CONSUMER RESISTANCE TO INNOVATION AMONG PUBLIC UNIVERSITIES' STUDIENTS IN PAKISTAN

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ABSTRACT

Implementations of technological innovations have been playing key roles for firms to grow and survive in the long run particularly in a dynamic and complex market and unstable economic conditions. The success of any innovation in the market which highly depends on consumers could be one of the potential factors behind the failure of the innovation. Research on innovation resistance is still in infancy and effort to describe the resistance as well as understanding the consumers' resistance to innovation still require in-depth investigations including the context of resistance to innovation. As a response to this problem, this study examines the consumers' resistance to innovation through measuring the resistance to smartphones. This study is grounded by the resistance to innovation and appraisal theories. In the research framework, this study includes consumers' characteristics (motivation, self-efficacy, emotion (negative), and attitude towards existing product) and innovation characteristics (relative advantage, perceived risk, complexity, social influence, and price). A cross sectional, survey data was gathered from 307 university students of four public universities in Pakistan via self-administered survey questionnaires. They were statistically tested using PLS (SEM) path modeling. The results demonstrate the concept of consumers' resistance to innovation in the context of Pakistan. The results also reveal that majority of the main consumers' and innovation characteristics (complexity, emotion (negative), motivation, price, self-efficacy, social influence, and consumers' innovativeness (moderator) have significant influence on consumers' resistance to smartphone. However, three consumers' and innovation characteristics (relative advantage, perceived risk, and attitude towards existing product) are insignificant with consumers' resistance to innovation. The significant factors are good predictors of consumers' resistance to innovation. Based on the findings of the study, the theoretical and practical contributions are described. The limitations of the study are discussed and suggestions for future studies are also deliberately addressed.

Keywords: resistance to innovation, consumer characteristics, innovation characteristics, innovativeness, smartphone

ABSTRAK

Pelaksanaan inovasi teknologi memainkan peranan yang penting untuk membolehkan firma berkembang dan terus bertahan dalam tempoh jangka masa yang panjang, khususnya dalam pasaran yang dinamik serta kompleks dan dalam keadaan ekonomi yang tidak stabil. Kejayaan sebarang inovasi dalam pasaran yang banyak bergantung kepada para pengguna merupakan satu faktor yang menerangkan kegagalan inovasi. Kajian tentang rintangan terhadap inovasi masih berada pada peringkat awal dan usaha untuk menerangkan rintangan dan memahami rintangan pengguna terhadap inovasi, termasuklah konteks rintangan terhadap inovasi, memerlukan penelitian yang mendesak. Oleh yang demikian, kajian ini menyelidik rintangan pengguna terhadap inovasi dengan mengukur daya rintangan terhadap telefon pintar. Kajian ini dilaksanakan bersandarkan teori rintangan terhadap inovasi dan teori penilaian. Kerangka kajian meliputi ciri-ciri pengguna (motivasi, efikasi kendiri, emosi (negatif) dan sikap terhadap produk sedia ada) dan ciri-ciri inovasi (kelebihan relatif, risiko anggapan, kerumitan, pengaruh sosial, dan harga). Data tinjauan yang merentas bahagian telah dikutip daripada sejumlah 307 orang penuntut universiti daripada empat universiti awam di Pakistan menerusi tinjauan soal selidik yang ditadbir sendiri. Data soal selidik diuji secara statistik dengan menggunakan pemodelan laluan PLS (SEM). Hasil dapatan memperlihatkan konsep rintangan pengguna terhadap inovasi dalam konteks di Pakistan. Dapatan juga memaparkan bahawa kebanyakan ciri utama pengguna dan inovasi (kerumitan, emosi (negatif), motivasi, harga, efikasi kendiri, pengaruh sosial) dan daya pembaharuan pengguna (sebagai penyederhana) mempunyai pengaruh yang signifikan terhadap rintangan pengguna kepada telefon pintar. Walau bagaimanapun, tiga ciri pengguna dan inovasi, terutamanya kelebihan relatif, risiko anggapan, dan sikap terhadap produk sedia ada didapati tidak signifikan dalam rintangan pengguna terhadap inovasi. Faktor yang signifikan merupakan peramal yang baik untuk rintangan pengguna terhadap inovasi. Sumbangan teori dan amali diterangkan berdasarkan dapatan kajian. Selain itu, batasan kajian serta saranan untuk kajian akan datang turut dikupas dengan terperinci dalam kajian ini.

Kata kunci: rintangan terhadap inovasi, ciri-ciri pengguna, ciri-ciri inovasi, daya pembaharuan, telefon pintar

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ATEP : Attitude towards Existing Product

AVE : Average Variance Extracted

BMI : Business Monitor International

BZU : Bahahuddin Zakrya University

CFA : Confirmatory Factor Analysis

CI : Consumer Innovativeness

CNET : Communication Network

COM : Complexity

COMSATS: Commission on Science and Technology in Sustainable Development of South

CR : Consumer Resistance

DTPB : Decomposed Theory of Planned Behavior

EMO : Emotion

GU : Gomal University

IDT : Innovation Diffusion Theory

IOS : Internetwork Operating System

IUB : Islamia University Bahawalpur

KPK : Khaibar Paktonkhawa

LG : Lucky Goldstar

MOT : Motivation

MPCU : Model of Personal Computer Utilization

OECD : Organization for Economic Cooperation and Development

PDA	:	Personal Digital Assistance
PEOU	:	Perceived Ease of Use
PIM	:	Personal Information Management
PLS	:	Partial Least Square
PR	:	Perceived Risk
PTA	:	Pakistan Telecommunication Authority
PU	:	Perceived Usefulness
RA	:	Relative Advantage
SE	:	Self-Efficacy
SEM	:	Structural Equation Modeling
SI	:	Social Influence
S-Q-R	:	Simulate-Qrganism-Response
TAM	:	Technology Acceptance Model
TPB	:	Theory of Planned Behavior
TRA	:	Theory of Reasoned Action
UTAUT	:	Unified Theory of Acceptance and Use of Technology
VIP	:	Very Important Person

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter provides the overview of the following points: background of the study, problem statement, research questions, research objectives, significance of the study, scope of the research, limitation of the study, organization of this thesis and provides summarized version of chapter one, respectively.

1.2 Background of the Study

The worldwide Smartphone users are recorded as 3 billion in 2007; and more than 4 billion in 2008 and is now expected to increase 5.5 billion by the end of 2013. Likewise, according to Boxal (2015), the number of users is anticipated to increase from 4 billion to 6.1 billion by 2020. While seeking the maximum growth, particularly Asian region is a land of maximum smartphone users. Globally, the mobile-phone technology has been rapidly growing; for instance, 4 billion smartphone users were recorded in mid-2011; whereas, according to Digitalbuzz (2011), 1.08 billion users, making 57% of the worldwide population, have been using a personal digital assistant (PDA). Over the previous years, a majority of the smartphones users' growth in the regions of Asia Pacific Region, Africa, the Middle East and Latin America, is expected to continue growing with high pace (Worldwide Mobile Market, 2009).

Mobile-phone technology i.e. telephones, tablets, and notepads has been playing key role in building our lives better than ever before. As an effective tool of communication, due to the technology, users can reach to whom they want to, regarding their official or social matters (Kendrick, 2013). Today, mobile phones have become users' part of life due to its meaningful, effective, affordable and operational use (Lepp, Barkley & Karpinski, 2014). Hence, the mobile phone has been considered as one of the basic communication device (Kaya & Argan, 2015), building virtual communication environment (Kaya & Argan, 2015). According to Smura, Kivi and Toyli (2009), majority of the users in developing states are use to carry their smartphones with them everywhere and every time (Smura, Kivi, & Toyli, 2009). As indicated by Hanley and Becker (2008), the mobile-phone technology has quickly turned into one of the most significant telecommunication medium due to emergence of the internet technology. The effect of mobile phone, as an innovation, has become unquestionable in our everyday lives (Balasubramanian, Peterson, & Jarvenpaa, 2002).

Today, people are using mobile-phone devices, not only as an effective communication tool worldwide, but as a medium of information and education for them (CNET, 2013). Frequent use of mobile-phones has lead to an extended communication environment and users' mobility. Development of internet and the wireless technology, in the late 1990s, has been helping in the growth of telecommunication facilities for the mobile-phone users (Barnes, 2002). Therefore, mobile advancement has a lot of potential for the upcoming

communication markets, as a revolution in the business world as well (Stewart & Pavlou, 2002).

According to the International Telecommunication Union (ITU, 2009), mobile technology is a key source of rapid data and information communication, being developed in various regions of the World. Therefore, users can share the information and access the emails via mobile phones (Sultan, Rohm, & Gao, 2009). The mobile phone industry has a great potential to play its role in the telecommunication sector of Pakistan.

The telecommunication industry of Pakistan has rapidly grown is the recent years showing incredible developments in the country. The telecommunication industry of Pakistan was rewarded as the status of the industry in 2005; whereas it is one of the fastest growing industries in the country. Growth of the mobile business sector was 10%, i.e. 120 million subscribers in 2012. However, the number of subscribers was decreased in 2013, because of the substantial duties forced by the new government. In March 2013, total number of mobile users were noted as 122.127 million, the strongest net expansion since November 2012 (Mobile Phone Industry of Pakistan, 2013). Similarly, annual subscribers of the mobile phone were increased in September, 2015 (Pakistan Telecommunication Authority, 2015).

Table 1.1

Annual Mobile Phone Users in Pakistan (PTA)

tim	Mobilink	Ufone	CMPak	Instaphone	Telenor	Warid	Total
2003-04	3,215,989	801,160	470,021	535,738			5,022,908
2004-05	7,469,085	2,579,103	924,486	454,147	835,727	508,655	12,771,203
2005-06	17,205,555	7,487,005	1,040,503	336,696	3,573,660	4,863,138	34,506,557
2006-07	26,466,451	14,014,044	1,024,563	333,081	10,701,332	10,620,386	63,159,857
2007-08	32,032,363	18,100,440	3,950,758	351,135	18,125,189	15,489,858	88,019,812
2008-09	29,136,839	20,004,707	6,386,571	34,048	20,893,129	17,886,736	94,342,030
2009-10	32,202,548	19,549,100	6,704,288	0	23,798,221	16,931,687	99,185,844
2010-11	33,378,161	20,533,787	10,927,693	0	26,667,079	17,387,798	108,894,518
2011-12	35,953,434	23,897,261	16,836,983	0	29,963,722	13,499,835	120,151,235
2012-13	37,121,871	24,547,986	21,177,156	0	32,183,920	12,706,353	127,737,286
2013-14	38,768,346	24,352,717	27,197048	0	36,571820	13,084,823	139,974,754
2014-15	33,424,268	17,809,315	22,102,968	0	31,491,263	9,830,620	114,658,434
Jul-15	33,993,778	17,893,156	22,432,785	0	32,155,599	9,956,205	116,431,523
Aug-15	34,637,527	18,296,277	23,100,847	0	32,747,666	10,161,283	118,943,600
Sep-15	35,156,550	18,750,250	23,518,919	0	33,191,103	10,323,691	120,940,513

Source: *Annual Mobile Phone Subscriber (Users) Report by Pakistan Telecommunication Authority (PTA), September, 2015*

According to Business Monitor International (BMI), consumer electronic product business in Pakistan is expected to grow annually 13.3 percent i.e. USD 3.3 billion by 2016. The buyer's electronic marketplace, described as including computing gadgets, mobile handsets, and sound/visual products, for example, TV sets, are anticipated to be worth about USD 2 billion in 2013. Due to the intense competition and growing population, the worth is expected to grow USD 3.3 billion by 2016 (Mobile Phone Industry of Pakistan, 2013).

Furthermore, according to Morgan Stanley (2011), point out in figure 1.1, the demand of mobile phone devices in Pakistan involves Smartphone and tablet is anticipated to grow at an incredible rate and even exceed the requirements of old-style innovative products. This wonderful innovation shows an unquestionable benefit of Smartphone within a small period of time (Anckar and D'incau, 2002), the prospective benefits of increasing this new mobile device can't ignore because mobile phone devices are also helping for effective sales and marketing figure 1.2 shows increasing use of smartphones.

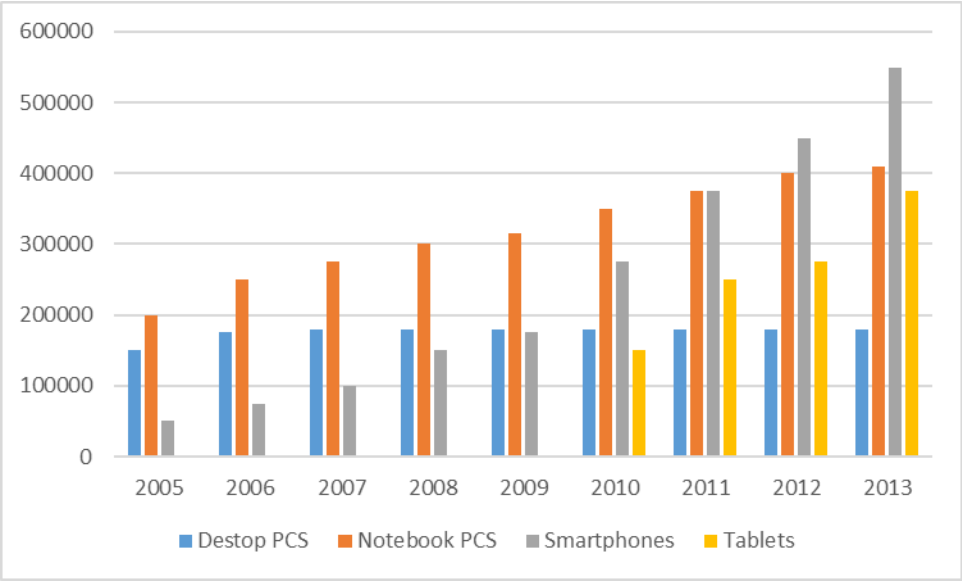


Figure 1.1
Morgan Stanley (2011): Increasing usage of Smartphone

Furthermore, smartphone usage in Pakistan has been gradually increasing and it has reached 31 percent by January 2015. Indeed, Smartphones have been playing a key role in the growth of the telecommunication devices market in Pakistan. A majority of the smartphone population is comprised of youngsters gives an extra edge to the smartphones in Pakistan.

Companies dealing in the area of smart devices in Pakistan are Samsung, Nokia, Blackberry, Apple iPhone and LG and the telecommunication services are being provided by Ufone, Mobilink, Warid, Telenor and Zong (PTA). Importantly, among the aforementioned companies working in Pakistan, Samsung is seen far ahead in popularity among the users; whereas all other companies like; Nokia, Blackberry, Apple iPhone and LG etc. have remained unable to maintain their popularity in the market. Pakistan is price conscious market while more than 65 percent of the total users in Pakistan carry low cost

Chinese smartphones resulting in unattractive market for all other brands like; Nokia, LG, Sony and Huawei (Khan, 2015). Hence, the expensive value of the Smartphones is one of the main reasons behind Smartphone low market share i.e. one per cent market share in the market from 2007 to 2008 (Martin, 2007). Consequently, consumers are seeing reluctant towards adopting all Smartphones like Nokia, Apple, and Blackberry except the Samsung. Similarly, all the Smartphone companies, except Samsung, have been facing huge challenges in selling their products in the market. According to Nokia Corporation Interim Report (2013), Nokia group net sales has been decreased by 22 percent per year in Pakistan. Whereas, Gartner (2013) reported that global market share held by Nokia Smartphone's from first quarter 2007 to second quarter 2013 market share had slipped down 3.10 percent. ABI research reveals that Samsung has made more Smartphone sales in quarter three than all other competitors namely; Nokia, Apple and Blackberry (Schahbaz, 2013). For instance, total sales of Smartphones are calculated at 244 million throughout the third quarter, with a rising share of Samsung shipments approximately 35 Pakistan. Comparing to Samsung sales with all other brands currently available in Pakistan, the collective shipments of Samsung alone is calculated larger than the total sale of all other brands like; Nokia, Apple, and Blackberry in Pakistan, as shown in Figure 1.2. Furthermore, Nokia's sales has been declined both in smartphones and features mobiles in Pakistan (Kobie, 2014). Figure 1.2 shows Smartphones sales quarter three 2013.

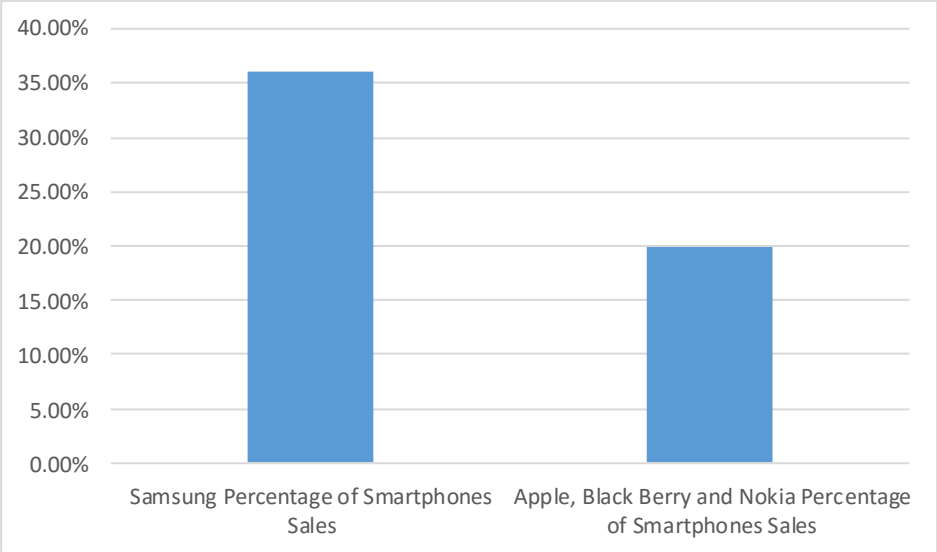


Figure 1. 2
Smartphones sales quarter three 2013

The aforementioned phenomenon of unpopularity of particular Smartphone brands at large scale in Pakistan, open the ways to instigate the frequently ignored perspective of innovation challenge, such as consumers' resistance towards the innovations in Pakistan. The innovations in Smartphone devices falls in the category of "radical innovation", that faces more resistance, comparing to the incremental innovations, as revealed by (Garcia, Bardhi & Friedrich, 2007; Heiskanen *et al*., 2007).

Consumers' purchase decision plays an important role in the success of innovation, while significantly influencing the success factor of innovative products (Cheng *et al*., 2014). The "non-users" consumers those uphold a delaying attitude towards adoption of innovations, are considered as an important pool of consumers. The "non-user" consumers are very valuable groups of people of the business organizations, as they provide useful feedback to the marketing strategists which help the business in reviewing

and revising their policies accordingly (Laukkanen, Sinkkonen & Laukkanen 2008; Yu, Li & Chantatub, 2015). Likewise, from the managerial point of view, studying buyer's resistance to innovation is very important for business knowledge and innovation standing. To ensure the success of innovation in the market, consumers' resistance towards innovation, as a potential factor in marketing, will help the company's indifferent ways for product design and development. Higher failure rate of innovation can be reduced by providing the best products in the market. Study of consumer resistance against their innovative product enable companies understanding the root causes of the resistance and the ways to deal with the most likely factors (Ram, 1987). Hence, the study of the variables influencing the resistance to innovation would be help in shaping up the innovation more productive, popular, useful and profitable for all the stakeholders.

1.3 Problem Statement

Implementations of technological innovations have been playing key roles for firms to grow and survive in the long run (Tidd, 2001; Balachandra and Friar, 1997), particularly in a dynamic and complex market and instable economic conditions. Consumers' behavior towards the latest ideas, technologies or innovations, is one of the main triggers with respect to emergence of an innovation in the market. For instance, postponement in the adoption of an innovation from the consumers' behavior towards the latest ideas, technologies or innovations, the success of any innovation in the market highly depends upon the consumers' could be one of the potential factors behind the failure of an innovation. Similarly, resistant behavior from consumers is one of the main factors that

causes delay or resistance in the diffusion of innovations. Moreover, innovation characteristic and consumer characteristics are few of the main elements in the perspective of adoption of an innovation. Erstwhile researches in the area of innovation and consumer characteristics explores a good correlation among the factors and adoption or implementation of innovations. The relationship between innovation characteristics, consumers' characteristics and consumers' resistance towards innovation have been source of inspiration among research to explore the phenomenon further. The study intends to explore the relationship between innovation characteristics, consumer characteristics and consumer resistance to innovation in the perspective of Pakistan.

A thorough literature review reveals a strong relationship between consumer characteristics and innovation characteristics influenced on resistance to innovation. However, the research area in the perspective of young degree or university students, a community of frequent Smartphone users (Lepp *et al*., 2015), is still lagging far behind (Yu, Li & Chantatub, 2015; Mohtar & Abbas, 2015; Cheng Lee & Lee, 2014; Laukhanen *et al*., 2008; Kuisma *et al*., 2007; Ram & Sheth, 1989).

Global innovation index has recognized the important role of innovation as an element of economic growth and success (Global Innovation Index., 2013). Innovation in product, backbone of many organizations (Balachandra, 1997), is essential for organizational survival and growth over the long period of time (Tidd, 2001; Cheng *et al*., 2014), particularly in dynamic and complex situations (Assink, 2006; Cheng *et al*., 2014).

According to Gatignon et al, (1981), Crawford (1983), Mahajan & Muller, (2000) and Cheng et al, (2014) although, the success consequences of innovation, consumer delay or postponement in the adoption of innovation might change this success into the failure. Acceptability of any innovation varies from place to place and consumer to consumer, depending on characteristics of innovation and the feasibility, frequently resulting in delaying or resistant attitude i.e. consumer resistance, from the consumers. The delaying attitude by young consumers (particularly the degree or university student) towards innovations in general and Smartphones in particular, needs to be explored (Ram, 1989; 1989a; Cornscu & Adam, 2013; Kuisma *et al*., 2007; Laukhanen *et al*., 2008). Innovations, while causing significant benefits for businesses, economies and societies (Murphy, 2015), are equally important at all levels i.e. individual, organizational, national, regional and global (Radu, 2015). Notwithstanding innovations bring significant benefits and improved features, consumers are seen impassionate towards the latest technologies (Dutta & Lanvin, 2013; Salerno, 1981; O' Connor et al., 1990; Gold, 1981; Brod, 1982; Murdock, 1983; Blackler, 1985) ultimately resulting in "consumers resistance" towards innovation (Heiskanen *et al*., 2007; Ellene *et al*., 1991; Bao, 2009). According to Ram (1989), consumer resistance, "Innovation resistance is the resistance offered by consumers to an innovation, either because it poses potential changes from a satisfactory status quo or because it conflicts with their belief structure". Respective companies are keenly necessitated to give the due attention toward the phenomenon of "consumer resistance" to develop themselves in the today's market (Heiskanen *et al*., 2007). Ram (1989; 1989a), highlighting the prime important of consumer resistance to innovation, states that the factor has been playing an important role for successful

innovation. O' Connor et al, (1990) stated that the occurrences of resistant behavior for the due implementation and advertisement of innovation. Ignorance toward the leading factor of consumers' resistance, may cause in failure of the new product or innovation (Ram, 1989). Hence, businesses/companies need to focus not only on the market competition, efficiency of the product and financial gains, but the causes and influential factors in consumers' resistance towards latest technologies including Smartphone (Dunphy & Herbig, 1995).

Moreover, innovation characteristic and consumer characteristics are few of the main elements in the perspective of adoption of an innovation. Erstwhile researches in the area of innovation and consumer characteristics explores a good correlation among the factors and adoption or implementation of innovations (Dunphy & Herbig, 1995; Veryzer, 1998).

The research upheld by Tornatzky and Klein (1982), explored the characteristics of innovation, while describing its relationship, acceptance, usage and applications. Robert (1998) also emphasized on the importance factors influencing consumers' resistance to the latest technologies. Hence, it is very important to evaluate the influence of consumer and innovation characteristics on the consumer resistance to innovation including its significance, strength of each variable that influences the aforementioned relationships. The phenomenon of consumers' resistance to innovation is equally valuable for the businesses to enhance their business processes, research and development (Veryzer, 1998).

Furthermore, Ram (1987), explores that the reason behind resistance to innovation varies from consumer to consumers and place to place. Limited knowledge of consumers about the characteristics of the latest technologies or innovations could be one the leading reasons behind the resistance (Ellen *et al*., 1991). The resistant and inconsistent behavior of consumers towards latest technologies prompt organizations to investigate further various reasons behind it. Particularly, regarding consumer's resistant attitude towards Smartphone, according to Chang and Chen, (2005), it is the need of the day to investigate the motives behind the resistant behavior.

The studies on resistance to innovation are comparatively few in number therefore, according to Sheth (1981), figuring out the idea of innovation resistance as "less developed concept", recommended two psychological constructs that seemed to be beneficial for understanding the concept of consumer resistance to innovation psychology. Innovations psychological concepts like behavior related to products and "perceived risks" toward innovation. Correspondingly, Ram (1987), proposed model showing resistance to innovation in several points of interest. The model discussed three main related areas; characteristics of innovation, consumer and propagation mechanisms. In contradiction Lee and Yu (1994), explored that characteristics of innovation and consumer causes consumer resistance to latest technologies, whereas the propagation mechanism was observed as ineffective towards resistance to innovation. On the basis previous discussion, first objective of the study was to investigate the causal relationship between innovation characteristics and consumer resistance to innovation.

Previous studies have been explored consumer characteristics to determine its influence on consumer adoption of innovation (Mohtar & Abbas, 2015; Grabner-Kräuter & Faullant, 2008; Wang *et al*., 2003; Tan & Teo, 2000; Karjaluoto, Mattila, & Pento, 2002) and also on resistance to innovation (Cho & Chang, 2008). Numerous studies are found determining the consumer characteristics and their impact on consumer behavior using technology acceptance (TAM) model. TAM model proposes that consumer intention to use innovative products has been determined through the perceived usefulness, complexity, self-efficacy and perceived risk (MoFang *et al*., 2006; Constantiou, Damsgaard & Knutsen, 2006; Lu et al., 2003; Koivumaki et al., 2006). Studies upheld by Harkke, (2006) and Han et al. (2006 explored resistance mobile system in the perspective of Finnish physicians. The study identified that relative advantage plays the most important role, comparing to all among other factor (Han, et. al., 2006). Likewise, Erasmus *et al*. (2015); Harkke (2006); Yang (2005); Chi Shing Yiu, Kevin Grant (2007); Amin (2008) employed technological acceptance model (TAM) to investigate the impact of customer characteristics variables on consumers' attitude in the field of mobile credit cards, online banking and mobile commerce respectively.

Roberts and Pick (2004), exploring the characteristics of innovation (Smartphone), examined the influence of "price and perceived risk" analyzed that both the factors had a significant relationship between acceptance and consumer resistance to innovation. Using the characteristics of innovation, several studies have examined the adoption of innovations (Patsiotis et al., 2013; He at al., 2006; Holak & Lehmann, 1990; He &

Mykytyn, 2007; Tan & Teo, 2000; Brown et al., 2003) and very few studies (Kuisma et al., 2007; Laukkanen et al., 2007; Yu, Li & Chantatub, 2015) have explored the resistance to innovation in the context of Smartphones (Laukkanen *et al*.,2007; Kuisma *et al*., 2007; Yu, Li & Chantatub, 2015).

He *et al.* (2006) studied explored the relationship between innovation characteristics and E- payment of online consumers, exploring that the complexity was negatively associated with the adoption of electronic payment, whereas the relative advantage was found positively associated with the adoption of electronic payment. According to Lakkanen et al. (2007), innovation characteristics like; perceived risk, quality and image, are major causes of consumer resistance to innovation. Hence, the second objective of the study was to investigate the causal relationship between consumers' characteristics and consumers' resistance to innovation.

According to Mohtar & Abbas (2015) and Robert (1998) the most influencing factors towards consumer resistance to innovation are keenly required to be investigated further. Keeping in view the scope of the study, its research questions and objectives, the third aim of the study was to investigate the more influential factors towards consumer resistance, out of all the elements of innovation and consumer characteristics.

Today, companies and manufacturers compare the level of innovativeness of any product with their competitors in the market, as well as consumers' behavior and attitude towards

innovativeness. Change in consumers' behavior towards latest technologies, may result in innovation failure. The moderating role of innovativeness on the relationship between innovation and consumer characteristics and consumer resistance to innovation, has not been adequately studied. Whereas the role of consumer innovativeness in the innovation diffusion process has been studied (Rogers, 2003). Consumer innovativeness is one of the dominant components of the early stages of innovation diffusion.

In the diffusion process, according to Rogers (2003), innovators are those who adopt an innovation at the first stage i.e. earlier than others. Keeping in consideration the prominent role of consumer innovativeness in the adoption process, it is one of the prime interest of this study to investigate the moderating of role of innovativeness on the relationship between innovation characteristics and consumer resistance to innovation. Consumer innovativeness is a personality trait (Baumgartner and Steenkamp, 1996; Raju, 1980; Vandecasteele and Geuens, 2010) that may influence consumer behavior. According to the previous studies, the innovative behavior of consumers has been studied in the perspective of adoption of innovation (Citrin *et al*., 2000; Im *et al*., 2003; Lassar *et al*., 2005; Rogers, 2003)), however the study on the relationship between consumer characteristics and consumers' resistance to innovation is lagging behind. Hence, this study aims to investigate the moderating effect of innovativeness on the relationship between consumer characteristics and consumers resistance to innovation.

Notably, the studies investigating the relationship between innovation characteristics, consumers' characteristics and consumer resistance to innovation shows inconsistent

relationships between the aforementioned predictors and outcome variables (Chao, Reid, & Mavondo, 2012; Citrin, Sprott, Silverman, & Stem, 2000; Kunz, Schmitt, & Meyer, 2011; Hu & Wu, 2011). In the case where the relationships between the independent and dependent variables are not fully established as significant, insignificant, consistent or inconsistent, Baron and Kenny (1986), recommends to apply moderator variable to assess its effect on the relationships.

Under the light of above discussion, the fourth and fifth objectives of the study are: to examine the moderating effect of innovativeness on the relationship between innovation characteristics and consumers' resistance to innovation; and to examine the moderating effect of innovativeness on the relationship between consumer's characteristics and consumers' resistance to innovation, respectively. Under the scope of study, this research targets university student from Pakistan, as the student community bears all the characteristics of opinion leaders and change agent (Roger, 2003) being qualified segment of society, in particular the use of Smartphone (Lepp *et al.*, 2015).

Keeping in view this issue some question arises which are given below:

1.4 Research Questions

1. What is the causal relationship between innovation characteristic and consumers' resistance to innovation?
2. What is the causal relationship between consumers' characteristic and consumers' resistance to innovation?

3. Which aspects of consumers' and innovation characteristics, largely affect/determine consumers' resistance to innovation?
4. How the moderating role of consumer innovativeness between the innovation characteristics and consumer resistance to innovation?
5. How the moderating role of consumer innovativeness between the consumer characteristics and consumer resistance to innovation?

1.5 Research Objectives

1. To determine the causal relationships between innovation characteristic and consumer resistance to innovation.
2. To determine the causal relationships between consumer's characteristics and consumer resistance to innovation.
3. To analyze the factors of consumer and innovation characteristics, largely influence/resolve consumer resistance to innovation.
4. To investigate the moderating role of consumer innovativeness among the innovation characteristics and consumer resistance to innovation.
5. To investigate the moderating role of consumer innovativeness among the consumer characteristics and consumer resistance to innovation.

1.6 Significant of the Study

The significance of the study can be view as from both practical and theoretical aspects. Theoretically, the present study has contributed to the consumer resistance to innovation with the relationship of consumer and innovation characteristics literature. The study provides empirical evidence in relation to the relationship among innovation characteristics, consumer characteristics and consumer resistance to innovation based on Two underpinning theories such as innovation resistance theory and appraisal theory (Ram, 1987; Arnold, 1960).

The practical aspect of this study were addressed to the practitioners in recognizing the various drivers and possible challenges to the resistance of innovation like smartphones in the mobile industry. This study has provided a guideline to practitioners in designing their new products or services to reach the target market. Since the findings of this study manage to highlight the factor that influence the resistance to innovation, and the moderating effect of consumer innovativeness. This study gives more insight into the resistance and their moderating effect among the variables such as consumer characteristics and innovation characteristics factors.

Furthermore from the practical viewpoint, finding from this study additionally provided deep understanding to the professionals in perceiving the different and possible difficulties to the resistance to innovation like smartphones in the mobile business. Along these lines, the proposed model of this study could be served as a rule to professionals in planning their new products or services to achieve the target market.

Since the findings of this study figure out how to highlight the element that impact the resistance to innovation and give more understanding into the resistance and their direct impact. Consequently, the study will give the huge indicators to specialists in distinguishing the particular elements prompting the resistance of innovation (Smartphone) in the mobile-technology business. So the motivation behind this research is to distinguish and examine the relationship among "consumers' resistance" and distinctive elements from "innovation and consumers' characteristics". From that point, the critical elements are recognized which fundamentally influence/focus consumers' resistance to innovation.

1.7 Scope and Limitation

As discussed earlier in this chapter, this study examines the relationship between consumer's characteristics, innovation characteristics and consumer resistance to innovation. Other than that, this study also determines the most influential factors on the consumers' resistance to smartphones. In line with objective of this study, the unit of analysis of current study are university students in Pakistan.

In addition, the study is a primary in nature so it depends on a questionnaire with adapted measures of the construct. The measures may not be perfect, and consequently, need rectifying and validation in distinctive settings. Furthermore, current study is cross-sectional in nature. This study geographically limited to Pakistan and also limited to the public university students in Pakistan because of budget and time constraint. At last this

study focuses on the technological innovation like Smartphone's in Pakistan during 2013 to 2016 and findings will be related to this period.

1.8 Operational Definitions of Variables

There are 11 scientific terms used in this thesis. They carry specific meaning to this study, which may differ from their existence those in other works. Hence, each of them is outlined scientifically in Table 1.2.

Table: 1.2
Operational Definitions of Variables

Variable of the Study	Operational Definition	Sources
Consumer Resistance to Innovation	In this study, consumer resistance to innovation has been defined as "Innovation resistance is a consumers' reaction towards an innovation, either because it creates potential changes from a satisfactory status quo or because it is in conflict with their belief structure". Resistance to innovation leads consumer response like direct rejection, postponement or opposition. Postponement occurs when consumer delays the adoption of an innovation. It simply "refers to pushing the adoption decision to future". Opposition refers to "protesting the innovation or searching for further information after the trial". Rejection refers to direct rejection of consumer actively or passively.	Mirela *et al*., (2009); Yang, (2005); Szmigin & Foxal, (1998); ; Sheth, 1981
Relative Advantage	In this study, relative advantage has been defined as "the degree to which an innovation is perceived as being better than the idea it supersedes". The consumer always perceives economic profitability, social prestige, and other benefits like innovation is reliable more functional with good quality and price.	Yiu *et al*., (2007); Jo, (2006); Yang, (2005); I.Brown *et al*., (2003)

Perceived Risk	Perceived risk has been defined as "degree that the consumer's subjectively perceives the losses of unfavorable results due to the uncertainties of using innovation" Perceived risk refers to individual's "observation or their beliefs with respect to security measure and particular information secrecy taken by mobile suppliers. It also concerns about potential loss and unforeseen issue when utilizing innovative product like smartphones	I.Brown *et al*., (2003); Holak & Lehmann, (1990)
Complexity	In this study complexity defined as "the degree to which the innovation is perceived as relatively difficult to understand, use or comprehend". When consumer use innovative products like smartphone perceive difficulties and user cannot easily understand the function of innovative product like a smartphone.	He *et al*., (2006); I.Brown *et al*., (2003); Holak & Lehmann, (1990)
Price	Price is defined as "Price is the amount of money charged for a product or service, or the sum of the values that consumers exchange for the benefits of having or using the product or service". For consumer Price is fundamentally the amount of cash a consumer ready to pay for in return with products and services that they think are significant.	Richardson, Jain, and Dick, (1996); Grewal *et al*., (1998); Sinhaa & Batrab, (1999)
Motivation	Motivation is defined as "goal-directed arousal". Consumer perceives technology to be useful and easy to use as well, helping in the near future.	Lee *et al*., (2007); Park and Chen, (2007)
Social Influence	In this study social influence is defined as "degree to which people have the impression that important others ensure they would better use a new system". Consumer buying decision depends on their family and friends. Consumer always trust and purchase technology because family and friends recommended.	Isen, (2011); Agost& Hughes-Hassel, (2005), (2005); Nihal, (2011); Walczuch, (2004); Carayannis et al., (2013).
Self-Efficacy	In this study, self-efficacy is defined as "an individual's perception of his or her ability to use a technological innovative product". Consumer have self-confidence in his or her ability to perform any behavior.	Hung *et al*, (2003); I.Brown *et al*., (2003)

Emotion (Negative)	In this study emotion (negative) defined as "Emotions are defined as mental state of mind emerges from the cognitive appraisals of event during individual interactions with the surroundings". Consumer feel frustration, anxiety, fear, irritation and scared from innovative products when it does not meet the consumer needs and wants.	Richins, (1997); Reynolds *et al*. (2006)
Attitude towards Existing Product	In this study attitude towards existing product is defined as "examines consumers' attitude toward existing products and is influenced by tradition and the abilities of existing product in serving consumers' needs and wants" Consumer mostly satisfied with old and existing product over innovation.	Wang *et al*., (2003); Schwartz, (1992)
Consumer Innovativeness	Consumer innovativeness is defined as "the degree to which an individual is earlier in adopting new ideas than average member of his or her social system". Consumer like innovative products and always love to try new products available in the market.	Doughfous et. al., (1999)

1.9 Organization of the Thesis

The study comprises on five chapters including chapter 1. Moreover, chapter 2 highlights the significant literature for the factors considered in the theoretical framework of this study, definition of resistance to innovation underpinning components of the essential beliefs, innovation resistance theory utilized as a part of this study. This chapter likewise includes reasonable schema in the form of conceptual framework and the assumptions in the context of this study.

Chapter 3 present the research methodology utilized within this study. In this chapter includes research design, measurement of the variables, population and sampling

techniques, data collection procedures, the results of the pilot test and statistical tool to analyze the data.

Chapter 4 concentrates on the findings of the research. Finally, the Chapter 5 provides the discussion and the conclusion of the research. This chapter contains the research of the results in line with the objectives of the research, the effects of the research, limitations and suggestions for future research. This chapter section ends with the last statement of the research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter begins with the definition and conceptualization of innovation, smartphone and consumer resistance to innovation. Furthermore, an overview of the relationship between consumer characteristics, innovation characteristics and consumer resistance to innovation are given. Next, theoretical frame work was developed on the basis of previous discussed literature and two underpinning theories such as consumer resistance to innovation and appraisal theory, which demonstrate the relationships among the study variable. After that this chapter describes the moderating role of consumer innovativeness related to consumer resistance to innovation. Finally, this chapter illustrates the research framework and discusses the proposed hypotheses formulated in this study. In this chapter term, smartphone and innovation have been used interchangeably. In overall thesis smartphones are used as an innovation. Similarly the term consumer innovativeness and innovativeness interchangeably.

2.2 The Concept of Innovation

As mentioned in introduction part, the term innovation and smartphone used interchangeably. Previously, the term innovations were studied in different perspective

such as management, economics, sociology and technology (Rogers, 2003). Likewise, there are various approaches to hypothesize and operationalize the innovation. In line with this idea, when the innovative products are launched, it brings new change in the mind of the customer. In 2003, Rogers defined innovation as “an idea, practice, or object that is perceived as new by an individual or another unit of adoption". Hence, in line with definition given by (e.g. Rogers, 2003) this study was focused on innovation as an object (smartphone used as product, service or technology).

2.3 Defining Innovation

Traces back from the literature, Innovation has been significant focus of attention for scholars and organization particularly in monetary aspects. In past many studies have been conducted to highlight the innovation in global prospective (e.g. OECD report, 1991; Garcia and Calantone, 2002). Moreover, approximately more than 60 definitions have been proposed by different scholars to define innovation in different disciplines like economics, administration, sociology, and communications (Baregheh, et al., 2009). The purpose behind different definitions given by different scholars to capture the idea of innovation processes that begins from product innovation to resource replacement.

Josef Schumpeter was the first scholar who initially defined innovation as an essential trait that creates the capital for firms (1934). Schumpeter further suggested that innovation is basically rents-entrepreneurial in nature which play an important role in changing the rules of rival inside the industry. Describing the process of

"entrepreneurship," Schumpeter explains that innovation occurs when a firm has "means to join together materials and forces in an unexpected way" (Schumpeter,1934).

Other than that, Penrose (1959) defined innovation as "the use of precisely the same resources, used for distinctive purposes or in different ways in mixture with distinctive types of resources." Additionally, Thompson's (1965) defined innovation as “the generation, acceptance and implementation of new ideas, processes, products or services." Furthermore, number of scholars defined innovation as "state of the art" (Abrahamson, 1996; Kimberly & Evanisko, 1981), some of them defined as “the concept new to the organization" (Zbaracki, 1998; Mccabe, 2002). Recently, Dutta and Lanvin (2013), explained that innovation is the process by which ideas are generated and marketed, and innovation hubs can help lift up that process to the level of a distinguishing capability.

2.4 Technological Innovation

The technological innovation is an important development in dynamic market for a technological innovation which leads to the progress of innovation. Further it explained in two methods, first includes technological development for creation, and second it opens new opportunities for consumer by commercializing the innovative products in order to increase its performance in the market (Garcia & Calantone's, 2002; Gourville, 2006). Consistent with previous argument electronic and digital products can be considered as technological products which increase the opportunities for companies to

capture the maximum market share in order to sustain in the competitive market. Hence, with respect to this study smartphone considered as technological innovation.

2.5 Types of Innovation

Basically innovation divided into two types; first radical and second incremental innovations. In this research, researcher followed "radical innovation". In 2006, Assink defined radical innovation as "a product procedure or service with also extraordinary presentation features or familiar features that offer significant improvements in performance or costs that transform existing markets or create new ones". Moreover, Garcia and Calantone (2002), highlighted that radical innovation is very important for the marketers or manufacturers because of their abilities to carry the innovative resources of destructive benefits; secondly, consumers are very important because they are the key cause of economic and social transformation in daily life span (Dahlin & Behrens, 2005; Kasmire et al., 2012). Furthermore, according to Heiskanen et al. (2007) acceptance of "radical innovations" carries a lot of commitment and requires risk as well as cost (comprising the mental efforts and cost of wisdom) than the acceptance of "incremental innovations".

2.6 Defining Innovativeness

The definition of Innovativeness is the most commonly applied concept to measure the level of the newness of an innovation. Garcia and Calantone, (2002) discovered more

than 21 empirical studies that have been conducted to conceptualize the innovativeness, which reveals that there is no contradiction in their conceptualization they given the same concept as “the degree of discontinuity in the status quo in marketing and/or technological factors”.

