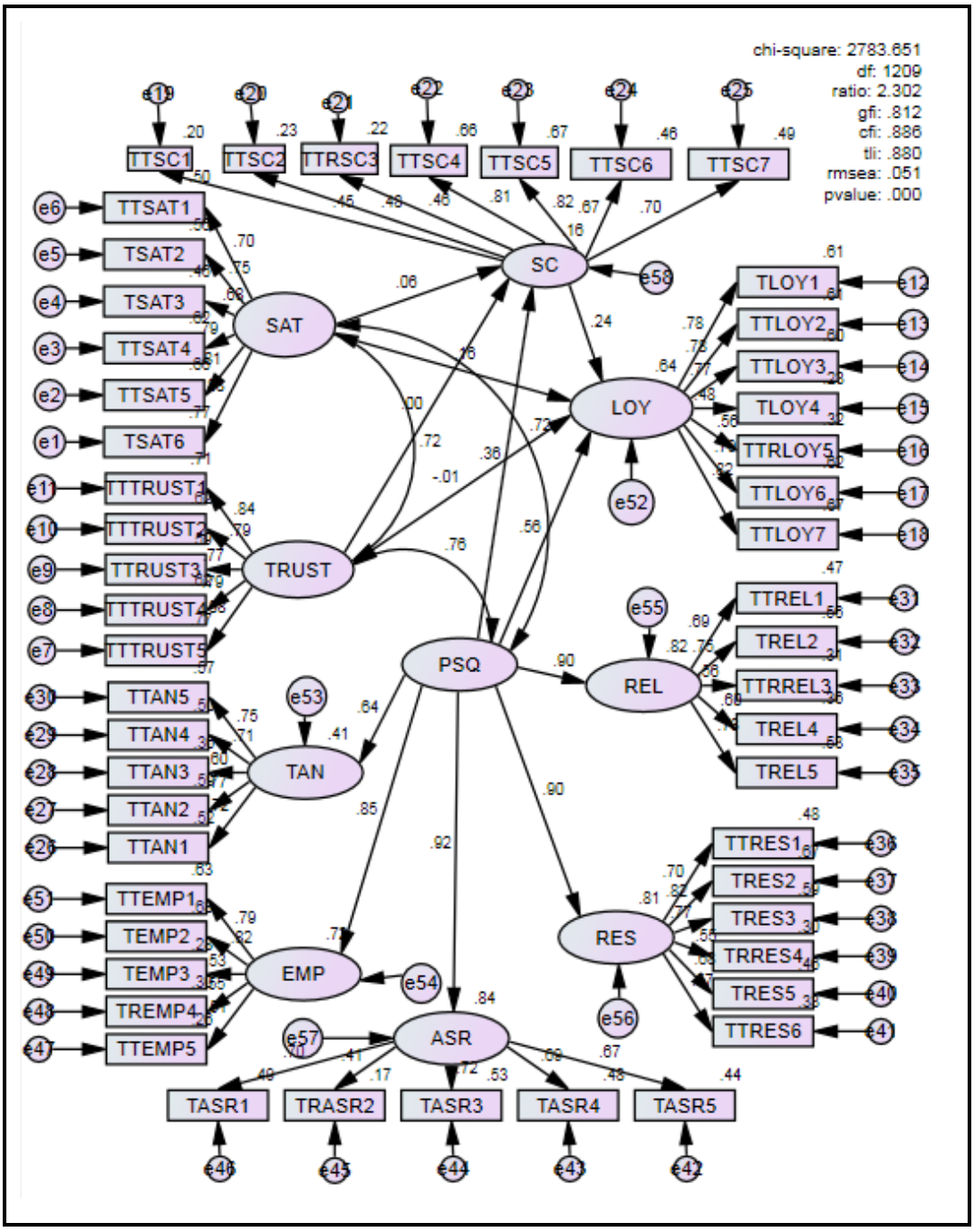

Figure 4.1
Hypothesized structure model

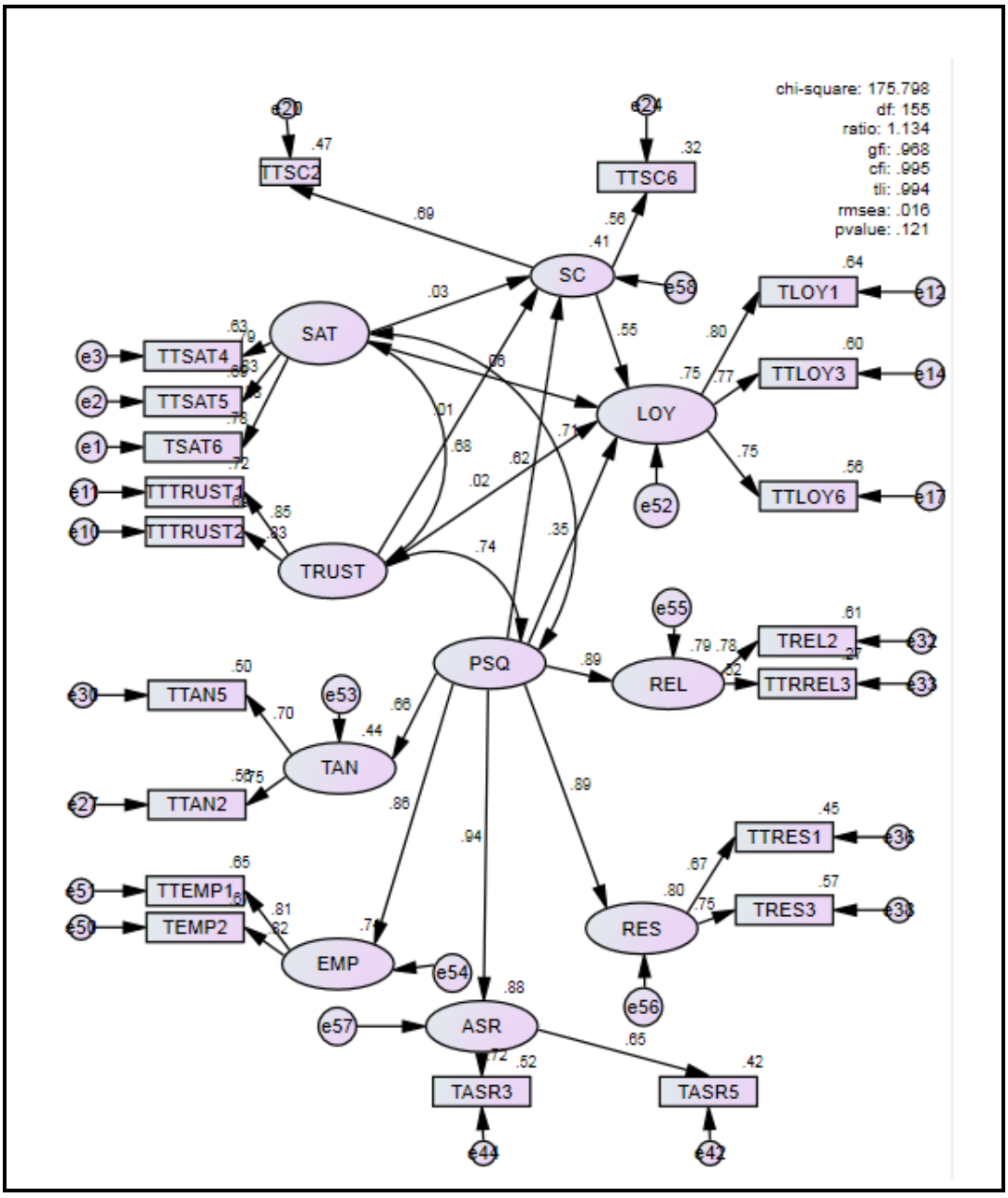

Figure 4.2
Generated model

4.9 Hypotheses testing

Hypotheses' testing is conducted based on generated model. This study's hypotheses' testing is basically channelled to three segments, namely direct effect,

indirect effect and comparison between postpaid and prepaid users. Along the same notion, this research has been designed with 17 hypotheses in total, out of which, seven are measuring direct effect followed by three indirect effect and seven hypotheses to compare postpaid and prepaid users.

4.9.1 Direct effect

Hypotheses one to seven pertain to measuring direct relationship (refer Table 4.15). The results demonstrate hypothesis three (H3), hypothesis four (H4) and hypothesis seven (H7) being significant. As such, this study has revealed that perceived service quality has significant relationship with loyalty (ß=0.348, CR=3.322, $p < 0.05$). Similarly, the result has shown that perceived service quality has significant relationship with switching cost (ß=0.616, CR= 4.963, $p < 0.05$) likewise switching cost too has significant relationship with loyalty (ß=0.548, CR=5.535, $p < 0.05$).

Table 4.15

Direct Effect

Hypothesis	Construct relationship	Standardized regression	Critical ratio	P value	Verdict
H1	Loyalty ⟵ Satisfaction	0.062	0.919	0.358	Not sig
H2	Loyalty ⟵ Trust	0.017	0.228	0.819	Not sig
H3	Loyalty ⟵ PSQ	0.348	3.322	***	Sig
H4	Loyalty ⟵ Switching cost	0.548	5.535	***	Sig
H5	Switching cost ⟵ Satisfaction	0.031	0.329	0.742	Not sig
H6	Switching cost ⟵ Trust	0.007	0.068	0.946	Not sig
H7	Switching cost ⟵ PSQ	0.616	4.963	***	Sig

4.9.2 Indirect effect

Indirect effect permeates an array of relationships with at least one intervening construct, thereby introduces a third variable between two constructs (Asyraf, 2014; Hair et al., 2010). As such, indirect effect in this study is designed to be tested as a mediator by introducing a third variable, switching cost to intervene between two constructs. Mediation test were accomplished through bootstrapping method. A variable is considered mediator when it bears the influence of exogenous to endogenous variable (Preacher & Selig, 2012) and in bootstrapping method, occurrence of mediation is confirmed by determining upper and lower bound values, given a 95% confidence interval. Similarly, a bias corrected and accelerated confidence interval is also established through bootstrapping, done by adjusting the end points, The mediation is supported when value of zero does not appear between the lower and upper bound value.