The term discontinuity in marketing refers to the disturbance an innovation causes in a market, in the same way as the making of new marketing networks or new buyers in the market. Similarly, from a company's point of view, very creative products may show themselves in the need to get new advertising abilities. High technological discontinuities, alternatively, are technological quantum jumps that need consumers and firms to gain new technological information. Marketing and technological irregularity accordingly give the first reference indicate the novelty of product innovations. Further, Garcia and Calantone's, (2002) study revealed that most studies assessed product creativeness structure either a macro or a micro viewpoint. On the macro level inventiveness measures how new an innovation is to the world, business sector or industry. The antecedents describing inventiveness on the macro level are subsequently exogenous to the firm. For instance, innovativeness on the macro level concerns the awareness of innovation to the world and industry or the formation of new rivals by introducing new innovations. Inventiveness on the micro-level concerns the novelty perceived by buyers or firms. Accordingly, dependent upon the buyer's or organizations viewpoint, the observation of innovativeness is to be expected to change. Further, it needs to be brought up those innovations that are seen as new on the macro level (e.g. Markets). By applying the two levels of investigation, i.e. macro versus micro and marketing versus

technology point of view, one can recognize three distinctly unique kinds of innovative products: radical, truly new and incremental innovation. This study concerns micro level of innovativeness from the buyer's point of view.

2.7 Smartphone Definition

In this study as discussed above smartphone used as an innovation. While looking for the definition of a smartphone, it is noticed that no one accepted the meaning of smartphone. Although the meaning of smartphones has enhanced over time (Jo B., 2006). Gartner, a well-known specialist describes "Smartphone" for instance "A large-screen, voice-centric convenient system designed to offer complete cell phone features while at the same time performing as a personal digital assistant (PDA)" (Jo B., 2006). "Palm (a hand-held gadget manufacturer) meaning on Smartphone is A portable device that combines a wireless phone, e-mail, and Web access and organize into a single, integrated piece of hardware, that represents radical innovation in the cell phone market (Mike, 2007). According to Yuan (2006), a smartphone, is any electronic hand-held device that combines together the availability of a cellular phone, personal digital assistant, also called PDA, or another information system".

Furthermore, Chang and Chen (2005), revealed that smartphone gadgets have one most common guideline characteristics: they all provides cellular phones, E-Mail/Internet, and basic PDA enactment. For this research, we determine smartphones as a device that provides a cellular phone, E-Mail/Internet, PDA (personal digital assistant) performance

with a full keyboard and comparatively big display. Considering this, with respect to the following mobile phones as Smartphones; the cellular phone mark*et al*so identifies these gadgets as Smartphones (CNET, 2009)". Nokia N-series, Nokia E-series, Nokia express music series, Samsung smartphones, Apple iPhone, HTC T Mobiles, LG, and Blackberry etc.

2.8 Consumer Resistance to Innovation

After the definition of innovation and smartphones, there is a need to understand the concept of resistance to innovation. However, innovation resistance is a most vibrant field of study for economy development of the country. Nowadays, many researchers try to analyze the variables which identify the consumer behavior towards innovation resistance, which brought up consumer understanding and their good approach towards innovation (Cornescu & Adam, 2013). In addition, Mohtar and Abbas (2015), argued that the consumer response towards innovation which always create resistance to innovation because of their personal beliefs and norms structure. On the other hand, Cornescu & Adam, (2013) suggested that innovation acceptance is the consequence of increasing the resistance attitude towards innovation (Cornescu & Adam, 2013).

On the other hand, one aspect of resistance to innovation was that it occurs due to change executed by innovation like changes in consumption pattern or product called changes due to the resistance of innovation (Mohtar & Abbas2015; Gatignon & Robertson, 1989). In addition, Zaltman and Duncan (1977), define it as "any behavior that maintains the

status quo is facing pressure to change the status quo." The main reason behind this change which occurs due to innovation is basically common reaction by the human beings that change their lifestyle as well as change their living standard (Watson, 1971; Zaltman & Duncan, 1977). Another definition given by Ellen et al. (1991) and Schein (1985), which stated that "it is not an innovation per se that people resist, but the changes associated with it". Thus, resistance to the innovation is one of the vital and important variables for the adoption of technological innovation (Szmigin & Foxall, 1998). In previous studies, the resistance and adoption was two different consumer responses towards change that mainly happened due to innovation (Mohtar & Abbas, 2015; Lapointe et al., 2002).

Morever, Ram (1989), was found that, reasons behind resistance to innovation comes from adoption barrier. Consistent with previous line, these main hurdles are due to value risk, image, usage of a consumer, and traditional values. Among these hurdles specifically the usage of consumers affected by change which comes from an innovation because it's not friendly with consumer's current experiences, attitudes or workflow. Another is economic barrier which is known as value barrier of an innovation, which implies that it does not provide favorable price and good performance as compare to other products in the same market. Next is risk barriers which are associated with latest technologies which implies that consumer feels risk when they want to buy innovative products which are risky for them during usage. This argument has been validated by Lian and Yen (2013), who found that risk associated with the innovative product also the major hurdle to consumer's adoption of innovation. Other than that, tradition hurdles

includes alteration into the innovation might be the reasons of everyday life and it is also called "a preference for existing, familiar products and behaviors over novel ones" (Arnould et al., 2004; Chemingui & Lallouna, 2013). Image barrier which is another cause of resistance to innovation which comes from uniqueness in product class, brands identity or the origin of any country (Ram, 1989).

A large number of researchers analyzed that sometimes consumer's reaction towards innovative product was less excited even though the product is new and successful (Brod, 1982; Blackler & Brown, 1985; O'Connor et al., 1990; Murdock & Franz, 1983; Salerno, 1985; Gold, 1981), this minimum excitement of consumer response towards innovation called resistance to innovation (Ellen & Bearden, 1991). In the success of innovation, consumer resistance to innovation has played a significant role and consumer inhibit or delay the latest technologies which is one of the major reason for the failure of innovation in the market (Ram 1989; Sheth 1981). There are three types of consumer resistance, first one is direct rejection by the consumers, second is opposition and third is delay or postponement by consumers (Mirella et al., 2009; Szmigin & Foxall, 1998). However, consumer resistance to innovation is an important and significant aspect.

In the literature, a less number of studies focused the role of resistance in perspective of product and services adoption. Some of them defined resistance in the in the psychological point of view, resistance is an aversive motivational form, it is originated when someone perceived his freedom is threatened and leading to understanding as well

as action in the direction of retrieval the threatened liberty (Mohtar & Abbas 2015; Brehm 1966; Brehm & Brehm 1981, 2013).

Majority of the time resistance towards innovation happened passively. Consumers always resist to innovation without seeing these types of innovation for adoption. The passive resistance is a result of consumer's habits (Bagozzi & Lee, 1999). Moreover, Sheth (1981), highlighted the importance of habit which imperative predictor of consumer resistance to innovation. Chernev, 2004 and Gourville (2005) defined habit as "A typical human tendency is to strive for consistency and status quo, rather than to adopt new behaviors". On the other side according to the Bagozzi and Lee (1999), innovation can be resisted by consumer actively. In the case of active resistance, consumers do not decide to select the innovative product later when they assess the innovation has happened.

Research on consumer behavior by emphasizing on consumers or individual resistance is important because their perception about products plays a significant role in consumer resistance to innovation. Consumer resistance to innovation is very important due to its positive and negative consequences like success or failure the innovations (Yu, Li & Chantatub, 2015; Mohtar & Abbas, 2015; Leonard, 2004). Moreover, some of the studies that have done on resistance to innovation (e.g. Yu, Li & Chantatub, 2015; Mohtar & Abbas, 2015; Leonard, 2004) to identified the factors which determined the resistance to innovation but still some lacking remained, unexplored and neglected in determining the factors influencing the consumer resistance to innovation. Hence, to fill the gap in

discussed literature, this study identified most imperative predictors which determined consumer resistance to innovation.

Over the year major focus of the research on consumer resistance to innovation has focused on individual-level factors of innovation and consumer characteristics in different context such as tradition and norms, existing usage pattern, perceived image, information overload, physical risk, social risk, economic risk, functional risk (Brislin, 1970), organizational factors like, resistance to nanotechnology, mina logic case (Gauthier, 2010), some other individual, cultural and demographic factors like attitude towards innovation, perceived usefulness, perceived ease of use, social influence, personal innovativeness, cultural factors, demographic factors (Buuligedcu, Hollanders, & Seebi, 2012).

Despite all the argument which emphasize the importance of consumer resistance to innovation, there is still limited number studies which demonstrate the link between consumer characteristics, innovation characteristics and consumer resistance to innovation. Table 2.1 shows the summary of studies in the relevant field.

Table 2.1
Summary of the Studies on Resistance to Innovation

Authors	Variable	Focus of the Study
(Brislin, 1970)	Tradition and Norms, Existing Usage Pattern, Perceived image, Information Overload, Physical Risk, Social Risk, Economic Risk, Functional Risk, Social Risk	An Exploration of Consumer Resistance to Innovation and its Antecedents
(Starch, Insulin, & Syndrome, 2009)	Resistance Starch, Insulin Sensitivity, Insulin Resistance, Metabolic Syndrome	Hi Maiz Resistance Starch Improves Insulin Sensitivity in Individuals With Insulin Resistance and Metabolic Syndrome
(Gauthier, 2010)	Resistance to Nanotechnology, Mina logic Case	From Customer Resistance to Stakeholder Resistance The Case of Nanotechnology
(Criscuolo, 2012)	Bootlegging, Individual Innovative Performance	Going Underground: Bootlegging Individual Innovative Performance
(Tc & Janetius, 2012)	Technology Adaptation, Innovation Resistance, Demographic Variables	Technology Adaptation, Innovation Resistance and Net-Banking Behavior Among Middle Aged Adults
(Buuligedcu, Hollanders, & Seebi, 2012)	Attitude towards Innovation, Perceived Usefulness, Perceived Ease of Use, Social Influence(Norms and Image), Personal Innovativeness, Cultural Factors, Demographic Factors	An Analysis of Innovation Drivers and Barriers Economic and Market Intelligence on Innovation Social Attitudes to Innovation and Entrepreneurship
(Hajri, Xu, Nuwangi, & Sedera, 2014)	Productivity, Innovative Use, Cognitive Limit, Technical Process, Environment, Politics, Structure, Support	Individual Innovative Use of ERP System
(Gurtner, 2014)	Rejection/Opposition, Usage Barrier, Value Barrier, Physical Risk, Performance, Risk, Social Risk, Tradition Barrier	Modeling Consumer Resistance to Mobile

2.9 Gap of the Study

This study contributes to the resistance to innovation and appraisal theory in several ways. In terms of theoretical contributions, this study improves the existing literature by addressing two questions. First of all, this study extends previous literature by investigating the major factors that provides clear insight for the understanding of consumers" resistance in the perspective of smartphone. Secondly, in past major focus of research was remained to investigate the influence of consumer and innovation characteristics factors on adoption of innovation while little attention have been paid to see the relationship between consumer and innovation characteristics and resistance towards innovation (e.g. Kleijnen, Lee & Wetzels, 2009; De Cannière et al.,2009; Reinders, 2010).

Other than that, literature related to emotion mainly focused on positive emotion with consumer satisfaction (e.g. Chitturi, Raghunathan & Mahajan 2008), positive emotion with adoption of innovation (Cannière et al., 2009; Reinders, 2010). Whereas, less number of studies (e.g. Schwarzer & Born, 1997) have been done to examine the relationship between negative emotion and resistance to innovation. This reason may further boost researcher to investigate and extend previous literature particularly on negative emotions in discontinuance behavior. Likewise, research may look at what sorts of (negative) emotions are predominant and what kind of product assessments these emotions might be attributed in this study.

On the other hand, some researchers argued that consumer innovativeness was played an important role in the selection of innovative product (Citrin et al., 2000; Im et al., 2003; Lassar et al., 2005; Rogers, 2003). Consistent with previous line, Hauser et al. (2006), Roehrich (2004) and Im et al. (2007) argued that there is inconsistent relationship between consumer innovativeness and consumer resistance to innovation. Hence based on previous discussed literature there is need to further investigate the moderating role of consumer innovativeness in relationship with consumer resistance to innovation specifically in Pakistani context.

Therefore, current study could serve as an important contribution to the resistance to innovation theory specifically by the relationship between consumer and innovation characteristics and resistance towards innovation. In addition, current study also gives a deep understanding about the factors; which factor is more imperative to predict resistance to innovation in the context of young students in public universities of Pakistan. Thirdly, majority of researches that have been done in developed European context by ignoring the context of Asian underdeveloped country like Pakistan. So that's why current study conducted in Asian perspective particularly on Pakistan to extend the literature on consumer behavior which related to innovation management and resistance management.

2.10 Sheth Model

According to the Sheth (1989) study on the consumer (Psychological) resistance to innovation, suggested two concepts which are very helpful for the marketers and for the

consumers to analyze the psychology of resistance to innovation. The concepts of consumer psychology are; attitude or habits of the consumers in the direction of current product, in addition perceived risk related with the adoption of innovation by the consumers.

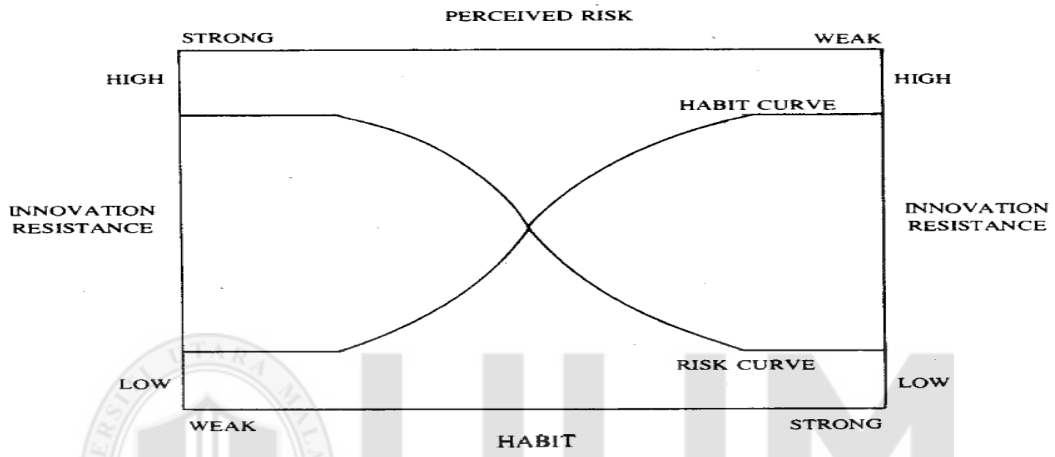


Figure 2.1
Sheth Model the psychology modeling of innovation resistance (Sheth, 1989).

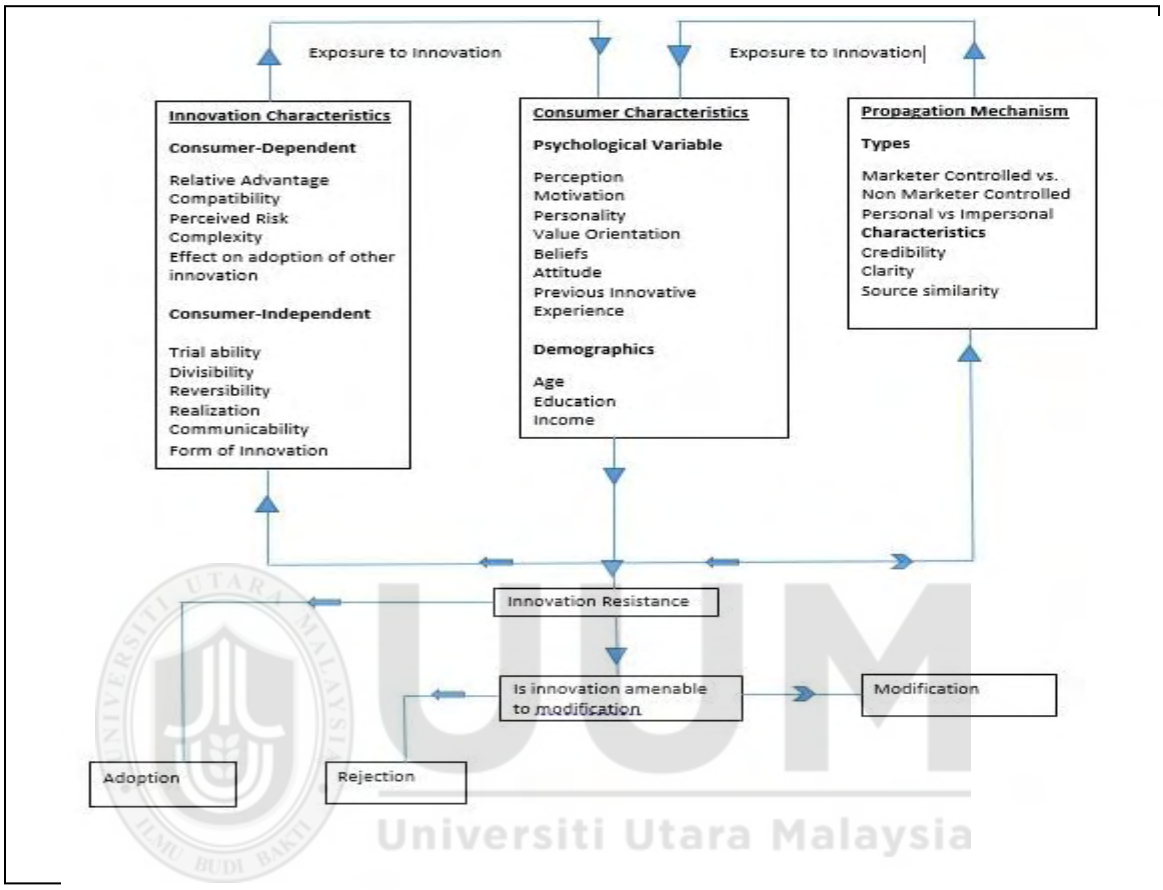
The subsequent Ram (1987) elaborated the detail of resistance to innovation as well as suggested a resistance to innovation model.

2.11 Ram's Model

As discussed earlier consumer resistance to innovation in this chapter, this Ram model also discussed the detail of consumer resistance to innovation. As per the Ram's model consumer resistance towards innovation depends upon characteristics which comprised on different variables like; the characteristics of innovation variables are; Compatibility, Relative Advantage, Complexity, Perceived Risk and expectations for better product

create a problem and create hurdles for adoption of innovation. On the other side, the variables of consumer characteristics are perceived as personality value positioning, motivation, perception, behavior, attitude, experience about innovative products, norms and their belief structure, age, education, and income of the consumers. All of the above mentioned variables are different from each other and having different effect on the products and businesses (Gatignon & Robertson 1991; Rogers 1995).

In 1994, there are two Korean researchers Yu and Lee adapted Ram's model and alter the Ram's resistance model and they omitted the propagation mechanism characteristics and claimed that in the social point of view "propagation mechanism" is a hurdle in the diffusion of innovation instead of the causes of resistance to innovation. moreover, some of the researchers (e.g. Goldsmith & Hofacker, 1991; Szmigin & Foxall, 1998; Im et al., 2003; Roger, 1995; Mohr, 2001; Tornatzky & Klein, 1982; Yu & Lee 1994, Midgley & Dowling 1993; Lassar et al., 2005, Lunsford Dale & Burnett Melissa, 1992) validated the Ram's model by highlighting the role of consumer and innovation characteristics particularly in the perspective of consumer resistance to innovation.



Figu
Ram

2.12

Yu and Lee model discussed resistance to innovation in detail as discussed in previous Sheth and Ram model. However, when Yu and Lee (1994) altered the Ram's model of resistance to innovation they differentiated that the hurdles of innovation come from the innovation resistance. As per the Yu and Lee, the characteristics of innovation and

consumers in Ram's model create resistance to innovation which is called consumer resistance to innovation. Nevertheless, propagation mechanism is not the main reason of the consumer resistance to innovation but it's having a greater role in diffusion of innovation in the social point of view. So consequently they claimed that innovation resistance in Ram's model generates resistance through the consumer and innovation characteristics.

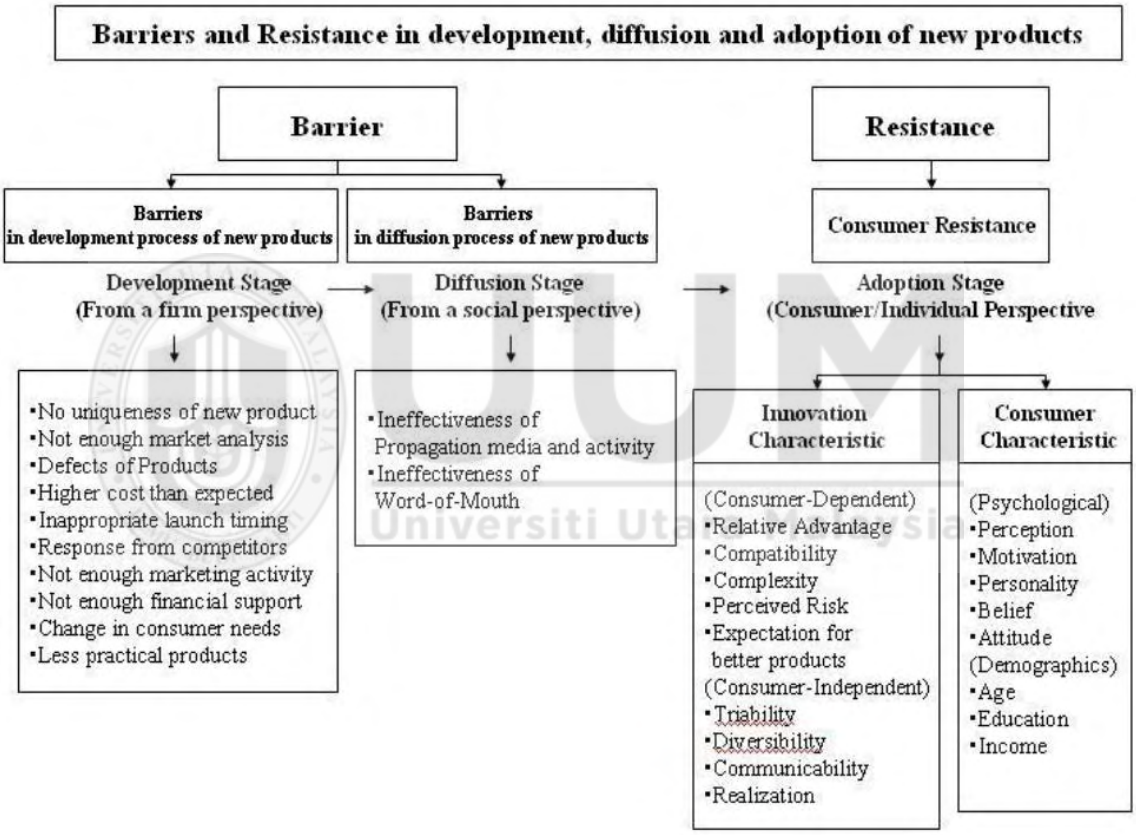


Figure 2.3
Yu and Lee Model (Le and Yu, 1994)

2.13 Technological Acceptance Model

TAM model is widely used through different researchers to examine the behavior of consumers towards the acceptance of new technology as well as determined the extent to identify the factors on the basis consumers to make the decision for the adoption of new technology (Gefen, Karahanna, & Straub, 2003). Technological acceptance model (TAM) is a subclass of Ram model and it particularly deals with the study of "technological innovation" and (PEOU) "perceived ease of use" determine the "complexity" and "perceived usefulness" from the "relative advantage" (Roberts, 2004). Subsequently different researchers used another factor like "self-efficacy" which is an important element rather than perceived ease of use (PEOU) to examine the customer behavior towards innovative products (Tan, 2000; Ellen, Bearden, & Sharma, 1991).

2.14 Related Studies of Consumer Resistance to Innovation

Why is there a need to study consumer resistance to innovation? Is important in this study. Innovation resistance comparatively neglected concept in innovative product management. The majority of the previous studies concentrated on innovation adoption and diffusion; as a result innovation resistance used to be traditionally measured indirectly by looking at the individual innovativeness (Tansuhaj et al., 1993). Consistent with this view, adoption and diffusion examine how an innovation spreads in the market from the time of innovation whereas innovation resistance focuses on why consumers are an unwillingness to adopt newness (Ram, 1989; Tansuhaj et al., 1993). In the past, a number of researches used consumer characteristics and innovation characteristics as

main predictors to evaluate the consumer behavior and their intention to adopt the new product (Mohtar & Abbas, 2015; Ram, 1989). On the other hand, some researchers used the Ram model to evaluate the influence of "innovation attributes" (characteristics) towards innovative products particularly in customer point of view (Laio, Liu and Cheng 2015; Holak & Lehmann, 1990; Brown, et al., 2003; He, Duan, Fu, & Li, 2006; Tan, 2000).

The suggested Roger model (1987) is used to evaluate the impact of innovation characteristics on the adoption of innovation, where number of characteristics like relative advantage, complexity, and compatibility and trial ability found in the perspective of consumer resistance to innovation. He et al. (2006) used Rogers innovation attributes to investigate the variables that influence the consumer decision to adopt for instance, relative advantage is positively associated and complexity is negatively associated towards consumer acceptance about online electronic payments. Im et al., (2003) used "consumer characteristics" and their impact on the acceptance of innovation. Fang, Chan, Brzezinski, & Xu, (2006) conducted a research to investigate the consumer choices and the selection towards an online payment system. These choices of the consumers are a consequence of "innovation characteristics", "consumer characteristics" and TAM. On the other hand, number of researcher investigate the impact of consumer characteristics towards intention to adopt new technology(e.g. Han et al., 2006; Harkke, 2006; Lu, Yu, Liu and Yao, 2003) and some of them using the technological acceptance model by adding other variables (e.g. Fang, et a., 2006; Constantiou, et al., 2006; Koivumaki, et al., 2006). Furthermore, Ketkar, Shankar, and

Banwet, (2012); Yiu et al,. (2007); Amin, (2008) used technology acceptance model in the perspective of mobile commerce, online banking to investigate the influence of consumer characteristics on purchase behavior of consumers towards latest technologies. Puschel et al., (2010) used technological acceptance model (TAM), TPB, IDT to investigate "consumer's characteristics" and their following influences on acceptance of the mobile banking adoption. The findings of the study revealed that relative advantage and self-efficacy significantly influences mobile banking adoption. Based on the TAM model, Sripalawat et al. (2011) was found that self-efficacy and perceived usefulness were most influential factors in mobile banking adoption. Furthermore, Koeng-Lewis. et al., (2010) collected 155 useable sample of consumers aged 18-35 in Germany and found that perceived usefulness and perceived risk were significantly influence the consumer intention to adopt mobile technology. Other than that, Park and Chen, (2007) also used technological acceptance (TAM) to investigate the influence of self-efficacy on the selection of "Smartphone" through medicinal surgeons and nurses. The findings of this study indicated that self-efficacy positively influence the adoption of technology, which Implies that when consumer are more confident and have positive feelings then their intention to adopt new technologies is high. Dasgupta et al., (2011) used technological acceptance model (TAM), conducted a study to examined the influence of perceived usefulness, ease of use, self-efficacy, image, value and credibility on consumer intention to adopt mobile banking by using 325 sample from MBA students in India. The findings of the study revealed that perceived usefulness, self-efficacy and ease of use were significantly influencing consumer adoption towards latest technologies.

Furthermore, Guus et al. (2001) and Yang, (2005) criticized the TAM that it failed to deliver the concept of accepting advanced technologies in what manners "consumer's perceptions" and also in what manner all such types of consumer perceptions can be changed to enhance the adoption/acceptance.

As above discussed the literature shows that a number of researches were focused on customer acceptance of innovation, but very little attention paid to see the reasons behind the consumer resistance to innovation (Ram, 1987; Gatignon & Robertson, 1985). In addition, both adoption and diffusion theories does not support the procedure of consumer resistance to innovation.

Attitude towards existing product and motivation are selected as consumer characteristics to investigate the influence on consumer resistance to innovation. As researcher have selected these factors from different model same other variables are selected on the basis of different reasons because most of the studies have utilized perceived usefulness, perceived ease of use, compatibility, complexity, trial ability, adoptability as the antecedent of consumer resistance to innovation. Perceived ease of use and perceived usefulness, complexity, trial ability and adoptability are commonly used in determining the consumer resistance to innovation in previous studies (Park & Chen, 2007; Roberts, 2004; Morris & Venkatesh, 2000).

Despite all arguments that have been discussed in previous literature some variables like innovation characteristics (e.g. social influence and price) and consumer characteristics

(e.g. motivation, self-efficacy, emotions and attitude towards existing product) which are not fully explored yet in the perspective of consumer resistance to innovation. Furthermore, the proposed antecedent factors of emotions such as negative emotions social influence, perceived risk, relative advantage, motivations, self-efficacy and attitude towards existing product as well as consumer innovativeness as a moderator have been employed by current study to investigate the consumer resistance to innovations. Moreover, the study of social influence, price, emotion (negative) and consumer innovativeness in the context of resistance to innovation is less studied and need to explore more in the domain of consumer resistance of innovation. The summarized findings of previous studies which revealed that the major focused of studies on direct relationship between the predictors and consumer resistance to innovation.

There are very limited studies found in the previous literature those exploring the determinants relationship with consumer resistance to innovation. Similarly, there are few studies found empirically investigating the consumer awareness - one of the major factors towards consumer resistance towards technologies (Park & Chen, 2007). Lennon (2007), while exploring the factors those contribute to consumer positive decision to adopt innovations, emphasized that it was equally significant to understand the reasons behind resistance to latest technologies or ideas (Midgley & Dowling, 1993; Rogers, 1995). It was found that three innovative projects, out of four, fail due to consumers' resistance (Cooper, 1990). Whereas, Studies are limited on resistance to innovation and specific context only. However, still there is limited number of studies providing understanding and explanatory power of consumer resistance to innovation. Understanding on consumer

resistance to innovation, there is lack of research focus of consumer resistance to innovation.

2.15 Underlying Theories of Innovation Resistance

Reviewing the previous literature reveals some challenging models which have been mostly used by different researcher to predict consumer resistance to innovation. These models include innovation resistance theory (Ram, 1987) and appraisal theory (Arnold, 1960).

2.15.1 Innovation Resistance Theory

In 1987, Ram and Sheth, initially developed innovation resistance theory which is based on two dimensions like consumer characteristics, innovation characteristics and also discuss the reasons of consumers who cannot accept innovation. Besides, Ram and Sheth specified the reasons that consumers resist innovation is just because of the difficulties produces the change and conflicts through innovation. These conflicts can be a consumer's barriers and these are divided psychological and functional barriers.

The barriers that stop the adoption of an innovation comprises of image and tradition barriers known as psychological barriers. Similarly, Psychological barriers usually caused through consumer's previous belief (Ram & Seth, 1989). Other than that, according to this theory consumer personal beliefs are also influenced by some factors for example (motivation, perceived as personality value positioning, perception, behavior, attitude,

previous experiences about innovative products, norms and their belief structure, age, education, and income) which lead consumer resistance to innovation.

Furthermore, consumer characteristics perceived by consumers determine the extent of consumer resistance. Consumer personality is the main factor of innovation resistance. Variety seekers or innovators love innovating for the purpose of the new experience and will thus have a lesser resistance to innovative products. Personality traits, for instance, self-efficacy play a significant role in how consumer respond towards innovations. For example, in the situation of innovations which cannot be verified before purchase. A consumer with lower self-efficacy would relatively delay up to the product performance have been illustrated sufficiently. Hence, self-efficacy has negative relationship with consumer resistance to innovation (Rokeach, 1973).

Another source of consumer resistance to innovation is consumer motivation. Consumer behaviors that are comfortable based on consumer "habits" (Sheth, 1981) are resistance to change. If the consumer rather happy with the existing routine and the innovation threatens to disturbance established usage pattern then consumer to be expected to resist the innovation. Hence, motivation have negative relationship with consumer resistance to innovation. Similarly, consumer favorable attitude towards innovation influences the resistance. If the consumer perceives the need for innovation is expected to resist the innovation. Furthermore, if the consumer perception about the innovation remains satisfactory both before and after is probable resistance to innovation. The more

favorable attitude of consumer towards existing innovation, the higher the consumer resistance to innovation.

On the other hand, the barriers that stop the adoption of an innovation comprises of risk, usage and value barriers known as functional barriers. For instance, these functional barriers arise if a consumer sees some significant changes from adopting an innovative product (Ram & Seth, 1989). Furthermore, Ram's resistance to innovation theory also includes innovation characteristics such as Perceived Risk, Relative Advantage, Complexity and Better Product Adoption as factors their influence on adoption of innovation or main reasons for rejection of an innovation.

Similarly, characteristics of innovation perceived by consumers also determine the extent of consumer resistance. Ram and Sheth also validated the view of Rogers (1962) who revealed that five innovation characteristics such as the comparative advantages over an innovation can be in the perspective of economic gains or cost savings. The innovation may possibly provide better performance at relatively low costs in other verses greater value. If the low relative advantage of innovation over current substitutes available, then consumers are more expected to resist. In addition, perceived risk related with the adoption of innovation. The level of perceived risk depends on the type of innovation. Continuous or minor innovation (Robertson, 1971) have a lower level of perceived risk for the consumer. Whereas, discontinuous or major innovations threaten a disturbance of consumer routine behavior and the higher the level of perceived risk, the higher the innovation resistance. Another characteristic of innovation, complexity is the extent to

which the innovation is perceived as relatively difficult to understand and operate. Certain innovations or new ideas can be complex or difficult to be the adopter or prospective adopter from the use of innovative products.

Other than that, a price is another innovation characteristic which is the economic cause of the postponement of the consumer conflict with the current approach of use of the product. Furthermore, economic factors like price are sole predictor of rate of adoption because the term rate of adoption mean it can be adopted or rejected (Griliches, 1957). Which implies that when the price of new products is high, the rate of adoption is decreased which ultimately increase the consumer resistance to innovation (Rogers, 1995).

With respect to the innovativeness of consumer has also based on innovation theory. Rogers and Shoemaker (1971), gives the definition of consumer innovativeness like "the degree to which an individual is earlier in adopting new ideas than average member of his or her social system". Fundamentally, that consumer who having high degree of innovativeness are categorized via (Blackwell, Miniard, & Engel, 2006) a readiness to create changes in the things and ideas; (Boone, 1970) a characteristics of consumer to impact on others to select the innovative products and ideas; (Greenleaf, and Lehmann, 1995) is very useful for the consumer for good decision as well as for the problem solution in an social system or organization and (Guiltinan, 1999) the suitable time and degree of selection of the said modification in a practical correlation.

Hence, in 1989, Ram and Seth argues that rejection is the strongest form of consumer resistance to innovation as compared to another outcome such as postponement, and delay which are mainly affected by situational factors or innovation factors. For example, product perceived complexity which lead to the adoption or rejection to the innovation. In addition, Yadav and Varadarajan, (2005) conducted an empirical study on the perspective of consumer resistance to innovation who argues that rejection is imperative predictor of consumer resistance to innovation.

2.15.2 Appraisal Theory

Appraisal theory was proposed by (Arnold, 1960) and developed by (Lazarus, 1966) to describe how different emotions might occur after the similar occasion. On the basis of appraisal theory, cognitive appraisal method has used hidden inspirational and assessment of emotions in order to explain their influences on consumer behavior related to their consumption. This technique considers that actual evaluation of a situation, for example, good quality, confidence combine to encourage particular emotions. The inspired emotions influence consumer behavior. This technique could be applied to describe a wide series of emotions and consumer confidence including those with relative valence and degree of consumer excitement, are motivated and how they are quick to different behavioral responses of the consumers.

The method cognitive appraisals were termed as “a particularly important approach” (Johnson & Stewart, 2005). As others, scholars (Bagozzi *et al*., 1999) projected an approach that cognitive appraisals deliver an extra comprehensive description of interactive reactions of consumers and their individual certainty of emotions that occurred. However, before study researcher can evolve our understanding through implementing cognitive appraisals used for the research of consumer behavior, marketers must reach an agreement on what are the features an occasion or a condition are considered which encourage consumer emotions.

The cognitive appraisal method was used to understand the consumer emotions related to their personal consumption and their influence on post purchase behavior (Nyer, 1997) and use own heuristics (Tiedens & Linton, 2001). Many studies developed separately, but very complex (Scherer, 1988) and their perspective what appraisals underlying reason of emotions (Frijda, 1986; Ortony *et al*, 1988; Roseman, 1984; Scherer, 1988; Ellsworth, 1991; Smith, 1985).

Whereas it was specified that emotion influences consumer belief, decision making regarding innovative and information processing (Davidson, 1994; Forgas, 2000). Ketelaar and Clore (1997), proposed that emotional appraisals create distinct emotions postulates that will affect subsequent information processing. They argue that the information providing is emotional useful, as its advantages for consumers to resolve specific difficulties and uncertainties about products. For instances, annoyance is created by the experience with someone who took care of one unfairly, and gives information for

the individual who is to blame somebody. Consequently, emotion will motivate activities, for instance, punishment in this situation. Ketelaar and Clore (2010) stated that emotions are unique psychological states that arise after one makes appraisals of an innovation. Appraisals are relationships one makes between a real and wanted state and normally happen spontaneously (Bagozzi, & Lee, 1999).

2.16 Factors Affecting the Consumer Resistance to Innovation

Consumer and innovation characteristics are two main causes of consumer "resistance to innovation" (Kim, 2005; Veryzer, 1998; Ram, 1987; Yu & Lee, 1994; Dunphy & Herbig, 1995). Consumer resistance to innovation was generated by the negative response of customer against new product which is basically the extent to which consumer resist to adopt new technology (Ram, 1987). Agarwal (1997), argued that "innovation characteristics" has played important role to describe the consumer attitude in the direction of innovation. Although, some researchers conducted study to describe role of innovation characteristics to implementation of innovation that leads to adoption or rejection of technology (Tornatzky & Klein, 1982; Okiro & Ndungu, 2013). On the other hand, Dunphy and Herbig, (1995) stated that "Consumer characteristics" are the "psychological" attributes of consumers, for example in what manners they perceive the innovativeness regarding specific innovative product. This implies that resistance to innovation depends uopn the psychological attributes of consumers.

2.17 Innovation Characteristics

As per Ram (1987) and Kelly and Kranzberg (1978), “Characteristics of innovations” are categorized into two perspectives, first perspective is related to consumer independence and the second perspective is consumer dependent. With respect to the view of Ram (1987), aspects of consumer independents perspectives may be anticipated to build the similar type of resistance through all the consumers and although it is out of the scope of that study. Furthermore, the impacts of Consumer-dependent components differ from consumer to consumer. “Innovation characteristics” (customer dependent) elements impact on decision-making ability of the consumer to accept a different product that components are; relative advantage, complexity, perceived risk, social influence and price. Yu & Lee, (1994) and Ram, (1987) stated that gaining knowledge from these factors and their influence on “resistance to innovation” is important for the innovation success. Below is an in-depth details are given of each factor.

2.17.1 Relative Advantage

In 1971, Rogers and Shoemaker defined relative advantage as “the degree to which an innovation is perceived as being better or more prevalent than the idea it supersedes". There were some studies (e.g. Holak & Lehmann, 1990; Tornatzky & Klein, 1982) who used the same definition given by Rogers & Shoemaker, (1971). Rogers (2003), validated that Relative advantage has been used mainly in diffusion of innovation research and also

grab huge numbers of the tangible features of innovation. Furthermore, Rogers measured the idea of relative advantage with low cost, social prestige, saving of effort and time, financial reward, economic profitability and decreased comforts (2003).

In past some studies like (e.g. Riquelme & Rios, 2010; Puschel et al., 2010; Rogers, 2003) explored that relative advantage is very significant factor for the adoption of innovation. Likewise, Moore (1991) established a measure of relative advantage that influence the rate of diffusion of innovation. Similarly, Al-Gahtani (2003) explored the impact of relative advantage on consumer adoption which was significantly positive. Moreover, Kolodinsky, Hogarth (2004) stated that electronic banking increased due to the relative advantage. While, Lin (2011) stated that attitude of consumers towards mobile banking is positive when they perceive clear advantages. Relative advantage has been acknowledged as an imperative predictor of adoption in a majority of the aforementioned studies. This is due to the belief and attitude by the potential adopter that the relative advantages represent economic improvements for the individual or organization compared with the idea it supersedes (Frambach, 1993; Au & Enderwick, 2000). Hence, the previous innovation literature has established that relative advantage is one of the best and most consistent predictors of innovation adoption.

On the other hand, Relative advantage clearly provides benefits of adopting the new technology as compared to the costs. This is because of users perceive advantages in style, design, status and dependability relative to other comparable innovations. If a product is very expensive compared to other brands, prospective buyers can have a very

low economic benefit (Sypher, 1997). Similarly, the customer will have fear, uncertainty, and doubt about whether the technology will deliver the promised benefits, and the customer will have the skills and capabilities to realize those benefits (Mohr & Sengupta, 2010). Besides dollar price, high-tech products can lead to a type of psychic cost, which is the emotional worry (Mohr & Sengupta, 2010).

A number of studies have been done to examine the influence of relative advantage on adoption of innovation, which demonstrate that an innovation is perceived to give major benefits as compared to its predecessor (Moore & Benbasat 1991; Riquelme & Rios, 2010; Puschel et al., 2010; Lin, 2011). Practically, relative advantage increase effectiveness, financial advantages which ultimately enhanced the status of end users (Rogers 2003). Previous research revealed that relative advantage of an innovation is positively correlated with the rate of adoption (Lin, 2011; Moore & Benbasat 1991).

Previously mainstream literature has been done to see the influence of relative advantage on adoption of innovation in different context. For example, a number of studies conducted by Meutner et al. (2005), Agarwal & Prasad, (1998), and Arts, Frambach and Bijmolt (2011), in the context of self-service technology to investigate the factors affecting the intention to use self-service technology. The findings of these studies revealed that relative advantage holds the degree to which potential adopters sees the innovation as offering an advantage over earlier modes for execution of the same task. Which implies that relative advantage has strong influence on innovation or SST adoption. On the other hand, some studies conducted in the perspective of usefulness in

the technology acceptance model (e.g. Montazemi & Saremi, 2013; Aylott and Mitchell, 1999; Cassill et al., 1997; Claudy et al., 2014) which argued that resistance occur when the utilization of new innovations needs higher monitory and non-monetary costs. This implies that consumer might see the relative advantage of an innovation over an existing product, yet consumer rejects it on the basis of image barriers.

Furthermore, previous studies stated that relative advantage has great influence on the adoption of innovation. For instance, Frambach and Schillewaert (1999) argued that relative advantage is imperative predictor of degree of adoption and have negative consequence like resistance to innovation. Likewise, in (2003), Rogers claimed that relative advantage has been one of the strongest predictor of innovation adoption and resistance to innovation. This is because of the belief and behavior by the potential adopter that signify the economic developments for the individual or organizations through relative advantages (Robinson, 2012; Mohtar & Abbas, 2015; Frambach, 1993; Kai-ming Au & Enderwick, 2000). Additionally, consumer have strong beliefs about innovation characteristics like its relative advantage over different innovative products and also very important factor of consumer adoption or rejection decision (Claudy et al., 2014).

Hence, majority of the previous literature have been done so far revealed that, when a consumer perceives the lower relative advantage of innovation over non-users of technological innovation, they are most likely to resist the innovation. With regard to this, in recent years number of studies have been undertaken which stated that when consumer

perceives lower relative advantage over different innovative products, they are most likely to resist the innovation, which implies that consumer perceives lower relative advantage with innovation, which leads to higher consumer resistance to innovation and another study hypothesized that different advantages offered by technological innovation , consumer are most likely to adopt it (Mohtar & Abbas, 2015; AL-Jabri & Sohail, 2012; Hu & Wu, 2011; Tidd, 2010; IST-Africa, 2015; KRA, 2015; Hu & Wu, 2011; Robinson, 2012; Mndzebele, 2013).