The mediator test results, bias corrected inclusive conducted through bootstrapping method is shown in Table 4.16. The results reveal that switching cost is not a mediator between satisfaction and loyalty relationship (H8) likewise for trust and loyalty relationship (H9) as the lower and upper bound values are sprawled beyond zero in between. The H10, which posits switching cost as the mediator between perceived service quality and loyalty resulted in (ß=0.338, Z=3.595) and as indicated by Preacher and Hayes (2008), the indirect effect, 0.338, 95% Boot CI (LL=0.193, UL=0.564) does not straddle a zero in between indicating there is mediation, thus supporting H10. The result was also reiterated further in bias corrected bootstrapping method.

Table 4.16

Indirect effect

	Point estimate	Product of coefficients		Bootstrapping			
				Percentile 95% CI		BC 95% CI	
		SE	Z	Lower	Upper	Lower	Upper
Satisfaction	0.017	0.061	0.278	-0.096	0.139	-0.096	0.140
Trust	0.004	0.067	0.060	-0.128	0.140	-0.127	0.141
PSQ	0.338	0.094	3.595	0.193	0.564	0.193	0.565

4.9.3 Comparison study

The comparison study between postpaid and prepaid user group on exogenous and endogenous construct is done through multigroup analysis. The construct is measured equally among these two groups, which concurred with the notion that theoretical structure is the same for both (Byrne, 2004). The results (refer Table 4.17) indicate that perceived service quality and loyalty construct is the only relationship that has a distinct difference between postpaid and prepaid segments. Postpaid segment recorded significance (ß=0.425; p=0.001) whereas prepaid was not significant (ß= 0.281; p >0.05). This outcome does support H13 in reflecting differences between postpaid and prepaid users. Other constructs did reveal consistent relationship between postpaid and prepaid segment whereby both were significant for switching cost and loyalty, similar to perceived service quality and loyalty relationships. Remaining relationships such as satisfaction and loyalty, trust and loyalty, satisfaction and switching cost followed by trust and switching cost resulted in being insignificant for both the user group of postpaid and prepaid. Therefore, H11, H12, H14, H15, H16 and H17 were not supported.