Therefore, based on the discussed recent literature, this study proposed that perceived relative advantage of an innovation is positively related to the rate of its adoption and negatively correlated to the resistance of consumers. Therefore, this study uses relative advantage is yet another determining factor for behavioral intention to use innovative products like smartphone in the context of Pakistan.

2.17.2 Perceived Risk

The idea of risk is critical to numerous issues or problems, including economy, management, and public services fields (Yang & Zhang, 2009). In the perspective of smartphone adoption, perceived risk is equally supposed to have an impact on the intention of a consumer to use the gadgets as well as other devices. Perceived risk is a well-established concept in resistance literature also (Claudy, 2010, Kleijnen*et al*., 2009; Stone & Grønhaug, 1993). Perceived risks were revealed as a key component of the purchaser, seller relations (Dowling & Stalin 1994; Mitchell, 1992; Taylor, 1974).

Bauer (1960) brought the perceived risk theory in order to explain consumer behavior that shows consumer behavior as risky behavior. As claimed by Bauer (1967) the advance perceived risk is the combination of reliability and uncertainty of the results. Besides, Cox and Rich (1964) have claimed that perceived risk comprises of two viewpoints which are uncertainties and outcomes. In accordance with Taylor (1974), the basic problem related to the behavior of consumer is the situation of choice. Because of the outcome of choice, that may be known in the future of consumer so that's why they deal with risk or uncertainty of such an outcome. Taylor (1974) confirmed that perceived risk is a basic portion of consumer behavior. Most of the researchers are conceptualized uncertainty in terms of individuals believes probabilistic (Mohtar & Abbas, 2015; Dowling, 1986). Moreover, Dowling (1986) proclaims that the idea of perceived risk is one of the more persistent in the theories of human decisions. Consistent with the previous research Yeung, Yee, and Morris, (2010) revealed that information, brand, quality control strategies to reduce the influence of consumer perception of food safety risk and then to facilitate the purchasing probability during a period of risk reduction or concerned about microbiological food contamination in meat of chicken.

Most of the researcher defined risk differently according to their disciplines such as psychology, economics, statistical game theory, where the concept of risk is linked with the choice situation which involved virtually negative and positive outcomes. Moreover according to (Stone & Gronhaug 1993) perceived risk in consumer behavior is mainly focus on potentially negative outcomes.

Furthermore, previous to relevant literatures regularly mentioned the meaning of consumers "perceived risk" and there is no understanding among experts regarding meaning, particularly in customer behavior area (Yang & Zhang, 2009) and the meaning offered by some previous researches is uncertain (Kim & Prabhakar, 2000; Liang & Huang, 1998; Limayem, Khalifa, & Frini, 2000; Loh & Ong, 1998). Apart from, the meaning of perceived risk has been different from each other in different perspective of the analyst (Conchar, Zinkhan, Peters, & Olavarrieta, 2004). As suggested by Lim (2003), it continues to be uncertain on current explanations of perceived risk and most of them are different, actually some of the explanations are confusing. In customer studies, perceived risk was described as the user's incredibly subjective function of the extent of negative outcomes and the possibilities that these outcomes may happen if the services or products are obtained (Dowling &Staelin, 1994). Furthermore, from previous studies there are six dimensions of perceived risk which are: financial, performance, physical, time social and emotional risk (Mohtar & Abbas, 2014; Brahim, 2015; Dholkia, 2001; Cherry & Fraedrich, 2002, Ram, 1989). In this study researcher measured three dimensions of perceived risk as a uni-dimensions

The justification behind the use of these reduced dimension in this study is that numerous previous studies have suggested the idea of perceived risk regarding to several types of failures that are performance, social, physical, economical, emotional, psychosocial, time, failure, and so on (Dowling, 1986). Jacoby and Kaplan (1972) observed that there are limited types of risk dimensions known as performance, economical, emotional, physical

and social risks as a whole risk concept which have greatest impact on the statistic of risk as a whole. Stone and Gronhaug's (1993) apply six dimensions of risk in analyzing the risk as a whole known as finance, social, time, performance, physical and psychological.

On the other hand, financial and psychological measurements are identified as major measures of the risk whereas the measurement of psychological dimension which shows significant mediating role for different other kinds of risk. With respect to the previous studies conducted by, Lim (2003) suggest different nine measures of the perceived risk which are called as performance risk, physical risk, social risk, psychological risk, personal risk, time and loss risk, privacy risk, perceived security risk, and financial risk. Consistent with this view, researcher revealed four sources or measures of perceived risk called perceived technological risk, perceived intention to use risk, perceived vender risk, perceived consumer risk and perceived product risk in their research.

With respect to Lim (2003) all measures of perceived risk was not any vital and strong effect on consumer behavior. According to Stone and Gronhaugs (1993), revealed that psychological and financial risk is the major risk dimensions. According to another research carried out by Bhatnagar *et al*., (2000) on web shopping observed that financial risk product risk, security and privacy risk are major measures of the perceived risk as whole. Within the same context another research conducted by Simpson and Lakner (1993) and Crisp, Jarvenpaa and Todd (1997) resulted that performance and personal risks are very important as compare to different kinds of measurement in online shopping (such as personal, privacy, economic, performance and social). Perceived financial risk

have been observed as an essential measurement in defining the consumer's behavior (Simpson & Lakner, 1993; Tan & Teo, 2000). Moreover, Aldas-Manzano *et al*. (2009) determine five measurement of perceived risk in their research of internet banking called as performance, social, security, privacy and time risk.

According to Yang and Zhang (2009), the measurement and the meaning of consumer perceived risk specifically in the context of mobile phones is inconsistent and unclear. Numerous researchers claimed that perceived risk by consumer has several dimensions but in according to different scholars they are confused and unclear which dimension should be included (Li & Bai, 2010; Yang & Zhang, 2009). The previous researches such as Bauer (1960) improving the idea of perceived risk might not particularly mention the dimensions of perceived risk (Li & Bai, 2010; Yang & Zhang, 2009). Because of this reason the majority of the scholars develop different kinds of dimensions of perceived risk for the use of different situations. Although scholars have been utilized other dimensions, these dimensions have not any limit the research to apply the perceived risk as a concept in identifying the consumer behavioral intentions. As for the current study focus on the overall perceived risk like product performance, security etc. to identify the consumer behavior by (Carter & Curry, 2013; Stone & Gronhaug, 1993).

Furthermore, the literature about the behavioral intention the perceived risk represents 'a customer's confidence about the possible uncertain negative results (Kim, Ferrin & Rao, 2008). Especially in the context of Smartphone resistance, perceived risk is additionally accepted to have impact on consumers 'intention to utilize or reject the Smartphones. The

perceived risk has immediate impact on intention to utilize an innovative product. As describe before in the literature perceived risks were focused for the context of Smartphone resistance like perceived financial risk and perceived device risk (Mohtar & Abbas, 2015). While perceived financial risk represent additional costs in financial structure introduced about by purchasers as a consequence of utilizing Smartphone's (Mohtar & Abbas, 2014). Perceived financial risk such as gadget risk will have decreased their expectation to utilize Smartphones (Featherman & Pavlou, 2003). Perceived gadget risk refers to risks connected with the performance and physical qualities of a Smartphone, for example, product defect or different functioning (Mitchell, 1999).

Numerous studies examined the impact of perceived risk on plan identified with buyer behavior in different research areas, for instance, E-commerce and smartphones (Mohtar & Abbas, 2015; Belkhamza & Syed Azizi, 2009; Crespo, del Bosque, & Sanchez, 2009; Kim *et al*., 2008; Park & Jun, 2003), e-filling system (Azmi & Bee, 2010; Ramayah *et al*., 2009b), acquiring tickets on-line (Kim, Kim & Leong, 2005), buying via email (Simpson & Lakner, 1993), and Internet banking (Aldas-Manzano *et al*., 2009.; Ozdemir and Trott, 2009). While Simpson and Lakner (1993), for instance, carried out a research in determining the impacts of perceived risk on customer adoption and purchasing behavior through email request. This study derived that perceived financial risk is a vital factor as view by consumers in obtaining the product by means of mail request. Furthermore, Park and Jun (2003), conducted a cross-cultural study on Internet purchasing behavior between Korea and America. This study highlights that perceived risks of Internet shopping are higher in Korea as compared with America.

Kim *et al*. (2005) conducted a study on the impact of perceived risk on purchasing behavior of consumers in the field of airline ticketing by using the sample of 310 universities students in U.S. The empirical results of this study shows that perceived risk have a significant effect in consumer buying behavior of on-line ticketing. Furthermore, consistent with previous research another study conducted by Aldas-Manzano *et al*. (2009) uses 511 online banking users in Italy in identifying the impact of innovativeness and perceived risk on on-line financial banking. Mohtar & Abbas, (2015) conducted the study in Pakistan and results of this study revealed that more perceived risk, the higher the consumer resistance to innovation. Thus, the research confirms that perceived risk has significantly negative impacts online financial banking usage. Furthermore, the research also states that security threat is one of the most important factors of perceived risk. Their finding is consistent with a research conducted by Tan and Teo (2000) which has found that perceived risk has an important adverse and direct impact on consumers‟ adopting of an Online financial institution. It is believed as positively related to consumer's resistance and adversely relevant to consumer adoption (Ram, 1989, Dunphy & Herbig, 1995).

As mentioned above, prior researches have shown that perceived risk has favorably positively related to customer resistance and adversely relevant to consumer adoption. The higher the consumer's perceived risk towards utilizing the technological innovation, the lower their objective to use the technological innovation. However consistent with this view Javernpaa, Tractinsky, and Vitae (2000), and Pavlou and Gefen (2004) which found that perceived risk has been shown to reduce consumer's objective to perform

online dealings. Furthermore, Mohtar and Abbas, 2015; Polatoglu and Ekin (2001) also set up that perceived risk is one of the major aspects impacting consumer's level of resistance. Despite numerous research using perceived risk in identifying the objective to avoid the technological innovation, there are still less number of studies about perceived risk based on consumer resistance to innovation theory in identifying the consumer's resistance, particularly in Smartphones perspective. Consequently, research on the effect of perceived risk on consumer behavior is considered to be validated as mentioned by Brahim, (2015) Li and Bai (2010), perceived risk is the most important determinant for consumer's adoption or consumer resistance behavior in the perspective of smartphones.

2.17.3 Complexity

Rogers and Shoemaker, (1971) defined complexity "the extent to which the innovation is perceived as relatively difficult to understand and use". Likewise, this definition was used by some other researchers (Dunphy & Herbig, 1995; Holak & Lehmann, 1990; Gandal, 2002). Complexity defines the degree "to which an innovation can be considered relatively difficult to understand and use i.e. it's the opposite of ease of use (Al-Jabri & Sohail, 2012).

Various different researchers have described complexity as adversely relevant to the diffusion of innovation and favorably positive related to consumer resistance to innovation (Moghavvemi, Hakimian & Feissal, 2012; Tornatzky & Klein, 1982; Dunphy & Herbig). Along with Previous research has revealed that; a new product with

significant complexity need more skills and initiatives (to apply and use innovation) to increase its adopting and reduce the chance of consumers' level of resistance (Lee, Hsieh & Hsu, 201; Dickerson & Gentry, 1983; Tan & Teo, 2000; Cooper & Zmud, 1990).

It is usually considered that products which are less complex are quickly used and adopt by consumers (Laio, Liu and Cheng 2015; Holak & Lehmann, 1990). Moreover, there exists an adverse (negative) correlation among the relative advantage and complexity, due to complexity of the product, it is hard for the consumers to try it, and hence could not be used for its benefit (Laio, Liu and Cheng 2015; Holak & Lehmann, 1990; Veryzer, 1998).

Complexity as a predictor of customer' characteristics is expected to influence buyers' intention and cause towards its adoption via relative advantage, risk, and self-efficacy. Furthermore, Holak and Lehmann, (1990) observed that higher the risk associated with innovation, that is also perceived as more complex. Inconsistent with these findings there is a positive correlation among perceived risk and complexity as supported by (Laio, Liu and Cheng 2015; Holak & Lehmann, 1990) complexity also affects consumer adoption through perceived risk.

From the above literature, a researcher found that there are inconsistencies among the relationship of studied variables such as complexity and consumer resistance to innovation so that’s why researcher inspire to examine the factors in the field of resistance to innovation. There are still less number of studies about perceived risk based

on consumer resistance to innovation theory in identifying the consumer's resistance particularly in Smartphones perspective and it is also observed that higher the complexity and higher the resistance (Moghavvemi, Hakimian & Feissal, 2012).

2.17.4 Social Influence

The aim of this research to enhance understanding of social influences on purchase intention within the perspective of a special consumer. The idea of consumer intention is basically based upon a theory of reasoned action (TRA) (Ajzen & Fishbein, 1975). Moreover, Theory of reasoned action gives strong support about the impact of social influence on consumer purchase intention by adding the concept of subjective norms. In essence with TRA, firstly people in the society depends upon the choice, behavior and decision of others which ultimately affect their intention to adopt the new technology; secondly, it also given the idea about the social influence which is usually raised due social pressure from friends and family (Cialdini & Goldstein, 2004). On the other hand, the concept of social influence has been studied in different aspects like, voting (Gerber, Green, and Larimer, 2008), contributing to the donations (Reingen, 1982), indicating damage (Apfelbaum, Sommers, & Norton, 2008), collecting loans (Higgins, 2001), putting the resources in the stock market (Hong, Kubik, & Stein, 2004) and also studied in both adoption and the rejection of innovative product aspect (Berger & Heath, 2007). Furthermore, Asch (1951) explained the purpose of social influences which can alter the social meaning of purchasing and consumption decision. Along with previously discussed literature related to social influence has explained that changes happened

mainly due to implementing the different ideologies and values which was commonly shared among social groups. In the context of social influence, these changes further develop the mind of the individuals through which they understand, identify the logic behind these changes. On the other hand, some studies argued that these changes in exiting product were particular influence by group of society.

As explained previously, when consumer is conscious about their own identity then consumer change the meaning of different issues (Asch, 1951). Venkatesh, Morris, Davis, and Davis, (2003) utilized social influence represent to subjective norm in theory of reasoned action (TRA), technological acceptance model (TAM), theory of planned behavior (TPB) or Diffusion theory of planned behavior (DTPB), and combining the technological acceptance model and theory of planned behavior (C-TAM-TPB), social components in model of personal computer utilization (MPCU), and image in innovation diffusion theory (IDT). They defined "social influence as the degree to which an individual perceives that important others believe he/she should use the technology". A survey conducted in Malaysian bank, by Amin, Muhammad, Hamid, and Lada, (2008) experimentally found that individual intention to utilize mobile banking was meaningfully influenced by persons surrounding them. Similarly, Singh, Srivastava, and Srivastava, (2010) found that individual choices to adopt mobile commerce services were affected by the friends and family. A research investigated by Püschel, Mazzon, and Hernandez, (2010), Riquelme, and Rios, (2010), and Sripalawat, Thongmak, & Ngarmyarn, (2011) showed that subjective norm was a remarkable impact, while Laukkanen et al. (2007) and Dasgupta *et al*., (2011) observed that perceived image was a

huge variance for individual's readiness to adopt mobile banking. The above might clarifies why Singh et al., (2010) argued that mobile commerce users are not just technology users, also part of the social system. Venkatesh and Zhang (2010) stated that "degree to which individuals have the emotion that criticize others guarantee they would better utilize new system". Additionally, a consumer may want to buy a product simply due to the social image that a product may communicate its personality in front of others (Gimpel, 2011). In the perspective of adoption, Gimpel (2011) revealed that Smartphones technology was pioneers who was offering more stylish and trendy mobile to the users. Numerous users buy a smartphone in order to enhance their self-image in a society (Ting, Lim & Patanmacia, 2011).

Furthermore, Ting et al., (2011) discovered an important positive relationship between smartphone adoption and social influences. Bødker, Gimpel, and Hedman (2012) found that numerous users like to buy Smartphone as it carries the interest and feeling of users. Consumers always purchase smartphones because these smartphones are very compatible with their personality and lifestyle and their own habits (Khan & Hyunwoo, 2009). Some users purchase Smartphone as it gives social backup that reflects a position of riches and tip top social status (Gimpel, 2011). On the other hand, this finding was contended by Jongepier (2011) found that 77% of respondents differ or obviously can't help contradicting the idea that individuals buy smartphones to gain more prestige and up to 50% of smartphone users do not find it to be social status or a symbol. All above literature related to the social influence in the context of social image, prestige, and social status have positive relationship with consumer adoption but on the other side social

influence have positive relationship with consumer resistance to innovation when family friends and groups give pressure to the buyer when consumers try to purchase the innovative product that damaging his personality and lifestyle.

In line with above literature further explanation in the context of smartphone purchaser behavior is affected by social elements, for example, the buyer's small groups, family, and social factors and status also effect the consumer intention to purchase the innovative products (Kotler & Armstrong, 2010). Throughout the decision-making, buyers have a tendency to consistently influence by the social groups, because buyers may listen and trust in different social groupswho can influence their attitude and behavior. In the buying of smartphone for Generation Y, maybe the social impact may originate from friends, peers, families, and life partner (Farzana, 2012; Osman, Talib, Sanusi, Shiang-Yen, & Alwi, 2012). A study also found that social influence has a critical relationship of student's belief on a smartphone buying behavior (Ding, Suet, Tanusina, Ca, & Gay, 2011). An another study towards Malaysian children's grown-up of age 19 to 25 shows that both immediate and vicarious role model have an effect on the consumer's purchase intention, in which direct role model such as refers to parents and vicarious role model indicate to very important persons (VIPs). The result shows that superstars have a higher impact than parents (Ernest, Moshin & Chung 2010). Social impact undoubtedly assumes a critical part and it is the most compelling to scholar's reliance on a smartphone (Suki, and Suki, 2013). The researcher takes into consideration the social factors as a social influence in this present study for the reason that smartphone is considered as a new technological innovation which makes uncertainty about people expected results. In

addition, consumers have a tendency to advise with their social system about this uncertainty instead of advising the outside elements, for example, media and expert opinion before making a sound decision to utilize smartphone (Lopez-Nicolas et al., 2008). Now a day's new technologies met with resistance; in a situation such as these, social influence plays an important role (Batcovic & Batcovic, 20115). Social influence represents consumer beliefs that important to others like friend's classmate's coworker, and family must think that when he or she buy a smartphone (Venkatesh et al., 2003) as cited by (Batcovic & Batcovic, 20115).

From the above literature, a researcher found that there are inconsistencies among the relationship of studied variables such as social influence and consumer resistance to innovation so that's why researcher inspire to examine this factor in the field of resistance to innovation. There are still less number of studies about social influence based on consumer resistance to innovation theory in identifying the consumer's resistance particularly in Smartphones in the context of Pakistan and it is also observed that higher the social influence, the higher the resistance.

2.17.5 Price

Price is one of the most important factors in the market. The financial aspects and consumer's factors can be utilized to understand the view about price. Price is showed as a limitation to be trade-off consumer products for every product with highest possible use from the financial point of view. No unseen detail prevails in trading products in a

market. The problem of price has been mentioned as critical factor challenging consideration with limited research on purchase intention (Erickson & Johansson, 1985). Even it is in implicit feature details (Mitra, 1995). A set of the appropriate price range is founded when consumers buy products. Purchase intention seems to be reduced when the actual price on products is greater than appropriate price variety or vice versa (Dodds, 1991). If the prices are lower than appropriate price range significantly, consumers are a lack of assuring towards products quality (Peter, 1969).

With regards to this Jacob and Olson, (1977), suggest that the prices are a factor to imitate the consumer‘s understanding on purchasing products and the price can show mindset reaction of consumers after getting in touch with a price. At the same time, the customer makes a decision whether to buy the product or not depending on incorporated all details. It was in compliance with the well-known model which is known as Simulate-Qrganism-Response model ‘(S-Q-R Model) to describe. The prices are a helpful factor to suppose by consumer‘s inner knowledge relevant to products (Erickson & Johansson, 1985). In the same way, the other also validate Jacoby ‘s model in advance that it shows that price standard is approximated by perceived excellent quality and perceived compromise (Monroe & Krishnan, 1985). It means greater price results in greater product great quality which gradually increases purchase intention directly. In terms of Monroe ‘s thought, the aspect of price which affected purchase intention was not only contains perceived greater quality but also perceived compromise (Lefkoff-Hagius & Builder, 1993).

Furthermore, in 2004, when the initial analysis was performed, approximately 30% of Australian bottles makers used attach hats on their products and more than 50% of New Zealand bottles makers used Stelvins, but less than 5% of U.S. bottles makers used this innovative closing. However, the results of this quantitative analysis indicated very few differences among the consumers in the three nations. Overall, respondents recommended dark bottles over white, recommended to buy from local national bottles makers rather than from international and recommended mid-cost wines over low-priced or high-priced ones. The only factor between the two sets of consumers was in their preferences for the type of closing. Wine consumers in Sydney and New Zealand equally recommended attach hats and cork closed, but Americans rated attach hats as their least recommended type of closing from a list of four closing types (cork, attach cap, synthetic, combined cork-twist cap). A separate analysis of purchase behaviors of bottles consumers in the three nations revealed few similarities across these different cultures.

Price in the perspective of a smartphone in different research conducted and mentioned that Price is the money incurred for products or services, or the sum of the consumers return for the benefits of having or using the product or service" (Kotler & Remedy, 2010). Price is generally the cash a customer willing to pay for in return with products and services that they think are useful. The value of cash differs from different people. Some might think it is useful for a higher price, but others might think it does not worth for the value of money. There are so many methods of prices, such as markup costs, target-return costs, perceived-value costs, going quantity costs and marketing costs (Kotler & Keller, 2012). If the discount price is low, it should be provided in its price;

whilst if the discount price quantity is greater, it should be provided in an amount, so that consumers will have higher purchase intention (Isabella *et al*., 2012). DMD Mobile SdnBhd Malaysia has released a full-featured Smartphone working on the Android system. This Smartphone cost RM500 or below, seeking those who find spending RM1000 to RM2000 for Smartphone is a challenge (Asohan, 2012 cited in Lay-Yee et al., 2013). It reveals a motivation from the company in launching Smartphone to the Malaysian, by modifying the price of Smartphone.

In the same year,2013, Malaysian youngsters who older 21 to 30, with per month making less than RM300 is qualified to get an RM200 Government refund on a Smartphone (The Celebrity, 2013). It reveals inspiration from the Malaysian Government to the youngsters, which is the Generation why to use a Smartphone by providing much better price especially those who concern about prices of Smartphone. In this situation, a price is an inspired aspect in a buying decision. The price issue is one of the factors examined to find out the effects on a requirement of Smartphone (Mei Min, Ling Hong, Jian Ai, & Pei Wah, (2011). Furthermore, Lim, Eat, Lee, Loke, and Wong, (2012) found that price considerably effects on the purchase intention of Smartphone among teenagers in UTAR, Perak, Malaysia.

Another study is carried out into the diffusion of resistant to innovation, began with an examination of more than 2,255 bottles consumers from Modern Australia, New Zealand and the U. States; that research was done by Olivier Toubia, associate lecturer of marketing at Columbia University; John Hauser, Kirin Professor of Marketing and head

of the Marketing Group at MIT Sloan School of Management; and Rosanna Garcia, McCarthy They observed that why one set of consumers (in the U.States) may be resistant to an innovation but another set (in Sydney and New Zealand) may not be(Lim, Chew, Lee, Loke, & Wong, 2012). Berggren (2012) and Okada & Mais (2010) argued that price is a good predictor of consumer behavioral intention to use a technology.

Thus, from all above discussion, it is concluded that consumer resists the innovative product due to the high price of that product. From the above literature, researcher found that there are inconsistencies among the relationship of studied variables such as price and consumer resistance to innovation so that's why researcher inspire to examine the factors in the field of resistance to innovation. There are still less number of studies about price based on consumer resistance to innovation theory in identifying the consumer's resistance particularly in Smartphones in the context of Pakistan and it is also observed that higher the price and higher the resistance.

2.17.6 Consumer Characteristics Factors

For this research we have selected "motivation" feelings like negative emotions is ignored the point of view in consumer resistance to innovation, as motivation and negative emotion are considered as the main key aspect predicting customer behavior. In addition, Barczak *et al*., (1997), conducted a study to analyze the part of current products in generating consumer's level of resistance. Moreover, self-efficacy has been included, as it considered contributing a big part in technical innovative products (Ellen *et al*. 1991,

Compeau & Higgins 1995). One of reason behind selecting these aspects is because of their simple statistic procedure and intense use by different researchers (Lee Matthew *et al*., 2007, Barczak *et al*., 1997, Wang *et al*., 2008, Wang *et al*., 2003).

2.17.7 Motivation

Diefendorff and Tempe (2010) described motivation as "an unobservable power that guides, stimulates, and maintains actions over time and across modifying conditions" (p. 66). Furthermore, Motivation is derived as "goal-directed arousal" that pushes consumers wants (MacInnis & Moorman, 1991). It requires inner procedures that provide behavior with strength and way. Power explains the strength, dedication, and focus of the engaged behavior, although direction gives a particular purpose to the behavior (Lee Matthew *et al*., 2007). Herzberg at el. (1959) revealed that behavior can be influenced externally and internally. Consistent with this idea, motivation is separated in two types, the external motivation and internal motivation that are two types of drivers that stimulate a particular result behavior. Perceived usefulness and perceived entertainment are common illustrations of external and internal motivation respectively, in technology adopting perspective (Lee Matthew *et al*., 2007). In addition Afzal *et al*., (2015) conducted a study in Pakistan, the results of this study revealed that intrinsic motivation like perceived enjoyment has influence on consumer adoption of mobile phone services like short messages service.

External motivation concerned making an action for attaining other objectives such as to obtain other valued outputs relatively than the actions itself. Moreover, Davis, Bagozzi, and Warshaw, (1992) gives a preference to use computer system for producing a letter whereas (Lee Matthew *et al*., (2007) stress about behavior which is executed by its identified value and expected rewards. Davis *et al*. (1992) state that perceived usefulness (PU) and perceived ease of use (PEOU) are the two dimensions of external motivation and found that if consumers understand something (technology) to be beneficial and very simple to use, it is more possible that they will use it. Afzal *et al*., (2015); Devis *et al*. (1992) also observed that consumer's perceived usefulness enhances through enhancing in perceived ease of use. In Technological Innovation Acceptance Model (TAM) the two aspects, Perceived usefulness and Perceived ease of use are commonly used in research studies on technology acceptance (Afzal *et al*., 2015; Lee Matthew *et al*., 2007).

Internal motivation includes carrying out an activity for its own benefit, as the activity is itself interesting, exciting, appealing etc. It indicates the interest to do an activity for the sake of benefit which originates from the entertainment of the activity itself e.g., expressing personality and position by using a product. Furthermore, Looking at the aspect of intrinsic motivation, Lee Matthew *et al*., (2007) which explained behavior as it is brought about from the emotions of satisfaction, joy, and fun. The empirical results of this study proven that both external (for example, perceived usefulness and perceived ease of use) and intrinsic (for example, perceived satisfaction) motivators are essential to the development of intent to use (adoption) (Lee Matthew *et al*., 2007).

Moreover, another study investigates what is behind the intent to use cellular cost-effective services by examining at the same time the impact of several motivation aspects such as some of the five innovation features of Rogers (2003), the impact of Ram and Sheth (1989) model concerned about resistant to innovation of the five constraints and the impact of customer believe in. Thus, the research allows banking organizations to highlight motivational aspects that may minimize their consumers' mistrust and to deal with their level of resistance which is an essential problem that has often been ignored by the previous studies that have been conducted on resistance to innovation.

Another research conducted to observe the impact of motivation on resistance to change. With regard to this different researchers identified five essential sources: (a) direct expenses of modify (Rumelt, 1995); (b) cannibalization expenses, that is to say, modify that delivers results to a product but simultaneously delivers failures to others, so it needs some kind of compromise (Rumelt, 1995); so that there is no actual motivation for modify (Rumelt, 1995); (d) previous problems, which keep a negative picture for upcoming changes (Lorenzo, 2000); and (e) different interests among workers and management, or deficiency of motivation of workers who value modify outcomes less than supervisors value them (Waddell, &Sohal, 1998).

Overall, Motivation is recognized as having direction, strength, and determination (Diefendorff& Chandler; Kanfer, Chen, & Pritchard, 2008; Benedetti et al., 2015). Although Pinder (2008) and Diefendorff and Chandler (2010) mentioned that ability and circumstances cannot be considered aspects of motivation, Parker & Ohly (2008)

reconciled that motivation is affected from external causes at both micro and macro levels. Furthermore, Kanfer, Chen, and Pritchard indicated that there is also a wide range of other factors those impacts on motivation such as chemistry, personality, and subconscious procedures such as elements of traits.

All in all, the objective of this research is to obtain a further understanding of resistance to change and to understand how it is influenced by various motivational and attitudinal factors by applying the consumer resistance to innovation theory. From the above literature, researcher found that there are inconsistencies among the relationship of studied variables such as motivation and consumer resistance to innovation so that's why researcher inspire to examine the factors in the field of resistance to innovation.

2.17.8 Self-Efficacy

Self-efficacy defines the level of trust one has towards his or her ability to perform and accomplish a specific task (Mohtar & Abbas, 2015; Chong *et al*., 2010). Self-efficacy reflects one's courage in the capability to lead behavior and is described as "a person's judgment of his/her capabilities to organize and execute courses of action required in order to reach designated types of performance. Another definition of self-efficacy which is given by (Ellen *et al*., 1991) defined the self-efficacy "an individual's perception of his or her ability to use a technologically innovative product". Functionality "self-efficacy" is an important element of "ease of use" and the perceived desirability of a product (Mohtar & Abbas, 2015; Ellen *et al*., 1991). It is additionally characterized as, individual's

confidence (Bandura,1977and 1982) the self-efficacy states to the self-assurance in their own aptitude and the capability to supervise and execute the ways of actions needed to meet a required result (Bandura, 1977, 1982) and starts from individual beginnings including performance accomplishment, past experience, individual changes, and so forth (Ellen *et al*., 1991).

It has been revealed by a few scholars so as to self-efficacy have the ability to predict intentions for utilizing the variety of innovative products (Ellen *et al*., 1991). A purchaser with low self-efficacy will most likely choose the product that should be controlled easily, even though there are superior or advanced innovative products available (Ellen *et al*., 1991). Ellen, *et al*., (1991) confirmed empirically the concept of self-efficacy is a variable which influences the resistance to the "technological innovations". Several specialists have been also perceived the degree of consumers' self-efficacy as a particularly critical variable to the research of resistance and the diffusion of innovation (Mohtar & Abbas, 2014; Tan & Teo, 2000).

"Self-efficacy" has been chosen because it is one of the variables in this research as previous researchers have found that "self-efficacy" show a significant impact of judgments of buyer's ability to use the new innovative product and in its product choice for the adoption and rejection of products (Mohtar & Abbas, 2015; Park & Chen, 2007). It has been contended that performance will not achievable without ability; as well as performance cannot be persuaded without self- efficacy (Compeau & Higgins, 1995). Purchasers' self-efficacy and their observation achieve a causal relationship between the

adoption of technological innovation and customer cognitive factors. Over a wide range of behaviors, self-efficacy has been demonstrated to impact the consumer readiness to adopt the innovative products and actual consumer behavior introduction (Bagozzi & Kyu-Hyun, 1999). The impact of self-efficacy has additionally been archived in an investigation of adoption of Internet banking revealed by (Shih & Fang, 2004). The results of this study revealed that self-efficacy is the best predictor of adoption of internet banking and having a positive relationship with consumer adoption and negative relationship with consumer resistance to innovation.

An alternate study toward self-efficacy Venkatesh *et al*. (2003) contended that self-efficacy was an unforeseen determinant caught by effort expectancy. Consequently, they dropped self-efficacy from the immediate determinant of behavior, which is likewise underpinned by other UTAUT studies (Venkatesh & Zhang 2010). Among mobile banking adoption examines, by Brown *et al*. (2003) supported self-efficacy was not an immediate determinant in influencing individual behavior to adopt mobile banking and Puschel *et al*. (2010) supported self-efficacy was not an immediate determinant in influencing individual expectation to adopt mobile banking an account. Then, some mobile banking studies Luarn and Lin (2005); Sripalawat *et al*. (2010); Dasgupta *et al*. (2011) supported perceived self-efficacy as a determinant in affecting consumer intends to mobile banking adoption, opposition or rejection of the innovative product. Furthermore, Mohtar & Abbas, (2015) revealed that self-efficacy is a good predictor of consumer resistance to innovation.

Furthermore, self-efficacy is related with beliefs and behavior (Bandura, 1977; Gist, 1987; Gist and Mitchell, 1992) it additionally has a serious impact on choices including computer usage and adoption of any product or services (Mohtar & Abbas, 2015; Compeau, & Higgins, 1991; Davis, Bagozzi, & Warshaw, 1989; Ellen, Bearden & Sharma, 1991; Hill, Smith, & Mann, 1987; Leonard-Barton, & Kraus, 1985). People who consider computer usage is very complex and accept that they will never have the capacity to control these computers will like to maintain a strategic distance from them and are less motivated to utilize them. Additionally, Gist (1989) proposed that self-efficacy is a significant motivational variable, which impacts individual influences, effort perseverance, and motivation. The relationship between self-efficacy and perceived value is intended to present the impact of self-efficacy on motivation and in addition on expectation about desired results. Moreover, people who feel less fit to control the circumstance may resist it as a result of thoughts of inadequacy or uneasiness which may come about because of expected variations. On the other side, people with high self-efficacy will see the system to be simple and helpful because of the impact of self-efficacy on the level of effort, the persistent and the level of understanding which happens Bandura, (1977) and will be less resistance to changes. Similarly, on the other side people who have low self-efficacy have higher resistance to change. People's apparent capability to utilize a product effectively influences their behavioral reaction to the product (Ellen, Bearden, & Sharma, 1991). Accordingly, self-efficacy is liable to influence people beliefs and behavior. Particularly, it will influence system use openly and in an indirect way through perceived relative advantage as well as perceived complexity.

Furthermore, the study of Hysong and Miguel (1998) revealed that a teacher's efficacy has a positive impact on the innovation and performance of a single person in nature, and as the idea of self-efficacy is familiar with the field of information technology (IT) systems, adequacy toward self-efficacy has been generally viewed in numerous studies as a primary variable, which influences imaginative performance or performance all in all (Jang & Jo, 2002; Compeau & Higgins, 1995). In the temporary point of view, individuals with a low level of self-efficacy minimize nervousness by picking a system that they are familiar with regardless of the fact that a superior method exists. Because low self-efficacy leads to the resistance to the system. In this way, it could be seen that the resistance against innovation might be influenced by a teachers' perceived efficacy. Hence, in light of past research, this study establishes that the level of resistance against the presentation of Smart Education relying upon the teacher's efficacy and accept that a similarity might be drawn from the information of innovation resistance.

Hence, the previous investigation of literature reported that the self-efficacy has negative relationships with consumer resistance to innovation and the concept of diffusion of innovation given by Sheth (1981) initially proposed the idea of innovation resistance and contended it to be the least created idea in diffusion research (Ellen *et al*., 1991). Self-efficacy is a strong predictor of consumer intention to use numerous innovative products (Mohtar & Abbas, 2015).

Furthermore, the work of Ram and Sheth (1989) on innovation resistance conceptualizes such behavior. They defined innovation resistance as " the resistance offered by consumers to an innovation, either because it poses potential changes from a satisfactory status quo or because it conflicts with their belief structure" along these lines, the two fundamental reason for resistance are identified with behavior change and the current worth system (cognitive resistance), however the level of resistance will shift crosswise over different product classes and crosswise over societies (Ram, 1989). Ellen *et al*. (1991) and Mohtar & Abbas, (2015) found that an individual's perceived capability to utilize the innovation effectively and, to a lesser degree, the level of fulfillment with existing behavior are sources of resistance. Perceived capability to utilize an innovation is like self-efficacy, an idea created by Bandura (1977) and Mohtar & Abbas, (2015), who links it with the perceived control in use. This highlights the vitality of trial or an inadequate utilization of an innovation preceding to its adoption. Then again, resistance to innovation may avoid trial in any case.

Past studies have reliably reported a huge and negative relationship between self-efficacy and resistance to innovation. They ended efficacy of having a negative impact on buyer resistance and positive impact on the adoption of innovative products of the buyer (Mohtar & Abbas, 2015a; Tan, 2000; Ellen *et al*., 1991). All in all, taking into account the inconsistent influence of self-efficacy on consumer resistance to innovation, mixed results of this relationship and lack of research in the context of a smartphone in Pakistan. Hence, using self-efficacy as an antecedent of consumer resistance to innovation by applying resistance to innovation theory. Self-efficacy is an antecedent which receive less

attention by consumer resistance to innovation research. So that's why researcher inspires to examine this factor in the field of resistance to innovation.

2.17.9 Emotions (Nrgative)

Emotions are an essential element of customer response, and the significance of emotions in the field of buyer behavior was founded (Bagozzi, Gopinath, & Nyer 1999; Richins, 1997). According to Phillips and Baumgartner, (2002) emotions related to consumption are influenced by each actual product functionality and a performance of disconfirmation of anticipation. On the other hand, previous literature in marketing seems to a mainly emphasis on "positive emotions" in regard to customer pleasure and satisfaction (Chitturi, Raghunathan, & Mahajan 2008). Limited studies focused on negative emotion which causes consumer resistance to innovation (Bagozzi, & Lee, 1999).

In the light of negative emotion, emotions are unique psychological states that arise after one makes appraisals of an innovation. Appraisals are evaluations one makes between a real and wanted state and normally happen spontaneously (Bagozzi, & Lee, 1999). As emotion is a psychological state, an emotion comprises of a conscious awareness that individual feeling has an emotional state and felt propensity on the emotion. In the meantime, emotions are normally joined by unique physiological developments in terms of different changes such as changes in the autonomic anxious system and physical actions such as facial appearance (Bagozzi, & Lee, 1999). Bagozzi, and Lee, (1999) examined that emotional acceptance of innovations originates from positive emotions, for

example, happiness, pride, trust, love or liking. Delight results when a consumer takes a reward perceived to be created by innovations and pride happens when one sees that self-efficacy shaped his or her accomplishment of a prize or escaped from costs. Hope happens when, given an ambiguous circumstance, one judgment on he or she will maybe get a prize or not incur a cost, and love or liking results when a buyer caused one get something he or she desired or to not get something he or she didn't want. These positive emotions help emotional acknowledgment of innovations (Bagozzi & Lee, 1999) and Similarly, emotional resistance to innovations originates from negative emotions, for example, anger, fear, sadness and disgust, guilt, shame, contempt, and jealousy and desire. Anger happens when a consumer fails to achieve the wanted reward. Fear happens when either a threat is anticipated or probable failure to obtain a prize is expected. Confusion or disappointment comes about after external occasions stop the occurrence of a wanted prize. Disgust results when external circumstances stop one's gustatory objectives. Guilt results when one does something he or she sees as ethically wrong notice harmful to someone else or persons. Shame happens when one sees that someone else whose belief is appreciated assesses one as unworthy or incompetent, as a result of a violation of some standard. Contempt emerges when one feels hatred to another person, in light of the fact that the individual has blocked one's objectives or damaged one somehow, jealousy and desire happen when one sees an alternate has or threaten to take away what he or she thinks of one as own (Bagozzi & Lee, 1999). All these above psychological states of negative emotions cause consumer resistance to innovation when consumer purchase innovative products like smartphones.

Furthermore, consumer emotional beliefs have examined the motive for buying and consumption choice based on appearance just like attractiveness and beauty. It was also indicated that emotional beliefs involve “the perceived utility acquired from an alternative’s capacity to arouse feelings or affective condition". Seth *et al*., (1991) revealed that emotional beliefs are assessed on an account of feelings and emotions related with the alternative. Consistent with this belief Gimpel (2011) mentioned that appearance, such as attractiveness and beauty, may include emotional values to a product. In the same way, several other studies also indicate that "ease of use" is the important aspect which would make the customer buy Smartphone (Crothers, 2011; Gartner, 2011; Park & Chen, 2007; Heilmreich, 2009). Furthermore, Chung and Chan (2011) observed an important positive connection among perceived ease of use and behavioral intent of buying Smartphone. Ease of use of a Smartphone is primarily based on ease to understand, customer ambiance, distinct relationship and need much fewer efforts to work the Smartphone. Moreover, Jongepier, (2011) and Khan and Hyunwoo (2009) observed that a lot of consumers realize that Smartphone is very complex to use and complicated to use apps just like internet, gaming and PDA.

Consumer knowledge and experience is discovered to be one of the most vital element that leads to a consumer to buy a Smartphone (CLN, 2010). Out of hundred percent, 94% of consumers purchase and use Smartphone simply because they are satisfying to use (Jongepier, 2011). If the consumer practical experience is positive and satisfying, it generates an emotional bonding and positively influence on Smartphone intention to repurchase (You *et al*, 2011). In the same manner, individual experiences and how they

fulfill consumer demands that guide to recurring purchase (Kaveney & Porsarathy, 2011 cited in Ting *et al*, 2011).

Additionally, design and appearances such as attractiveness and beauty of Smartphone maximize the possibilities to buy and choose Smartphone (Bodker *et al*., 2010; Crothers, 2011). Morever, J. D. Power and Associates (2012) conducted a study on consumer purchase intention of Smartphones and the results of this study reveal that 24% of consumers adopts and purchase Smartphone because of to the physical design and style. Numerous consumers also buy Smartphones because of to the stimulated and aroused emotion, for instance, understanding for functional beauty (Gimpel, 2011). Furthermore, usefulness and feeling of possessions generate emotional value. These kinds of emotional connection may influence changing costs (You *et al*, 2011). In terms of usefulness, a lot of consumers choose Smartphone (Chen *et al*, 2010 cited in Bakon & Hassan, 2013). Several quantitative and qualitative findings stated that there is a considerable positive connection between negative emotion and consumer resistance to Smartphone (Chung & Chen, 2011; Park & Chen, 2007; Jongepier, 2011). Wakfield, (2015) revealed that consumer encounters pleasurable stimuli result in positive emotion and unfavorable stimuli would result in negative emotion by a consumer.

From the above literature, a researcher found that there are inconsistencies among the relationship of studied variables such as emotion (negative) and consumer resistance to innovation so that's why researcher inspire to examine the factors in the field of resistance to innovation. There are still less number of studies about emotion (negative)

based on consumer resistance to innovation theory in identifying the consumer's resistance particularly in Smartphones perspective and it is also observed that higher the emotion (negative), the higher the resistance. The main objective of this research to explore more the negative emotions in the context of consumer resistance to innovation in Pakistan.

2.17.10 Attitude Towards Existing Product

Attitude towards existing product defined as "the degree to which a service is perceived as consistent with users' existing values, beliefs, habits and present and previous experiences" (Dzogbenuku, 2013). Similarly, another definition "the degree to which innovation is regarded as being consistent with the potential end-users' existing values, prior experiences, and needs" (Lee, Hsieh & Hsu, 2013). That is a common factor 'that investigates the attitudes of consumers towards present products and is affected by the traditions and skills of current products to serve consumers' needs and wants. The worth of custom and tradition is related to the appropriate personnel behavior of consumers to the past and present which shows special respect for the culture, traditions and social norms (Schwartz, 1992). The worth of tradition involves positive approach of consumers about the products they currently use. In such circumstances, consumers are unwilling to share their older products with still functional and replace them with innovative products.