Table 4.17

Postpaid and Prepaid comparison

Construct	Standardized regression weight		
	Postpaid/ significance	**Prepaid/ significance**	**Verdict**
Satisfaction - loyalty	-0.064 / (ns)	0.186 / (ns)	H11 not supported
Trust - loyalty	0.090 / (ns)	-0.070 / (ns)	H12 not supported
PSQ - loyalty	0.425 / (sig, p=0.001)	0.281 / (ns)	H13 supported
Switching cost - loyalty	0.534/ (***)	0.551 / (sig, p=0.001)	H14 not supported
Satisfaction - switching cost	-0.046 / (ns)	0.104 / (ns)	H15 not supported
Trust - Switching cost	0.064 / (ns)	-0.060 / (ns)	H16 not supported
PSQ - Switching cost	0.591/ (***)	0.673 / (***)	H17 not supported

4.9.4 Squared Multiple Correlations for Endogenous Variables

The squared multiple correlation (R^2) for switching cost is 0.41 whereas loyalty is recorded at 0.75. These readings indicate that 41% of switching cost variance is being explained by satisfaction, trust and perceived service quality and for loyalty, 75% variance is explained by switching cost together with satisfaction, trust and perceived service quality.

4.10 Summary

This chapter delivers finding of research after undertaking data analysis through SEM. Prior to data analysis, the structural model was put through confirmatory factor analysis to ensure acceptable goodness of fit indices, after which it was referred to as the revised model, encapsulating retained items (refer Table 4.18). It is also noted

that all five items which had factor loading less than 0.5 were treated, of which four were factored out and the remaining one item, (TTSC2) experienced elevated factor loading to 0.69. The outcome of data analysis, in general has supported three out of seven direct hypotheses. As for indirect relationship (mediator), there were three hypotheses and apparently H10 was supported to render switching cost as the mediator for perceived service quality and loyalty relationship. The comparison study, on the other hand posits that only perceived service quality and loyalty relationship differs between postpaid and prepaid users, thus significant for postpaid and insignificant for prepaid. The snapshot of verdicts is condensed in Table 4.19 and analysis output (AMOS) is exhibited in Appendix 8.

Table 4.18

Retained predictors, construct and factor loading

Variable	**Code**	**Item**	**Factor loading**
Satisfaction	TTSAT4	I am happy with the efforts this service provider is making towards regular customers like me.	0.79
	TTSAT5	The mobile service provider has met my expectations.	0.83
	TSAT6	Overall, I am satisfied with this mobile service provider.	0.88
Trust	TTTRUST1	I believe that I can trust this service provider will always be honest to me.	0.85
	TTTRUST2	I trust this service provider keeps my best interest in mind.	0.83

Table 4.18 (continued)

Variable	Code	Item	Factor loading
Perceived Service Quality	TTAN2	The physical facilities are visually appealling.	0.75
	TTAN5	Appearance of physical facilities is in keeping with the type of services provided.	0.70
	TREL2	When customers have problem, the service provider shows a sincere interest in solving it.	0.78
	TTREL3	The service provider seldom deliver it's services at the time it promises to do so.	0.52
	TTRES1	The employees tell me exactly when the services will be performed.	0.67
	TRES3	The employees are always willing to help me.	0.75
	TASR3	The employees are consistently courteous with customers.	0.65
	TASR5	Employees get adequate support from the company to do their jobs well.	0.72
	TTEMP1	The service provider gives customers' individual attention.	0.81
	TEMP2	The employees understand customers' specific needs.	0.82
Switching cost	TTSC2	I hesitate to switch from my existing provider because I enjoy certain privileges, I would not receive elsewhere.	0.69
	TTSC6	I am more comfortable interacting with the people working for my service provider than I would be if I switched service providers.	0.56
Loyalty	TLOY1	As long as the present service is given, I would always continue to choose my current service provider.	0.80
	TTLOY3	I will use more from this service provider in future.	0.77
	TTLOY6	I consider myself to be a loyal customer of this service provider.	0.75

Table 4.19

Research objectives, hypotheses and verdict

Research objective	**Hypothesis**	**Verdict**
1. To examine direct relationship between satisfaction, trust, perceived service quality and switching cost to loyalty in mobile telecommunication.	H1. Satisfaction has significant relationship with loyalty.	Not supported
	H2. Trust has significant relationship with loyalty.	Not supported
	H3. Perceived service quality has significant relationship with loyalty.	Supported
	H4.Switching cost has significant relationship with loyalty.	Supported
2. To examine direct relationship between satisfaction, trust and perceived service quality to switching cost in mobile telecommunication.	H5.Satisfaction has significant relationship with switching cost.	Not supported
	H6.Trust has significant relationship with switching cost.	Not supported
	H7.Perceived service quality has significant relationship with switching cost.	Supported
3. To examine the mediating effect of switching cost between satisfaction-loyalty, trust-loyalty and perceived service quality - loyalty in mobile telecommunication.	H8.Switching cost mediates the relationship between satisfaction and loyalty	Not supported
	H9.Switching cost mediates the relationship between trust and loyalty	Not supported
	H10.Switching cost mediates the relationship between perceived service quality and loyalty	Supported
4. To compare the differences between postpaid and prepaid users pertaining to satisfaction-switching cost, trust-switching cost, perceived service quality-switching cost, switching cost-loyalty, trust-loyalty and perceived service quality-loyalty.	H11.Satisfaction-loyalty relationship is different between postpaid and prepaid users.	Not supported
	H12.Trust-loyalty relationship is different between postpaid and prepaid users.	Not supported
	H13.Perceived service quality -loyalty relationship is different between postpaid and prepaid users.	Supported
	H14.Switching cost-loyalty relationship is different between postpaid and prepaid users.	Not supported
	H15.Satisfaction-switching cost relationship is different between postpaid and prepaid users.	Not supported
	H16.Trust-switching cost relationship is different between postpaid and prepaid users.	Not supported
	H17.Perceived service quality -switching cost relationship is different between postpaid and prepaid users.	Not supported

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter deliberates on the research findings by mapping them back to the research objectives and prevailing literatures. It commences by discussing respective findings with the outcome of past studies and literature. The second section points to the implication to practitioners, academicians and customers before proceeding with limitations of study in the third section. This research wraps up with suggestions and recommendations for future study.

5.2 Deliberation on Research findings

This study encapsulates 17 hypotheses in total, of which, five were supported. The overall research findings are discussed in this section, in line with the premeditated respective objectives.

5.2.1 Outcome of Research Objective One

Objective One has four hypotheses of which two were supported. The verdict did not support H1 and H2 but nevertheless, supported H3 and H4 where perceived service quality and switching cost, having an effect on loyalty.

The role of service quality is to advocate loyalty which had produced significant results in previous research (Aydin & Ozer, 2005; Blery et al., 2009; Boohene & Agyapong, 2011; Ishaq, 2012; Pearson et al., 2012; Roy et al., 2014; Yu et al., 2006) and the depth of its impact, is also observed when all SERVQUAL dimensions proved to be significant predictors of loyalty in the mobile telecommunication industry as highlighted by Alnsour et al. (2014). This was also mirrored in the study done by Izogo and Ogba (2015) on Nigerian automobile industry.

The results definitely supports the notion that service quality is a vital predictor of loyalty in services industry, especially in the mobile telecommunication industry of Malaysia, which is in contrast to the view of Yang and Peterson (2004) that the cognitive element is built based on brand. It is henceforth, not surprising to note that service quality has garnered lots of attention among academicians and practitioners over the past few decades (Santouridis & Trivellas, 2010). In fact, the decision by most companies in the service industry to inculcate quality as their mission or vision statement while engaging in continuous promotional activities such as extra air time, discounts and frequent flyers program, is testimony to the importance of service quality. This can be seen in Celcom, Malaysia's leading mobile telecommunication provider who emphasizes commitment to service quality in their vision and mission statements (http://www.celcom.com.my/corporate/aboutus/vision and mission). In fact, Telekom Malaysia, the leading telecommunication provider in Malaysia has also positioned customer centricity and quality improvements as their maiden strategy, to achieve vision and mission.

The outcome of Hypothesis 3 is also in tandem with sentiment that in a highly competitive industry such as the mobile telecommunication where customers face almost homogenous products, perceived service quality, which is derived from customers' judgement, acts as the niche and paves the way for stronger bonding (Zeithaml et al., 1996) which goes all the way to the cognitive level and encourages repeat purchase. Service providers, should, for this obvious reason, position service quality as of paramount importance and consequently, maximize service quality in the quest to enhance loyalty.

Switching cost and loyalty relationship were also supported in various studies of mobile telecommunication (Aydin & Ozer, 2005; Chadha & Kapoor, 2009; Edward & Sahadev, 2011; Lee & Murphy, 2008; Liu et al., 2011; Sujatha & Chandrika, 2013) and its position was further confirmed when studies in other competitive industries such as ISP (Cheng et al., 2008; Tong et al., 2012), ad-agency (Davies & Prince, 2011) and delivery services (Chou & Lu, 2009) and less competitive industries such as energy (Ibanez et al., 2006) revealed similar results.

The outcome reflects ability of switching cost to render loyalty, especially the positive side of switching cost, employed in this study. The positive switching cost, generated from loss of special discounts and loss of personal bonds, stands as a pull factor rather than a push factor in preventing defection, through which, mobile telecommunication services' ex ante-homogenous, metamorphoses into ex post-heterogeneous service, after experiencing positive switching cost (Klemper, 1987), and further proves its crucial importance to loyalty. Similarly, mobile service

providers could implement reward programmes to improve the benefits of subscription.

The manifestation of switching cost as a formidable force to loyalty is also justified further, as seen in its significance in the structural equation modelling analysis method, which was a matter of concern in the past as it had produced mixed results compared to multiple regression analysis method. As such, employing switching cost as a tool to gain loyalty is obviously the right decision.

Satisfaction and loyalty relationship is not supported in this study. The relationship between satisfaction and loyalty has attracted much attention in the past, and produced inconsistent results. This study has been skewed to the non-significant group altogether, echoing the fact that satisfied customers need not necessarily remain loyal (Adoyo et al., 2012; Boohene & Agyapong, 2011; Sivadass & Prewitt, 2000; Sumaedi et al., 2014; Tarus & Rabach, 2013) which was also reiterated by Oliver (1999) in which, the researcher had stressed that loyal customer may have been a satisfied lot but yet, satisfaction need not necessarily render loyalty. In addition to Oliver (1999), researchers, Pleshko and Heins (2015) have gone one step further and tested why satisfied customers are not loyal. Even though, the research was done in retail industry of Kuwait, the revelation portrays more about customers' behaviour, whereby satisfied customers do indeed engage in portfolio purchase by purchasing from other providers in the same category too and in actual fact, had the tendency to patronize more service providers. This scenario is similar to mobile telecommunication industry of Malaysia where customers do freely patronize alternative service providers, as recorded by this researcher where 89% of users have

utilised web-based provider and that 49% of respondents did also resort to engaging more than one web-based provider. All this transpired while continuing to be a customer of incumbent mobile provider hence, scoring a mean value of 5.187 for satisfaction, yet unable to predict loyalty, which eventually supports the philosophy that satisfied customers need not remain loyal.