Select or adopts innovative product comparatively quicker than others members in his social circle (Rogers & Shoemaker, 1971). This behavioral attitude has been

operationalized in experimental work in three different ways, specifically, new product ownership for a given type of product (Foxall, 1998), buying purpose (Laio, Liu and Cheng, 2015; Holak & Lehmann, 1990), and comparative time of adoption or rejection towards a specific product (Midgley & Dowling, 1993).

Numerous previous literature validates that consumer innovative attitude might be described by psychological and demographical variables (Dickerson & Gentry, 1983; Gatignon & Robertson, 1991; Labay & Kinnear, 1981; Midgley & Dowling, 1993; Ostlund, 1974). Demographically, buyer trend-setters ordinarily have higher income and education and are younger (Gatignon & Robertson, 1985). Among different psychographic variables, consumer's beliefs and consumption attitudes are considered to have an immediate effect on specific customer behavior, for example, new product adoption (Brunso *et al*., 2004; Burgess, 1992; Kamakura & Mazzon, 1991; Smith & Schwartz, 1997). Taking after Eagly and Chaiken (1993), scholar's defined consumption attitude as "a psychological tendency that is expressed by evaluating a particular consumption-related entity with some degree of favor or disfavor". For the reason that consumption attitudes are specific to the consumption field, they are more analytical of consumption behavior than other more general components (Brunso *et al*., 2004). On the other hand, utilization attitudes are guided and ruled and guided by the more comprehensive quality structure, which include important moods appropriate to an extensive variety of circumstances, behaviors and contexts (Brunso *et al*., 2004; Steenkamp *et al*., 1999). Its means that consumption attitudes are consumer context-specific moods that link individual qualities to real consumption practices.

On the other side, product lifecycle reduces and the competition is getting tougher, the new products coming to market with a much faster pace, and products or technologies obsolete very quickly. Because of the many options available to the consumer to leave their existing products, and go to a lot of new and expanded or better products. But consumers resist with a strong positive attitude toward existing products and innovative products to keep with their existing products until and unless the product cannot work with them. (Wang *et al*., 2008). It 'has also been observed by the scholars that consumers are quite satisfied with the existing products are not motivated to accept the changes and go for new products, on the other hand, are consumers who are satisfied with existing products follow the same (Karjaluoto *et al*., 2002). Customer satisfaction of existing products and plays an important role in driving consumer behavior to be innovative. Researchers contented that innovation represents appropriate advantages over existing products then consumers resist to the innovation when consumers conflicts with their belief structures needs changes in consumer's routine behavior or high learning time (Garica *et al*., 2007; Chen, 2012; Yu & Chantatub, 2015). This factor has been found to have a positive effect on consumer resistance to innovation.

2.18 Moderating Variables

2.18.1 Consumer Innovativeness

In 1980, Agarwal and Prasad have proposed a new construct that demonstrate the relationship of consumer innovativeness in technology acceptance model (Davis, 1986) and resistance model (Ram, 1987). Consumer innovativeness is one of the variables that

potentially predict how people respond to innovation and also defined as "willingness of consumers to adopt an innovation". This implies that a consumer is known as innovative if he or she is early to adopt or reject innovation. Similarly, Hurt *et al*., (1977) defined consumer innovativeness as "eagerness of consumer to adopt the change". Another author Jeong *et al*., (2009) identified that consumer innovativeness is the ability of an individual to try out new technology and also suggest that consumer innovativeness serves as a key moderator in technology acceptance and rejection behavior. In this study consumer, innovativeness is referred to consumer belief and perception on their willingness to accept or reject the technology. Persistent with this view consumer with a high level of innovativeness or more likely to develop a positive attitude towards adopting the technology than the less innovative consumer (Chao, Reid, & Mavondo, 2012). Thus, it can be concluded that if the consumer level innovativeness is higher, it is believed that it will develop positive attitude towards acceptance the technology whilst if the individual with less innovativeness believed that it will develop negative attitude towards resistance to innovation.

However, the importance of consumer innovativeness has been discussed in past studies which postulate that consumer innovativeness as one of the imperative predictors of consumer intention to buy or reject the new product (Chao, Reid, & Mavondo, 2012). Moreover, the study by Im, Mason, and Houston, (2007) suggested that the greater the level of innovativeness, lessen the intention to reject the product. Furthermore, the empirical study conducted by Yang, (2005) argued that consumer innovativeness is a valuable predictor of innovation adoption behavior.

Over the year majority of studies used consumer innovativeness as predictor with new product adoption, adoption of internet shopping, consumer perceived attributes, service adoption behavior, intention to use smartphones and direct marketing innovation (Chao, Reid, & Mavondo, 2012; Citrin, Sprott, Silverman, & Stem, 2000; Kunz, Schmitt, & Meyer, 2011; Hu & Wu, 2011; Hirunyawipada & Paswan, 2006; Marcati, Guido, & Peluso, 2008; Ma & Peng, 2012). On the other hand studies that introduce consumer innovativeness as intervening variable on the relationship between innovation-related factors and intention to accept or reject behavior of consumer or not many, some of them is the study by (Jaccard *et al*., 1990 cited in Hur, Yoo, & Chung, 2012; Ouellet, 2006 cited in Sanayei, Shahin, & Taherfar, 2013; Vandecasteele and Geuens, 2010) likewise, they argues that consumer who encounters high level of innovativeness have more social relationships, personal judgment which leads to resistance towards innovation.

Furthermore, at large number of studies have validated the negative relationship between motivations, self-efficacy and consumer resistance to innovation. Other than that there is a positive relationship between price, social influence, negative emotion, and complexity and consumer resistance to innovation. Due to the complexity of consumer resistance and adoption behavior, the demand for further research including consumer innovativeness as an intervening variable has increased in order to understand the complex phenomenon. Generally, most of the studies highlighted that consumer innovativeness as a negative relationship with consumer resistance to innovation (Fu and Elliott, 2013). Likewise, resistance to innovation theory in 1987, Ram and Sheth, initially developed innovation

resistance theory which is based on two dimensions like consumer characteristics, innovation characteristics and also discuss the reasons of consumers who cannot accept innovation due their high innovativeness behavior. Besides, Ram and Sheth specified the reasons that consumers resist innovation is just because of the difficulties produces the change, and conflicts through consumer innovativeness. These conflicts can be a consumer's barriers and these are divided psychological (consumer characteristics) and functional barriers (innovation characteristics).

Despite all the arguments that highlight the moderating role of consumer innovativeness on consumer resistance to innovation is limited. Nevertheless, the literature has so far focused on western culture, the organization even though moderating role consumer innovativeness presently highly needed by Asian context with a different culture. So that's why current empirical study conducted in Asian context particularly focusing on Smartphone users as an innovation in Asian context such as Pakistan as oppose to western context.

In the case where the relationships between the independent and dependent variables are not fully established as significant, insignificant, consistent or inconsistent, Baron and Kenny (1986), recommends to apply moderator variable to assess its effect on the relationships.

2.19 Theoretical Framework

According to this study, research problem, purpose, and the hypothesis formulated in a theoretical framework as illustrated in figure 2.6. The study mainly emphases on the individual university student and their resistance behavior towards innovation. The research framework of this study mainly depends on the Ram, (1987) resistance to innovation theory. This proposed model describes the precise correlation between the elements of consumer & innovation characteristics and consumer resistance to innovation. This model applied in this study to analyze the empirical data which have been collected through questionnaires. Similarly, antecedents of both innovation characteristics and consumer characteristics; like self-efficacy, motivation, price and relative advantage are expected a significant relationship with consumer resistance to innovation (Smartphones). This means that the consumer will strengthen these factors reduces resistance to Smartphone and vice versa. Again, factors; Complexity, risk perception, social influence, emotion (negative) and attitude toward the existing products are likely to have also relationship affecting resistance towards innovation. Specific information has been reviewed on the premise of this model; to test the theory that deals with the investigation and applications to test the hypothesis, answer the research questions which are designed in this study and achieve the objectives behind this study.

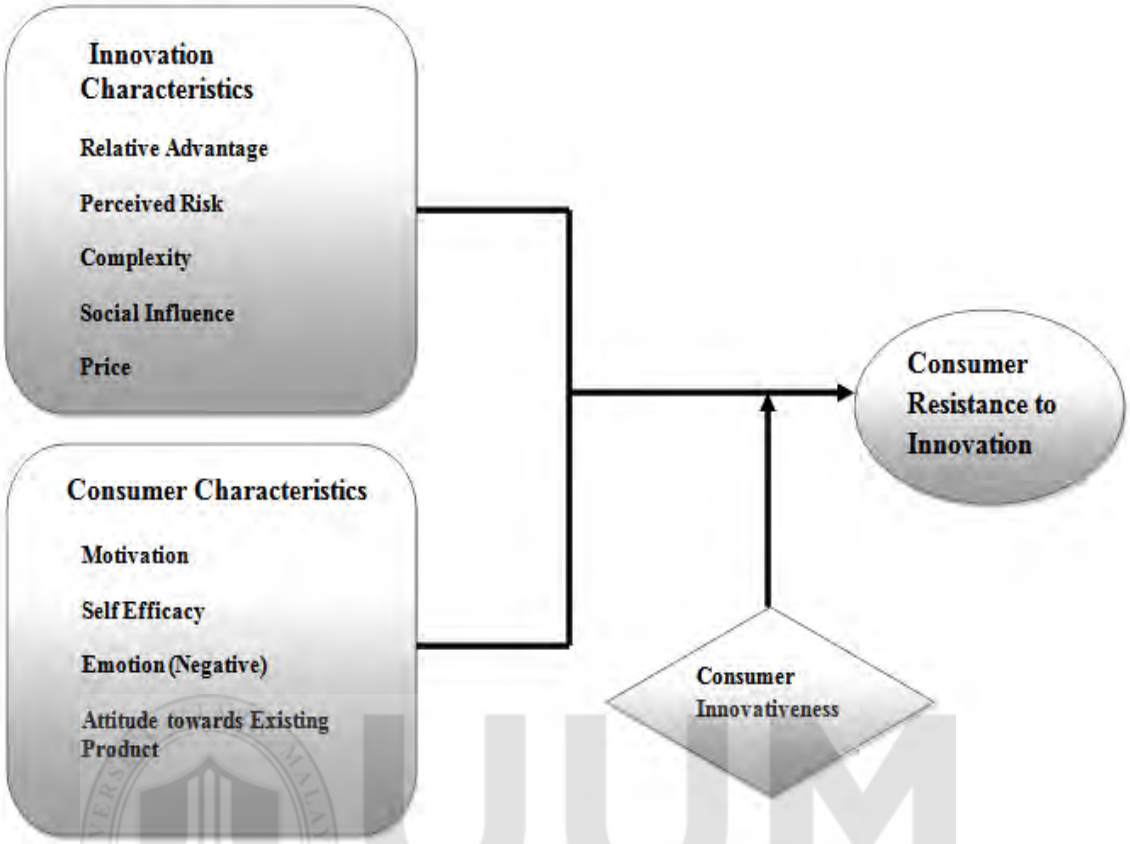


Figure 2.4
Proposed Framework

2.20 Hypotheses

Based on the theoretical framework 19 hypothesis formulated to identify the causal relationship between consumer resistances to innovation and discussed above nine factors, researcher formulated a hypothesis on the basis of models of innovation resistance and the results of previous research. According to the literature discussed above nine factors, positivist research paradigm was adopted and ten hypotheses were constructed including moderating variable, with a direct relationship and nine hypotheses were constructed with an indirect relationship with predictor and consumer resistance to

innovation. Previous empirical results on the relationship between the variables are presented to support the hypothesis assumed.

The details of the discussion on the relationship between variables and proposed hypothesis are discussed below.

2.20.1 Relationship between Relative Advantage and Resistance to Innovation

"Relative advantage refers to the degree to which an innovation is perceived as providing more benefits than its predecessor" (Moore & Benbasat, 1991). Results of relative advantage give improved productivity, economic advantages and better status (Rogers, 2003). Diffusion researchers have identified that relative advantage one of the best predictor of innovation rate of adoption and product resistance to innovation cited in the study (Kleijnen, Lee, & Wetzels, 2009).

In past majority of the studies found that the relative advantage is positively related to the degree of adoption of innovation (Moore & Benbasat, 1991; Dunphy & Herbig, 1995; Mohtar & Abbas, 2015) and negatively related to resistance to innovation (Kleijnen *et al*., 2009). This implies that, a consumer might see the relative advantage of an innovation over an existing product, yet consumer rejects it on the basis of image barriers. In addition, some other studies, for example, McCloskey, (2006), Rogers, (2003) and Claudy *et al*., (2014) also validate the findings which revealed that if the rate of relative advantage is high ultimately it reduced the rejection intention which ultimately reflects

the resistance to innovation. In addition, recently Mohtar & Abbas, (2015) explored that relative advantage was the significant precursors of consumers‟ intention to adopt and have a negative relationship with a resist to a mobile phone.

Furthermore, another study conducted by Lin, (2011) the behavior of mobile banking usage. The results of this study indicate that there is a significant negative relationship between the relative advantages and intent to resist, but there is a positive relationship between intention to adopt and relative advantages of the new online technology perspective.

Thus, Nor and Pearson (2008), who claim that the relative advantage may actually have a positive relationship with resistance to innovation. Consistent with this view, a thorough investigation of the three different organizations (such as banking, TBBS, Mobile) researchers found that a significant correlation between the relative advantages and intent to reject (Lin, 2011; Kleijnen *et al*., 2009). There is still a lack of clear evidence about the nature of the association between the relative advantages and rejection behavior of consumers. Thus, because of inconsistent results and lack of clear evidence of the relationship, more research is necessary to better understand the relationship between the relative advantages and resistance to innovation users. This actually inspired researchers to include this variable in this study.

Hypothesis 1: There is a negative relationship between relative advantage and consumer resistance to innovation.

2.20.2 Relationship between Perceived Risk and Resistance to Innovation

Gronhaug's, (1993) defined perceived risk as the subjective expectation of loss. Meanwhile, Mitchell *et al*., (1999) gives the theory on perceived risk. According to their theory perceived risk theory has great potential when explaining how a perceived risk directly influences purchase intention of consumers, which is usually referred to as a successful indicator for forecasting the actual purchasing decision. In previous times, Im *et al*., (2008) stated that perceived risk or uncertainty affects people's confidence in their decisions.

Furthermore, with regard to adoption and non-adoption behavior of consumer particularly resistance towards innovations is a multifaceted phenomenon which is also influenced by consumers' awareness of the perceived risk of adopting an innovation (Shoemaker & Shoaf, 1975). Consumers often experience many uncertainties about the adoption of innovations, especially with regard to performance (Brahim, 2015; Garcia & Atkin, 2002), and consequently, assume the likely outcome of innovation usage to be negative (Carter & Curry, 2013). It is consumers' evaluation of the likelihood of these negative outcomes which constitutes their perceived risk. Previous literature has defined several forms of risks, of which physical, economic, functional, and social risk have been mentioned in relation to consumer resistance (Mohtar & Abbas, 2015; Bredahl, 2001; Saba *et al*., 2000; Ram & Sheth, 1989).

Physical risk related to the consumer explanations about the potential losses to any valuable goods (Klerck & Sweeney, 2007). Economic risk concerned to the cost (in universal logic) of an innovation. Functional risk related to any uncertainty about the innovation performance. Finally, social risk concerns that consumer emotional state about the social atmosphere like reference group will provide or acknowledge their selection or adoption of the products (Klerck & Sweeney, 2007).

In previous research Bredahl (2001) found that perceived risk with regard to the harmful, health-related effects of genetically modified food negatively affect consumer evaluation of these foods innovations. Ram and Sheth (1989) suggest a negative relationship between perceived risk and resistance. Another study Bredahl, (2001) cited in Abzakh, Ling, & Alkilani, (2013) found that perceived risk with regard to the harmful, health-related effect of genetically modified food negatively affect consumer behavior with regard to these food innovations. Furthermore, Ganiere *et al*., (2004) noted that perceived risk with regard to the harmful, health-related effects of genetically modified food causes a consumer to oppose these innovations. Another scholar stated that the innovation will be a waste of economic resources Dhebar (1996) Suggest that particularly high-tech innovations often require high investments which make consumers worry reluctant to spend such amounts of money as they worried about how well spend this money really is on a long-term basis. According to Ram and Sheth (1989) model conducted a study there is a negative relationship between economic risk and resistance. Szmigin and Foxall (1998) Consumers postpone adoption until they feel they can afford the innovation. Mohtar & Abbas (2015) Suggests that perceived risk leads to rejection and negatively

associated with consumer resistance to innovation. Similarly, Woodside and Biemans (2005) Suggests that perceived risk leads to rejection to innovation. Fain and Roberts (1997) conducted a study on high-tech innovation. The result of this study shows that there is a negative relationship between perceived risk and resistance, particularly for high-tech innovations.

Kim *et al*., (2005) conducted a study on online purchasing tickets. The result of this study shows that there is a significant relationship between perceived risk and innovation. Another study conducted by Aldas-Manzano *et al*., (2009) on internet banking with regard to adoption of new technology. The results of this study suggest that perceived risk is a strong predictor of consumer nonadoption behavior towards new technology. In the same year Ozdemir & Trott, (2009) conducted a study on consumer response to new technology in internet banking. The result of this study points out that there is no strong influence of perceived risk on innovation as compared to habit, strive for consistency and status quo. Previously Azmi and Bee (2010), conducted a study on an e-billing system. According to their study resistance is a normal consumer response that has to be overcome before an adoption may begin. The results of this study show that with regard to rejection of innovation, perceived risk would be worthwhile to consider the problems that consumers encounter with technologies. But according to Dunphy & Herbig, (1995); Aggarwal *et al*., (1998); Yiu Chi *et al*., (2007) there is a significant positive relationship between perceived risk and rejection of innovation encounter with technologies especially in the context of a smartphone.

Previous mainstream literature shows and verify the relationship and effect of perceived risk on intention related to consumer behavior in various fields such as electronic commerce (e.g. Crespo *et al*., 2009; Kim *et al*., 2008; Park & Jun, 2003; Belkhamza & Syed Azizi, 2009), e-filling system (Azmi and Bee,2010), purchasing tickets on-line (Kim *et al*., 2005), purchasing via mail order (Simpson & Lakner, 1993), and Internet banking (Aldas-Manzano *et al*., 2009; Ozdemir & Trott, 2009). On the other side of the perceived risk associated with the financial, performance, and security risks were found to be significant in the case of smartphones. Following the mainstream literature on the perceived risk and consumer behavior towards innovation (Brahim, 2015; Carter & Curry, 2013; Yiu Chi *et al*., 2007, Dunphy & Herbig, 1995, Aggarwal *et al*., 1998) found a positive relationship in the context of a smartphone. From above literature, there is a contradiction between the relationship among perceived risk and innovation so this call for further research related to innovation especially in Smartphones.

Hypothesis 2: There is a positive relationship between perceived risk and consumer resistance to innovation.

2.20.3 Relationship between Complexity and Resistance to Innovation

According to Cheung *et al*., (2000) complexity as the extent to which an innovation can be considered relatively difficult to understand and use. They argue that complexity negatively influences the adoption of innovation related to internet usage (Mohtar & Abbas, 2015). On the contrary ease of use refers to the extent to which mobile banking is perceived as easy to understand and operate but the complexity is perceived as relatively difficult to understand and use especially in internet mobile banking (Cheung *et al*.,

2000). A vast body of research suggests that there is a strong impact of a complexity of new technology on its adoption and its rejection (Mohtar & Abbas, 2015; Gu *et al*. 2009; Luarn & Lin 2005; Venkatesh & Davis 2000; Wang *et al*. 2006; Cheung *et al*., 2000). As mobile banking services have very user-friendly interfaces, users see them as easy to use, and hence to form positive attitudes towards them (Lin, 2011). Different researchers have come across as complexity is negatively associated with the diffusion of innovation and positively related with resistance to innovation (Mohtar & Abbas, 2015; Dunphy & Herbig 1995; Tornatzky & Klein, 1982).

It is also claimed through several researchers that; innovative products with enough complexity demands a lot of skill and effort (to implement and apply innovations) to increase utilization and reduce the possibility of customer resistance (Cooper & Zmud, 1990; Dickerson & Gentry 1983; Tan & Teo 2000). It is believed that the innovative products that are less complex and easily adopted by consumers (Laio, Liu and Cheng 2015; Holak & Lehmann, 1990). There is a negative relationship between complexity and relative advantage as if a product is considered complex, will be difficult for consumers to use and, therefore, cannot be exploited for its usage and advantage (Holak & Lehmann, 1990, Robert, 1998). With regarding, consumer characteristic, complexity as a strong precursor that affect customer intentions and lead to the acceptance by the relative advantage, risks, and self-efficacy. Moreover, according to Laio, Liu and Cheng (2015) and Holak and Lehmann (1990), that the bigger risk colligates with innovation are considered more complex, so, there is a positive relationship between the complexity and perceived risk. Moreover, complexity related to the degree to which an innovation is

difficult to use and understand. Cognitive impairment associated adoption process of innovation is gaining attention by the researcher (Kleijnen, de Ruyter, & Wetzels, 2007), and emphasized as an important contributor to innovation resistance (Oreg, 2006; Ram, 1989).

In the past mainstream literature, most researchers have been looking complexity has a positive influence on consumer resistance and negative influence on consumer adoption to innovation (Cooper & Zmud, 1990; Dickerson & Gentry 1983; Tan & Teo 2000). Most of the past literature have been done on the western context that is not applicable in the Asian context like in Pakistan. Because according to Ongori *et al*., (2007) every country have different preferences and characteristics which vary culture to culture, so Pakistan is collectivism and power distance country in which people have different preferences related to adoption and rejection of new technology. On the other hand, most of past literature have been done on the internet banking, mobile banking, self-service technology, online e-banking but limited literature have been done on the resistance to innovation especially in Smart Phones (Dunphy & Herbig, 1995, Tan & Teo, 2000, Holak & Lehmann, 1990).

Hypothesis 3: There is a positive relationship between complexity and consumer resistance to innovation

2.20.4 Relationship between Social Influence and Resistance to Innovation

The research seeks to improve the understanding of social influences on consumer behavior related to purchase intention and intention to resist in the field of innovation. (Bickart & Schindler, 2001). Social influences on consumer behavior based on interactions of social life, where some relationships are built and interests are shared (Lin, 2008). Members within these communities seek and share information that is related to the product, brand, and shops. Because of this lack of knowledge within the virtual consumer communities, has improved a better knowledge in the field of social influence effect on consumer behavior related to the selection or rejection of the innovative product within these consumers. The concept of innovation is dominantly based on the diffusion of innovation theory (Rogers, 1987). According to Diffusion theory of Rogers, (1981) accounted for social influence effects on consumer intention to adopt or reject the novel change.

The effect of social influence has been proven in a number of areas, including littering (Cialdini, Reno, and Kallgren, 1990), voting (Gerber, Green, & Larimer, 2008), who donate in charity (Reingen, 1982), which express the injury (Apfelbaum, Sommers, & Norton, 2008), the choice of employment (Higgins, 2001), investing in the stock market (Hong, Kubik, & Stein, 2004), and, most relevant to the investigation of both the adoption and rejection of consumer products (Berger & Heath, 2007).

There are some past and recent literature related to social influence that shows there is a significant relationship between social influence and resistance to innovation. According to Walczuch (2004) conducted study in Netherlands, the results of this study revealed that social influence has a significant influence on consumer purchase trust towards the smartphone. Similarly, Agosto and Hughes-Hassell (2005), conducted a study in Malaysia, results of this study revealed that family and friends have positive relationship towards consumer confidence to adopt the smartphone and similarly if they lose confidence then higher the social influence, the higher the consumer resistance to innovation. Furthermore, Nihal, (2011) conducted a study in Turkey, the results of this study revealed that information shared among family and friends have a positive relationship to consumer confidence to adopt smartphone and if information influence the consumer confidence then consumer resist to the smartphone. In next year Carayannis, Clark and Valvi (2013), conducted a study in the United States, results of this study revealed that friends and family have positively influenced the consumer intention to purchase a smartphone.

Furthermore, according to Asch (1951), social influences may significant effect of social influence on consumer adoption and rejection decisions related to consumption. The result of this study points out that social influence is a good predictor of customer intention to reject the new product rather than the adoption of the products. Similarly, (Tan, 2000) conducted a study on factors influencing the adoption of internet banking. The results of this study revealed that social influence, play a significant role in influencing the intention to adopt and reject the internet banking. In addition, Lopez-

Nicolas *et al*. (2008) argued that social influence has a positive influence on the attitude towards mobile innovations. Furthermore, Singh at al., (2010) stated that consumer's decision to adopt or reject mobile commerce were influenced by family members and friends. Adoption of products depends on the customer and their willingness. The study results revealed that social influence has significant positive influence on consumer resistance to innovation. According to Dasgupta *et al*., (2011) stated that perceived image was a significant element for consumers' willingness to adopt or reject the technology.

To support the relationship by the previous study Kim (2009) conducted a study to examine the impact of social influence on Smartphone's users. The results of this study show that social influence could affect the intention to use a Smartphone via influencing the perceived usefulness. In addition, to previous study Verkasalo (2010) cited in Hamka, Bouwman, de Reuver, & Kroesen, (2014) suggests that the social norm influences intention to use a Smartphone indirectly through influencing the perceived enjoyment. In the same year, Shin (2010) also indicates that social influence has a positive influence on the attitude towards Smartphone adoption. Recently, Talukder & Quazi, (2011) conducted a study to examine the impact of social factors (peer and social network) on attitudes toward innovation and the impact of that attitude on individual employees adopting innovation in their workplaces in Australia. Furthermore, finding of this study reveal that social network has been found to directly influence the innovation resistance process.

In the same year Kim and Park, (2011) conducted their research on the adoption of innovation concentrates on voluntary adoption, even if the decisions adoption is not voluntary or induced are prevalent in real life, especially for the high-tech products and services. The present study intends to investigate the impact of social influence in the adoption of innovation in the context of consumer adoption and rejection to change required. The results show that there is a significant relationship between social influence and innovation if you adopt or reject the new product. Another study conducted by ss attempts to quantitatively measure the various influences on mobile phone adoption at the bottom of the pyramid in Bangladesh, Pakistan, India, Sri Lanka, the Philippines, and Thailand. Their study gives evidence for the importance of social influence in mobile adoption in two modes: one that exerts pressure on individuals to adopt, and another that helps to the individual to identify those factors which become a hurdle in the adoption process. So according to findings of this study social influence is a good predictor of rejection process in innovation. Now a day's new technologies met with resistance; in a situation such as these, social influence plays an important role (Batcovic & Batcovic, 20115). The study results revealed that social influences on consumer decision to adopt or reject the innovative product.

Most of the past literature have been done on the internet banking, mobile banking, Stock market, searching jobs, voting, online e-banking but limited literature have been done on the resistance to innovation especially in Smartphones as an innovation (Lopez-Nicolas *et al*. 2008; Shin, 2010; Talukder & Quazi, 2011; Kim, 2009; Park, 2011; Silva, 2011).

Hypothesis 4: There is a positive relationship between social influence and consumer resistance to innovation.

2.20.5 Relationship between Price and Consumer Resistance to Innovation

Price has been noted an important component affecting the diffusion of new products or services, but the price for a new product or service is especially difficult, study results identified that there is positive relationship between price and consumer resistance to innovation (Chen, 2012; McTaggart, 2012; Mohtar & Abbas, 2015; Foxall, 1984). According to Ram's "model of resistance to innovation," restrictive effect on the adoption of other innovations "is one of the factors that influence the resistance to innovation. In certain cases, the adoption of an innovation product can have a cruel effect on the adoption of other innovations (Ram, 1987). If a person buys a product as an innovative breakthrough product as expensive like a smartphone, the person is not able to buy another brand new like a smartphone with better performance and more characteristics in a short period of time. The person has put off their purchases.

It is also claimed through several researchers that higher the price, the higher the consumer resistance to innovation and price have a positive relationship between consumer resistances to innovation (Ram & Sheth, 1989). In the next few years' study by Szmigin and Foxall (1998) was indicate that price has strong influence on consumer resistance to innovation as compared to adoption. Consistent with this study Ven den Bulte and Stremersch, (2004) have found a strong, positive correlation between price and

consumer resistance to innovation. Literature related to price and consumer resistance to innovation highlighted that price as one of the greatest significant components for consumer resistance to innovation. In this regard, the majority of the previous literature revealed that when a consumer perceives higher price, they are most likely to resist the innovation.

Furthermore, a large number of studies have validated the positive relationship between price and consumer resistance to innovation. Similarly, most of the studies highlighted that price has a positive relationship with consumer resistance to innovation for example (Kleijnen *et al*., 2009; Nagle & Holden, 2002; Bagozzi & Lee 1999).

Furthermore, Related to price perceptions, Goldsmith and Newell (1997) who found that shopping innovators to be less price sensitive than later buyers and study results revealed that higher the price, the higher consumer resistance to innovation, whereas Korgaonkar and Smith (1986) as cited in Lim & Ting, (2012) reported no relationship between purchase behavior and price consciousness, results of this study revealed that there is negative relationship between price and consumer resistance to innovation. However, earlier Korgaonkar (1984) had concluded that non-store shopping would be most appealing to price oriented individuals and study results stated that price is best predictor of resistance to innovation because higher price lead to the consumer resistance to innovation. Similarly, Pagani (2004) has conducted a study in determining the intention to use the third generation of multimedia services among Italian mobile phone users. The result shows that perceived usefulness, ease of use, price, and speed of use are the most

important determinants of postponement of innovation of multimedia mobile services. Khan & Hyunwoo, (2009) conducted a study on the customer perception about online shopping. According to the qualitative findings of their fifty years' study, old people are more conscious about quality while others are conscious about price. The result of this study revealed that participants use internet shopping service when they have chance to get things at less price comparing to the shop price, but this concession cannot create any attraction for Swedish women to whom we conducted our interviews. So there is no relationship between customer perception about price and innovation.

In addition, the theory of materialism explains the customer higher perceived value of all luxury products, which including high innovative product or a new technology, because these types of products are usually paid at a reasonable high price (Vitzthum, 1995; Lange, 1925). In addition, the Smartphone can affect consumers' purchase intentions, but it must impose the abnormally high price. For example, a luxury product such as smartphones become a normal good or even an inferior good, if the purchasing power of global consumers has risen which means that everyone can own a Smartphone, therefore it is no longer the symbol of social status (Jee Han, Joseph, & Xavier, 2010).

With regard to this, in recent years many studies shown that when consumer perceives higher price, they are most likely to resist the innovation, which implies that higher the price, the higher the higher the consumer resistance to innovation. Price perceptions have a significant influence on purchase intention of Smartphone's amongst the young adults in Malaysia. Smartphone companies can increase prices for high-end Smartphone for the

young adults tend to view that high prices lead to higher quality products, conversely (Kleijnen, Lee, & Wetzel, 2009). All in all, taking into consideration of the previous studies Chen, (2012) revealed that price is a predictor of resistance to innovation.

Hypothesis 5: There is a positive relationship between price and consumer resistance to innovation.

2.20.6 Relationship between Motivation and Consumer Resistance to Innovations

Motivation includes an inner procedure that give power and route to consumer behavior (Reeve, 1996). Previous studies to understand the human motivation including self-determination concept (Deci & Ryan, 1985). Motivation is a source of consumer resistance to innovation and consumer motivation behavior that are satisfied which depends on the habit are resistance to novelty (Sheth, 1981). When the consumer is quite satisfied with the routine and innovation threaten to the consumer routine as well as usage pattern then he resist to the innovation, thus more the discontinuous the innovation, the more resistance to innovation. Thus, it is proved that lower the motivation, the higher the consumer resistance to innovation (Lee Matthew *et al*., 2007).

Furthermore, for motivational resistance to innovation there are numerous signs of resistance, both passive and active. Further explaining the motivation in training classes perspective scholars stated that active resistance incorporates immediate verbal dissatisfaction against the program from consumers towards training department and management department. Passive resistance incorporates taking part in private, negative

discussions with different consumers, avoiding from the training classes, and avoiding the utilization of the technology and systems. These manifestations of resistance are not unordinary when executing new methodologies and advances in nature's domain. Passive resistance may be immediate after effect of low motivation. Thus study results revealed that lower motivation create high resistance to innovation (Lee Matthew *et al*., 2007). Bunce and West (1995) recognized both intrinsic motivation and standard autonomy as positive indicators of consumers' behaviors towards innovation. Additionally, the results of this study proved that there is negative relationship between motivation and consumer resistance to innovation (Isen and Baron, 1991; Anderson & King, 1993). Motivation drives shoppers' requirements and expectations to hold innovation. Taking after scientist arguments and observational conclusions (Lee, Cheung and Chen, 2007; Davis, Bagozzi and Warshaw, 1992) have negative impact on customer resistance to innovation (cell phones).

Hypothesis 6: There is a negative relationship between motivation and consumer resistance to innovation.

2.20.7 Relationship between Self-Efficacy and Consumer Resistance to Innovation

Self-efficacy is a construct which represents the trust of a single person in their own capabilities. Self-efficacy is characterized as the faith in one's skills to perform a specific behavior and effectively execute certain activities to achieve objectives (Bandura, 1997; Chen, Greene & Rick, 1998; Gist & Mitchell, 1992). Research has indicated that people gradually collect their self-efficacy through earlier cognitive, social, and physical

achievements and through taking in (Bandura, 1986), Self-efficacy subsequently develops with hard-won accomplishments rather than uniqueness and attributes, which are generally balanced qualities. Thus, the individual capability of self-efficacy significantly influences the level of perceived anxiety.

It is also claimed through several researchers that, computer self-efficacy as a confidence in one's competencies to effectively perform a computer related activities, is identified with computer related anxiety when individuals utilize this innovation. As per self-efficacy influences people's emotions of anxiety and tension, including thought designs and passionate responses (Bandura, 1986). Study results shows that lower the self-efficacy of consumer lead to the higher resistance to innovation. Furthermore, previous studies have discovered that apparent high computer efficacy toward self-efficacy expand the utilization of an individual computer nervousness (Compeau & Higgins, 1995; Fagan & Neill, 2003). In the meantime, people with higher computer self-efficacy will very easy to adapt the variations and innovations in computer technology and IT than those with lower computer self-efficacy. In line with a lower self-efficacy leads to the consumer resistance to innovation. A few specialists exactly confirmed that efficacy toward self-efficacy is negatively associated with resistance to technology change. That is individuals who see low level of efficacy toward self-efficacy will be more resistant to innovation change than those with higher self-efficacy (Tan & Teo, 2000).

Futhermore, in the context of Smartphone's researchers discovered that confidence in their ability to understand and cope Smartphone's without problems, it can build the

possibility of adoption, and will have negative impact on resistance to innovation by consumer. Some experts have come to efficacy of having a negative impact on the resistance of the buyer and the positive impact on the adoption of imaginary products (Ellen & Bearden, 1991; Park & Chen, 2007 and Tan & Teo, 2000).

With regard to this, in recent years many studies shown lower the consumer self-efficacy leads to the higher consumer resistance to innovation, which implies that when consumer have self-efficacy related to that product which create lower self-efficacy about innovative product, the higher the consumer resistance to innovation (Mohtar & Abbas, 2015; Park & Chen, 2007). On the basis of previous literature, it has been proven that the suitability of the buyer to self-efficacy to expected a negative impact on resistance to innovation.

Hypothesis 7: There is a negative relationship between self-efficacy and consumer resistance to innovation.

2.20.8 Relationship between Eemotions (Negative) and Consumer Resistance to Innovation

The existing literature on consumer resistance was not clearly explaining the role and place of emotions, studies on metacognition in any case recommend, analyzing in understanding the impacts of enthusiastic states in resistance circumstances, as well as the way in which they are encoded, with the purpose of studying the whole resistance. With the exception of the studies on brands by (Romani, Grappi, & Dalli, 2012) and of Dalli, Romani and Gistri (2005), there are few theoretical contributions for seeing,

specifically, which emotions become an integral factor like anger, fear, hatred, distress, disgust in causing resistance. So the findings showed that there is positive relationship between emotion (negative) and consumer resistance to innovation.

Furthermore, a large number of studies have validated the negative relationship between emotion (negative) and consumer resistance to innovation (Davis *et al*., 1992; Martin *et al*., 2008; Wood and Moreau, 2006 as cited in Patsiotis, Hughes, & Webber, 2013), which implies that, higher the emotion (negative) higher the consumer resistance to innovation (Martin *et al*., 2008; Watson and Spence, 2007; Wood & Moreau, 2006). In the same year study by Mauro, Hernandez and Afonso Mazzon, (2007), found that conumer are resisting innovation due to the negative emotion. Likewise, study by Bagozzi and Lee (1999) was indicate that negative emotion have strong influence on consumer resistance to innovation as compared to adoption.

Moreover, Mauro, Hernandez and Afonso Mazzon, (2007) stated that user behavior may be not quite the same as pre-adaptation behavior, given in the different effects of the emotional perspectives and results of this study revealed that higher the emotion (negative) leads to the higher consumer resistance to innovation. Similarly, research could further inspect the relationship between emotions and perceived negative difficulties by using the innovative products. These difficulties by using the innovative products raise negative emotions and these negative emotions leads to the consumer resistance to innovation. Thus in line with above statements, negative emotion is a best predictor of consumer resistance to innovation.

Furthermore, Bagozzi and Lee (1999) noted that emotional resistance to innovation comes from the negative emotions such as anger, fear, sadness and disgusted guilt, shame, humiliation, and the envy. Anger happens when another consumer makes one be unsuccessful to achieve a normal reward leads to the resistance to innovation. Fear happens when either a threat is anticipated or possible disappointment to get a prize is anticipated. Disappointment comes about external occasions stop the occurrence of a wanted reward. Disgust results when outside circumstances upset one's objectives. Guilt results when one does something he or she perceives as ethically wrong notice harmful to someone else. Shame happens when one perceives that someone else whose belief is valued evaluates one as worthless or incompetent, as a consequence of a violation of some standard. Disrespect emerges when one feels disgust or contempt to someone else, in light of the fact that the individual has delayed one's objectives or injured one somehow, jealousy and envy happen when one sees another has or debilitates to take away what he or she thinks of one as own. The results of all these emotional states create negative emotion and these negative emotions lead to the consumer resistance to innovation. In line with higher the emotion (negative), the higher the consumer resistance to innovation. Furthermore, Bagozzi and Lee (1999) showed that rejection of an innovation results, to some degree, from the assessment of a product's new promotions and the expected outcomes of its adoption, additionally the negative emotions included when consumer purchase new products and this product create negative emotions in the consumer minds. From above discussion, all negative emotional states are the predictors

of consumer resistance to innovation. Furthermore, the literature discovered that emotions have a positive association with consumer resistance to innovation.

With regard to this, in recent years many studies shown that when consumer perceives negative emotion, they are most likely to resist the new technology, which implies that when consumer have bad experience related to that product which create negative feelings about innovative product, the higher the consumer resistance to innovation (Wakfield, 2015; Choraria & Sardana, 2013; Barsky and Nash, 2002; Cronin *et al*., 2000)

Hypothesis 8: There is a positive relationship between emotions (negative) and consumer resistance to innovation.

2.20.9 Relationship between Attitude Towards Eexisting Product and Consumer Resistance to Innovation

In 1992, Schwartz defined attitude towards exiting product in term of tradition value which is relevant to one's favorable attitude towards present and past as well as reveals one's regards for lifestyle, public standards and customs. Aligned with this view, these tradition values indicate a positive attitude toward the items that consumers are currently using. Other than that, in the perspective of consumer there is positive relationship between attitude towards existing product and consumer resistance to innovation because consumers with such a favorable attitude will be reluctant to substitute their old but still efficient items with new market promotions. Consequently, consumers have a lot of possibilities to give up what they already have, but those with a powerful positive attitude

towards current products will resist new products and keep using what they already have until the items don't succeed to function.

It is also claimed through several researchers that attitude towards existing product is positively associated to consumer resistance to innovation, which implies that, higher the attitude of consumer towards existing product higher the consumer resistance to innovation (Gatignon & Robertson, 1985). After few years Gatignon and Robertson, (1991) and Rogers, (1995) found that there is positive relationship between attitude towards existing product and consumer resistance to innovation because certain social-psychographic aspects, for example, innovative feeling, opinion leadership and risk-taking behavior, have equally been indicated to be identified with new product adoption and consumer who have their feelings with old products they reject to the new ones.

Likewise, study by Gatignon & Robertson, (1985) was indicate that attitude towards existing product have strong influence on consumer resistance to innovation as compared to adoption. Consistent with this study, Karjaluoto *et al*., (2002) have found that attitude of consumer towards existing product have a positive effect on consumer resistance to innovation due to result of consumer mentality towards Smartphone. Literature related to attitude of consumer towards existing product and resistance to innovation highlighted that attitude of consumer towards existing product as one of the greatest significant components for resistance to innovation. In this regard, majority of the previous literature revealed that when consumer perceives favorable attitude towards existing product, they are most likely to resist the innovation.

With regard to this, in recent years many studies shown that when consumer perceives favorable attitude towards existing product, they are most likely to resist the innovation, which implies that more consumer feel satisfied with their existing product, the higher the resistance to innovation (Mont and Heiskanen, 2015; Yu, Li & Chantatub, 2015; Chen, 2012; Dzogbenuku, 2013; Wang *et al*., 2008; Garica *et al*., 2007).

In consideration of all above findings and their influence on consumer resistance to innovation, it is proposed that more favorable consumer attitude towards existing products, the higher the consumer resistance to innovation.

Hypothesis 9: There is positive relationship between attitude towards exiting product and resistance to innovation.

2.20.10 Relationship between Consumers Innovativeness (Moderator) and Consumer Resistance to Innovation

The idea of consumer resistance is applied by a number of scholars to describe innovation failures. Innovation resistance is a normal consumer reaction to innovative products (Ram & Sheth, 1989). Radical innovations, such as the automobile, mobile phones and the computer, which have already proved to deliver incalculable benefits to the consumer, have faced consumer resistance in the initial stages of their technology adoption life cycles. Radical innovations, by definition, are superior both in technical terms and in the

ability to meet consumer needs (Montaguti *et al*., 2002). Nonetheless, the conceptualization of consumer resistance differs across studies.

According to Kuisma (2007), the psychology of innovation resistance is generated when there is a tendency towards an existing practice or behavior, which is driven by the desire of stability and status quo, and when there are perceived risks associated with innovation adoption, which can be physical, social, economic, and functional risks. Heidenreich & Spieth (2013), in their turn, believe that this phenomenon is the result of two distinct foundations: product-specific barriers, and adopter- and situation-specific factors. The former is defined as active innovation resistance and the latter is defined as passive innovation resistance.

Consumer innovativeness is the opposite of consumer resistance to innovation. According to Heidenreich & Spieth (2013), it is the propensity an individual has to seek variety and novelty more often than others. Consumer innovativeness is driven by two central needs: need for stimulation, and need for uniqueness (Heidenreich & Spieth, 2013). The adoption of new products occurs as a consequence of consumer innovativeness.

In view of this between consumer innovativeness and consumer resistance to innovation according to Fu and Elliott, (2013) found that consumer innovativeness positively and significantly influences the consumer adoption and negatively influence the consumer resistance to innovation. Consumer innovativeness might agree with the desires of

consumers for the adoption of new product that are launched in the market. Consumers needs reflect the uniqueness for individual differences among the young consumers (Fu & Elliott, 2013).

Hypothesis 10: There is negative relationship between consumer innovativeness and consumer resistance to innovation.

2.20.11 Moderating Effect of Consumer Innovativeness on the Relationship between Consumer Characteristics, Innovation Characteristics and Consumer Resistance to Innovation

In the last decades the consumer innovativeness has been a growing number of research attentions and is now perceived as a major concern for consumer and manufacturer (Saeed, Zameer, Awan, Ullah, 2014). Moreover, a growing body of research now shows that the consumer innovativeness is very prevalent and associated with numerous adverse effects, such as decreased consumer self-efficacy, increase complexity, lower motivation, favorable attitude towards existing product, lower relative advantage, higher complexity, higher perceived risk, high social influence, high price and increase consumer resistance to innovation (Mohtar & Abbas, 2015, 2014; Wang *et al*., 2008; Lee Mathew *et al*., 2007; Tan & Teo, 2000).

Over the year majority of the studies used consumer innovativeness as predictor with consumer characteristics, innovation characteristics and consumer resistance to innovation (Bartels & Reinders, 2011, 2010; Vandecasteele and Geuens, 2010; Jeong *et al*., 2009). On the other hand, studies that introduced consumer innovativeness as intervening variable on the relationship between consumer characteristics, innovation

characteristics and consumer resistance to innovation are not many, some of them is the study by (Bartels & Reinders, 2011, 2010; Vandecasteele and Geuens, 2010; Jeong *et al*., 2009; Tomaseti *et al*., 2004). Likewise, they argued that consumer who encounter high levels of innovativeness were not the best performer as well as lower motivation, self-efficacy, high emotion (negative), favorable attitude towards existing products, lower relative advantage, higher complexity, higher perceived risk, high social influnec, high price with their innovative products which ultimately increase the level of consumer resistance to innovation. The use of innovativeness as an intervening variable having an indirect effect, instead of direct effect was also supported by (Vandecasteele and Geuens, 2010; Ouellet, 2006; Jaccard *et al*., 1990).

Furthermore, a large number of studies have validated the negative relationship between self-efficacy, motivation, relative advantage, and consumer resistance to innovation and positive relationship between emotion (negative), attitude towards existing product, complexity, perceived risk, social influence, price and consumer resistance to innovation. Due to the complexity of consumer resistance behavior, the demand for further research including intervening variables has increased in order to understand the complex phenomenon. Generally, most of the studies highlighted that consumer innovativeness has negative relationship with consumer resistance to innovation for example, (Fu & Elliott, 2013; Heidenreich & Spieth, 2013), who found that consumer who encounter high levels of innovativeness, Confidence in one's ability to use/understand innovation without any difficulty, may increase the chances of adoption, and will have negative effect on consumers' resistance. On the other hand, this notion is also supported by resistance to

innovation and appraisal theory (Ram, 1987; Arnold, 1960; Lazarus, 1966). Likewise, resistance to innovation theory in 1987, Ram and Sheth, initially developed innovation resistance theory which is based on two dimensions like consumer characteristics, innovation characteristics and also discuss the reasons of consumers who cannot accept innovation. Besides Ram and Sheth specified the reasons that consumers resist innovation is just because of the difficulties produces through the change, and conflicts through innovation. These conflicts can be a consumer's barriers and these are divided psychological (consumer characteristics) and functional barriers (innovation characteristics).

Thus the strength of relationship between consumer characteristics and consumer resistance to innovation is moderte; but this relationship is in line with resistance to innovation theory and majority of previous literature which revealed that behavior and attitude of consumer were influenced by consumer innovativeness. Which implies that, the consumer with high consumer innovativeness could have very innovative than consumer with low innovativeness. Hence, based on the discussed literature, the suggestion is that the level of consumer innovativeness can weaken, strengthen or have no effect on the negative relationship between self-efficacy, motivation, relative advantage and consumer resistance to innovation. Similarly, the level of consumer innovativeness can weaken, strengthen or have no effect on the positive relationship between emotion (negative), attitude towards existing product, perceived risk, complexity, social influence, price and consumer resistance to innovation.

Despite all the arguments that highlights the moderating role of consumer innovativeness on the realtionship between consumer characteristics, innovation characteritics and consumer resistance to innovation are limited. Neverthless, the litrature has so far been focusing on moderating role of consumer innovativeness have two shortcommings. First, in past some of studies indicates inconsistany related to moderating role of consumer innovativeness on the realtionship between consumer characteristics, innovation characteristics and consumer resistance to innovation. Second, scholors have traditionaly focused on western organizations even though moderating role of consumer innovativeness presently highly needed by Pakistani consumer market particulary university students with different context. So that why, current empirical study conducted in asian context particularly in the pakistanini context as apposed to western context.

Hypothesis 11(a): The relationship between innovation characteristics and consumer resistance to innovation is moderated by consumer innovativeness; in more detail:

Hypothesis 11(a)(1): The relationship between relative advantage and consumer resistance to innovation is moderated by consumer innovativeness.

Hypothesis 11(a)(2): The relationship between perceived risk and consumer resistance to innovation is moderated by consumer innovativeness.

Hypothesis 11(a)(3): The relationship between complexity and consumer resistance to innovation is moderated by consumer innovativeness.

Hypothesis 11(a)(4): The relationship between social influence and consumer resistance to innovation is moderated by consumer innovativeness.

Hypothesis 11(a)(5): The relationship between price and consumer resistance to innovation is moderated by consumer innovativeness.

Hypothesis 11(b): the relationship between consumer characteristics and consumer resistance to innovation is moderated by consumer innovativeness.

Hypothesis 11(b)(1): The relationship between motivation and consumer resistance to innovation is moderated by consumer innovativeness.

Hypothesis 11(b)(2): The relationship between self-efficacy and consumer resistance to innovation is moderated by consumer innovativeness.

Hypothesis 11(b)(3): The relationship between emotions and consumer resistance to innovation is moderated by consumer innovativeness.

Hypothesis 11(b)(4): The relationship between attitude towards existing product and consumer resistance to innovation is moderated by consumer innovativeness.

2.21 Summary

This chapter has reviewed the literatures recognized with the study variables. The relationship among the study variables has been distinguished and discussed. The underpinning theories which explain all the variables are equally discussed in this study. The theoretical framework of the study is expressed based on the consumer resistance to innovation theories by Ram (1987), Arnold, (1960) and Lazarus, (1966) research issues and also after investigating the past studies. In the end, based on past literature and the relationship among the constructs and also this present study proposes the study hypothesis.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter discusses the methodology of this study. It begins by defining the research design, followed with the operational definitions of the variables, population, and sampling. Realistically, the research design of any study provides a structure for data collection as well as analysis, and it reveals the type of research and the priorities of researchers. It also includes the research approach, sample and sampling design, measurement of variables, data collection procedures and analysis techniques to examine the relationship between consumer characteristics, innovation characteristics and consumer resistance to innovation through consumer innovativeness. The researcher had employed questionnaire survey method for data collection to study the student's response towards resistance to innovation who are university students enrolled in public universities in Pakistan.

3.2 Research Design

Research design of any study is based on the type of research (Ghauri & Grønhaug, 2005). It can be quantitative, qualitative or mixed, depending upon the problem to be answered in the study; all approaches are different in terms of the nature of the data. While qualitative approach works with data based on observations, sentences, words,

symbols and photos, quantitative approach in contrast works with data in the form of numbers (Cooper, Schindler, & Sun, 2006). Meanwhile, the mixed research method is based on applying quantitative and qualitative approach (Creswell, 2013). In this study, the quantitative research approach is applied, based on justifications discussed in the subsequent paragraphs.

The quantitative design is a systematic and scientific approach for identifying associations and interaction between different variables under study because different researchers concern about the trends or relationships between variables applying theories, models, and hypotheses (Cooper et al., 2006). It is objective, is based on positivist ontology (Bryman, 2012), is appropriate to analyze the association between groups and rationalization of dependency among variables and is the most suitable way of testing hypotheses (Creswell, 2013). As the study aims at examining the direct and indirect relationships between innovation characteristics, consumer characteristics and consumer resistance to innovation through consumer innovativeness as a moderating variable, it is similar with studies by Selimi (2013) and Claudy (2014), which also used quantitative approach for studying the consumer and innovation characteristics influencing consumer resistance to innovation and other factors such as consumer innovativeness on consumer resistance to innovation.

To meet the aim of the study, the survey method is employed. It involves the use of questionnaires as the main data collection technique for statistical analysis. Regarding the technique, the cross sectional strategy is used, whereby the data were collected once to

answer the research questions. The unit of analysis for this study is the individual, whereby the subjects of study are students in public universities in Pakistan.

3.3 Research Scale and Instrument Development

First, a good questionnaire has been designed and all appropriate as well as often used (by different researchers) factors/questions (for the selected factor measurement) have been verified (refer to the Appendix A). The survey questionnaires have been adapted from previous researchers with appropriate modification that is suitable for the sample. It consists of mainly two components. The first component comprises of several Likert-type scale items, and the second component describes the demographic information about the consumer resistance to innovation. The Likert scale is considered to examine how strongly the respondents agree or disagree with a certain statement (Sekaran, 2003). The scale is intended to be the new approach of Renis Likert rating scale for measuring the personal attributes and behavior of an individual, which are six-point Likert scale. The scale is chopping the possibility of choice to respond without considering the measuring elements. The respondents are unable to choose a modest value as well as a middle value in this type of rating scale, because respondents must choose between one of the two skills of the scale in order to be the answer. With this approach, the participants must take into consideration for a while or level. Ideally, the purpose of using a 6-point Likert scale with ‘Agree very much’ refers to ‘6’, and ‘Disagree very much’ refers to ‘1’is to offer the respondents more options/choice and better capture variability in their attitudes and feelings (Hinkin, 1995).

This study focuses on the factors influencing the consumer resistance towards innovation through innovation and consumer characteristics. Accordingly, it employs university students to express their opinions. The six-point Likert scale is used because it is the most widely used methods of scaling in the social and behavioral sciences research (Chomeya, 2010). According to Chomeya (2010), the 6-point Likert scale has a tendency to provide values of discrimination and reliability that are greater and accurate than 5-point Likert scale. If they wish to highlight the high discrimination and reliability, so they should use the 6-point Likert scale. With respect to the reliability, value as a whole, the 6-point Likert scale gives the reliability by Cronbach's Alpha Coefficient higher than the 5-point Likert scale (Chomeya, 2010). Many researchers use 6-point Likert scale instead of 5-point Likert scale to reduce the risks that might happen from the deviation of personal decision making (Chomeya, 2010). Besides that, the 6-point Likert scale is appropriate to a research that has several variables because it makes the test as a whole has less number of items and it was not the burden of the respondents while the reliability is acceptable according to the standard of psychology test (Chomeya, 2010). Nevertheless, this scale is much easier to construct and much more reliable than 4-point Likert scale and 5-point Likert scale (Chomeya, 2010). Practically, 6-point Likert scale offers respondents simply more options from where they can smoothly make their choices.

The above paragraphs justify the decision for using the 6-point Likert scale. Further, to ensure the consistency among all variables, this study measures all items (summarized in Table 3.2) using 1=disagree very much, 2 =disagree moderately, 3=disagree slightly,

4=agree slightly, 5=agree moderately, 6=agree very much scaling. The survey questionnaires were distributed personally to each respondent, through the drop-off and pick-up method (Burns & Bush, 2003), where the questionnaires were left with the respondents and were collected in the following week.

Table 3.1
Measurement of the Study

Variables	Sources	Total Number of Item
Consumer Resistance to Innovation	Mirela *et al*., (2009); Yang, (2005); Szmigin & Foxal, (1998); ; Sheth, 1981	11
Innovation Characteristics		
Relative Advantage	Yiu *et al*., (2007); Jo, (2006); Yang, (2005); I.Brown *et al*., (2003)	5
Perceived Risk	I.Brown *et al*., (2003); Holak & Lehmann, (1990)	6
Complexity	He *et al*., (2006); I.Brown *et al*., (2003); Holak & Lehmann, (1990)	4
Social Influence	Isen, (2011); Agosto & Hughes-Hassell, (2005), (2005); Nihal, (2011); Walczuch, (2004); Carayannis et al., (2013)	5
Price	Richardson, Jain, and Dick, (1996); Grewal *et al*., (1998); Sinhaa & Batrab, (1999)	5
Consumer Characteristics		
Motivation	Lee *et al*., (2007); Park and Chen, (2007)	4
Self-Efficacy	Hung *et al*, (2003); I.Brown *et al*., (2003)	4
Emotions (Negative)	Richins, (1997); Reynolds *et al*. (2006)	6
Attitude towards Existing Product	Wang *et al*., (2003); Schwartz, (1992)	3
(Consumer Innovativeness)Moderator	Doughfous et. al., (1999)	7
Total Item		60

3.4 A Pilot Study

A pilot study involving 30 students of University Utara Malaysia was conducted to determine whether in the questionnaire items are clear and suitable as well as to determine and improve the process relating to the tool management. Specifically, the pilot study was carried out to check the precision and suitability of the questions in the instrument. It allows the researcher to investigate the reliability of the tool. All respondents completed the questionnaire within 25 minutes.

Based on the gathered data, all items in the questionnaire are easy to understand and clear. However, based on some comments, some items in the questionnaire were re-worded into English and Urdu to facilitate the research context, such as "characteristics" was changed into "attributes" and "Salahayat" into "Khasosiat". Besides checking on the face validity, the reliability was worked on ultimately. Having the reliability test run, the results on all measures are shown in Table 3.3. It is seen that the item values which are calculated by Cronbach's Alpha for all dimensions range between 0.62 and 0.95, over and above the less acceptable Cronbach Alpha value at 0.6 (Sekaran & Bougie, 2010). Thus, the measures are supposed to be consistent, the dimensions fit the purpose of study (Nunnally, 1978). Then, the final version of the questionnaire was made into a booklet form (refer to the Appendix A).

Table 3.2
Cronbach's alpha for the Variables in Pilot Study

Variable	Alpha (α)
Consumer Resistance to Innovation	0.91
Relative Advantage	0.83
Perceived Risk	0.81
Complexity	0.90
Social Influence	0.77
Price	0.72
Motivation	0.85
Self-Efficacy	0.75
Emotion (Negative)	0.86
Attitude towards Existing Product	0.66
Consumer Innovativeness	0.8

3.5 Measurement of Variables or Instrumentations

The measurement items were adapted from the past studies, which are authentic sources. The wording of the items used in the questionnaire is changed according to the sample and local context.

3.5.1 Consumer Resistance to Innovation

The dependent variable consumer resistance to innovation is measured through eleven items adapted from Mirela et al. (2009), Yang (2005), Szmigin and Foxal (1998), and Sheth (1981). Previously a study conducted by Khan and Hyunwoo (2009) also used the same scale with reliability of 0.729.

3.5.2 Relative Advantage

Previous studies have adapted their measurement items of relative advantage from Qun et al. (2012), who had adapted five items from Yiu et al. (2007), Jo (2006), Yang (2005), and Brown et al. (2003) with reliability of 0.716. Khan and Hyunwoo (2009) also used the same scale for measuring the price with reliability of 0.816. Later, Laurence (2014) adapted the same scale in his study with reliability of 0.673. Accordingly, this study also adapts the measurement items in the questionnaire from Yiu et al. (2007), Jo (2006), Yang (2005), and Brown et al. (2003).

3.5.3 Perceived Risk

Khan and Hyunwoo (2009) also used the same scale for measuring the price with reported reliability at 0.854. Hence, this study also adapts the measuring items for Perceived Risk from Brown et al. (2003). Also, they are also adapted from Holak and Lehmann (1990).

3.5.4 Complexity

Laurence (2014) adapted the measurement items of complexity from He et al. (2006), Brown et al. (2003), and Holak and Lehmann (1990) with the reliability of 0.667. Khan and Hyunwoo (2009) also used the same items for measuring the price with reliability of 0.710. When they have shown their success in their study, they have convinced this study to also adapt the measuring items from He et al. (2006), Brown et al. (2003), and Holak and Lehmann (1990).

3.5.5 Social Influence

The social influence in this study is measured by five items adapted from Isen (2011), Agosto & Hughes-Hassell (2005), Nihal (2011), Walczuch (2004), and Carayannis et al., (2013). The decision was influenced by a successful study, by Qun et al. (2012), who obtained a reliability value of 0.758.

3.5.6 Price

Price is measured through five items adapted from Richardson, Jain, and Dick (1996), Grewal et al. (1998), and Sinhaa and Batrab (1999). They have also been adapted by Qun et al. (2012) and Laurence (2014) in their successful study with reliability values of 0.880 and 0.687 respectively.

3.5.7 Motivation

Khan and Hyunwoo (2009) also used the same scale for measuring the motivation with reliability of 0.850. Due to its relevance in this study, the motivation is measured by four items adapted from Lee et al. (2007) and Park and Chen (2007).

3.5.8 Self-Efficacy

Compeau and Higgins (1991), Ajzen (1985), Ajzen (1991), and Taylor (1995) established three items for measuring the self-efficacy with reported reliability of 0.83. Meanwhile, Bhattacherjee (2000) adapted the measures from Taylor (1995) (three items) with reliability of 0.81. Then, Pedersen (2005) adapted the items from Bhattacherjee, (2000) and Taylor (1995) for measuring the intention to use mobile services. Meanwhile, Nor (2008) adapted from Compeau and Higgins (1995) and Taylor (1995) to measure self-efficacy with reliability of 0.83. Those studies used between three to five items in measuring self-efficacy. Accordingly, in this study, self-efficacy is also measured by four items, adapted from Hung et al (2003) and Brown et al. (2003). Previously, Khan and Hyunwoo (2009) also adapted their measurement items (four items) from Hung et al (2003) and Brown et al. (2003) with reported reliability of 0.744.

3.5.9 Emotions

This study measures emotion using four items adapted from Richins (1997) and Reynolds et al. (2006). Previously some researchers like Matitla and Enz (2002) and Diener et al. (1995) also used the same items for measuring the emotion with reliability of 0.744.

3.5.10 Attitude Towards Existence Product

Previously, Khan and Hyunwoo (2009) adapted the measuring items by Wang et al. (2003) and Schwartz (1992) with reliability of 0.736. They are highly relevant to this study. Hence, they are also adapted into this study.

3.5.11 Consumer Innovativeness (Moderator)

Goldsmith (1991) developed a six-item construct for measuring innovativeness, with reliability value of 0.83. Then, Agarwal (1998) developed a four-item construct, for measuring consumer innovativeness with reliability value of 0.84. It was followed by Doughfous et al. (1999) who used a six-item construct with reliability value of 0.83. Later, Aldás-Manzano et al. (2009) measured the innovativeness using a four-item construct adapted from Goldsmith (1991). It was carried out after Lu and Yao (2005) used a four-item construct adapted from Agarwal (1998) in measuring the innovativeness of the adoption of wireless internet services through mobile technology with reliability value of 0.82. Based on those works, this study adapts the measurement items of innovativeness of consumers from Doughfous et al. (1999), in which it contains seven items.

3.6 Demographic Information

Many questions regarding demographic profile of the respondents on consumer resistance to smartphones are also contained in the questionnaire. They require the respondents to fill or tick appropriate boxes for appropriate. Particularly, the demographic profile of the respondents in this study includes age, gender, education, and region, according to the provinces of Pakistan. Besides, monthly spending, mobile brand, and service provider about innovation are also asked.

3.7 Data Collection

There are primary and secondary sources for data (Sekaran, 2003). Primary source refers to the first-hand data, collected by researchers and scientists especially for the achievement of their research objectives. In contrast, secondary source refers to the second-hand data collected from existing sources as well as for different purposes. Saunders, Lewis, and Thornhill (2003) discovered that most studies that utilize secondary data fail to achieve their particular objectives. Accordingly, researchers tend to work on other sources of data.

The purpose of this research is to measure the consumer behavior towards selected items. Hence, gathering primary data is essential, while secondary data could help enrich the results. Regarding that, Sekaran (2003) and Zikmund (2000) agree that secondary data could be collected from many sources like articles, journal papers, books, and the

Internet. Meanwhile, primary data are collected through interviews, observations, and survey like a questionnaire. Based on such recommendation, this study utilizes questionnaire to gather the desired primary data. In fact, questionnaire technique is cost effective in gathering data from a large geographical area, in a scheduled time, and is free from interviewer influence. Besides, the technique could concentrate on collecting information from any specific unit of analysis from the population, so that the gathered data is highly relevant.

3.8 Difficulties in Data Collection

One of the challenges in gathering data is that the public universities are scattered in various cities in Pakistan. On top of that, a few political issues due to political instability in Pakistan have affected this study, making the movement for collecting data difficult. In such situation, the government had many VIP movements from one city to another city (Babar, 2014; Ferya, 2014). Not only the movement was difficult, the government had also arrested many youngsters who had an association with the concerning parties. Eventually, due to all these issues, the government has announced vacation in the education department and many universities were closed (Babar, 2014; Ferya, 2014).

3.9 Quantitative Research

The main objective of quantitative research is to determine the relationship between independent and dependent variables in a population (Hopkins, 2000). Thus, it is all

about quantifying relationships between variables. The prime objective of a quantitative research is also to examine the cause and effect of certain relationships between variables, which are generalizable to the population. Sukamolson (2005) outlines a few reasons for employing a quantitative approach in social sciences research. First, it offers inferences over the study population at large and provides condensed results. Second, it helps specifying the richness of people's attitudes accurately, and finally, it permits for statistical contrast between different groups. In that regard, this study employs a survey technique as it is the most well-accepted and most commonly used technique in management and social sciences research (Myers, 2009; Veal, 2005; Hair, Ringle, & Smarted, 2011). Secondly, the survey technique is useful for obtaining precise statistical information (Whitfield & Strauss, 1998). Not only that, it is also regarded as the simplest and least expensive, especially when the sample is geographically widely dispersed (Bryman, 2001). Also, it ensures anonymity of the respondents, which can lead to more truthful or valid responses. Nevertheless, due to a high degree of standardization and accessibility of the survey technique, which is particularly essential from a data analysis viewpoint, as a result, the findings can be generalized (Ghauri & Gronhaug, 2005).

On the other hand, a cross-sectional study mainly involves in measuring all variables within a short span of time, where data is collected at one point in time. Thus, the cross-sectional is appropriate for this study, which aims at finding out the perceptions of respondents regarding consumer resistance to innovation. Usually, the survey method helps in collecting a large amount of data quickly, and it can be generalized to a large

population. In addition, various statistical techniques can be used to analyze data (Myers, 2009).

3.10 Translation of the Questionnaire

Although every respondent understands English to some extent, and the questionnaire is basically in English, it is carefully translated into Urdu (National Language of Pakistan). The translation of the questionnaire is used to verify the equality of measures in English and Urdu versions. The translation process was monitored through Brislin (1970) process for back-translation for cross-cultural research through different languages. The English version of the questionnaire was translated into Urdu by an assistant Professor in COMSATS Vehari Pakistan, who is sound in the Urdu language. Then, the translated questionnaire was sent to another Profession in Pakistani public university for English translation who is sound in the English language. A lot of debates was held for the original meaning of the questionnaire to verify the real meaning of the questionnaire is preserved. Eventually, the final questionnaire was available in English and Urdu.

3.11 Population and Sampling of the Study

The population of this study comprises of smartphone users who use different brands with different services by service providers in Pakistan. Selected sample from the wide range of population consists of university students (with details in Table 3.4) who are

mobile phone users and using smartphones in Pakistan. The selection of university students as the unit analysis in this study is appropriate based on the following reasons.

- Lepp et al. (2015) state that mobile phones are an important part of young student's life and culture.
- Student community bears all the characteristics of opinion leaders and change agent (Roger, 2003) being qualified segment of society, in particular the use of Smartphone (Lepp et al., 2015).
- It is observed that majority of college students with the same age group are mobile phone users (Karaaslan & Budak, 2012).
- University students have been looking one of the biggest group of consumers of smartphones (Head & Ziolkowski, 2012).
- The sales of smartphones among youth group has greatly increased (Comscore, 2010; Canalys, 2011; Cisco Visual Networking Index, 2010).
- University students are undoubtedly a percentage of the heaviest users of technology compared with other societal groups (Junco, Merson, & Salter, 2010).
- Gender-related differences among young users of a cellular telephone is seen in the use of technology (Devís- Devís et al., 2009).
- Users between 18 and 25 years old are the most familiar with mobile phones (Jayawardhena, Kuckertz, Karjaluoto, & Kautonen, 2009).
- Students are significant target market for mobile phones in this era because many of them have experience and they become mature in the innovative age (Roach, 2009).
- Young university students are easily available (Roach, 2009).

- This university student is more aware with mobile services and utilize them more than the all-inclusive community (Karjaluoto, Leppaniemi, & Sinisalo, 2005).

The selection of public sector university students as the unit analysis in this study is appropriate based on the following different reasons:

- In Pakistan, there are 71% education institutions in the public sector and 29% in private sector (Amin, 2013).
- In Pakistan, there are 124 universities of which 68 (55%) are in public sector, whereas 56 (45%) are in private sector (Abbasi, Malik, Chaudhry, & Imdadullah, 2011).
- The total enrolment in the universities is 86% is in public sector, whereas, 14% is in private sector (Nadeem, 2012).

The selection of four universities in this study is appropriate because, the study has been conducted in the perspective of Pakistan, whereas the sample of the study was duly collected from the all the provinces namely; Sindh, Punjab, the perspective of Pakistan Khyber Pukhtoonkhwa and Baluchistan (Government of Pakistan). In this regard, for public sector universities namely; Bahauddin Zakariya University, The Islamia University of Bahawalpur, Gomal University and COMSATS were targeted. All the targeted institutions have sub-campuses across the country (HEC Pakistan). For example, BZU has three sub-campuses (Sahiwal, Lahore and Layyah); IUB has two sub-campuses (Bahawalnagar and Rahimyar Khan); Gomal University has one sub-campus

(Islamabad); and COMSATS has seven campuses (Islamabad, Abbottabad, Lahore, Attock, Wah, Sahiwal and Vehari). The aforementioned campuses truly represent the students across the country. Hence, the data justifiably represents Pakistani public sector university students.

Table 3.3
Population of the Study

Population of the Study				
Institution	**PhD**	**Master**	**Bachelor's degree**	**Total**
BZ University (57%)	300	18000	21700	40000
Islamia University Bahawalpur (25%)	500	3500	14000	18000
COMSATS IIT Lahore & Abot (10%)	24	1407	6550	7981
G University D I Khan (8%)	289	485	4926	5700
Total				**71681**

Source: *www.hec.gov.pk (Universities websites) 2014*

In any study, the determination of suitable sample size is an imperative viewpoint that needs to be considered via an analysis. Besides that, Ding, Velicer, and Harlow (1995) have discovered that various studies consider 100 to 150 subjects to be the base of adequate sample size when utilizing Structural Equation Modeling. Besides that, Kelloway (1998) and Hair et al., (2010) have proposed a sample size of no less than 200 observations suitable minimum. Meanwhile, Boomsma (1983) proposes a sample size of roughly 400 observations for models of moderate intricacy. On top of that, Schumacker and Lomax (1996) have demonstrated that numerous studies have utilized 250 to 500 subjects within their exploration. However, they propose that the sample size could be determined by utilizing the general guidelines (i.e. 10 subjects for every variable or 20 subjects for every variable).

As a result, this study makes use of the rule of thumb, which postulates 20 subjects each variable. Accordingly, while there are eleven factors/variables, the sample size should be at the minimum of 220. This fulfills the criteria proposed by the previous researchers (Ding et al., 1995; Hair et al., 2010; Kelloway, 1998; Sekaran & Bougie, 2010), and fulfills also the rule of thumb by Roscoe (1975) in Sekaran and Bougie (2010), Hair et al. (2011), and Hair et al. (2014). So, this ensures the minimum responses from the respondents. Hence, the sample size for the present study is 307 which is appeared to be more suitable for statistical analysis compares to eleven variable used in the study. However, the final useable sample for this study was 600 responses (Sekaran, 2003). Practically a bigger sample size is preferable to avoid the possibility of non-response bias. The lists of sample size are given in table 3.5.

Table 3.4
Sample Size of the Study

Institution	**PhD**	**Master**	**Bachelor's degree**	**Total**
BZ University (57%)	1	56	68	125
Islamia University Bahawalpur (25%)	1	10	43	54
COMSATS IIT Lahore & Abot (10%)	0	4	20	24
G University D I Khan (8%)	0	2	15	17
Total				**220**

3.12 Sampling Technique and Data Collection Procedure

Fowler (2013) suggests a number of techniques that can be utilized for selecting respondents from a sample frame. They include simple random, systematic, and stratified sampling. From those many techniques, this study utilizes multi-stage probability sampling technique, coupled with stratified random sampling technique. A brief account on simple random, systematic, and stratified sampling is in subsequent paragraphs together with the reasons for selecting stratified random sampling are discussed.

Conducting a simple random sampling requires a numbered list of the target population, with each entry appears once and only once. Then the required amount of random numbers needed to be generated within a specified range of numbers. This could be done using a computer program, a table of random numbers, or some other generators of random numbers. Entries corresponding to the total amount of random numbers selected then constitute a sample random sample of the target population (Fowler, 2013).

Since ordering and numbering, a large target population can be awkward, difficult, and time-consuming, an alternative to replace this technique is systematic sampling. Systematic sampling is not only mechanically easier to create, but it also allows obtaining the benefits of stratification more easily without compromising the precision of sampling. Creating a systematic sample involves determining the total number of entries in a sample frame and then selecting a number of entries from the list. A division of latter values by the former one will produce a fraction. This estimated fraction is utilized as an

interval every time a number is drawn and the composite of which makes the systematic sample (Fowler, 2013).

When a sample frame is divided by a number of subgroups on the basis of the characteristics of the target population and the total number of entries differing in the subgroups, then it is not considered appropriate to apply either simple random sampling or systematic sampling. For example, the Pakistan population is divided into various areas that differ in terms of their total population; therefore, it is not appropriate to apply both simple random and systematic sampling. This is due to the difference in the size of subgroups and the fact that entries from the larger subgroups would have more chances to be selected than the smaller ones. In this situation it is appropriate to apply the stratified random sampling techniques. The initial step of this sampling technique involves estimating how many entries need to be selected from each subgroup according to its total size. This can be achieved by dividing the total number of entries in a subgroup from the total sample size. Once the numbers of entries for all the estimated subgroups are obtained, the selection can be made from each subgroup according to the simple random or systematic sampling process. Thereafter, combining all the entries selected from the various subgroups offers a stratified random sample (Fowler, 2013).

Based on the characteristics of the three sampling techniques discussed in the previous paragraphs, the structure of the sample frame in this study necessitates the adoption of the third approach, the stratified random sampling, to ensure the sample really represents the population evenly.

The data has been collected through a set of self-administered questionnaire (as Booklet) from the university students of public universities of Pakistan, because the self-administered questionnaire technique is more preferred than the interview and telephone due to ease of contact. This is because many people are busy in their daily lives and work schedules. This study avoids to encounter problems when arranging a suitable time for face-to-face or telephone interviews in such situation (Fowler, 2013). Contrastingly, if the contact information is correct, questionnaires can reach respondents who can then respond at any time they feel convenient.

In terms of the question format, Fowler (2013) suggests that self-administered questionnaire can have an advantage if the instrument comprises only closed-ended questions that can be answered by simply ticking a box. When a researcher wants to ask many questions that are similar in form, then having an interview face-to-face or over the phone reading a long list can be awkward and tedious (Fowler, 2013). This is most relevant to this study as there are many similar types of closed-ended questions expecting for answers; therefore, it is considered more appropriate to employ the self-administered questionnaire rather than the telephone or face-to-face interview.

The sample in this study has been identified through stratified random sampling technique. It ensures that every critical portion of the population is sufficiently sampled, very cost effective, and comparison among groups is possible (Sekaran & Bougie, 2010). In such technique, it enables students of all levels (Bachelor's degree, Master, and Ph.D)

to be part of the sample, to represent the significant smartphone users (Debaillon & Rockwell, 2005; Poon, 2008). The students' name lists acquired from every university were randomly chosen on the basis of students study program. Gender has been separated into male and female and age was separated into different groups.

When the respondents have been recognized, the questionnaires were distributed. The survey was controlled with the help of representative staff from student's affair department. The representatives were contacted earlier for an appointment. They have been briefed on the study during the meeting and request their cooperation in distributing the questionnaires. The questionnaires were hand-delivered to the representative officers who then delivered to each representative of students' residential university. For data coding purposes, the date when the questionnaires were distributed to the students were noted at the back of the questionnaires.

Each booklet was accompanied with a cover letter stating the purposes of the study, confidentiality of the gathered data, a short description of smartphones, and instructions on how to answer the questionnaires. Participants were given an assurance of confidentiality. In order to ensure a higher response, a pre-stamped envelope with the researcher's address was provided with each set of questionnaire. The respondents were given two weeks to complete the questionnaire and were asked to mail the completed questionnaires to the researcher using the pre-stamped envelopes enclosed.

As mentioned earlier, the minimum sample size targeted in this study is 220. However, based on Shumacker and Lomax (1996), when using PLS (SEM), the greater the sample size is the better. Therefore, in this study, 600 questionnaires were distributed. It was decided based on findings by McGill University (2010) and Wahab, Nor, and Al-Momani (2010) with 48% and 57% response rate respectively. Based on that, this study distributed 600 questionnaires to get the required sample of 220. As a strategy to ensure it is achievable, this study details the breakdown as seen in Table 3.6.

Table 3.5
Total Respondents for Questionnaire Distribution

Institution	PhD	Master	Bachelor's degree	Total
BZ University (37%)	2	102	116	220
Islamia University Bahawalpur (31%)	2	60	123	185
COMSATS IIT Lahore & Abot (19%)	0	24	91	115
G University D I Khan (13%)	0	20	60	80
Total				**600**

3.13 Techniques of Data Analysis

This study used SEM Path analysis, using SmartPLS 2.0 (Ringle et al., 2005) to test the inter-relationship between dependent and independent variables. In 2007, Le and Wu argued that "Path analysis is an extension of multiple regression because it involves various multiple regression models or equations that are estimated simultaneously". In multiple regression analysis, it is assumed that the dependent variable is directly affecting

all the independent variables. The major purpose of using SEM is to find out the consistency of the collected data with hypothesized theoretical model (Lei & Wu, 2007).

In response to the research questions and the objective, SEM (called path analysis) is appropriate to identify multiple relationships of dependent, independent, and (product indicator approach) used for moderating variables (Hair, Black, Babin, & Anderson 2006; Wong, 2013). With the sample size, the inferences were derived through SEM-PLS. Particularly, the PLS is used to confirm the results and it has provided more credibility. Meanwhile, SEM method is to check the outcomes and, therefore, it has delivered extra trustworthiness. The selection of SEM-PLS in this study is appropriate based on the following reasons.

- It is commonly used method in social sciences research which is suggested by different researchers (Henseler et al., 2009; Hair et al., 2014; Hair, Ringle, &Sarstedt, 2013; Ringle, Sarstedt, & Straub, 2012).
- It is wide spread recognition in academic research and practice (Hair et al., 2012; Ringle et al., 2012; Lee et al., 2011).
- It is most important for testing theories (Hair et al., 2014; Hair, Ringle, &Sarstedt, 2013; Ringle, Sarstedt, & Straub, 2012; Chin, 1998).
- It was recommended by many researchers that SEM-PLS is most suitable for Prediction-oriented models or extension of an existing theory (Hair et al., 2011; Henseler et al., 2009; Hulland, 1999).

- It can be conveniently applied to complex structural equation models with a large number of constructs (Chin & Newsted, 1999; Urbach & Ahleman, 2010).
- SEM- PLS has capability to handle any sample size and also distribution free nature.

For the measurement of nine factors such as innovation characteristics and consumer characteristics by different variables, SEM, as a statistical tool that allows distinct relationship for every dependent variable, has been used in this study. It is described into two models, first is measurement model and the second is the structural model. In the model evaluation, the measurement model was undertaken to ensure the model validity and reliability. In line with the arguments by Esposito Vinzi et al. (2010) who come out with the rule of thumb for outer loading. According to their rule of thumb, the outer loading should be 0.5 and greater, the Average Variance Extracted (AVE) should be greater than 0.5. Based upon the following argument, all the items in the outer loading with values below than 0.5 should be deleted one by one beginning with the lowest value. This technique is also validated by Hair et al. (2012), and it improves the quality of data.

Before determining the convergent validity, this study examined the loading and cross-loadings of all items of the study variables to point out any problem, which serves as the prerequisite for the measurement model. This segment shows the results of the Confirmatory Factor Analysis (CFA) through principle component analysis. As revealed in Chapter 3, all the items of the study variables were adapted from earlier studies, hence this study commenced only CFA via using SmartPLS 2.0 M3 (Ringle et al., 2005), which

has a built-in feature of the CFA. Based on the recommendations by Hair et al. (2010), the large sample size requires to perform CFA (where the minimum sample required is 150).

Other than that, the discriminant validity was determined using AVE as proposed by Fornell and Larcker (1981). Discriminant validity was obtained by comparing the correlation between the latent variables with the square root of AVE (Fornell & Larcker, 1981). Referring to the rule of thumb by Fornell and Larcker (1981), discriminant validity requires the AVE to be 0.50 or greater. In line with the recommendation of Fornell and Larcker (1981), the square root of the AVE must be greater than among latent variables which indicate the discriminant validity.

Having dealt with the evaluation of measurement model, the structural model deals about the dependence of the relationship in the hypothesized model of the study. In PLS, structural model gives an inner modeling analysis of the direct relationship among the constructs of the study and their t-values as for as path coefficients. As argued by Argawal and Karahanna, (2000), the path coefficient is similar with the standardized beta coefficient and regression analysis. The beta values of the coefficient of the regression and t-values are examined to decide on the significance. Referring to the rule of thumb by Hair et al. (2014), t – value greater than 1.64 is considered to be significant, which is further used for making decisions on the proposed hypothesis.

As for moderating variable concerned, there are series of techniques for testing the moderation effects such as hierarchal regression procedure. It is based on three steps but the drawback of this technique is to calculate the interaction terms manually by using functions, transforms, compute, and taking the product of each pair. Another technique is to apply the moderating variable as an additional construct using the cross products of the indicator of the independent variable and the moderator (Chin et al., 2001). In this study, SmartPLS 2.0 M3 is used, (Ringle et al., 2005) by introducing the interaction term into the model. This model is called the main effect model and the R-square is noted before introducing the interaction term. This study analyzes the test of moderating effect approach by applying the moderating variables as an additional construct using the cross product of the indicator of the predictor variable and the moderator (Chin et al., 2003).

3.14 Summary

This chapter describes the techniques and steps this study has gone through in achieving the objectives stated in Chapter 1. It comprises of the variable measurement, instruments for the survey, sample and sampling method, method for collecting data, and the procedure of data analysis. This chapter also mentions and discusses the reliability of the instrument on the basis of the pilot study piloted before to the actual research.

CHAPTER FOUR
ANALYSIS AND FINDINGS

4.1 Introduction

Aligned with chapter three the aim of this chapter presents the results of data analysis. First the response of respondents would be highlighted depend on the demographic report. The response rate was analyzed by the test of the demographic report, response bias on early and late response including the preliminary analysis and data screening analysis. This chapter four represented the results of a present study using PLS-SEM path modeling. Results of descriptive statistics for all variables exogenous and endogenous discussed. Next the main results of the present study presented into two main section first discussed the measurement the model which was based on loading item reliability, internal consistency reliability, discriminant validity and convergent validity. Part two represent the structural models describing the coefficient significance of variables for testing hypothesis and effect size, and predictive relevance of model and final level of the R-square value. Finally, results of the complementary PLS-SEM analysis, which analyze the moderating effects of consumer innovativeness on the structural model are presented.

4.2 Response Rate Analysis

According to data collection procedure a total of 600 questionnaires were distributed to the university students face to face and series of reminder calls and emails were sent to

the selected university students, this technique is also validated by the study of (Shah, 2009). Out of 600, 56% of the questionnaires were returned by courier out which only 307 questionnaires were valid, the other twenty-nine (29) were rejected on the basis of 54% of their responses in multiple answers, another ten (10) questionnaires were unanswered and ten (10) questionnaires were incomplete. The distribution and collection of questionnaires were carried out in period of five and half months from September 2014 to February 2015.

Table: 4.1
Response Rate of the Questionnaires

Response	Frequency/Rate
No of Questionnaires distributed	600
Questionnaires Received	336
Received and Useable Questionnaires	307
Received and Excluded Questionnaires	29
Questionnaires were not received	264
Response Rate	56%
Valid Response Rate	51%

Table 4.1 shows that 307 questionnaires were usable for subsequent analysis that gives a valid response rate 51%. The response rate was obtained comparable to other several past studies using university students as the study sample, the response rate was such studies is 48 percent (McGill University, 2010), and 57% (Wahab, Nor, & Al-Momani, 2010)). As suggested by Hair *et al*. (2014), the total responses are sufficient for remaining analysis. According to Hair *et al*, (2010) good sample size for statistical analysis at least 10-20 times more than variables. Hair *et al*. (2010/2014) recommended that minimum sample size for SEM analysis is about 200 respondents. Hence, the sample size of present

study is 307 which appears to be suitable for statistical analysis compare to eleven (11) variables used in this study.

4.3 Test of Non-Response Bias

After the confirmation of valid returned questionnaires, this study went ahead to check any differences between respondents and non-respondents, an independent T-test was conducted. The independent T-test was conducted for categorical variable such as age, gender, study program, service subscribe, brand, mode of study monthly spending, province, and current study approach to determine whatever the responses receive from respondents who responded late (i.e. after a three weeks) significantly differed from those who responded earlier (I,e, within the three weeks). According to Malhotra, Hall, Shaw, Oppenheim, (2006), non-response bias might affect the results. As a result of that, the current study used independent T-test analysis to determine the non-response bias by comparing mean, standard deviation and standard error mean of the demographic variable such as age, gender, study program, service subscribe, brand, mode of study monthly spending, and province.

A period of three weeks was selected as a benchmark to differentiate among early and late response. The time period is assumed to be suitable for the participants to complete the questionnaires. In line with Malhotra *et al*. (2004) that late response to an item by respondents is an indication of their unwillingness to complete that questionnaires. Based on the returned questionnaires there were 195 responses classified as early response and 112 were classified as a late response. The benchmark used to check nonresponse bias in

the current study has been based on the demographic variables where a descriptive statistics done by the researcher indicates that there were no significant differences among the variables. Therefore, the results revealed that most of the questionnaires that were received late have been those from the last semester students who were busy in their final term exams and some of them are new students who were familiar with university culture. The confirmation of above discussion might be drawn from table 4.2.

Table 4.2.
Test of Non Response Bias

	Periods	**N**	**Mean**	**Std. Deviation**
Gender	Early	195	1.37	0.48
	Late	112	1.22	0.42
Province	Early	195	1.73	1.28
	Late	112	1.29	0.79
Age	Early	195	1.13	0.43
	Late	112	1.04	0.31
Study Program	Early	195	1.32	0.47
	Late	112	1.37	0.48
Service Provider	Early	195	2.16	1.28
	Late	112	2.24	1.17
Servive_Subscribe	Early	195	1.10	0.30
	Late	112	1.05	0.23
Brand_of_Mobile	Early	195	1.77	1.08
	Late	112	1.78	1.14
Mode_of_Study	Early	195	1.05	0.29
	Late	112	1.02	0.13
Personal_Monthly_Spending	Early	195	1.56	1.00
	Late	112	1.56	0.95

Hence based on table 4.2 it can be concluded that nonresponse bias not affected the generalization of the findings, all three hundred and seven (307) responses were utilized in data analysis.