The role of trust in advocating loyalty has been supported on most occasions (Aydin & Ozer, 2005; Ruiz-Mafe et al., 2014; Deng et al., 2010; Hamidizadeh et al., 2011; Roy et al., 2014; Sumaedi et al., 2014; Zaman et al., 2012; Zhou et al., 2010). This is in contrast to the outcome of previous research on satisfaction. It is also known that even though trust may at times produce minimum impact, it still remains significant (Ball, Coelho & Machas, 2004) but despite the previous significant nature, trust has however, failed to render any effect towards loyalty in this study.

The non-supporting nature of both these hypotheses could probably prevail, contributed by the fast-paced innovations and improvements in the mobile telecommunication industry itself, supported by accelerated diffusion rate, making it almost impossible to relate pleasure or post-purchase evaluation towards loyalty as customers are constantly flooded with innovative solutions, thus making them crave further for innovative offerings consistently. Moreover, improvements in technology have, to a greater extent, given options for customers to utilise a service with minimum interactions with employees of the service provider, thereby limiting the avenue for fundamentals of interpersonal relationship (Iacobuuci & Ostrom, 1996; Macintosh & Lockshin, 1997) to blossom and foster loyalty. This is also seen in the

mean score of trust (4.9) in this study, being one of the lowest among other variables investigated.

The fact that 67.9% of respondents in this research, fall in the Gen Y category, speaks a lot about the findings too. Gen Y is naturally a demanding cohort, technology savvy (techie), sceptical and their inquisitive mind seeks out new challenges always, thus tending to switch loyalty more frequently as compared to Baby Boomers and Gen X (Ma & Niehm, 2006; Rahman & Azhar, 2011; Weyland, 2011). So, scepticism, inquisitive mind followed by minimum interpersonal interactions with service provider personnel coupled with continuous need for higher standards, could make it almost impossible to view satisfaction and trust as fostering loyalty but perhaps a minimum qualifier to subscribe service. However this is not an element that encourages repeat purchase which was reiterated by Agustin and Singh (2005) that satisfaction may be a necessary but not sufficient component of loyalty.

5.2.2 Outcome for Research Objective 2

Research objective two has three hypotheses where one is supported. The findings revealed that only perceived service quality has significant relationship with switching cost. It is important to take note that this finding has defied previous results where perceived service quality was found to be insignificant towards switching cost in the mobile telecommunication industry of India (Edward & Sahadev, 2013, Edward & Sahadev, 2011) hence, reaffirming the role of switching cost in the mobile telecommunication industry, especially the ones arising from

positive constraints, which is also at times referred as ‘exit cost’ (Davies & Prince, 2011) compared to negative switching cost, being operationalised in past studies.

The outcome of perceived service quality and switching cost relationship of this study is a landmark finding as previous studies either employed negative switching cost or combination of both hence, could have imposed difficulties, responding to the changing environment experienced by the mobile telecommunication industry, by its very nature, making negative switching cost almost irrelevant. As such, enhancing perceived service quality did obviously lend its effect towards positive switching cost, targeted at customers, preventing them from defecting to other means of service. This was also indicated by researchers, Jones et al. (2002) where the researchers stressed that strong correlation exists, especially between service quality and the benefits of positive switching cost, termed as ‘loss performance cost’ established from benefits accumulated over time with a particular provider; therefore service quality is more apt with positive switching cost. This result also speaks volumes of the impact, perceived service quality imposes on switching cost, where customers are seen to leverage on service quality to compare current service provider with the anticipated new provider before deciding to remain or defect, reaffirming the intensity, perceived service quality has on switching cost. In short, service quality, when fulfilled, encourages customers to remain, likewise responds well with switching cost which deters customers from switching.

Satisfaction (H5) and trust (H6), in contrast, failed to deliver their impact on switching cost. This condition may be a little perplexing as satisfaction and trust have been significant, mainly in mobile telecommunication setting in the past (Aydin

& Ozer, 2006; Edward & Sahadev, 2011) and also in non-mobile such as banking (Hamidizadeh et al., 2011). This outcome, even though is surprising, could have prevailed due to the fact that satisfaction and trust may not be enough to keep a customer or to hinder them from defecting in current times as other unfavourable factors may be overwhelming (Blut et al., 2007).

A quick look at trust will show its role in reducing uncertainty which increases the risk of uncertainty of the alternative service, product or supplier, hence erecting switching barrier namely switching cost (Yen, Wang & Horng, 2011). This study however, fails to concur, perhaps due to conditions where uncertainties are mitigated by advanced technology in an environment where information flows openly, in the process, trivialises trust and switching cost relationship. Moreover, ability to acquire and analyse is normally done without much challenge when society is learned, which is reflected in this study where the majority have secondary school qualifications (48.2%), followed by degree qualifications (29.2%) and Masters (10.8%), a true reflection of a learned society, the fruits of the National Education Policy of Malaysia towards producing a knowledgeable society (National Education Policy, 2012). It can therefore be concluded that satisfaction and trust, are not influential towards switching cost.

5.2.3 Outcome for Research Objective 3

Research objective three pertains to the mediating effect of switching cost towards loyalty in mobile telecommunication industry of Malaysia. It is done to gauge whether switching cost accounts for the relationship between exogenous and

endogenous variable. Of the three exogenous variables posited in this study, only perceived service quality and loyalty relationship is mediated by switching cost.

Perceived service quality, once again showed that it is an integral part of loyalty's pedigree, rendering effect through the presence of switching cost as the mediator. This outcome is seen as once and for all, closing the gap of Edward and Sahadev (2011) study where switching cost's mediation test between service quality and loyalty was omitted as it did not meet the Baron and Kenny (1986) criteria for mediation test. Furthermore, it also sheds more light on service quality being the cognitive type of loyalty which challenges the views of researchers, Blut et al. (2007) and Oliver (1999) that cognitive is the weakest type of loyalty as perceived service quality in this study did not encourage loyalty and switching cost alone, but also responded well to switching cost as the mediator. The supportive nature of perceived service quality can yield benefits through various relationship only if it is strong, thus when coupled with positive switching cost, it proved to be a solid combination to advocate loyalty in mobile telecommunication industry. As such, it also has the capabilities to overcome possible threat of other providers who offer superior service quality as highlighted by Sivadass and Prewitt (2000), made possible by the presence of positive switching cost.

Switching cost, on the other hand, is not a mediator between satisfaction and loyalty, similar to trust and loyalty relationship. This scenario is quite startling as many firms do acknowledge switching cost as one of their priorities (Yen et al., 2011). Hence, expected to be supportive, even when operationalised as a mediator, which is seen in a mobile telecommunication study done by Edward and Sahadev (2011) where

satisfaction and loyalty relationship was partially mediated by switching cost, similar to Kim et al. (2004) where lost cost, which is a switching cost dimension, mediates satisfaction and loyalty relationship. In fact a study by Matzler, Strobl, Thurner and Fuller (2015) in an ICT industry, using relational switching cost which is derived from psychological cost and emotional discomfort cost, similar to positive switching cost, does in actual fact mediate the satisfaction and loyalty relationship. As such it is quite intriguing that switching cost is unable to mediate satisfaction and loyalty in this study. A possible explanation could be rejection of satisfaction and trust by mobile users in current times, where even switching cost's presence fail to mediate and render its effect on loyalty. A point noted by the researcher of this study is, high percentage of users (89%), engage in web-based providers to place their calls while 44.9% of users leveraged on more than one web-based provider, may in actual fact, reflect the inconsequential nature of satisfaction and trust, be it towards loyalty, or switching cost.

5.2.4 Outcome for Research Objective 4

The fourth objective of this research is to ascertain the differences between postpaid and prepaid users towards each direct relationship. A similar test was done by Aydin and Ozer (2006) in Turkey using phi correlation estimates but had limitations to establish causal relationship. This research, on the other hand, stems from structural equation modelling, which provides useful insights into each relationship. Among the seven hypotheses tested for comparison study, only perceived service quality and loyalty relationship was discovered to record different outcomes between postpaid and prepaid, in comparison.

This scenario could have prevailed as most postpaid customers do normally undertake call packages, which are more frequently, offered with contractual obligations, be it in the form of fee or duration commitment, hence, expecting good service quality to commensurate the commitment. In fact, it is a known truth that Malaysian government's incentives to encourage smartphones for age group 21 to 30 years (Lee, 2013) was targeted at postpaid call plans and the takers (Gen Y) who despite having vast exposure to WhatsApp, Viber, Facebook and other alternative web-providers, did however, still resort to continue using the incumbent service provider, perhaps to experience the good service quality provided as compared to alternative medium providers whose services are rendered with quality challenges (Cherry, 2005; Hobfeld & Binzenhofer, 2008; Kruse, 2008).

This result does also indicate that postpaid customers show more tendencies towards loyalty as compared to prepaid, similar to the revelation of Lee et al. (2006).

5.3 Theoretical implications

The outcome of this study enriches the existing body of knowledge on switching cost and customer loyalty while reinforcing service quality as the key determinant and important driver of loyalty and switching cost. It also evidently declares the crux of customer loyalty in considerable ways. One of the glaring contributions is about the existence of loyalty components which in actual fact need not necessarily follow suit in a continuum, especially in mobile telecommunication industry of Malaysia. This conclusion is made after observing the significance of perceived service quality towards loyalty (ß=0.348, $p<0.005$), which altogether proves that cognitive

ingredient can have significant direct relationship with action loyalty. Similarly, the insignificant result of trust towards loyalty cancels the conative and action relationship. Consequently, the result bolsters belief that loyalty is complex and in this study, 75% of its variance ($R^2 = 0.75$) is explained by satisfaction, trust, perceived service quality and switching cost which genuinely reflect the intensity of loyalty. As such, it will be a great blunder to view it as purely linear especially in a competitive industry where changes are imminent, back dropped by continuous need for performance improvement in order to sustain advantages.

This study also affirms the role of switching cost, especially the ones stemming from positive side in advocating loyalty in mobile telecommunication industry. Although numerous studies on mobile telecommunication industry had capitalised on negative switching cost (Aydin & Ozer, 2005; Chadha & Kapoor, 2009; Edward & Sahadev, 2011; Islam, 2010; Park et al., 2014; Sujatha & Chandrika, 2013; Yang, 2015), accelerated technology diffusion in Malaysia, as an outcome of initiatives undertaken by Malaysian government to develop an IT savvy society, has made negative switching cost almost irrelevant. This is further heightened under the mobile number portability environment, where customers are spared from changing numbers when switching to different service providers, thereby cost of informing others on the change, as highlighted by Oyeniyi and Abiodun (2010) becomes irrelevant. This is also similar to procedural cost, learning cost and set up cost which turns out to be very trivial when information is available at the touch of a button.

This result also supports the statement made by Jones et al. (2007), featuring positive switching cost as the value enriching element, and an important pillar of loyalty that

augurs well with the changes in mobile telecommunication industry, thus forming a meaningful measurement of loyalty.

Thirdly, this study sheds light on the direct and indirect determinants of switching cost and loyalty whereby perceived service quality, measured from SERVQUAL instrument as a second order, has established itself as an important determinant to switching cost and loyalty. Meanwhile, switching cost from the positive constraints has also stamped its mark as a significant determinant of loyalty, as such, both factors, perceived service quality and switching cost continue to be tools to boost loyalty. Similarly, mediating effect rendered by switching cost on perceived service quality and loyalty relationship, turns out to enrich the literature pertaining to indirect effect of loyalty especially on mobile telecommunication industry, involving positive switching cost, altogether implicating the determinants of loyalty.