4.4 Demographic Analysis

Table 4.3 describe the profile of respondents. In demographic analysis the distribution of respondent's preliminary based on the age, illustrate that majority of the respondents fall within the age less than 20-30 years (92%), about 6.5% fall within the age of 30-40 years and 0.3% are between the age of 40-50 and the least number of respondents 1% whose ages above the age of 50 years.

Male respondents having dominated response rate with 68% as compared to 32% who are females. In Pakistani culture, the male having the dominant position over the female is a trend of most of the universities in Pakistan in which male students continue to dominate over the total of student's population in universities. The majority of the respondents doing bachelor degree representing 66% of the total sample and remaining 34% were doing a master degree. In terms of provinces in Pakistan about 78% respondents from Punjab then followed by Khaibar Pakhtunkhwa with 16.6% then Baluchistan with 2.9% and the remaining 1.6% of the respondents from Sindh.

In term of mobile service provider majority of the respondents were using Ufone services with 38% by using android Samsung phone with 53% and another 27% of the respondents using Mobilink services by using Nokia mobile phones with 33%, 20% were using services from Telenor, 6% uses Warid services and 8% uses Zong services. In term of postpaid and prepaid services majority of the respondents were using prepaid services

representing 91% whilst the remaining 9% were using postpaid services. With respect to the mode of the study majority of the respondents having a full-time mode of study.

In term of a brand majority of the respondents were using Samsung mobile phones with 53% then followed by Nokia 33%, Huawei 4.2%, Apple with 8% and the least number of respondents were using LG with 2%. With respect to monthly spending majority of the respondents have the monthly spending of 10000 with 65% which is followed by 23% in between the 10001-15000. As earlier mentioned in chapter one the demographic report of brand proved that it is evidently clear that respondents were using android phones like Samsung, LG, Huawei as compare to Symbian's and IOS phones.

Table 4.3
DemographicProfile of Response

Demography	Description	No.of Responses	%
Gender	Male	210	68.4
	Female	97	31.6
Province	Punjab	242	78.8
	Sindh	5	1.6
	Baluchistan	9	2.9
	Khaibar Pakhtonkha	51	16.6
Age	20-30 Year	283	92.2
	30-40 Year	20	6.5
	40-50 Year	3	0.3
	50-Above	1	1.0
Study Program	Bachelor Degree	203	66.1
	Master Degree	104	33.9
	PhD	0	0.0
Service Provider	Ufone	117	38.1
	Mobilink	83	27.0
	Telenor	63	20.5
	Warid	19	6.2
	Zong	25	8.1
Service Subscribe	Prepaid	281	91.5
	Postpaid	26	8.5
Brand	Samsung	100	33.0
	Nokia	164	53.0
	LG	5	1.6
	Apple	25	8.1
	Huawei	13	4.2
Mode of Study	Full Time	300	97.7
	Distance Learning	3	1.0
	Part Time	4	1.3
Monthly Spending	10000	201	65.5
	10001-15000	71	23.1
	15001-20000	16	5.2
	20001-25000	7	2.3
	25001-Above	12	3.9

4.5 Data Coding

With respect to non-response bias, it was confirmed that there is no problem of non-response bias so the researcher proceeds on data coding. With respect to categorization of data coding Churchill and Iacobucci (1999, 2010), revealed that data coding has two categories. Consistent with the view of Churchill and Iacobucci (1999, 2010) the questions should be arranged in confirmatory with the construct. So, according to Churchill and Iacobucci (1999,2010), the first category presumes that the items would become out to adopt the constructs in the study such as every construct might have its own different aspects that ask questions about it and secondly, the code number should be assigned to each of the construct for ease of identification and data analysis. The variable used in the current study were coded as follows shown in table 4.4.

Table 4.4
Variable Coding

Variables	Code
Relative Advantage	RA
Attitude Towards Existing Product	ATEP
Perceived Risk	PR
Complexity	COM
Social Influence	SI
Price	P
Self-Efficacy	SE
Emotion	EMO
Motivation	MOT
Consumer Innovativeness	CI
Consumer Resistance to Innovation	CR

4.6 Preliminary Analysis and Data Screening

As discussed previous in chapter three data screening process was undertaken on data survey to identify the relevance of data for multivariate data analysis. The data screening significance in data analysis particularly in quantitative research provides a solid groundwork for obtaining significance results.

This argument is also supported by Hair *et al*. (2010) that quality of analysis must be based on the quality of preliminary data screening. Useless for the management of the incomplete data the identification of missing and incomplete questionnaires answered was done. Out of 336 questionnaires received 29 questionnaires were not valid due to incomplete response. So according to Hair *et al*. (2010), the incomplete questionnaires were excluded from further data analysis. After the screening process, 307 questionnaires remain for further analysis and this total response is suitable to utilize in subsequent data analysis Hair *et al*. (2010).

The preliminary data analysis involved two procedures: missing value analysis and descriptive analysis of the latent variables. First, the missing value analysis has been undertaken to examine and produce complete data set for subsequent model estimation. Second, the descriptive analysis latent constructs provide estimates of the characteristics of the data. With regard to descriptive of the data such as the mean, variance, and correlation among variables have been also analyzing for appropriateness preceding to an estimation of the measurement models. It is also essential to examine that there are no

coding errors, that variables were recorded adequately, these two procedures have been carried out and are detailed below.

4.6.1 Missing Value Analysis

In line with the recommendation of Hair *et al*., (1995) missing data imputation has been thought to be suitable to apply to this data. Number of researchers recommended Expectations-Maximization algorithm to impute missing data by multiple imputation and bootstrap Honacker, King, and Blackwell, (2011); Dempster, Laird & Rubin, (1997). In line with the recommendation of previous authors, the researcher selected Expectations-Maximization imputation for a number of reasons. First, it is acceptable to implement the EM algorithm because it does not change the nature of the association between the variables (Honaker, King, & Blackwell, 2011). Another benefit of using EM algorithm is that it maintains the sample size and provides more powerful and accurate statistical test. Secondly, replacing missing data with mean centered also has beneficial in modeling interaction but before to creating product interaction terms. Replacement with mean centering also can help to remove the multicollinearity effects which are produced when working with interaction terms (Wong, 2013). Therefore, replacing missing values with Expectation Maximization algorithm eliminate bias particularly in moderation studies (Newman, 2009) and EM algorithm was commonly used in another studies (Enders, 2006).

4.6.2 Descriptive Statistics of the Study

After the screening process of data, the description of statistical analysis for the study variables is determined by using descriptive analysis where the statistical value of all variables such as dependent variables, independent variable, and moderating variables were analyzed. The descriptive statistics for study variables as shown in the table 4.5 which presents the minimum and maximum scores, the values of standard deviation and mean of the study variables as employed in this study, as previously mentioned in chapter three the questionnaire was used in this study was designed on six-point Likert scale ranging from 1 to 6. The mean scores of the study variables are within the range of 2.78 to 4.72, the value of standard deviation for the study variables ranges from 0.938 to 1.431.

Table 4.5
Results of Descriptive Statistics of the Study Variables

	N	Minimum	Maximum	Mean	Std. Deviation
RA	307	1	6	4.72	1.134
SE	307	1	6	4.63	1.029
MOT	307	1	6	4.67	1.080
ATEP	307	1	6	3.72	1.431
COM	307	1	6	3.30	1.310
PR	307	1	6	4.18	1.044
SI	307	1	6	4.21	1.211
P	307	1	6	4.38	1.068
EMO	307	1	6	2.78	1.140
CR	307	1	6	3.73	.938
CI	307	1	6	4.34	1.061
Valid N	307				

4.7 Model Evaluations

This part of the chapter deals with both measurement and structural model. The section 4.8.1 which represents and evaluation of measurement model which is explained briefly.

4.7.1 Measurement Model

In model evaluation, the measurement model was undertaken to ensure the model validity and reliability. In line with arguments of (Esposito Vinzi *et al*., 2010) who given the rule of thumb for outer loading. According to their rule of thumb out loading should be 0.5 and above, as for as for the average variance extracted it should be above than 0.5. Based upon the following argument all the items in outer loading which is below than 0.5 should be deleted one by one with the lowest value, this technique is also validated by (Hair *et al*., 2012; 14) because it improves the quality of data.

In line with the suggestion of Anderson and Gerbing, (1998) this section provide a brief explanation of the modeling procedures. They considered two-step modeling approach which is best to determine the quality of items which are used for measurement and secondly this two-step modeling approach should be undertaken to estimate the relationship between the models. These two approaches are measurement model and structure model (Hair *et al*., 2012; 14). This study following the two-step process to evaluate and generate results of PLS-SEM path, proposed by by Henseler *et al*., (2009) present study adopt two-step process one is assessment of measurement model and

second one measurement of structural model as showing in figure 4.1 (Henseler *et al*., 2009: Hair *et al*., 2012; Hair *et al*., 2014).

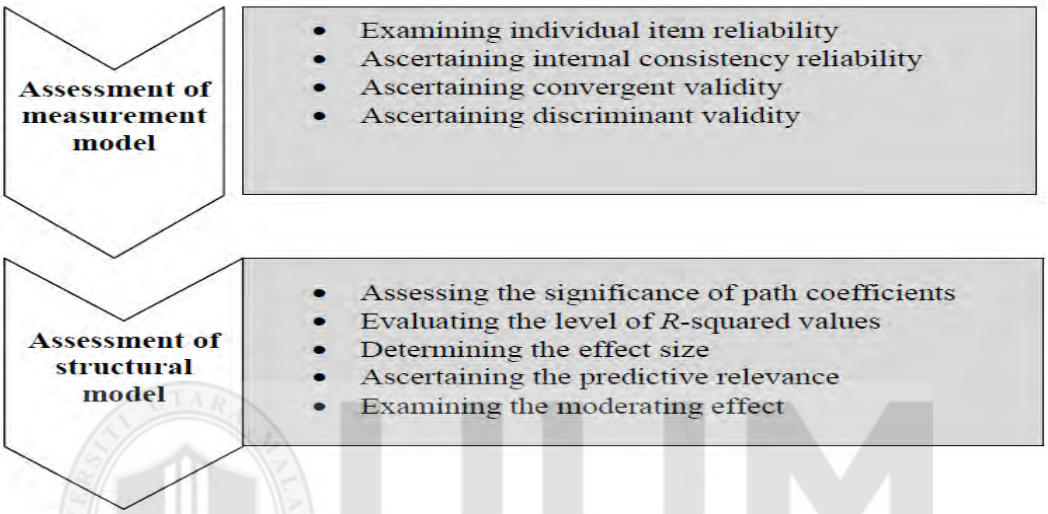


Figure 4.1
Two-Step Process of PLS Path Model Assessment
Source: (Henseler *et al*., 2009)

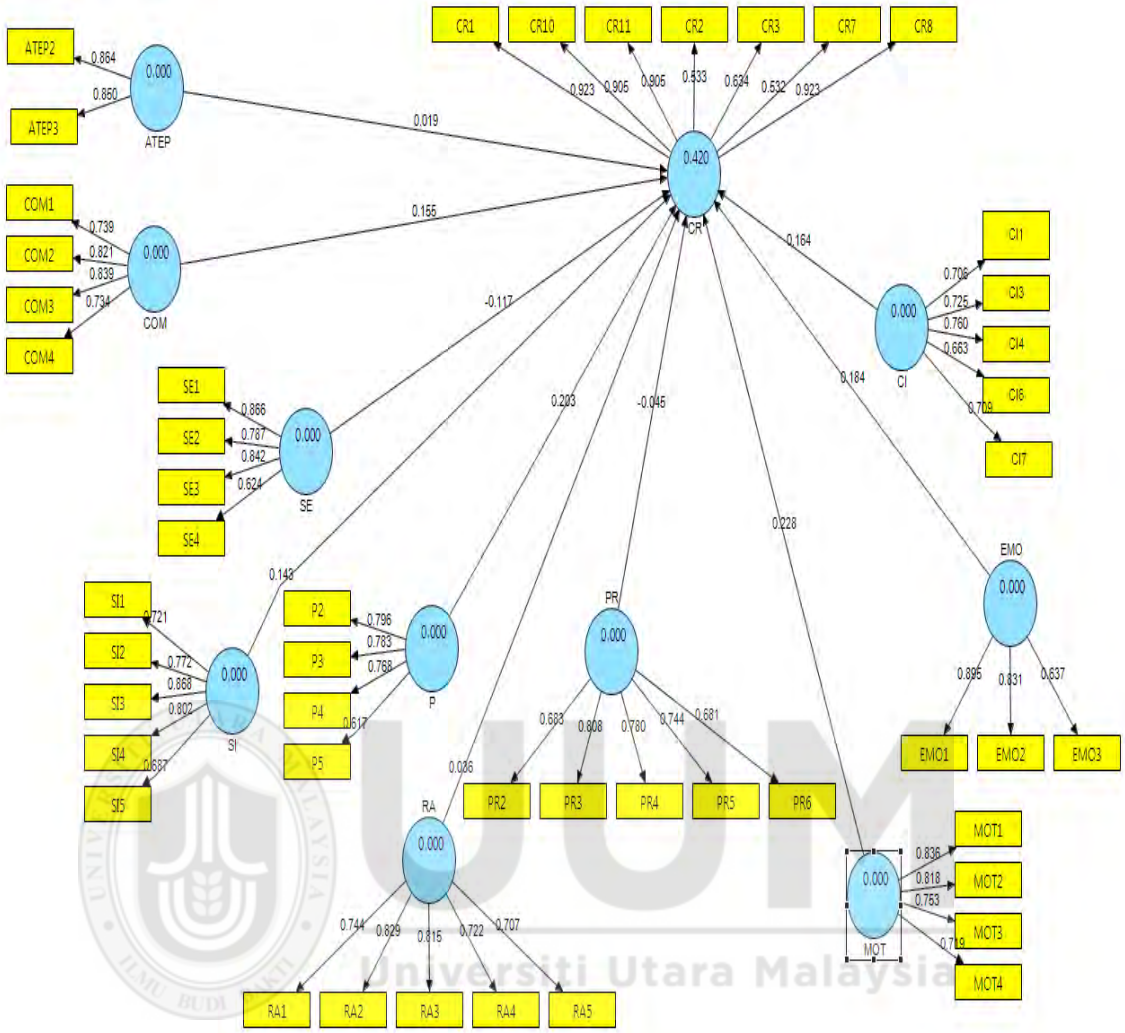


Figure 4.2
Measurement Model

Before determining the convergent validity, the researcher examined loading and cross-loadings of all items of the study variables to point out any problem which serve as a prerequisite for measurement model. This segment shows the results of confirmatory factor analysis for present study through using principle component analysis method. As revealed before in chapter three all the items of the study variables were adapted from

earlier studies, while this study commenced only confirmatory factor analysis via using SmartPLS 2.0 M3 (Ringle *et al*., 2005) which have built in feature of the CFA. According to the recommendation of (Hair *et al*., 2010) the large sample size required to perform CFA, where the minimum sample required is 150.

As argues by Hair *et al*., (2010;14) convergent validity is obtained when the factor loading of all the items higher than 0.5 and no loading of any item from other construct have higher loading than the one which think to measure. Regarding this study concerned 48 items have their loading above than 0.5 as shown table (Apendix B) which are bolded items.

The table 4.6 which is following given below poses the Cronbach's alpha, composite reliability, and average variance extracted (AVE) values of all constructs. According to (Fornel and Larcker, 1981; Hair *et al*., 2014) the composite reliability should be accepted at least 0.70 and AVE should be at 0.50. As shown in the table 4.10 which is given below, all the constructs have high reliability and their average variance extracted (AVE) is greater than cut off point of 0.50 which is an indication of the reliability of the measurement model. This study calculated Cronbach's Alpha to find out the internal consistency of the data. According to (George and Mallery, 2003) which provide the rule of for deciding the value alpha; "$\alpha > 0.9$- Excellent, $\alpha < 0.8$- Good, $\alpha < 0.7$- Acceptable. As for as this study concerned table 4.6 indicates that all constructs have Cronbach's Alpha value more than 0.6. So this is the indication of all the variables in the study have good consistency.

Table 4.6

Construct Reliability, Cronbachs Alpha, Composite Reliability and AVE of all the Latent Variables

Construct	Item	Loadings	Cronbachs Alpha	Composite Reliability	AVE
Attitude	ATEP2	0.864	0.638	0.847	0.734
	ATEP3	0.850			
consumer Innovativeness MV	CI1	0.706	0.758	0.838	0.509
	CI3	0.725			
	CI4	0.760			
	CI6	0.663			
	CI7	0.709			
Complexity	COM1	0.739	0.794	0.865	0.616
	COM2	0.821			
	COM3	0.839			
	COM4	0.734			
Consumer Resistance DV	CR1	0.923	0.883	0.914	0.616
	CR10	0.905			
	CR11	0.905			
	CR2	0.532			
	CR3	0.635			
	CR7	0.534			
	CR8	0.923			
Emotion	EMO1	0.895	0.718	0.835	0.632
	EMO2	0.831			
	EMO3	0.637			
Motivation	MOT1	0.836	0.791	0.863	0.613
	MOT2	0.818			
	MOT3	0.753			
	MOT4	0.719			
Price	P2	0.796	0.737	0.831	0.555
	P3	0.783			
	P4	0.768			
	P5	0.617			
Perceived RISK	PR2	0.683	0.795	0.858	0.549
	PR3	0.808			
	PR4	0.780			
	PR5	0.744			
	PR6	0.681			
Relative Advantage	RA1	0.744	0.822	0.875	0.585
	RA2	0.829			
	RA3	0.815			
	RA4	0.722			
	RA5	0.707			
Self-Efficacy	SE1	0.866	0.797	0.864	0.617
	SE2	0.787			
	SE3	0.842			
	SE4	0.624			
Social Influence	SI1	0.721	0.831	0.880	0.597
	SI2	0.772			
	SI3	0.868			
	SI4	0.802			
	SI5	0.687			

Furthermore, as shown in the table 4.6 which is given above, all the constructs have high reliability and their average variance extracted (AVE) is greater than cut off point of 0.50 which is indication of reliability of the measurement model.

4.7.2 Discriminant Validity

Duarte & Raposo, (2010) defined discriminant validity as the extent to which a particular latent variable is different from other latent variables. With respect to this study, discriminant validity was determined using AVE as proposed by Fornell and Larcker, (1981). Discriminant validity was obtained by comparing the correlation between the latent variables with the square root of AVE (Fornell & Larcker, 1981). According to the rule of thumb of Fornell & Larcker, (1981) for evaluating discriminant validity recommend the use of average variance extracted with a score of 0.50 or more. In line with the recommendation of Fornell & Larcker, (1981) the square root of AVE must be greater than among latent variables which indicate discriminant validity.

To observe discriminant validity, this study commenced discriminant validity to guarantee the external consistency of the model, based on the comparison between the latent variables as shown in the table 4.7 which summarily, the AVE of the variables are : attitude towards existing product (ATEP) = 0.857 ; consumer innovativeness (CI) = 0.713 ; complexity (COM) = 0.785 ; consumer resistance (CR) = 0.784 ; emotions (EMO) =

0.795 ; motivation (MOT) = 0.783 ; price (P) = 0.745 ; perceived risk (PR) = 0.741 ; relative advantage (RA) = 0.765 ; self-efficacy (SE) = 0.785 and social influence (SI) = 0.773.

Table 4.7
Discriminant Validity Matrix

	ATEP	CI	COM	CR	EMO	MOT	P	PR	RA	SE	SI
ATEP	**0.857**										
CI	0.171	**0.713**									
COM	0.437	0.1643	**0.785**								
CR	0.280	0.4750	0.368	**0.784**							
EMO	0.357	0.0763	0.368	0.297	**0.795**						
MOT	0.197	0.6705	0.198	0.449	0.013	**0.783**					
P	0.262	0.4972	0.269	0.467	0.133	0.420	**0.745**				
PR	0.183	0.2316	0.216	0.228	0.049	0.196	0.528	**0.741**			
RA	0.181	0.5903	0.192	0.406	0.103	0.687	0.434	0.218	**0.765**		
SE	0.197	0.6162	0.086	0.326	0.064	0.689	0.418	0.167	0.639	**0.785**	
SI	0.174	0.5266	0.154	0.429	0.126	0.407	0.501	0.335	0.420	0.390	**0.773**

Note: All the values shown in diagonal and bolded represents the square route of average whilst those of the diagonal represents latent variable correlations

At first, of this chapter this study delivered an explanation of framework and indicated the links of the relationship among the variables based on what has been obtained in the previous literature that probably has to be revised and modified due to the confirmatory factor analysis which was undertaken. After performing CFA in this study, none of the variables was dropped even the deletion of many items because in line with recommendation with Hair *et al*., (2012) the entire variables retained, at least, two items as a condition not to be deleted.

4.8 Structural Model

This segment treats with the structural model after the evaluation of measurement model as pointed out by Hair *et al*., (2006) structure model deals about the dependence of the relationship in the hypothesized model of the study. In PLS, structure model gives inner modeling analysis of the direct relationship among the constructs of the study and their t-values as for as path coefficients. As argued by Henseler, Ringle, & Sinkovics, (2009), the path coefficient is same like standardized beta coefficient and regression analysis. Where beta values of the coefficient of the regression and t-values are examined to decide on the significance. Following the rule of thumb by Hair *et al*., (2014), t – value greater than 1.64 is considered to be as significant, which is further used for making decisions on the purposed hypothesis.

The basic purpose of this study here to focused firstly on model evaluation with an examination of direct relationships and secondly test the hypothesized relationships among the constructs through the structural model. In this study ten (10) hypothesis which have direct relationships were tested, out of ten (10), seven (7) were proven to be supported and three (3) were not supported. Figure 4.3 which is given below explain the direct effect of every latent variable on the dependent variable.

The following diagram 4.3 displays the output results from the SmartPLS 2.0 M3 (Ringle *et al*., 2005) which shows the path coefficient values, t-values, p- values as well as standard error. On the basis of these standard values, the hypothesis was supported or not

by the researcher. The t-values in this study derived from bootstrapping (with 500 resampling iterations for 307 cases / observations. As argues by Hair *et al*., (2012) bootstrapping will serve as a proxy of parameters empirical standard error.

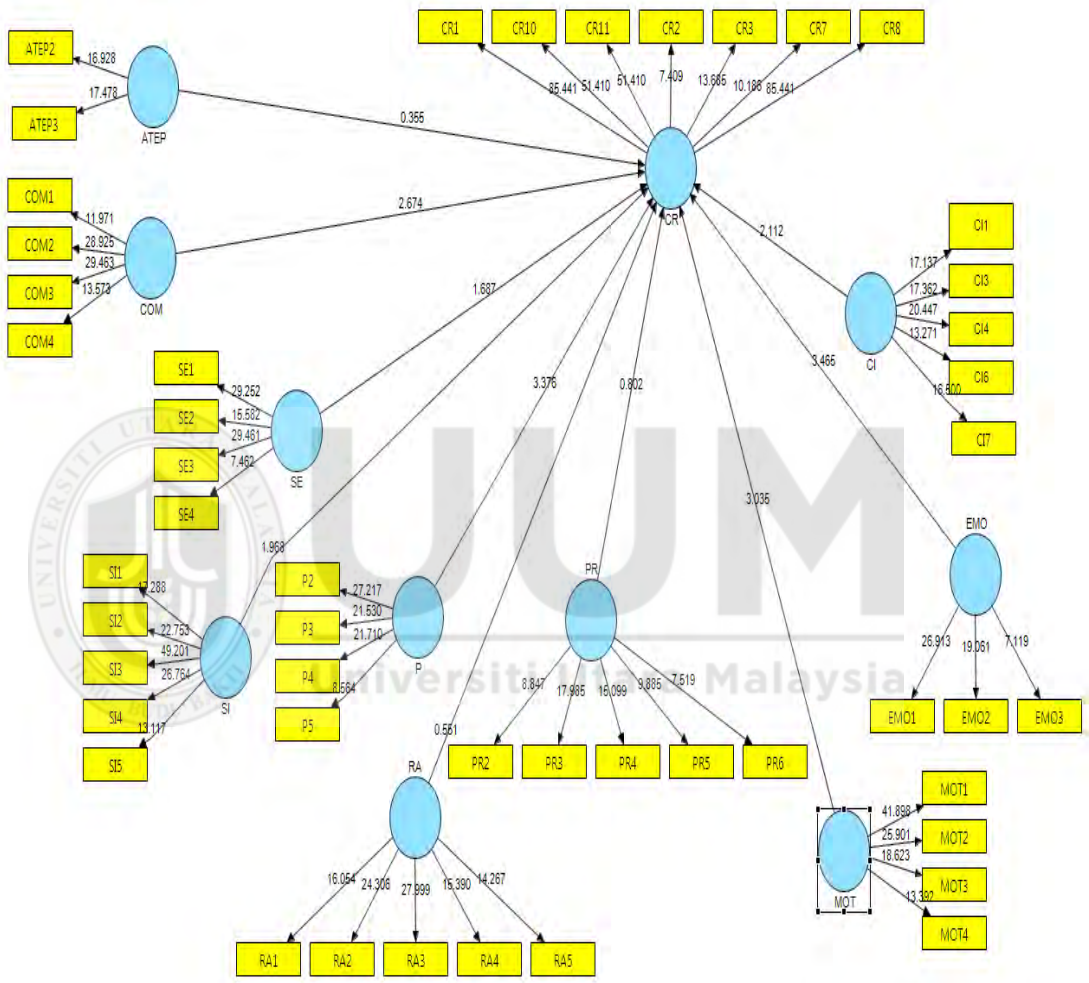


Figure 4.3
Structural Model Direct Relationships

With respect to a direct hypothesis testing hypothesis, 1 predicted that attitude towards existing product positively related to consumer resistance to innovation. Results as shown in (Table: 4.8, Figure, 4.3) indicates that there is a positive insignificant relationship

between attitude towards existing product and consumer resistance to innovation (β= 0.019, T= 0.329, p-value< 0.05) therefore this hypothesis not supported. Hypothesis 2 predicted that complexity positively related to consumer resistance to innovation. Results as shown in (Table: 4.8, Figure, 4.3) indicates that there is a positive significant relationship between complexity and consumer resistance to innovation (β= 0.162, T= 2.575, p-value< 0.05) therefore this hypothesis supported. Hypothesis 3 predicted that emotion (negative) positively related to consumer resistance to innovation. Results as shown in (Table: 4.8, Figure, 4.3) indicates that there is a positive significant relationship between emotion (negative) and consumer resistance to innovation. (β= 0.185, T= 3.355, p-value< 0.05) therefore, this hypothesis supported. Hypothesis 4 predicted that motivation positively related to consumer resistance to innovation. Results as shown in (Table: 4.8, Figure, 4.3) indicates that there is a positive significant relationship between motivation and consumer resistance to innovation. (β= 0.283, T= 3.078, p-value< 0.05) therefore, this hypothesis supported. Hypothesis 5 predicted that price positively related to consumer resistance to innovation. Results as shown in (Table: 4.8, Figure, 4.3) indicates that there is a positive significant relationship between price and consumer resistance to innovation. (β= 0.221, T= 3.302, p-value< 0.05) therefore, this hypothesis supported. Hypothesis 6 predicted that perceived risk negatively related to consumer resistance to innovation. Results as shown in (Table: 4.8, Figure, 4.3) indicates that there is a negative insignificant relationship between perceived risk and consumer resistance to innovation. (β= 0.036, T= 0.796, p-value< 0.05) therefore this hypothesis not supported. Hypothesis 7 predicted that relative advantage positively related to consumer resistance to innovation. Results as shown in (Table: 4.8, Figure, 4.3) indicates that there is a

positive insignificant relationship between relative advantage and consumer resistance to innovation. (β= 0.044, T= 0.533, p-value< 0.05) therefore this hypothesis not supported. Hypothesis 8 predicted that self-efficacy negatively related to consumer resistance to innovation. Results as shown in (Table: 4.8, Figure, 4.3) indicates that there is a negative significant relationship between self-efficacy and consumer resistance to innovation. (β= -0.080, T= 1.704, p-value< 0.05) therefore, this hypothesis supported. Hypothesis 9 predicted that social influence positively related to consumer resistance to innovation. Results as shown in (Table: 4.8, Figure, 4.3) indicates that there is a positive significant relationship between social influence and consumer resistance to innovation. (β= 0.180, T= 2.156, p-value< 0.05) therefore, this hypothesis supported. Hypothesis 10 predicted that consumer innovativeness positively related to consumer resistance to innovation. Results as shown in (Table: 4.8, Figure, 4.3) indicates that there is a positive significant relationship between consumer innovativeness and consumer resistance to innovation. (β= 0.172, T= 2.105, p-value< 0.05) therefore, this hypothesis supported.

Table 4.8
Results of hypothesis testing (Direct effects)

NO	Hypothesized Path	Path coefficient	Standard Error (STERR)	T Value	Decision
1	ATEP -> CR	0.019	0.058	0.329	Not supported
2	COM -> CR	0.162	0.060	2.575	Supported
3	EMO -> CR	0.185	0.053	3.355	Supported
4	MOT -> CR	0.283	0.072	3.078	Supported
5	P -> CR	0.221	0.064	3.302	Supported
6	PR -> CR	-0.036	0.058	0.796	Not supported
7	RA -> CR	0.044	0.069	0.533	Not supported
8	SE -> CR	-0.080	0.066	1.704	Supported
9	SI -> CR	0.180	0.066	2.156	Supported
10	CI -> CR	0.172	0.078	2.105	Supported

*****:p<0.001;**
****:P<0.01,***
:P<0.05

The table 4.8 illustrate that all the hypothesis that were supported and accepted have t-value that is greater than 1.64 and the hypothesis which are rejected have t-value less than 1.64. Figure 4.3 displays the t-values after bootstrapping.

Figure 4.3 was fully explained in table 4.8 which shows the effect of all constructs on dependent variable consumer resistance to innovation. The R-square value which derived from the output of PLS shows that all the constructs put together have tendency of influencing 42% of the changes independent variable.

4.9 Assessment of Effect Size (f-squared)

Effect size signifies the relative effect of a specific exogenous latent variable on an endogenous latent variable(s) by indicating a change in the R-squared (Chin, 1998). It is determined as the increase in R-squared of the latent variable to which the path is associated, relative to the latent variable's proportion of unexplained variance (Chin, 1998). Therefore, the effect size could be depicted using the following formula (Cohen, 1988; Selya, Rose, Dierker, Hedeker, & Mermelstein, 2012; Callaghan *et al*., 2007):

$$\text{Effect size: } f^2 = \frac{R^2_{Included} - R^2_{Excluded}}{1 - R^2_{Included}}$$

Cohen (1988) explains f2 values of 0.02, 0.15 and 0.35 as having weak, moderate, strong effects respectively. Table 4.9 demonstrates the particular effect sizes of the latent variables of the structural model.

Table 4.9
Effect size of Latent Variables

R-squared	Included	Excluded	f-squared	Effect size
ATEP -> CR	0.42	0.419	0.0017	None
COM -> CR	0.42	0.402	0.0310	Weak
EMO -> CR	0.42	0.395	0.0431	Weak
MOT -> CR	0.42	0.403	0.0293	Weak
P -> CR	0.42	0.399	0.0362	Weak
PR -> CR	0.42	0.418	0.0034	None
RA -> CR	0.42	0.419	0.0017	None
SE -> CR	0.42	0.413	0.0121	None
SI -> CR	0.42	0.407	0.0224	Weak
CI -> CR	0.42	0.409	0.0190	None

As mentioned in Table 4.9, the effect sizes for attitude towards existing product, complexity, emotion (negative), motivation, price, perceived risk, relative advantage, self-efficacy, social influence, consumer innovativeness on consumer resistance to innovation, were 0.0017, 0.0310, 0.04312, 0.0293, 0.0362, 0.0034, 0.0017, 0.0121, 0.0224 and 0.0190, respectively. Therefore, following Cohen's (1988) guideline, the effects sizes of these ten exogenous latent variables on consumer resistance could be viewed as weak and none respectively.

4.10 The Moderating Effects

A test of moderation as pointed out by Ramaya *et al*., (2011) was done to know whatever the moderator variable that affects the direction or strength of the relationship between the independent and dependent variable. Consistent with previous idea moderator variable is typically introduce when there is inconsistent relationship or week relationship

between the independent variable and dependent variable. There are series of techniques for testing the moderation effects such as hierarchal regression procedure which based on three steps, but the drawback of this technique was to calculate interaction terms manually by using functions, transforms, compute and taking the product of each pair. Another technique is to apply the moderating variable as additional construct using the cross products of the indicator of the independent variable and the moderator (Chin *et al*., 2001). As for as this study concerned the researcher use SmartPLS 2.0 M3 Ringle *et al*., (2005) by introducing the interaction term into the model. This model is called main effect model and the R-square will be noted before introducing the interaction term. This study uses the test of moderating effect approach by applying the moderating variables as an additional construct using the cross product of the indicator of the predictor variable and the moderator (Chin *et al*., 2003). This method of testing is called a product indicator approach. Subsequently an interaction model was tested by creating nine interaction terms. This model included the moderating effect of consumer innovativeness on the relationship between (attitude towards existing product, complexity, emotion, motivation, price, perceived risk, relative advantage, self-efficacy and social influence) and consumer resistance to innovation. This model tests nine hypothesis one by one. This product indicator approach is done by first of determining the path coefficients and t-values. In moderation analysis, R square change becomes an important issue.

With regard to this study introducing the level of consumer innovativeness perceived by the survey respondents in SmartPLS 2.0 M3 needs to establish a direct relationship between moderating variable (consumer innovativeness) and the outcome variable

(consumer resistance to innovation). Due to this reason, both the moderating effect as well as the direct effect will be used in order to improve the research. To calculate the moderating effect, the researcher run PLS algorithm to obtain the beta coefficients values which are given below in table 4.10. Regarding the hypothesis testing the researcher run bootstrapping method to check whatever consumer innovativeness have moderate's relationship between (attitude towards existing product, complexity, emotion, motivation, price, perceived risk, relative advantage, self-efficacy and social influence) and consumer resistance to innovation. As shown in tables 4.10 out of nine (9) moderating interaction hypothesis four hypothesis are significant at p<0.1 and remaining five are insignificant at p<0.1.

Table 4.10
Moderator Hypothesis Testing

NO	Hypothesized Path	Path coefficient	Standard Error (STERR)	T Value	Decision
1	ATEP * CI -> CR	-0.0525	0.0881	0.4127	Not-supported
2	COM * CI -> CR	0.0178	0.1735	0.8219	Not-Supported
3	EMO * CI -> CR	0.1098*	0.1172	1.3486	Supported
4	MOT * CI -> CR	0.1343*	0.1143	1.4128	Supported
5	P * CI -> CR	0.1165*	0.1085	1.2834	Supported
6	PR * CI -> CR	-0.0898	0.0877	0.7542	Not-Supported
7	RA * CI -> CR	-0.0338	0.4632	0.2288	Not Supported
8	SE * CI -> CR	-0.1399**	0.1018	1.6206	Supported
9	SI * CI -> CR	-0.108	0.0888	1.2288	Not-Supported

*:p<0.1; **:p<0.05; ***:p<0.01

At the same time the R-square value of the consumer resistance to innovation construct is increased from 0.420 to 0.458 by introducing consumer innovativeness as a moderating

variable between the relationship of (attitude towards existing product, complexity, emotion, motivation, price, perceived risk, relative advantage, self-efficacy and social influence) and consumer resistance to innovation.

4.10.1 Interaction Effect between Consumer Innovativeness and Attitude towards Existing Product

Despite the fact that interaction effect between consumer innovativeness and attitude towards existing product was insignificant. The form of the interaction effect shown in figure 4.4 was consistent with hypothesis 1. However, results show that there is no interaction effect between consumer innovativeness and attitude towards existing product. Simple slope analysis suggests that under the condition of high consumer innovativeness, no varying level of complexity had no influence on consumer resistance to innovation. However not varying level of complexity had no influence on consumer resistance to innovation under condition of low consumer innovativeness.

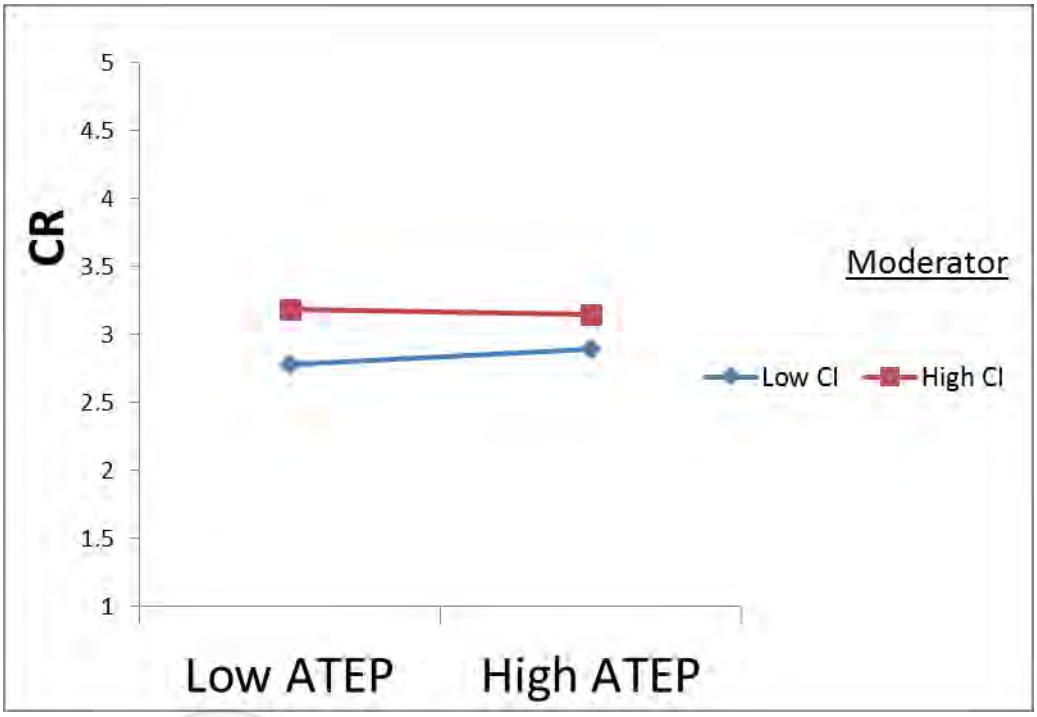


Figure 4.4
Interaction effect between Consumer Innovativeness and Attitude towards Existing Product

4.10.2 Interaction Effect between Consumer Innovativeness and Complexity

Whilst interaction effect between consumer innovativeness and complexity was insignificant. The form of the interaction effect shown in figure 4.5 was not consistent with hypothesis 2. However, results show that there is an interaction effect between consumer innovativeness and complexity. Simple slope analysis suggests that under the condition of high consumer innovativeness, varying level of complexity had an influence on consumer resistance to innovation. However varying level of complexity had no influence on consumer resistance to innovation under condition of low consumer innovativeness.

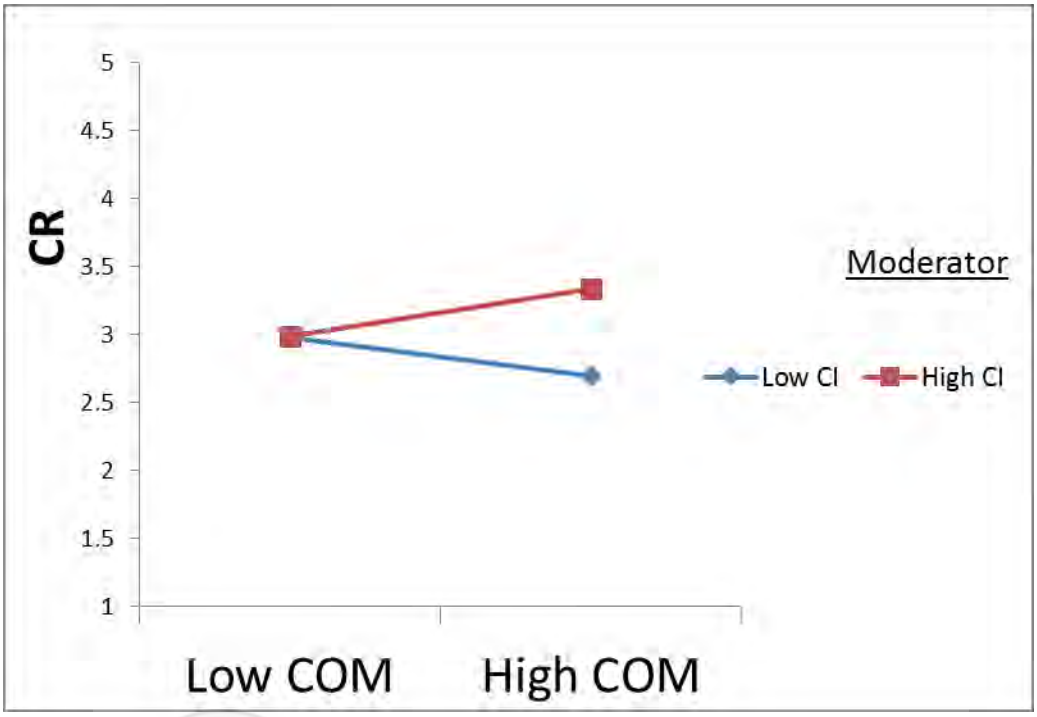


Figure 4.5
Interaction effect between consumer innovativeness and complexity

4.10.3 Interaction Effect between Consumer Innovativeness and Self-Efficacy

Whilst interaction effect between consumer innovativeness and self-efficacy was significant. The form of the interaction effect shown in figure 4.6 was consistent with hypothesis 8. However, results show that there is an interaction effect between consumer innovativeness and self-efficacy. Simple slope analysis suggests that under the condition of high consumer innovativeness, varying level of self-efficacy had a significant influence on consumer resistance to innovation. However varying level of self-efficacy had no influence on consumer resistance to innovation under condition of low consumer innovativeness.

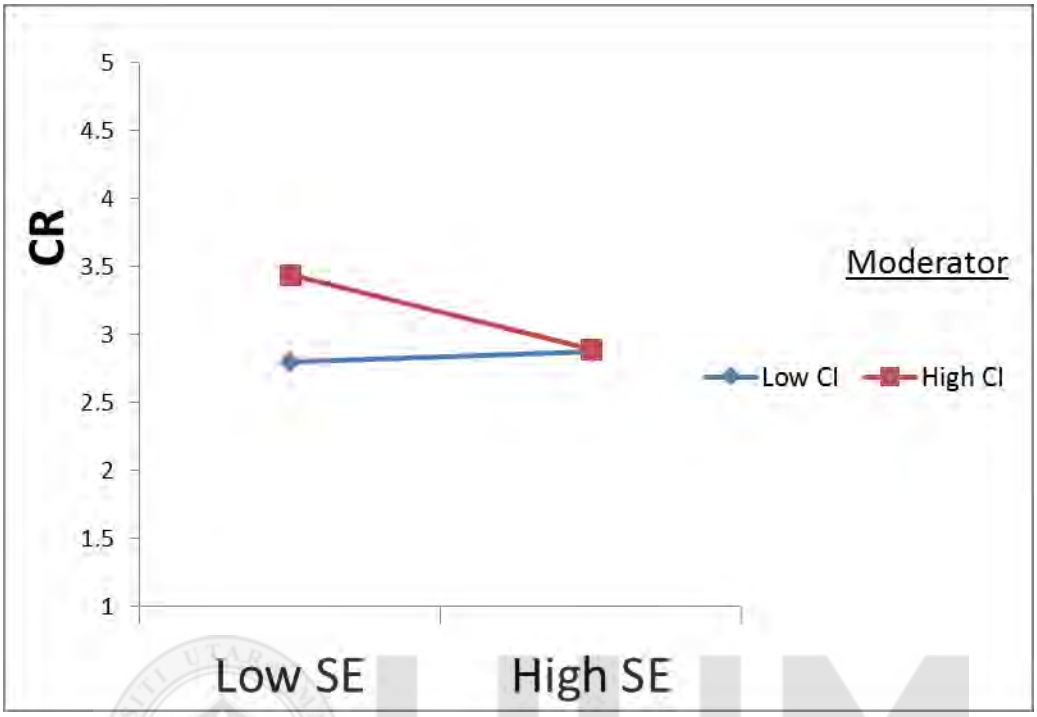


Figure 4.6
Interaction effect between consumer innovativeness and self-efficacy

4.10.4 Interaction Effect between Consumer Innovativeness and Social Influence

Despite the fact that interaction effect between consumer innovativeness and social influence was insignificant. The form of the interaction effect shown in figure 4.7 was consistent with hypothesis 9. However, results show that there is no interaction effect between consumer innovativeness and social Influence. Simple slope analysis suggests that under the condition of high consumer innovativeness, no varying level of social influence had no influence on consumer resistance to innovation. However not varying

level of social influence had no influence on consumer resistance to innovation under condition of low consumer innovativeness.

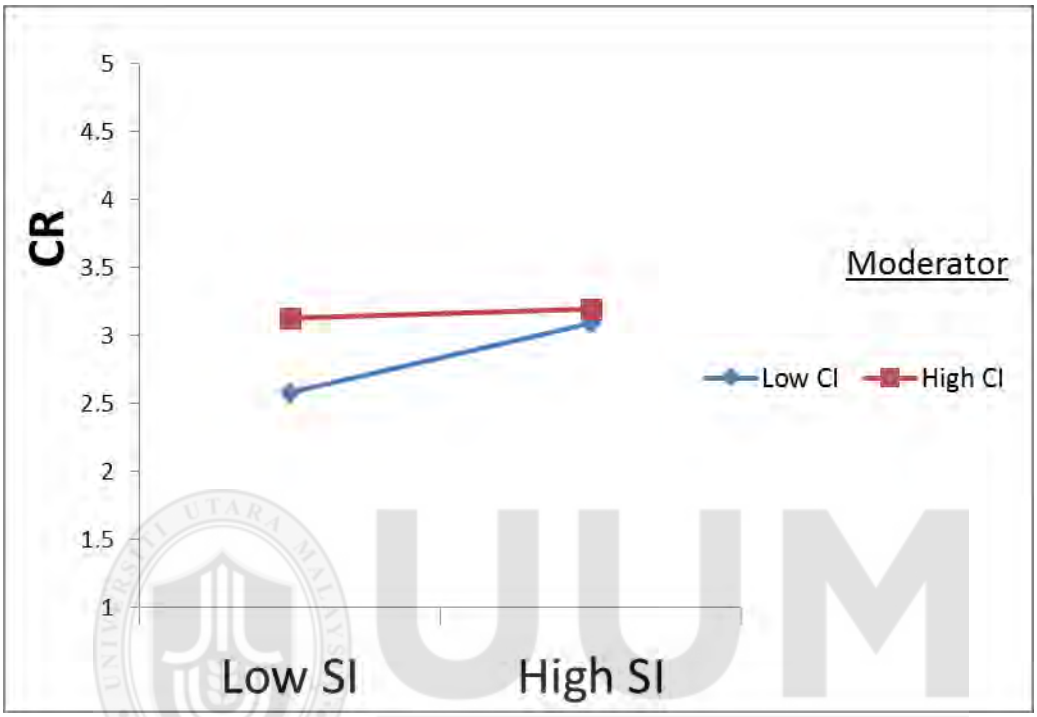


Figure 4.7
Interaction effect between consumer innovativeness and social influence

4.10.5 Interaction Effect between Consumer Innovativeness and Price

Whilst interaction effect between consumer innovativeness and the price was significant. The form of the interaction effect shown in figure 4.8 was consistent with hypothesis 5. However, results show that there is an interaction effect between consumer innovativeness and price. Simple slope analysis suggests that under the condition of high consumer innovativeness, varying level of price had a significant influence on consumer

resistance to innovation. However varying level of price had no influence on consumer resistance to innovation under condition of low consumer innovativeness.

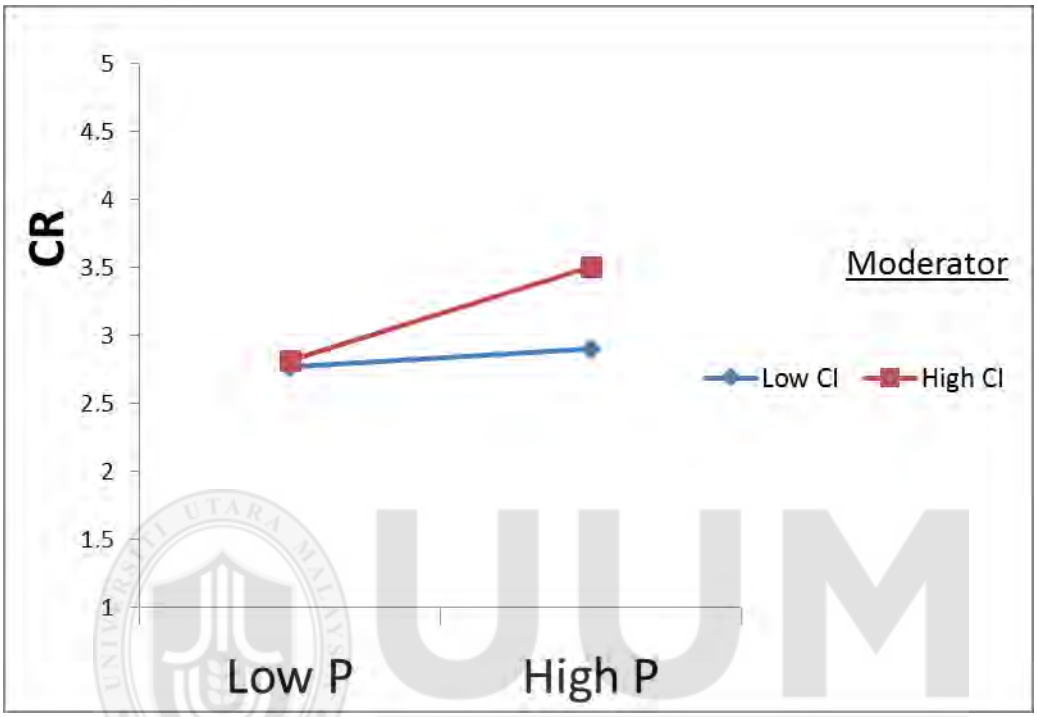


Figure 4.8
Interaction effect between consumer innovativeness and price

4.10.6 Interaction Effect between Consumer Innovativeness and Relative Advantage

Despite the fact that interaction effect between consumer innovativeness and relative advantage was insignificant. The form of the interaction effect shown in figure 4.9 was consistent with hypothesis 7. However, results show that there is no interaction effect between consumer innovativeness and relative advantage. Simple slope analysis suggests that under the condition of high consumer innovativeness, no varying level of relative

advantage had no influence on consumer resistance to innovation. However not varying level of relative advabtage had no influence on consumer resistance to innovation under condition of low consumer innovativeness.

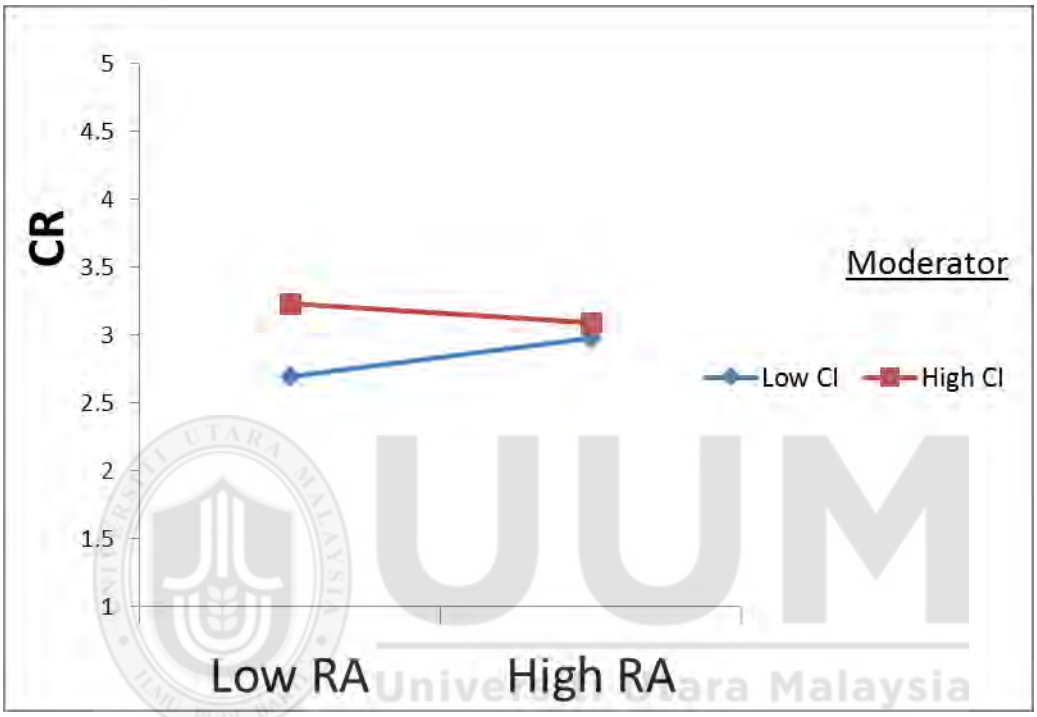


Figure 4.9
Interaction effect between consumer innovativeness and relative advantage

4.10.7 Interaction Effect between Consumer Innovativeness and Perceived Risk

Despite the fact that interaction effect between consumer innovativeness and perceived risk was insignificant. The form of the interaction effect shown in figure 4.10 was consistent with hypothesis 6. However, results show that there is no interaction effect between consumer innovativeness and perceived risk. Simple slope analysis suggests that under the condition of high consumer innovativeness, no varying level of perceived risk

had no influence on consumer resistance to innovation. However not varying level of perceived risk had no influence on consumer resistance to innovation under condition of low consumer innovativeness.

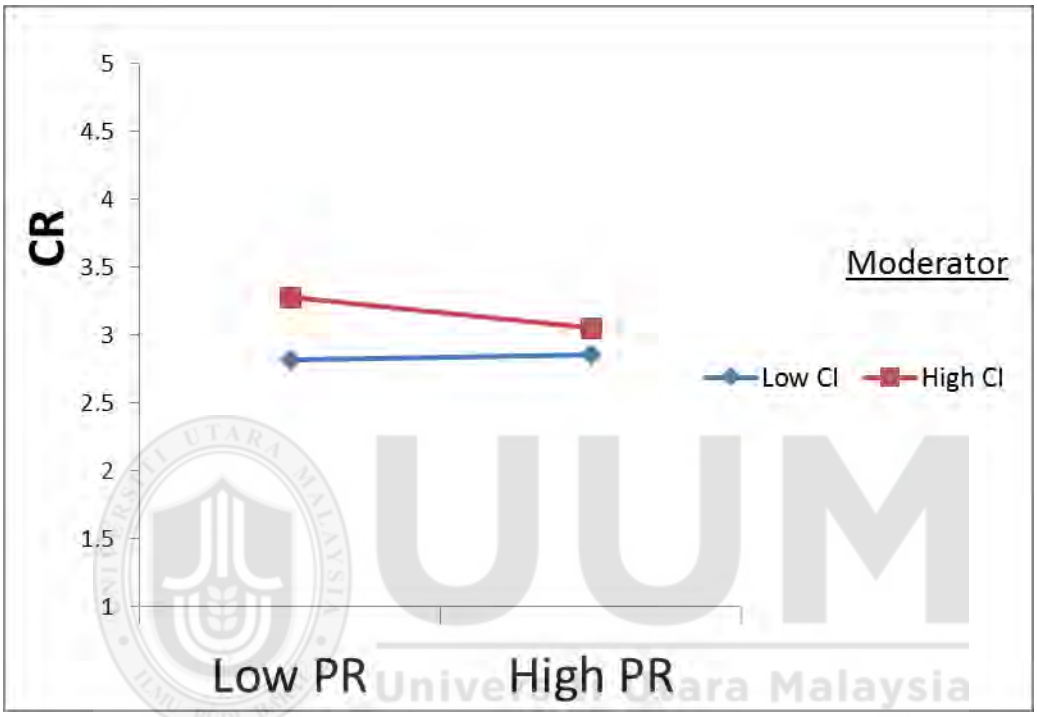


Figure 4.10
Interaction effect between consumer innovativeness and perceived risk

4.10.8 Interaction Effect between Consumer Innovativeness and Motivation

Whilst interaction effect between consumer innovativeness and motivation was significant. The form of the interaction effect shown in figure 4.11 was consistent with hypothesis 4. However, results show that there is an interaction effect between consumer innovativeness and motivation. Simple slope analysis suggests that under the condition of low consumer innovativeness, varying level of motivation had no influence on consumer

resistance to innovation. However varying level of motivation had significant influence on consumer resistance to innovation under condition of high consumer innovativeness.

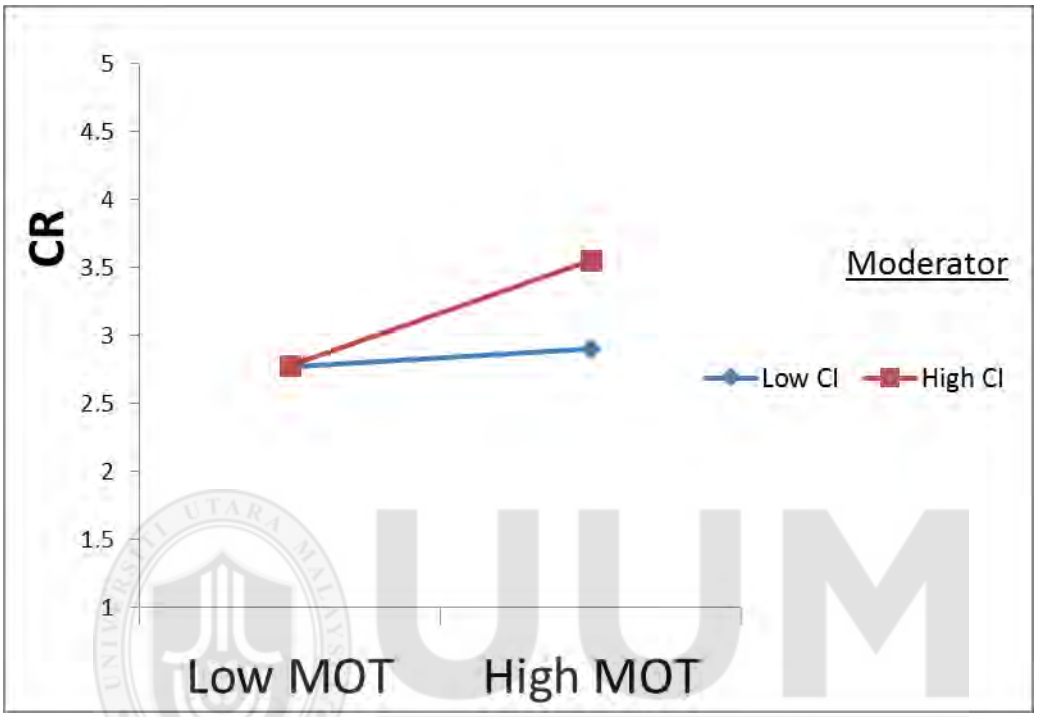


Figure 4.11
Interaction effect between consumer innovativeness and motivation

4.10.9 Interaction Effect between Consumer Innovativeness and Emotion (Negative)

Whilst interaction effect between consumer innovativeness and emotion (negative) was significant. The form of the interaction effect shown in figure 4.12 was consistent with hypothesis 3. However, results show that there is an interaction effect between consumer innovativeness and motivation. Simple slope analysis suggests that under the condition of high consumer innovativeness, varying a level of emotion (negative) had a significant

influence on consumer resistance to innovation. However varying level of emotion (negative) had no influence on consumer resistance to innovation under condition of low consumer innovativeness.

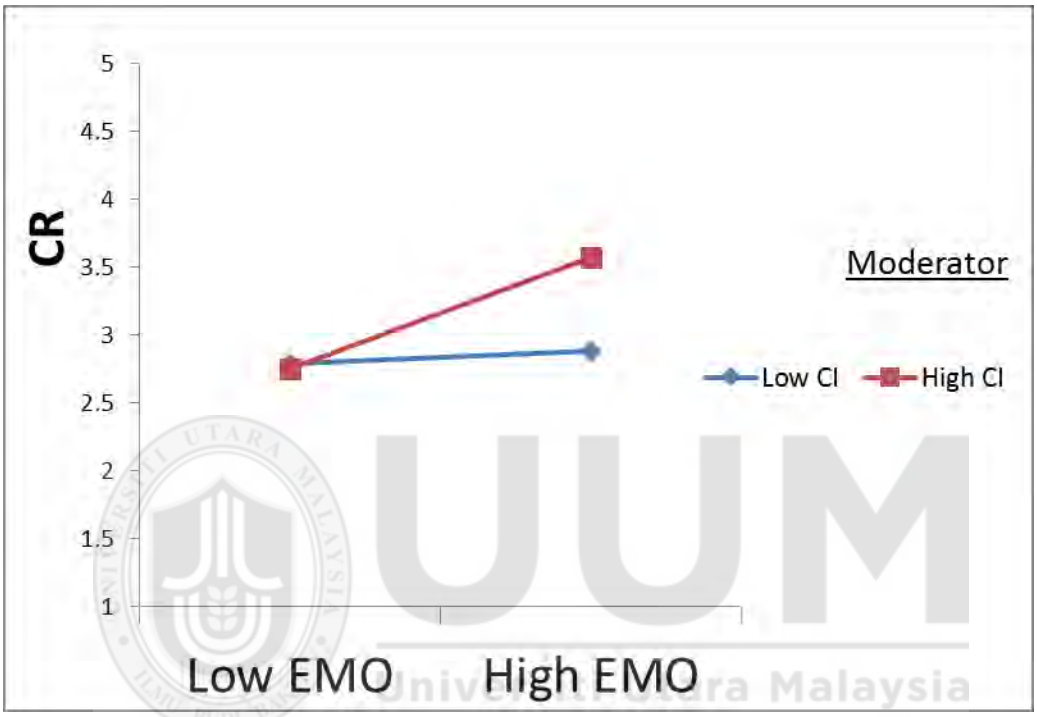


Figure 4.12
Interaction effect between consumer innovativeness and emotion (negative)

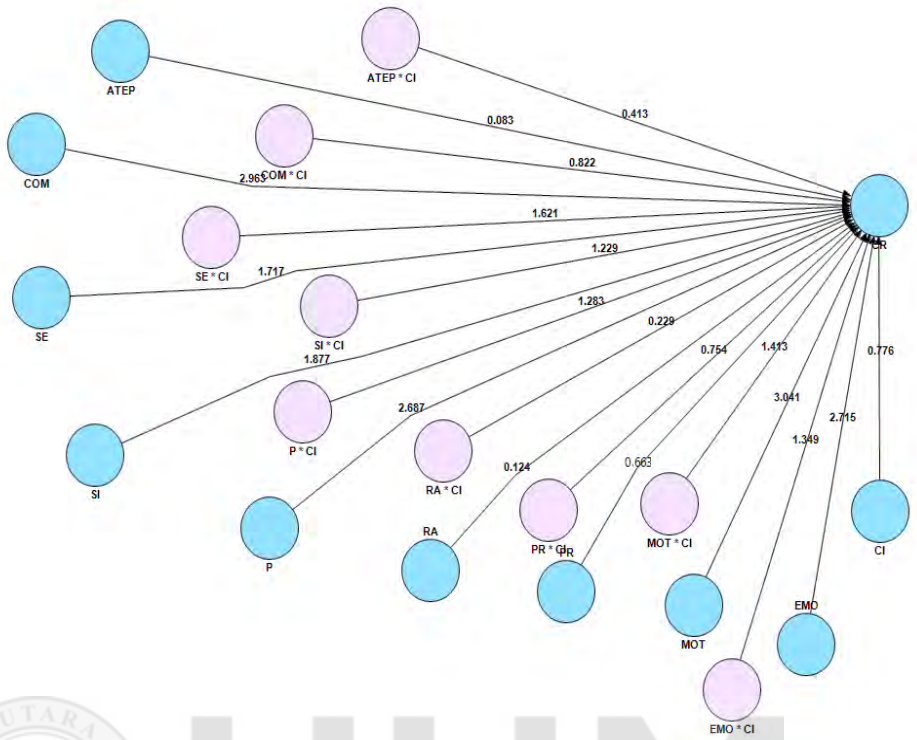


Figure 4.13
Structural Model with Moderating Variables

4.11 The Determining of Strength of Moderating Effects

As for as this study concern the researcher use the product indicator testing moderating effects of consumer innovativeness on the relation between attitude towards existing product, complexity, emotion, motivation, price, perceived risk, relative advantage, self-efficacy and social influence and consumer resistance to innovation, three-way interaction terms need to be created between indicator latent independent variables and indicator of moderating variable in structural model (Hair, *et al* 2011) moreover, to determine the strength of moderating effects, the current study used (Cohens , 1988) guidelines for the denitrifying the effects size. Furthermore, the strength of moderating

effects could be examined by comparing the R-square value main effects model with an R-square value of full model which includes both moderating variables and exogenous latent variables (Wilden, Gudergan, Nielsen, & Lings 2013; Henseler & Fassott, 2010a).

As discussed earlier in this study the R-square value of the consumer resistance to innovation construct is increased from 0.420 to 0.458 by introducing the consumer innovativeness as a moderating between attitude towards an existing product, complexity, emotion, motivation, price, perceived risk, relative advantage, self-efficacy and social influence and consumer resistance to innovation. The R square change is 0.038 which is indicating that with the addition of the 9 interaction terms the R-square changed about 3.8 % additional variance.

So the strength of the moderating effects can be stated by using the formula (Cohens, 1988).Therefore, the effect size could be depicted using the following formula (Cohen, 1988; Selya, Rose, Dierker, Hedeker, & Mermelstein, 2012; Callaghan *et al*., 2007):

$$\text{Effect size: } f^2 = \frac{R^2_{Included} - R^2_{Excluded}}{1 - R^2_{Included}}$$

Cohen (1988) explains f^2 values of 0.02, 0.15 and 0.35 as having weak, moderate, strong effects respectively. In line with the rule of thumb given by Cohen, (1988) f^2 for all interaction terms indicates 0.038, therefore, the researcher conclude that the effect size is small as per Cohen, (1988). On the other hand, low effects size does not basically mean that moderating effects is insignificant (Even a small interaction effect can be meaningful under extreme moderating conditions, if the resulting beta changes are meaningful, then it

is important to take these conditions into account" (Chin *et al*., 2003) table 4.11 demonstrate the strength of moderating effects.

Table 4.11
Effect size of (f^{2}) Moderating Variables

R-squared	Included	Excluded	f-squared	Effect size
MODERATORS	0.458	0.420	0.038	Weak

4.12 Determining the Predictive Relevance of the Model

This study further uses the blindfolding procedure to test the predictive relevance of the model. The blindfolding procedure as undertaken to assess the predictive capacity of the model (Geisser, 1974; Stone, 1974). The Stone-Geisser test of predictive relevance is generally used as a supplementary measurement of GOF in the PLS modeling (Duarte & Raposo, 2010). Predictive relevance is denoted by Q2. According to Hair *et al*., (2014) Q value is obtained by using the blindfolding to assess the parameter estimates and also assess how values are built around the model. The results were retrieved from the blindfolding output of PLS through the variable score out of which cross-validated redundancy extracted. This cross-validated redundancy analyzes the capacity of the model to predict the endogenous variables and also explain the quality of the model. The table 4.12 shows the construct cross-validated redundancy. The table 4.12 shows that in column four (4), Q2 shows the predictive relevance of 0.24 for the CR (Consumer Resistance) which shows that this model has predictive relevance. In line with

recommendation of Hair *et al*., (2014) if Q2 value is greater than zero (0) the model have predictive relevance for reflective endogenous latent variable.

Table 4.12
Construct Cross Validated Redundancy

Total	SSO	SSE	1-SSE/SSO
CR	2149	1622.51	0.24

4.13 Summary of Findings

Overall, for the findings of this study test of non-response bias verified and not found statistically significant variance among early and late responses of respondents. Thus, problem of non-response bias had not significantly influence the generalizability of the results in this study. Usually, results of descriptive statistics shown that the mean scores of the study variables are within the range of 2.78 to 4.72, on the other hand the value of standard deviation for the study variables ranges from 0.938 to 1.431. Furthermore, structure model analysis by structural equation modeling has been designed in order investigate the relationship among exogenous variables and endogenous variables. Table 4.13 given below shows the summary of the results of this study from hypothesis testing.

Table; 4.13
Summary of the Findings

NO	Hypothesized Path	Path coefficient	Standard Error (STERR)	T Value	Decision
1	ATEP -> CR	0.019	0.058	0.329	Not Supported
2	COM -> CR	0.162	0.060	2.575	Supported
3	EMO -> CR	0.185	0.053	3.355	Supported
4	MOT -> CR	0.283	0.072	3.078	Supported
5	P -> CR	0.221	0.064	3.302	Supported
6	PR -> CR	-0.036	0.058	0.796	Not Supported
7	RA -> CR	0.044	0.069	0.533	Not Supported
8	SE -> CR	-0.080	0.066	1.704	Supported
9	SI -> CR	0.180	0.066	2.156	Supported
10	CI -> CR	0.172	0.078	2.105	Supported
11	ATEP * CI -> CR	-0.0525	0.0881	0.4127	Not-supported
12	COM * CI -> CR	0.0178	0.1735	0.8219	Not-Supported
13	EMO * CI -> CR	0.1098*	0.1172	1.3486	Supported
14	MOT * CI -> CR	0.1343*	0.1143	1.4128	Supported
15	P * CI -> CR	0.1165*	0.1085	1.2834	Supported
16	PR * CI -> CR	-0.0898	0.0877	0.7542	Not-Supported
17	RA * CI -> CR	-0.0338	0.4632	0.2288	Not Supported
18	SE * CI -> CR	-0.1399**	0.1018	1.6206	Supported
19	SI * CI -> CR	-0.108	0.0888	1.2288	Not-Supported

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter discusses the results of the study outlined in Chapter 4. First, it elaborates the analytical results. Then, it summarizes the discussions into a conclusion by highlighting the contributions of the study (theoretical, methodological and practical). It ends up with a discussion on the limitation of the study and proposes some recommendations for future research.

5.2 Recapitutation of the Study

The main objective of this study to examine the moderating role of consumer innovativeness between the relationships of i.e. attitude towards existing product (ATEP), complexity (COM), emotion (EMO), motivation (MOT), price (P), perceived risk (PR), relative advantage (RA), self-efficacy (SE) and social influence (SI). Besides, this study also aims at investigating the moderating effect of consumer innovativeness and consumer resistance to innovation relationship as reflected among students of public universities in Pakistan. To this end, a total of nineteen (19) hypothesis have been stated and tested, the research findings and results empirically eleven (11) including direct, and moderating hypothesis.

Having all hypotheses tested, the results are discussed respectively in the following section. They are related with the objectives of study, in determining whether the objectives are fairly achieved or not.

As discussed in the analytical findings, innovation characteristic factors including relative advantage (RA), perceived risk (PR), complexity (COM), social influence (SI) and price (P) and consumer characteristic factors including motivation (MOT), self-efficacy (SE), emotion (EMO) and attitude toward existing product (ATEP) have some potentialities to predict consumer resistance to innovation. This has been empirically analyzed both directly and indirectly through some intervening variables, including moderating variable using the resistance to innovation theory by Ram (1987), who discovered that every adopter will and the ability to adopt an innovation would depend about their economic returns, awareness, interest, evaluation, trial, and adoption. According to the Ram's model, consumers resist to the innovation as a response to the hindrance produced through the change and conflict brought by the innovation. These hindrances could be divided into functional obstacles (for innovation) and psychological barriers (for a consumer). Ram also found that the strategies to reduce innovation resistance will vary by product.

This study aims at achieving the following objectives. They have been formulated based on the previous studies.

- To determine the causal relationships between innovation characteristic factors and consumer resistance to innovation.
- To determine the causal relationships between consumers' characteristics, factors and consumer resistance to innovation.
- To analyze the factors of consumer and innovation attributes largely influence/resolve consumer resistance to innovation.
- To investigate the moderating role of consumer innovativeness among the innovation attributes and consumer resistance to innovation.
- To investigate the moderating role of consumer innovativeness among the consumer attributes and consumer resistance to innovation.

In order to achieve the above-mentioned objectives, an extensive review of related literatures was carried out. The reviews include works related to innovation characteristic factors including relative advantage (RA), perceived risk (PR), complexity (COM), social influence (SI) and price (P) and consumer characteristic factors, motivation (MOT), self-efficacy (SE), emotion (EMO) and attitude toward existing product (ATEP) as well as consumer resistance to innovation. This study finds that they have been attended to in education sector including the public universities in Pakistan. To be specific, the first research question and objective are argued based on the H5, H6, H7, H2, and H9.

5.2.1 The Causal Relationship between Innovation Characteristic Factors and Consumer Resistance to Innovation

The first research question asks, what is the causal relationship between the innovation characteristic factors and consumer resistance to innovation? Specifically, the objective is to determine the causal relationship between innovation characteristic factors and consumer resistance to innovation. They are argued based on H5, H6, H7, H2, and H9.

To answer the first research question, to determine the causal relationship between innovation characteristic factors and consumer resistance to innovation, the argument is given below and elaborated deliberate on the results of the study based on the research hypothesis.

5.2.2 Direct Relationship between Relative Advantage and Consumer Resistance to Innovation

The relationship between relative advantage and consumer resistance to innovation has been tested in this study. According to the statistical results, it has been revealed that relative advantage is insignificant and has a positive relationship with consumer resistance to innovation. Previous literatures indicate that the relative advantage of smartphone users over non smartphone users have a positive effect on consumer resistance.

The result is not surprising because the respondents in this study are young consumers. According to Ling and Yttri (1999), young consumers are exposed to the telecom devices since young age. Consequently, they become more skillful in using smartphones technological innovation. The obtained insignificant result is congruent with past studies (Nysveen et al., 2005; Lu et al., 2009), which found that relative advantage has no direct effect on consumer resistance to innovation. This insignificant outcome also indicates that young consumers do not have any complication towards using mobile phone technologies. On top of that, most of the participants in this research are between 20 and 30 years old, who are very active with their smart phones to obtain shades, video clip, and walls document. This activity has become common to them since they are aware of and familiar with the functions in the mobile phones. While using the mobile phones is very easy to them, therefore they recognize that relative advantage has no immediate impact on resistance to innovation (Lu et al., 2009). In other words, the relative advantage is not an important factor that can affect consumer resistance to innovation mainly among university students.

In addition, the second reason is that young consumers in Pakistan are normally more aware of the latest growth in new advancement especially in mobile technological advancement like smartphone as an innovation. They are usually prepared with the experience and information of many types of technological advancement, therefore, the relative advantage would not impact their choice towards using the technological advancement like smartphone (Wei et al., 2009). In other terms, the level of challenges in using smartphones does not impact their choice to look at the technological advancement

since they have a better access to information and information on how to use the technological advancement. The results also suggest that relative advantage has insignificant impact on consumer resistance to innovation because they handle the technological innovation with less effort and less impact with resistance to innovation in the context of Pakistan.

Based on the results, this study goes one step ahead by providing facts that positive influence of relative advantage and consumer resistance to innovation also applies among university students in Pakistan. The establishment of positive relationship between relative advantage and consumer resistance to innovation among university students in Pakistan support the findings of previous studies. Generally, the research findings on relative advantage as considered by consumers are positively related to the consumer resistance to innovation (Fliegel & Kivlin, 1966). In the case of preventive innovation, it has a very slow rate of adoption due to the individual consumers who have difficulties in relative advantage perception among products. Also, sometimes consumers feel relative advantage of an innovation is a delayed reward and they perceive high relative advantage and high consumer resistance to innovation (Rogers, 1992). Dunphy and Herbig (1995) also conducted a study in the context of smartphone innovation, particularly on the relative advantage of smartphones and its advantage over non-smart phone users. The results show that there is no significant relationship between the relative advantages and resistance to innovation.

5.2.3 Direct Relationship between Price and Consumer Resistance to Innovation

The statistical finding supports this relationship. In answering the first research question, H5 is discussed on the relationship between price and consumer resistance to innovation. This supports the previous research findings (Mctaggart, 2012; Foxall, 1984; Ram, 1987; Pagani, 2004; Khan & Hyunwoo, 2009; Jee Han, Joseph, & Xavier; 2010). This hypothesized relationship between price and consumer resistance to innovation indicates that price has a significant influence on consumer resistance to innovation in the context of public universities of Pakistan. This finding also verifies the relationship, that the higher the price is, the higher the consumer resistance to smartphones will be, as supported by earlier studies (Kotler & Keller, 2012; Jakki et al., 2010; Ram, 1987).

The result shows that price is a major economic reason, which is the actual cause of the postponement of the consumer conflict with the current approach of use of the products. On the other hand, refusal of innovation by consumer indicates significant unwillingness to select or adopt the innovation. Customer higher perceived value of all expensive smartphones, which including high innovative product or a new technology, because these types of products are usually paid at the reasonable high price (Vitzthum, 1995; Lange, 1925).

On the other hand, smartphone can affect consumers' purchasing intention, but it must impose an abnormally high price. As an example, expensive phones become a normal good or even an inferior good if the purchasing power of global consumers has risen.

This means that everyone can own a smartphone, therefore it is no longer the symbol of social status (Jee Han, Joseph, & Xavier, 2010).

In Pakistan, a country that has different cultures, languages, and social values, the result is not surprising. In such situation, the higher the price, the higher the consumer resistance to innovation based is. This agrees with the findings in the previous study (Kleijnen, Lee, & Wetzels, 2009).

The results also show that consumers are willing to pay a premium for new technologies, especially in the smartphone, although this premium varies by product to product category and also vary from consumer to consumer. The result is consistent with those by Drozdenko et al. (2011) and Ali et al. (2011). Some researcher's state that a range of acceptable price is established when consumers want to purchase the product, otherwise they reject the high price. There is a reduction on consumer resistance to innovation when the actual price of a product decreases, and vice versa.

Furthermore, one plausible reason of significant relationship between price and consumer resistance to smartphones, is that a smartphone might influence the consumer's buying behavior due to the high and abnormal price of a product. For instance, innovative products like smartphone will become a normal phone or inferior phone just because of the abnormal price of the smartphone as well as if the purchasing power of consumer of overall products increased, that means every consumer may own a smartphone. Thus,

there is no need to take it for social status even it is not cheap for the consumers (Moser & J.D 1995; Jee, Han, Joseph, & Xavier, 2010).

Meanwhile, the second plausible reason of the significant finding is that young consumers in Pakistan like smartphones because the variety of smartphones with different brands and names like Samsung, Nokia, Apple, HTC, and Sony are available in the market. This could influence the consumer purchasing behavior because of the high price in Pakistan. Generally, the monthly spending of students in Pakistan is very low as compared to other students who are studying in PhD with jobs. So due to the low income, they cannot afford for the high price smartphones. They prefer smartphones they can afford for. That is a big reason they normally resist to buy high price smartphone in Pakistan. University students want to carry low-cost smartphones because of safety reasons.

5.2.4 Direct Relationship between Social Influence and Consumer Resistance to Innovation

The result obtained in Chapter 4 supports this relationship. In answering the second question, the H9 discusses the relationship between social influence and consumer resistance to innovation. This study hypothesizes that social influence significantly positively influence the consumer resistance to innovation. The significant result is consistent with the results from past studies (Bickart & Schindler, 2001; Gerber, Green, & Larimer, 2008; Berger & Heath, 2007; Kim & Park, 2011; Shin, 2010; Silva, 2011).

Consistent with the previous studies, the result of this study signifies the relationship of social influence and consumer resistance to smartphones in the context of Pakistani young consumers. This means that social influence plays a significant role in influencing the intention to reject the smartphones in Pakistan. Lopez-Nicolas et al. (2008) argue that social influence has a positive influence on the attitude towards mobile innovations. To support the results of this study, social influence has a positive and significant relationship with consumer resistance to smartphones by the previous study. Kim (2009) examined the impact of social influence on smartphone users. The result also verifies the findings of this study, showing that social influence could affect the intention to use a smartphone via influencing the perceived usefulness. In addition, Verkasalo (2010) suggests that the social norm influences intention to use a smartphone indirectly through influencing the perceived enjoyment and normally consumer resist to use the smartphones. In the same year, Shin (2010) also discovered that social influence has a positive influence on the attitude towards smartphone rejection. Meanwhile, Talukder and Quazi (2011) examined the impact of social factors on attitudes toward innovation and the impact of attitude on individual consumers' rejection to innovation in their workplace in Australia. Also, finding of this study has revealed that social network has been found to directly influence the innovation resistance process.

This finding is also consistent with Feathermana and Pavloub (2003) and Jacoby and Kaplan (1972) who found that social influence has significant and positive relationship with consumer resistance to innovation. This means that the higher the social pressure on the students the, higher the consumer resistance to innovation is due to their family and

friends. The result of the study is also consistent with the previous research. This implies that social influence is the probable damage of status of one individual in the same social group due to purchasing the particular services or products which are looking crazy or not stylish. The public threat or social influence is engaged with persons' perspective towards others, according to the consumption behavior they exercise. In other terms, consumers tend to avoid an innovative product or service due to their bad feeling that they will experience.

The result also agrees with Silva (2011) who quantitatively measured the various influences on mobile phone adoption at the bottom of the pyramid in Bangladesh, Pakistan, India, Sri Lanka, the Philippines, and Thailand. The study gives evidence for the importance of social influence in mobile adoption in two modes: one that exerts pressure on individuals to adopt, and another that helps the individuals to identify the hurdles in the adoption process. Accordingly, this study deduces that social influence is a good predictor of rejection process in innovation, including in Pakistan.

One plausible reason for this positive and significant finding is that consumers engage in mobile technology and they using smartphones and they believe their family and friends before deciding to purchase smartphones. This is supported by Talukder and Quazi (2011), who found similarly. In other words, when consumers want to purchase smartphones, they normally consult with their friends and family. This proposes that the higher the social influence, the higher the consumer resistance to innovation is. This

study also deduces that social network directly influences the innovation resistance process.

Another plausible reason to support this result lies in the different cultures, social systems, and family set ups like friends and family among the respondents. All these consumers get influenced by the social factors in purchasing smartphone in Pakistan. Social influence by friends, family, groups, and roles are possible factors that manipulate the young consumers' behavior in making last decision to purchase smartphones.

5.2.5 Direct Relationship between Complexity and Consumer Resistance to Innovation

The statistical results support the relationship. In answering the second question, H2 is discussed on the relationship between complexity and consumer resistance to innovation. This study hypothesizes that complexity significantly positively influences the consumer resistance to innovation. With reference to the results (in Chapter 4), this study confirms that the higher the complexity, the higher the consumer resistance to innovation is. The result is consistent with the results in the previous works (Laio, Liu, & Cheng 2015; Mohtar & Abbas, 2015; Dunphy & Herbig, 1995; Tan & Teo, 2000; Holak & Lehmann, 1990; Gu et al. 2009; Luarn & Lin 2005; Wang et al., 2006). The result verifies the findings by previous studies that complexity has a positive influence on consumer resistance and negative influence on consumer adoption to innovation (Cooper & Zmud, 1990; Dickerson & Gentry 1983; Tan & Teo 2000; Gu et al., 2009; Luarn & Lin 2005; Venkatesh & Davis 2000; Wang et al., 2006; Cheung et al., 2000). Most of the

discussions in the literatures are on works in the western context, which is not applicable in the Asian context because every country has different preferences and characteristics which vary culture to culture (Ongori et al., 2007). This includes Pakistan, collectivism and power distance country, in which people have different preferences related to adoption and rejection of new technologies. Also, most of the previous works were on the Internet banking, mobile banking, self-service technology, and online e-banking, with very few discussions on smart phones. Based on such distinction regarding the consumer's cultures and preferences in Pakistan, previous studies support that the complexity significantly and positively influences the consumer resistance to smartphones (Dunphy & Herbig, 1995; Tan & Teo; 2000, Laio, Liu, & Cheng, 2015; Holak & Lehmann, 1990).

The result also validates and is consistent with the various works that complexity is negatively related with the diffusion of innovation and positively related with resistance to innovation (Gandalf, 2002; Dunphy & Herbig, 1995; Tornatzky & Klein, 1982). Regarding this, previous findings have revealed that a new product with an extensive complexity appeal more abilities and considerations to run and use the innovation to build its acceptance and increase the chance of consumers' resistance (Cooper & Zmud, 1990; Dickerson & Gentry, 1983; Tan & Teo, 2000).

The plausible reason to support this result is that university students in Pakistan always want to try a short cut in every matter of their life to get success. They always rely on alternate products like smartphones. If they buy a smartphone and they find some

complexities, they try to shift to another smartphone that has a simple operating system. If the purchasing decision is habitual, then they buy complex products otherwise they buy simple and user-friendly Smartphones.

5.2.6 Direct Relationship between Perceived Risk and Consumer Resistance to Innovation

The relationship between perceived risk and consumer resistance to innovation has been tested in this study. The results support the relationship. In answering the second question, H6 is discussed on the relationship between perceived risk and consumer resistance to innovation. This study hypothesizes that perceived risk insignificantly negative influences the consumer resistance to innovation. Referring to the detailed result, it empirical evidences that there is a negative relationship between perceived risk (Financial, social, economic, functional, security, performance) and consumer resistance to innovation in the context of Pakistan. This is consistent with the results in previous studies (Cheng, Lee, & Lee, 2014; Ram & Sheth, 1989; Bredahl, 2001; Saba et al., 2000; Ganiere et al., 2004; Dhebar, 1996; Noussair et al., 2004; Szmigin & Foxall, 1998; Woodside & Biemans, 2005; Fain & Roberts, 1997).

As this study is conducted in Pakistan, it is not bizarre when and result contradicts with the studies conducted in the Western context (Dunphy & Herbig, 1995; Aggarwal et al., 1998; Yiu Chi et al., 2007) that discover positive relationship between perceived risk and consumer resistance to innovation. Meanwhile, the negative relationship is also verified through the previous research. It has been revealed that before pursuing economic

activity, consumers also consider risks associated with their transactions, in terms of financial, privacy, and security risk. Chen et al. (2010) refer financial risk to the consumer's possible financial loss, while security risk impacts the consumer purchase intention about innovative products. Further, Javed et al. (2012) remind that risks also influence the consumers' behavior. In such context, risks refer to product, convenience, security, and financial risk. In short, the previous findings reveal that perceived risk has a negative impact on consumer resistance to innovation.