Lastly, the comparison study between postpaid and prepaid has, to a great extent contributed to the literature of mobile telecommunication study. It was noted that previous studies had the tendency to either categorise postpaid and prepaid users in a homogenous group or otherwise failed to distinguish results according to these two groups. The available comparison study does not employ SEM analysis method in addition to having generalizability challenges, contributed by the nature of sampling. Therefore, comparison study between postpaid and prepaid users by utilising SEM methodology adds more insights to the literature on mobile telecommunication industry, additionally instils uniqueness by validating measurement instruments together with positive switching cost.

5.4 Practical implications

The outcome of this study provides impetus towards planning and execution of loyalty's initiatives to practitioners, especially mobile telecommunication providers such as Celcom, MAXIS and DIGI. Along the same lines, service quality elements, take centre stage for being significantly involved with switching cost and loyalty, not forgetting the role of switching cost in loyalty. This sentiment was also echoed by Santouridis and Trivellas (2010), who highlighted the need to strengthen service quality, mainly in mobile telecommunication industry, which has high penetration rate. As penetration rate recorded in Malaysia is 143.7%, mobile service providers can strategize and skew their initiatives and invest more in improving service quality of postpaid customers, yet without neglecting prepaid customers.

Service quality improvement can be done by uplifting the standards of SERVQUAL dimension such as reliability, assurance, empathy responsiveness and tangibility and deliver superior quality to customers. Given the nature of mobile services which demands 24 hours operation, customers' enquiry or report should be served by front liners or call centre executives with courteous and full of enthusiasm while providing customized attention to each user, be it in person or through tele-conversation. In addition to Santouridis and Trivellas (2010), there were also other string of researchers, who have reiterated the importance of service quality towards achieving loyalty (Aydin & Ozer, 2005; Boohene & Agyapong, 2011; Chadha & Kapoor, 2009). In Malaysia's context where IP based alternative web providers such as WhatsApp and Viber exist with quality challenges, incumbent mobile providers can secure the edge by providing excellent service quality, targeted mainly at postpaid

customers and encourage users to establish connectivity using incumbent's network. As such, this action will sure to divert more calls to incumbent providers' network and generate more revenue without totally relying on new customers to beef up revenue. Improvement in service quality could also be undertaken as recommended by Ranjbarian, Sanayei, Kaboli, and Hadadian (2012), where regular assessment is done to gauge customers' preference of service quality before administering the improvement plan.

Service providers can also provide special privileges to customers in order to create stickiness and enhance loyalty. It can be done by initiating campaigns where customers are rewarded through redeemable points based on call usages which entitle them to express or instant counter services. This method does not encourage customers to collect redeemable points alone, but also inspires customers to counter services and interact with customer relationship managers who are trained to convince customers and most likely able to upsell and cross sell more services. Mobile service provider, Celcom has started a similar campaign, a club for elite members called "Club Celcom First" which can be emulated by other service providers as well, in order to encourage call usages and erect switching barriers. Meanwhile, top up avenues for prepaid customers can be enhanced. The channels for prepaid top up such as agents and retailers can be invigorated by providing training and special incentives in order to make customers more comfortable interacting with them. Mobile service providers too can have collaboration with "Touch'n Go" and enjoy cashless top up or reload transactions where credit is deducted from 'Touch'n Go' value. In fact top up on demand for prepaid mobile customers, where air time is reloaded through short message service (sms) can materialize by collaborating with

banking institutions where payment is automatically deducted from users account. The flexibility and convenience to have top ups anytime, anywhere will surely contribute towards higher ARPU and revenue as mobile users will be able to respond to their impulsive need for connections and without any hindrances, will establish calls or sms when immediate top up is available.

Mobile service providers can also improve revenue by initiating sms campaign such as additional free sms for users who exceeds a certain threshold of sms. It is a known fact that short messaging service is a hit among youths in America (Lenhart, 2010) and since majority of Malaysian mobile users (62.5%) belongs to age group between 15 to 34 years old, attractive sms packages would sure to entice this age group and shift their preference from other medium of connectivity to sms. SMS has the penchant to beef up revenue as the users are billed two ways, one for the sms initiator and another charge is on the receiver who will more frequently reply. The three main mobile communication providers can also form a joint campaign to create synergy whereby sms incentives are offered to communication across network. This will sure to attract more users to engage in sms, thus, sms campaign and incentives will be poised to contribute towards encouraging repeated usage and eventually improves revenue.

The outcome of this research will be a guiding principle to mobile service providers and also regulators such as Malaysian Communication and Multimedia Commission (MCMC). MCMC can set certain service quality standards as a minimum Key Performance Indicator (KPI) each mobile service provider should adhere to and having achieved the intended service quality, regulators can leverage on mobile

phone services to execute various campaigns by collaborating with relevant authorities. One of such is ‘Walk A Win’ campaign, develop by (1M4U) through collaboration with Ministry of Health, Prime Minister’s Department and Malaysian Association of Telehealth. Even though the main theme is to establish healthy living as a form of entertainment, mobile phone is used as a medium to identify and reward winners. Therefore, the initiative is made possible by service quality which is a fundamental factor to the success of these campaigns and boost up revenue as customers would continue using the services. Similarly, more usages will be in place when additional campaigns are embedded in mobile phones, consequently encouraging customers to continue patronage.

MCMC can also explore possibilities of developing a hybrid call plan. Hybrid call plan can be designed to commence as a prepaid plan type and upon exceeding certain level of calls or bills, subsequent calls will automatically captured under postpaid plan. Hybrid call plan will serve two purposes in the likes of providing more options to users, meanwhile investment done by government and service providers can be monetized as more users of postpaid will prevail and in the process, reducing average investment cost (network and services), having in mind that service quality and loyalty relationship is significant for postpaid customers. Along the same line, prepaid customers, without doubt will appreciate the privileges given to experience postpaid category such as personalised services. Prepaid customers, showered with attention, coupled with hybrid flexibility will intuitively eliminate other offers and continue patronage with incumbent mobile service providers.

Mobile telecommunication industry has shown to have the capacity to influence commercial and domestic activities, therefore it is an undeniable fact that it can spur national growth and development as highlighted by Boohene and Agyapong (2011). The role of service quality which had stamped as one of the important element, discovered from this study is vital to ensure continuity of services. In the context of Malaysia as a nation, tourism industry can be strengthened further to boost economy by leveraging on mobile phone's application. Tourism industry has contributed RM 70.4 billion which is 7.2% of Malaysia's GDP in year 2013 (World Travel & Tourism Council, 2014). As such, important ingredient of tourism such travel can be strengthened by the flexibilities of airline's e-ticketing, undertaken through a stable mobile phone application. In addition, mobile phone's reliable applications would also enable tourist to engage in window shopping (Mohd & Azleen, 2011), discarding the troublesome physical search while fostering social ties (Galperin & Mariscal, 2007). Moreover, ancillary services included in an air travel industry, such as preferred seat booking and bag processing could be easily conducted through mobile phone which eventually contributes higher revenue to tourism industry (Morosan, 2014) and beef up Malaysian economy.

Mobile learning can progress and attain a highly embraced status, only when mobile telecommunication services achieve an acceptable standard of quality. The edutainment, which is an act of learning through a medium (Norbayah & Norazah, 2007) could build a stronger platform in making Malaysia a high income nation as stipulated in Eleventh Malaysia plan (2016 to 2020) through quality education. As such, mobile learning which provides instant access to information, eliminating booting period comes with high portability and flexibility, able to support an array of

learning activities. The mobile learning is also relatively cheap and has affordable technology cost (Smith, Mohan & Li, 1999), poised to take Malaysia to higher level of education in the quest to achieve Eleventh Malaysia Plan (2016 to 2020).

5.5 Limitations of study

Customer loyalty topic is wide, complex and most often very dynamic. Similarly, the drivers and predictor ought to change under various defining circumstances for instance the airline crash involving Air Asia's QZ8501 on 28 December 2014 is surely to impact airlines industry's customer loyalty especially AirAsia, despite having many promotional activities. As far as this research is concerned, it is confined to discover the relationship between antecedents and loyalty, no doubt producing R^2 value of 0.75, it is still susceptible to environmental changes which one cannot discount given the nature of business today.

The cross sectional design of this study comes with limitations pertaining to the nature of data set. The respondents being surveyed in this study during a particular time frame provides a snapshot of the condition and subsequently may provide different response under a different time frame (T + 1). As such, ability to conclude with absolute certainty is restrained to certain extent.

Another limitation of this study gravitates along the nature of study setting. Even though data collection was done in Klang Valley (USJ and Dengkil), after references made to Department of Statistics Malaysia to ascertain criteria for urban and rural category, the study may however, not reflect the actual behaviour of mobile

telecommunication users nationwide. This is because urban mobile users in Klang Valley may not behave exactly the same as urban users in Penang and Malacca, similarly, rural mobile users of Johor, may not dispose the same behaviour as rural users in Kedah.

5.6 Suggestions for future study

This study was undertaken to provide insights on mobile telecommunication users towards achieving loyalty. As it has been widely discussed in various literature about the complexity of customer loyalty, researchers should include more variables or test other prevailing factors that may influence behaviour of mobile telecommunication users. One of such could be after the implementation of Goods and Services Tax (GST) in Malaysia where perceived value, a trade-off between cost and benefit factor could be considered as a variable to understudy. In addition, the five dimensions of perceived service quality can also be tested towards loyalty and switching cost. There were instances where dimensions were not corresponding to loyalty in Malaysia's setting (Kheng, Mahamad, Ramayah, & Mosahab, 2010: Mokhtar et al., 2011) therefore, testing the five dimensions as the first order may uncover the significant underlying elements of service quality.

It is a well-known fact that technology changes rapidly, especially in Malaysia where diffusion takes place in an accelerated manner. This would inevitably influence mobile phone users, as technology and telecommunication are interdependence and most of the time function in a synergized manner. In such a scenario, it is necessary to engage in loyalty study in different time span in order to keep abreast with

customers' preference and clinch the arising opportunities. Similarly, future research should undertake longitudinal study where repeated measurement of a sample is done, thereby understanding behaviour and preference of mobile telecommunication users over time. Should researchers find difficulties in longitudinal research as it poses additional challenges such as difficulties in tracking the same sample, researchers may resort to repeated cross sectional survey where independent sample is collected at each time frame hence, representing the population at each single period of time. This method will ensure customers' behaviour and preferences are captured continuously to strive for loyalty.

Thirdly, future researchers should consider engaging in mediating study on individual group of postpaid and prepaid users. This should be done mainly because outcome of this study has shown differences between postpaid and prepaid users on service quality, moreover, other literatures have also acknowledge the heterogeneity between postpaid and prepaid users. Therefore, it will be value adding to conduct mediating test, having positive switching cost as the mediator for both these groups and compare the outcome in order to administer a more targeted strategy.

Future researchers should also consider doing cohort study as highlighted by Schiffman and Kanuk (2007) that each age group category can be viewed as subculture. As such, when conducting cohort study, Generation Y should never be left out as they are early adopters of technologies and embrace changes fast as compared to other cohorts (Martin, 2005; Rahman & Azhar, 2011;Weyland, 2011), being new entrants to employment, giving them the purchasing power. Knowing the preference of each age cohort will obviously enrich literatures especially on mobile

telecommunication loyalty while keeping abreast with the changes and preferences of each age cohort.

Lastly, study setting for mobile telecommunication may include all states in Malaysia by designing samples to be taken from each state in order to have better representation.

5.7 Conclusion

The main findings of this study found that perceived service quality and switching cost positively predict customer loyalty while perceived service quality significantly and positively predict switching cost. Correspondingly, switching cost mediates the relationship between perceived service quality and loyalty of customers in mobile telecommunication industry. Finally, perceived service quality is the only significant differentiating factor between postpaid and prepaid call plan.

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