Previously, Ram and Sheth (1989) also found a negative relationship between perceived risks like physical risk and consumer resistance to innovation. Consumers feel fear for innovation especially for different products and processed foods. Similarly, Bredahl (2001) found a negative relationship between perceived risk and harmful. It was found when health related products were innovated and genetically modified, resulting in negative effects. Also, Ganiere et al. (2004), Noussair et al. (2004), and Woodside and Biemans (2005) found similar results in their study.

The plausible reason for the insignificant relationship between perceived risk and consumer resistance to innovation is discussed by Wei et al. (2009). For them, consumer knowledge and experience on how to use and purchase new technology is one of the good reasons. Another reason was discovered by Shih and Fang (2004) and Lin (2007), that the respondents are familiar with technology and that they have a good experience that lead the consumer towards technology. In such situation, the relationship between

perceived risk and consumer resistance to innovation is insignificant. Besides that, DeBaillon and Rockwell (2005) insignificant difference among male and female is also a reason. Another good reason to explain the insignificant findings is just because majority of the respondents (68.4%) are male. The inequality among male and female might lead to the insignificant difference among male and female. Such reason is consistent with Rozario, Lewis, and White (2010) who state that perceived risk variable is not a good predictor of resistance to innovation.

5.2.7 The Causal Relationship between Consumer Characteristics Factors and Consumer Resistance to Innovation

The first research question determines the causal relationship between innovation characteristics factors and consumer resistance to innovation. Specifically, the objective is to determine the causal relationship between innovation characteristics factors and consumer resistance to innovation. For that, the research question and objective are argued based on H1, H3, H4, and H8.

5.2.8 Direct Relationship between Motivation and Consumer Resistance to Innovation

The statistical finding of this study supports the relationship. In answering the question, H4 discusses on the relationship between motivation and consumer resistance to innovation. This study hypothesizes that motivation significantly positively influences the consumer resistance to innovation. Referring to the empirical result in Chapter 4, the hypothesis confirms that the higher the consumer motivation, the higher the consumer

resistance to innovation is. This result is consistent with the results in the previous studies (Benedetti et al., 2015; Lee, Cheung and Chen, 2007; Davis et al., 1992; Diefendorff & Chandler, 2010; Kanfer, Chen, & Pritchard, 2008). It is like so because motivation has direction, power and determination to choose or reject the innovative product.

Even though a high motivation goes for product adoption, but consumers like students have more power and determination over the new technology and they reject due to their own cultural values and they are demotivated by the innovative products due to their intrinsic motivational factors. In spite of the fact that Pinder (2008) and Diefendorff and Chandler (2010) brought up, that capability and circumstances cannot be viewed as factors of motivation, which affect the consumer adoption towards new technology like smartphones, Parker and Ohly (2008) argue that motivation is affected by external power at both macro and micro levels. Meanwhile, Kanfer, Chen, and Pritchard (2008) found that there is a mixture of different impacts on motivation, such as science, identity, and unconscious techniques like quality groups of stars. Based on that, this study deduces that motivation is a significant factor that has created consumer resistance to innovation in the context of Pakistan due to their own pattern of life in Pakistani society.

The finding is also validated by Diefendorff and Chandler (2010), who define motivation as "an unobservable force that directs, energizes, and sustains behavior over time and across changing circumstances". Earlier, MacInnis and Moorman (1991) refers motivation to "goal-directed excitement" which pushes buyer needs. Meanwhile, Lee Matthew et al. (2007) and Davis et al., (1995) believe that motivation derives consumer's

intentions and needs to adopt or reject innovation. It involves inside procedures, which offer conduct or behaviors through the direction and control. Control in terms of power refers to a strength, determination, and focus behavior, while the direction gives a particular objective to the behavior (Lee Matthew et al., 2007). They are important because behavior can be influenced externally and internally (Herzberg at el., 1959).

5.2.9 Direct Relationship between Self-Efficacy and Consumer Resistance to Innovation

The finding statistically supports this relationship. In answering the question, H8 is discussed based on the relationship between self-efficacy and consumer resistance to innovation. This study hypothesizes that self-efficacy significantly negatively influences the consumer resistance to innovation. In regards to that, the empirical result outlined in Chapter 4 confirms that the lower the consumer self-efficacy, the higher the consumer resistance to innovation is in the context of Pakistan.

The result is consistent with the results of the previous studies (Mohtar & Abbas, 2015; Ellen & Bearden, 1991; Park & Chen, 2007; Tan & Teo, 2000; Fagan, Neill, & Wooldridge, 2003; Chong et al., 2010; Dasgupta et al., 2011; Kim et al., 2013; Kim et al., 2013), which signifies that efficacy or confidence of consumers to use smartphone might affect the consumer intent to purchase or reject new innovation or technology. The result supports the findings by Park and Chen (2007) that self-efficacy is an important predictor of consumer resistance to innovation. This means that individuals with higher level of

self-efficacy can reduce the consumer resistance level to adopt new technology as an innovation (Chong et al., 2010).

One possible reason for the result is that respondents are university students, who are young and have more exposure and updated knowledge on the development of mobile technology. Also, they could quickly adapt innovative products. This could enhance their self-confidence towards using smartphone as an innovation, because they believe in themselves and their capabilities in doing new things effectively (Chong et al., 2010).

5.2.10 Direct Relationship between Emotion (Negative) and Consumer Resistance to Innovation

The finding statistically supports this relationship. In answering the second question, H3 discusses on the relationship between emotion (negative) and consumer resistance to innovation in the context of public universities of Pakistan. This study hypothesizes that emotion (negative) significantly positively influences the consumer resistance to innovation. The empirical results of the hypothesis could confirm that the higher the consumer emotion (negative), the higher the consumer resistance to innovation is in the context of Pakistan.

The result is consistent with the results in the previous studies (Reynolds et al. 2006, Richins, 1997) and it verifies that emotion is an essential element of customer response, and the significance of emotion in the field of buyer behavior is founded (Bagozzi, Gopinath, & Nyer 1999; Richins, 1997; Sbai, 2013). According to Phillips and

Baumgartner (2002) emotion related to consumption is influenced by each actual product functionality and a performance of disconfirmation of anticipation (Chitturi, Raghunathan, & Mahajan, 2008). Also, it supports the findings by Bagozzi and Lee (1999), who detailed the negative emotion into anger, fear, sadness and disgusted guilt, shame, humiliation, and envy.

First plausible reason for that is that emotional states like anger happens when another consumer is an unsuccessful to achieve a normal reward. Also secondly, it happens when either a threat is anticipated or conceivable disappointment to get a prize is anticipated. Another reason is the disappointment among the consumers, regarding their purchase. Normally, when they purchase an item, and they feel that what they desire is not fulfilled, they feel disappointed. The fourth reason disgust results when external circumstances upset one's gustatory objectives. Besides that, the next reason is the feel of guilt when they purchase an item that harm someone else. In Pakistani culture, students with their young blood want a good product which is not harmful and ethically wrong. So, when they buy a wrong product that gives guilt in their mind, it creates negative emotions and they resist the new innovation. Nevertheless, the sixth reason is the feel embarrass. It could happen when one perceives that someone else whose belief is valued evaluates one as unworthy or incompetent, as a consequence of the violation of some standards. All respondents in this study are Muslims and their core beliefs and values are strong upon good deeds. So, when they buy a product and the product performance is not good, they tend to believe that the product is not user-friendly and not good for them.

On top of that, the seventh reason is the feel of contempt. It emerges when one feels disgust or contempt to someone else, in light of the fact that the individual has delayed one's objectives or injured one somehow, and jealousy and envy happen when one sees another has or debilitates to take away what he or she thinks of one as own. These are emotional states and created negatively related to innovation which create consumer resistance to innovation. Bagozzi and Lee (1999) show that rejection of an innovation results, to some degree, from the assessment of a product's new promotions and the expected outcomes of its adoption, additionally the negative emotions included. From the previous studies discovered that emotions have a positive association with consumer resistance to innovation and verify the results of this study. In Pakistan, young consumers have emotional experiences such as anxiety, satisfaction, and pleasure, which play an inconvertible role in impacting individual‘s choices and judgment.

5.2.11 Direct Relationship between Attitude towards Existing Product and Consumer Resistance to Innovation

The result has statistically proven that the relationship is not supported. In answering the research question, H1 discusses on the relationship between attitude towards existing product and consumer resistance to innovation in the context of public universities in Pakistan. This study hypothesizes that attitude towards existing product insignificantly positively influences the consumer resistance to innovation. Based on the obtained result in Chapter 4, the hypothesis could confirm that the more favorable or positive consumer attitude towards existing products, the higher the consumer resistance to innovation is in the context of Pakistan. This is consistent with the results in the previous studies (Brunso

et al., 2004; Burgess, 1992; Kamakura & Mazzon, 1991; Smith & Schwartz, 1997; Yu, Li & Chantatub, 2015).

It is a common factor that determines the attitudes of consumers towards current products and is affected by the traditions and skills of current products to serve consumers' needs and wants. The worth of custom and tradition is related to the appropriate personal behavior of consumers to the past and present which shows special respect for the culture, traditions, and social norms (Schwartz, 1992). The worth of tradition involves positive approach of consumers about the products they currently use.

To validate the result with the previous findings in terms of consumers' positive relationship between attitude towards existing product and consumer resistance to innovation, empirical exploration has revealed that social-demographic aspects in Pakistan has a positive influence on the adoption behavior of new products. It recommends that more youthful, higher salary, and better-qualified consumers have a tendency to acknowledge the market innovations (Gatignon & Robertson, 1985). Certain social-psychographic aspects, such as innovative feeling, leadership opinion, and risk-taking behavior, have equally been indicated to be identified with new product adoption (Gatignon & Robertson, 1991; Midgley & Dowling, 1978; Rogers, 1995). While the literatures have given vital experience into the individual qualities of innovative consumers, the understanding is restricted in two ways. In the first place, findings with respect to the impacts of the individual characteristic variables have not been anticipated across studies (Rogers & Shoemaker, 1971; Gatignon & Robertson, 1985; Steenkamp et

al., 1999). As an instance for that, Ostlund (1974) discovered that the impact of demographics was weak, while Foxall (1995) later found that inborn customer innovativeness and new product adoption were absolutely related in the product class but not in the sustenance product classification. Hence, the consumer has a positive relationship with resistance to innovation.

The plausible reason for is explained by Ling and Yttri (1999), that younger consumers are revealed to the telecom devices since young. Consequently, they become more skillful in using smartphones technological innovation. This agrees also with Nysveen et al. (2005) and Lu et al. (2009). This insignificant outcome also indicates that young consumers who are known as IT smart group do not have any complications towards using mobile phone technologies. At their age of between 20 and 30 years old, they use smartphones for various purposes, without any difficulties. Therefore, they want to move towards innovative products that can improve and enhance their capability to learn new application (Lu et al., 2009).

5.2.12 Direct Relationship between Consumer Innovativeness and Consumer Resistance to Innovation

The result in Chapter 4 statistical supports this relationship. In answering the research question, H1 discusses on the relationship between consumer innovativeness and consumer resistance to innovation. This study hypothesizes that consumer innovativeness significantly positively influence the consumer resistance to innovation. The result confirms that the more innovative the consumer, the higher the consumer resistance to

innovation is. This is consistent with the results studies by Albert (1970) and Midgley and Dowling (1978).

This finding is verified with the previous studies. In the previous studies, they found that consumer always desire to learn about novelty and excitement from novel product adoption (Agarwal & Prasad, 1998; Agarwal & Prasad, 1999; Hirunyawipada & Audhesh, 2006; Midgley & Dowling, 1978; Rijnsoever & castaldi, 2011). On top of that, Im et al. (2003) and Bartels and Reinders (2011) investigated the moderating variables for the relationship between consumer innovativeness and rate of adoption by consumers. Im et al. (2003) discovered that buyers' demographic factors like income, age, and education is not a significant moderating determinant when consumer innovativeness influence innovative product adoption.

Additionally, Steenkamp, Hofstede, and Wedel (1999) found that the degree of diffusion rate in a new product is high. Also, failures due to the cost is significant in the organizations. As an initiative to avoid from failures in the diffusion of innovation, marketers also understand the innovative consumer needs and demands as well as the significant target class in the process of diffusion of innovation. Due to the innovativeness, consumer needs and demands are very high and they always look to the new innovation but they resist to the new innovation because they feel every innovative product like a smartphone cannot meet their needs and demands (Hoffmann & Soyez, 2010).

From the result, it is understandable that an individual's innovativeness will have various unique symptoms. With regards to that, this study concentrates on the innovativeness of a particular person as a customer in the context of Pakistan. When consumer innovativeness significantly and positively influences the consumer resistance to innovation, it implies that a consumer is highly innovative and their innovativeness tendency leads to the resistance to innovation (Goldsmith & Flynn 1992; Im et al., 2003; Mahajan et al., 1990). It is normally believed that consumer innovativeness and innovators are significant aspects in the diffusion and adoption of new products (Rogers, 1995; Roger & Shoemaker, 1971; Gatignon & Robertson, 1991). This could happen also in the innovative ideas and services (Hirshman, 1980).

Basically, it connotes that consumers who have a high degree of innovativeness are categorized via (Blackwell, Miniard, & Engel, 2006) a readiness to create changes in the things and ideas; (Boone, 1970) a characteristics of consumer to impact on others to resist the innovative products and ideas (Greenleaf, & Lehmann, 1995). It is very useful for the consumers to make good decisions as well as for solving problems in a social system or organization (Guiltinan, 1999).

5.2.13 Factors of Consumer and Innovation Characteristics Largely Influence/Determine Consumer Resistance to Innovation

To answer the third research question, this study needs to determine the factors for consumer and innovation attributes, which largely influence/determine the consumer resistance to innovation. Specifically, the objective is to determine the factors of

consumer and innovation attributes largely influence/determine consumer resistance to innovation. Hence, the third research question and objective are argued based on H2, H3, H4, and H9.

Motivation, emotion (negative), social influence, and complexity are found as the most critical factors (according to their orders) that determine or affect consumer resistance to a smartphone. Where motivation was +0.283, emotion has +0.185, social influence +0.180 and complexity has +0.162 value of path coefficient (Beta), and these values imply that when motivation goes up by 1, consumer resistance also goes up by 0.238 for emotion,0.18 for social influence, and 0.162 for complexity. it validates that emotion is an important component of consumer response, and the significance of emotion in the field of buyer behavior is originated (Bagozzi, Gopinath, & Nyer 1999; Richins, 1997; Sbai, 2013). Furthermore, social influence plays a important role in inducing the intention to reject the smartphones by consumers in Pakistan. Lopez-Nicolas et al. (2008) contend that social influence has a positive influence on the attitude towards mobile innovations and important predictor of consumer resistance to innovation. Regarding complexity, previous findings have revealed that a new product with an extensive complexity appeal more abilities and considerations to run and use the innovation to build its acceptance and increase the chance of consumers' resistance (Cooper & Zmud, 1990; Dickerson & Gentry, 1983; Tan & Teo, 2000). From the previous studies and results shows that complexity is very important predictor of consumer resisance to innovation (Tan & Teo, 2000).

5.3 Moderating Effect of Consumer Innovativeness

To answer the fourth and fifth research question, this study determines the moderating roles of consumer innovativeness between the innovation characteristics factors and consumer resistance to innovation. Specifically, the objective is to investigate the moderating roles of consumer innovativeness among the innovation attributes and consumer resistance to innovation. To investigate the moderating roles of consumer innovativeness among the consumer attributes and consumer resistance to innovation, this study deals with H1, H2, H3, H4, H5, H6, H7, H8 and H9.

The main objective of this study is to determine whether consumer innovativeness moderates the relationship between self-efficacy, emotion (Negative), motivation, price, and consumer resistance to innovation. The results statistically reveal important findings. For moderator analysis of consumer innovativeness, Table 4.9 shows that moderation does exist in the relationship between self-efficacy, emotion (negative), motivation, price, and consumer resistance to innovation.

The consumer who want to seek out novelty and excitement from new product adoption generaly defined consumer innovativeness in earlier literature (Agarwal and Prasad, 1998; Midgley and Dowling, 1978; Hirunyawipada and Audhesh, 2006). Noteworthy efforts have been made to study innovativeness among consumers who are novelty seeker, which is identified as one of the determinants of consumer adoption or rejection

(Agarwal and Prasad, 1999; Rijnsoever and Castaldi, 2011). Recently, some studies have been conducted to examine moderating variables on the relationship between consumer innovativeness and product adoption behaviors (Im et al., 2003; Bartels and Reinders, 2011).

The findings of this study lead to the acceptance of the hypothesis, that consumer innovativeness moderates the relationship between self-efficacy, emotion (negative), motivation, price, and students' resistance to innovation towards smartphones in Pakistan. In general, three-way of interaction results has demonstrated that the effects of self-efficacy, emotion (negative), motivation, the price of a student as a consumer resistance to innovation vary across consumer innovativeness. This result may be discussed in the view of a majority of previous studies as follows.

5.3.1 Consumer Innovativeness Moderates the Relationship between Price and Consumer Resistance to Innovation

For the fourth research question, "what is the moderating roles of consumer innovativeness between the innovation characteristics (price) and consumer resistance to innovation?, the results reveal that consumer innovativeness moderates the relationship between price and consumer resistance to innovation. In other words, a high consumer innovativeness of change strengthens the relationship between price and consumer resistance to innovation. This relationship is in line with resistance to innovation theory, which reveals that consumer behavior and perception by which they select, organize, and reject the product, are influenced by their experience of purchasing behavior and

gradually change in these experiences as they grow older. This argument is validated by the qualitative findings of Khan and Hyunoo (2009), which revealed that age is the most important indicator for resistance to innovation. The main reason behind this is that young consumers are more conscious about price, because they are more innovative and they are highly sensitive about the price for smartphones in Pakistan and they have a tendency to judge the product features. Furthermore, the consumer behavior towards buying a product might be influenced by the consumer characteristics. Among the factors that might influence are price conscious, quality conscious, innovation conscious and they are confused by their own choices impulsive and brand conscious (Leo, Bennett, & Hartel, 2005). This argument is also validated by Steenkamp et al. (1999) who revealed that consumers are different from each other in terms of attitude towards innovation and novelty.

This study discovers that the respondents who are between 20 and 30 years old are conscious about quality. Also, they are more conscious about price because they are very innovative consumer, who tend to have innovativeness capabilities. Due to the innovations trait they resist for new smartphones, which are highly expensive for them. This is because they are more innovative, and their innovativeness make them conscious about some factors (especially price, and they are motivated as well as emotionally attached with the innovative products due to their self-efficacy).

5.3.2 Consumer Innovativeness Moderates the Relationship between Self-Efficacy and Consumer Resistance to Innovation

The fifth research question is "what is the moderating role of consumer innovativeness between the consumer attributes (self-efficacy) and consumer resistance to innovation?". The results reveal that consumer innovativeness moderates the relationship between self-efficacy and consumer resistance to innovation. In another words, when the consumer innovativeness of change gets high, it weakens the relationship between self-efficacy and consumer resistance to innovation.

A plausible reason for this is that consumers are confident in their ability to understand and cope up with the innovation without problems. It can build-up the possibility of adoption, and will have negative impact on resistance to innovation by consumer. Also, due to the consumer innovativeness, consumers have more ability to understand and solve the problems regarding smartphone adoption. Then, because of their high innovative capabilities, consumers have negative impact on consumer resistance to innovation like smartphones (Ellen & Bearden, 1991; Park & Chen, 2007; Tan & Teo, 2000). Obviously, young university students have innovativeness ability to manage and perform different courses of action for their desired goals. Hence, their self-efficacy or ability have more negative impact on their adoption of smartphone and they resist to the innovation (Bandura, 1997; 1998). Furthermore according to Bandura (1991), consumers behavior is strongly influenced by in line with this argument if the young consumers are more innovative, then they have more self-efficacy in their ability and confidence. This

leads to the high resistance that proves that consumer innovativeness moderates the relationship between self-efficacy and consumer resistance to innovation.

5.3.3 Consumer Innovativeness Moderates the Relationship between Motivation and Consumer Resistance to Innovation

The next research question is "what is the moderating role of consumer innovativeness between the consumer attributes (motivation) and consumer resistance to innovation?". The results reveal that consumer innovativeness moderates the relationship between motivation and consumer resistance to innovation. In another words, a high consumer innovativeness of change strengthens the relationship between motivation and consumer resistance to innovation. Based on that, there is a positive relationship between motivation and consumer resistance to innovation among young students of public universities in Pakistan. This implies that young consumers' high motivation exhibits a high level of consumer resistance to innovation. Hence, a high score on the consumer innovativeness is moderated positively.

A plausible reason for this has been explained by Lee Matthew at al. (2007) and Davis et al. (1992). They discovered that motivation is an internal process of consumers, which provide behavior with direction and power. Power strengthens consumers' determination and concentration of the required behavior. Meanwhile, direction gives specific purpose to the consumer behavior (Lee Matthew et al., 2007). In line with this argument, consumers who have power and direction to their behavior will be motivated and evoke specific behavior towards technology rejection. So, the findings of this study may also

contribute to the existing literatures that if consumers are more innovative it reduces the motivation for new technology and leads to the higher resistance to innovation.

Additionally, with respect to the Pakistani context, majority of young consumers are brand conscious. So, when purchasing smartphones, they are more motivated towards brand not towards innovation. Consistent with this idea, these young consumers are more innovative, then more motivated due to their internal factor but due to the innovativeness they are highly resistant to innovation because they adopt that technology with which they are more familiar with and having good experience with product. So because of high innovativeness, they feel it is a normal product and less motivate them and further leads to a higher resistance to purchase.

5.3.4 Consumer Innovativeness Moderates the Relationship between Emotion (negative) and Consumer Resistance to Innovation

Next, another research question is "what is the moderating role of consumer innovativeness between the consumer attributes (emotion (negative)) and consumer resistance to innovation?". The results reveal that consumer innovativeness moderates the relationship between emotion (negative) and consumer resistance to innovation. In another words, a high consumer innovativeness of change strengthens the relationship between emotion (negative) and consumer resistance to innovation. This agrees with the findings by Gimple (2011), Power and Associates (2012), and Richins (1997). This explains that emotion (negative) is a vital part of consumer reaction, and the criticalness

of the emotion in the research on purchasing behavior has been created (Bagozzi, Gopinath, & Nyer 1999; Richins 1997). Later, the consumption of emotion was determined by both real product performance and a capacity of disconfirmation of desires by Phillips and Baumgartner (2002). This is because young consumers are more focused on the product performance, such as whether the product is users friendly or not. If the product performance is not up to their requirements, their emotional attachment turns negative that make them resist to the innovation.

Consumers' emotional quality determines the purpose of purchasing and utilization decision founded on aesthetic, for example, fineness and innovativeness. This implies that emotional value includes "the perceived utility acquired from an alternative's capacity to provoke feelings or affective state". Emotional quality can be measured using a profile of feelings associated with the preference and consumer innovativeness (Seth et al., 1991). According to Gimpel (2011), aesthetic, such as, magnificence and creativity, can increase the emotional quality of a product besides making consumers more innovative. This explains that if the young consumers are more innovative, then their emotional feelings create negative emotion with innovative product, which eventually increases their resistance to innovation. The moderating role of consumer innovativeness might exist between consumer emotional values and consumer intention to purchase has been concluded from previous researches (Conger, 1998; Foxwall and Goldsmith, 1988; Foxwall and Haskins, 1987; Norman, 1993; Rogers, 1995).

Khan and Hyunwoo (2009) found that numerous users view smartphones as truly unpredictable to utilize and are difficult to understand. Essentially, individual concerns on how they fulfill their customer needs, so that they repeat in purchase for innovative product. This repeat purchase causes the resistance to innovation by the consumer innovativeness that moderates the relationship (Kaveney & Porsarathy, 2011; Ting et al, 2011). Repeat purchase is led by consumers' experience about products. With good experiences, consumers become more innovative and this innovativeness of consumers lead to the emotional (negative) attachment, which causes their resistance to innovation.

Also, consumer behavior towards smartphone is influenced by students study program. The results prove that students in bachelor programmes (66.1%) use and adopt more than those doing master and Ph.D. This is because they are very heavy users of smartphone, and that they have good knowledge about innovation characteristics through which they can be more innovative. This really influences the rate of adoption of smartphones, which leads to consumer resistance to innovation.

It is consistent with the study by Debaillon and Rockwell (2005), which found significant variances of smartphone usage between different types of innovative student groups (college students, university students, and non-students). The programmes of study obviously influences their smartphone usage behavior. Another reason for this result is that respondents who are doing bachelor programmes (between 20 and 30 years old) are very innovative, as found also by Rogers (1995).

5.3.5 Insignificant Effect

On top of that, Table 4.4 also reveals that attitude towards existing product, complexity, perceived risk, relative advantage, and social influence have no significant moderating effect on the relationship between consumer innovativeness and consumer resistance to innovation. This has to be discussed with the views of the majority of previous studies.

The first reason of the insignificant moderating effect is that Pakistani consumers depend on the local made products over imported products. Thus, local advertising companies and manufacturers position their product image in the mind of consumers' unsuccessfully, particularly innovative products. For that, it is very significant to know the consumer behavior, cultural differences, and socioeconomic characteristics of consumer in Pakistan (Rahman & Khan, 2012; Saeed & Baig, 2013). This explains that consumers like to adopt the local products over innovative products in Pakistan.

The second reason is in line with the arguments of Ling and Yttri (1999), that consumer innovativeness does not have any moderating effect among factors. As younger consumers have been exposed to the telecommunication devices since young, they become more skilful in using smartphone innovations. The result is also congruent with Nysveen et al. (2005) and Lu et al. (2009). Another reason is that most of the participants in this study are between 20 and 30 years old and they are not much innovative for some factors. Meanwhile, consumers who are using smartphones to obtain shades, video clip, and wall document do not have good innovative mind. Also, majority of the respondents

come from remote areas and they just like the products that only fulfill their needs and demands.

Besides, the insignificant difference among male and female (68.4% are male) is also a reason, as supported by DeBaillon and Rockwell (2005). This inequality (among male and female) has affected their usage of innovative products like smartphone. Consistent with demographic variables marketers always give importance to the demographic variables because it could show different results for different types of products especially innovative product related to their specific group or segment.

Besides that, the insignificant influence of age on consumer resistance to innovation is consistent with Rozario, Lewis, and White (2010), Poon (2008), and Hong and Tam (2006). Almost all (92.2%) respondents in this study are between 20 and 30 years old. This demonstrates a limited age range, which really affects the results.

The reasons also includes the mixed culture. The consumer resistance to innovation does not significantly vary based on different individuals from different states like Punjab, Khyber Pakhtun Khawa, Sindh, and Baluchistan with mixed society like Punjab (78.8%), Sindh (1.6%), Baluchistan (2.9%), and Khaiber Pakhtunkhwa (16.6%). As a result of the mixed culture, the result shows that it does not play significant role in influencing the consumer resistance to innovation in Pakistan. In the perspective of producers or advertisers, it would be in a superior position to foresee buyers' response/cooperation with the new products to minimize/defeat the ensuing consumers' resistance.

Nevertheless, in terms of mobile phone growth, Pakistan ranks the 7th worldwide and 2th in Asia (Portio research, 2013). 67% of the Pakistan's total population own a mobile phone and only 23% of them own a smartphone (Portio research, 2011). As the rate of smartphone users is comparatively low in Pakistan, it creates consumer resistance to innovation in Pakistan.

Based on the discussions in the previous paragraphs, marketers need to consider the demographic factors in developing their products and services. Furthermore, the companies might take advantage from this useful information to promote particular products or services to this market segment.

5.4 Contributions of the Research

The findings of this study offer numerous contributions theoretically, methodologically, and to the management practice. They are discussed in the subsequent subsections.

5.4.1 Theoretical Contribution

The existing literatures recognize that there is a relationship between consumer characteristics, innovation characteristics, and consumer resistance to innovation without confirming why and how these relationship exists. Hence, this study contributes to the existing literatures by establishing how and why those relationships exist by introducing

moderating variables. For that, this study introduces the direct relationship between consumer characteristics, innovation characteristics, and consumer resistance to innovation, with moderating variables such as consumer innovativeness. Another contribution of this study is that different cultural, social, and economic point of views in western and non-western culture makes relative advantage, perceived risk, and attitude towards existing products are insignificant with the relationship of consumer resistance to innovation. This contrasts the findings in previous studies.

From a theoretical point of view, this study has a number of contributions to the current body of knowledge. It helps enriching the understanding on the relationship between innovation characteristics and consumer resistance to innovation. First, this study has taken new variables which are price into the model. The result of the price reveals that price is one of the most significant variables of consumer resistance to innovation. This mentions that variable inclusion of price into the model as one of the main determinant of consumer resistance to innovation is a very reasonable factor in this study. Also, price is a very important factor that significantly predicts the user resistance to innovation in the market. This explains that the higher the price, the higher the consumer resistance to innovation is. This study also suggests the needs to incorporate price in other particular categories of consumer resistance to innovation studies.

Secondly, this study analyzes the robustness of the theory of resistance to innovation in its capacity to forecast resistance to innovation and have the intention to adopt new products and innovation within different sampling frames. Further, the understanding on

the relationship between consumer characteristics and consumer resistance to innovation with the incorporation of social influence into the model has enriched the current body of knowledge that family, companion, and public opinion impacts a noteworthy part in deciding the ones to accept or reject the use of mobile phones in Pakistan. This social influence decreases the users to adopt mobile phones, in which it is more serious if one has a larger social circle. Emotion is a dominant part of consumer reaction, and the critics of emotion in the circle of customer behavior has been made (Bagozzi, Gopinath, & Nyer, 1999; Richins, 1997). In fact, the utilization of emotions is determined by both real product execution and the capacity of disconfirmation of desires (Phillips & Baumgartner, 2002).

Third, this study integrates the core consumer characteristics to understand the relationship between consumer characteristics and consumer resistance to innovation (i.e. self-efficacy and motivation) in one construct. All the antecedents' determinants are supported in this study except three factors (i.e. perceived risk, attitude towards existing product, and relative advantage). The major findings in this study provides significant factors that might employ in studying the consumer resistance to innovation and also understanding the important factors that might impact the consumer resistance to innovation. The all significant determinant in this study can be used in determining the resistance of other technologies.

Fourth, the inclusion of moderator in this study to understand the moderating effect on the relationship between innovation and consumer characteristics with consumer

resistance to innovation is very impactful. Theoretically, scientists recommend that consumer innate innovativeness has a very important influence on the selection of innovative product (Citrin et al., 2000; Im et al., 2003; Lassar et al., 2005; Rogers, 2003). However, the strength of the relationship among consumer innovativeness and the resistance of innovation are inconsistent with the previous research (Im et al., 2007) and deficiency of consensus (Hauser et al., 2006; Roehrich, 2004). This opens up an argument that consumer innovativeness requires further exploration into its influence on the adoption of innovative products. Most studies in the literatures tested consumer innovativeness as a moderating variable through exploratory analysis, but this study tests consumer innovativeness as a moderating variable through CFA.

Fourth, the literatures showcase that there are too few studies make use of resistance to innovation theory in determining the consumer resistance to innovation in Pakistan. Furthermore, using resistance to innovation theory in Pakistani culture has also contributed to the existing body of knowledge. In addition, by using the different sampling framework and innovative products, the results of this study support the robustness of the innovation resistance theory to predict the consumer resistance to innovation. Hence, this study contributes to the current body of knowledge on consumer resistance to innovation through providing the deep insight from Pakistani perspective. All in all, all above variable contributed in resistance to innovation and appraisal theory.

5.4.2 Methodological Contribution

The findings of this study suggest a significant contribution in methodological point of view. In the context of smartphone, previous studies demonstrate there is a lack of measurement for consumer resistance to innovation. Previous studies on consumer resistance to innovation used many different methodical practices but limited of those studies to the good knowledge of the researcher by the use of SmartPLS 2.0 M3 (Ringle et al., 2005). On top of that, align with Ringle et al. (2005) methodological techniques to examine the moderating effect of consumer innovativeness between attitude towards existing product, complexity, emotion (negative), motivation, price, perceived risk, relative advantage, self-efficacy, social influence, and consumer resistance to innovation is proposed. According to Ringle et al. (2005), SmartPlS 2.0 M3 is the best tool that performs a number of functions, for example, CFA, multiple regression, correlation analysis and multivariate data analysis. It also has the ability to examine the relationship between variables.

On top of the above contributions described in the previous paragraphs, this study also contributes in revising the items for the measurement tool in the study. As an example, consumer resistance to innovation tool has been adopted from the previous studies which was developed by Kleijnen et al. (2009), Yang (2005), Szmigin and Foxal (1998), and Sheth (1981). By using the CFA, where a number of items that have crossed loadings below than the minimum criteria of 0.5 (Hair et al. 2005) have been dropped and a new measurement scales was developed.

5.4.3 Managerial Contribution

Based on the results of this study, one of the factors influencing the consumer resistance to innovation, in mobile phone industry smartphone, is that it is one of the best communication channels. This is because it provides users with smartphone functionalities of both personal digital assistant and cell phone. In the mobile phone industry, experts expect that smartphone can be dominant in mobile phone industry in Pakistan.

On the other hand, smartphones are facing different realities in the market, like consumer resistance to innovation. Due to this reality, this study establishes a few implications on the basis of study findings, those can be useful in helping the smartphone companies in Pakistan to increase the smartphone demand among consumers in the market and gives deep insight to the smartphone industries about the factors, significantly influencing consumer resistance to innovation in Pakistan. Because in the Pakistani market, targeted consumer in this study like university graduate have a number of cell phones or smartphone options in choosing their preferable smartphone brands. Thus, it is very important for smartphone companies to make future improvements and use different strategies to focus on the predicted factors and overcome the consumer resistance to smartphone in the market.

Emotion (negative) has the strongest significant influence between other independent variables in impacting the consumer resistance to smartphone among public university students in Pakistan. Therefore, smartphone companies are recommended to reduce the

consumer resistance to innovation (smartphone) through applying these practical implications which are drawn on the basis of this study results. Based on the study findings, for emotion (negative), smartphone companies are recommended to give smart functionalities to the consumers that suit their life style (young consumer) that create positive emotion to buy the smartphone instead of resisting it.

Social influence significantly influences consumer resistance to innovation because young consumers normally want to use some cool smartphones to show their friends. It has a positive impact on their life style instead of consumer resistance to innovation by social influence. University students are more socialized and this more socialization of consumers create positive and negative word of mouth between friends towards smartphone brands. Therefore, smartphone companies are recommended to provide innovative and new advertisements for the young university students who are the main users of smartphones. In addition, companies are also suggested to offer good service to meet the consumer's demands for the creation of positive word of mouth.

This study also provides a deep insight about the consumer perception of price that has a significant influence on consumer resistance to smartphone among university students in Pakistan. Thus, smartphone companies are recommended to emphasis on the smartphone price in targeting the young consumers in the market. This is because in Pakistan, there are a number of smartphone brands and consumers are very price conscious. According to the law of supply and demand, consumers are more experience and have knowledge about smartphone brands. Hence, a high price smartphone creates resistance to

purchasing. Accordingly, smartphone companies are recommended to offer good prices for consumers who have low purchasing power like students. In Pakistan, university students have limited pocket money and they are the main users of a smartphone. Smartphone companies can reduce their smartphone price because consumers tend to be attracted low price and low resistance to innovation.

Nevertheless, this study empirically proves that the moderating effect of consumer innovativeness, for instance, motivation influence is more important for consumer innovativeness. Meanwhile, self-efficacy is more salient to the innovativeness of consumers, and a similar price is more important to the consumer innovativeness. Emotion (negative) is a more salient to the consumer innovativeness. As a result, four implications for the companies and managers is that they need to focus on these factors when they launch new smartphones in the market. Companies and managers may provide the innovative products with salient features to focus the consumers in the context of price, self-efficacy, motivation, and emotion (negative). All in all all these practical implication given on the basis of study findings.

5.4.4 Limitations and Suggestions for Future Studies

First, as students are the sample for gathering data, the results are not generalizable to non-student sample. Therefore, future research needs to consider the sample, taking into account those not students so that the results are more generalizable. Further, more than 90% of the respondents are between 20 and 30 years old. This further limits the ability to

generalize the findings. Thus, this study recommends also for future studies to include a wider age range. On top of that, the high number of male respondents (68.4%) also limits this study. This makes gender-based tests a little biased. On the other hand, this study only involves students in public universities. It is recommended that future studies involve students of both public and private universities in Pakistan.

Future studies might overcome all described problems by applying new sampling techniques with a larger population of smartphone users and this could solve the problem of generalization of the findings.

As this study is carried out in the context of Pakistani consumers, the findings are not able to be generalized to consumers of other cultures and countries. The generalization of findings in this study beyond Pakistan requires another study to confirm and verify the results to ensure that it is consistent with the findings of other countries. It is important because culture difference can influence the resistance to innovation. So, it is very essential to conduct the study in a cross cultural context like national and international context in future studies. It is believing that a duplication of this framework to other countries can discover the significant factors that influence consumer resistance to innovation.

It is so interesting to notice that emotion (negative), price, and social influence are the most significant variables for determining the consumer resistance to innovation. This study is one of the first studies to examine the relationship involving consumer resistance

to innovation as well as in the field of smartphone. Due to the complexity of validation, further investigation of emotion, price and social influence may be essential for future research.

On the other hand, this study is quantitative in nature, and it relies on questionnaire for gathering data. As a response to that, a qualitative or mixed-mode approach on consumer resistance to innovation in the context of Pakistan would be good for the future.

Having gathered the data, SPSS and SmartPLS 2.0 M3 were used to determine the causal relationship between different variables or factors in the model. The tools are very helpful. Accordingly, it should be used in examining the cause-effect relationship among different variables in future model.

Finally, this study is a cross-sectional that measures consumer's resistance to innovation at one time. This is another limitation of the study because cross-sectional is quite vague in proving a cause- effect relationship (Sekaran, 2000). This is because consumer perception, attitude, and behavior for innovation change over time. Nevertheless, this study examines the model of consumer resistance for different innovative products and services also. Hence, the model of consumer resistance to smartphone may be extended and applied on empirical data, which can be collected from different geographical areas.

5.5 Conclusion

This study has drawn the model of resistance to innovation, to examine the factors influencing consumer resistance to innovation based on resistance to innovation and appraisal theory (Ram, 1987; Arnold, 1960). Theory can provide deep insight of factors or antecedent influencing resistance to innovation that can better explain the consumer resistance and adoption of the technology by the consumer behavior and factors that predict the consumer resistance to innovation. As a result, it increases the practical and theoretical contribution of this study.

The objective of this study is to investigate the factors influencing consumer resistance to innovation (smartphone) in the context of Pakistan. Based on the gathered data, seven out of ten direct hypothesis are significantly supported, where emotion (negative), attitude, existing product, motivation, and self-efficacy are from consumer characteristics. Meanwhile price, social influence, complexity, and relative advantage are from innovation characteristics. Emotion, motivation, price, complexity, social influence, and self-efficacy are the best predictor of consumer resistance to innovation.

On top of that, consumer innovativeness as a moderating variable is also tested to investigate its indirect relationship. It is proven as a good predictor of consumer resistance to innovation. Similarly, perceived risk, relative advantage, and attitude towards existing product is not found as a predictor of consumer resistance to innovation. The proposed theoretical framework of consumer resistance to smartphone represents an

acceptable where 50% (R-square value) of variation in consumer resistance is caused by the hypothesized factors.

Finally, there is an evidence of moderating effect of consumer innovativeness on the relationship between attitude towards existing product, complexity, emotion (negative), motivation, price, perceived risk, relative advantage, self- efficacy, social influence, and consumer resistance to innovation. This study is able to provide supports for four moderation interactions; emotion, motivation, price, and self-efficacy that have some moderating effects on the relationship between consumer innovativeness and consumer resistance to innovation. Meanwhile, attitude towards existing product, complexity, perceived risk, relative advantage, and social influence are insignificant with the relationship of consumer innovativeness and consumer resistance to innovation.

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APPENDIXES A
QUESTIONNAIRE

UUM SCHOOL OF TECHNOLOGY MANAGEMENT

Universiti Utara Malaysia 06010 UUM Sintok, Kedah, Darul Aman, Malaysia.
Tel: 6049285045, Fax: 604-9285761, www.cob.uum.edu.mv

Dear Participant,

The purpose of the attached survey is to understand the Innovation characteristics and consumer characteristics regarding the consumer resistance to the innovation by the individual student's in Pakistan in Public Universities of Pakistan. There are some statements given in this survey which you are requested to answer. This questionnaire is designed to assess your perception resistance to innovation.

There is no right or wrong answers in this survey. All your answers will reflect your personal opinion about the innovation characteristics and consumer characteristics with the moderating role of consumer innovativeness in the field of technological innovation. Individual responses to this survey will be kept **CONFIDENTIAL** and will **NOT** be disclosed. Your institution will NOT have access to the information you have provided herein. **No reference** will be made in written or oral materials that could link you to this study. **Only grouped data will be reported in the results.**

Please read carefully the instruction at the beginning of each section, and answer all the statements as accurately as possible. Your time and cooperation will be greatly appreciated. Please take a few minutes to fill out this survey questionnaire.

Thank you in advance for taking time to complete this survey.

Yours faithfully,

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1 = Disagree very much | 2 = Disagree moderately | 3 = Disagree slightly | 4 = Agree slightly | 5 = Agree moderately | 6 = Agree very much |

Relative Advantage		**1**	**2**	**3**	**4**	**5**	**6**
1	**Smartphones are more convenient, reliable, and useful than normal mobile phones**. (Smartphone munasib, reliable aura am mobile se ziada isstemal k qabil hay)						
2	**The Smartphone has good integration of a wide range of functions and services**. (Smartphone bohot achi services and functions ka majmooaa hay)						
3	**Smartphone are more fashionable, stylish, and trendy**. (smartphone ka design aur isska style bohot khoobsoorat hay)						
4	**The price or quality relationship is acceptable in Smartphone, as I can enjoy other free services (e.g. E-mail, voicemail, MSN & Skype, word processor) anywhere I want**. (Smartphone ki qeemat aur quality qabil-eqabool hay jis se me isski tamam free services kisi bhi jaga isstemal aur enjoy ker sakta hon)						
5	**Smartphones bigger screen and full keyboard make different functions easier to use.** (Smartphone ki screen aur keyboard baray hain aur iss se isko isstemaal kerna bohot assan hay)						

Self-Efficacy		**1**	**2**	**3**	**4**	**5**	**6**
1	**I know how to use smartphones**.(Main janta hoon Smartphone ko kesay isstemaal kerna hay)						
2	**I am confident of understanding and using smartphone**. (Main Smartphone ko samjhnay aur isstemaal kernay se mutmaieen hoon)						
3	**I am comfortable with using technical and advanced consumers‟ products (e.g. mp3 player, computer, digital camera, PDA, etc).** (Main bohot easy mehsoos kerta hoon tamam electronics ki masnoaat ko isstemal ker k)						
4	**I would be able to use smartphone, even if I have never used it before.** (Main ne pehlay kabhi isstemal ni kia Smartphone ki iss k bawajood me issko use kernay k qabil hoo jaionga)						

Motivation		**1**	**2**	**3**	**4**	**5**	**6**
1	**It is very exciting and entertaining to use smartphones (Ye bohot dlchaasap aur Smartphone** ko isstemaal kernay se tafreeh milti hay)						
2	**Using smartphone would be helpful to my work** (Smartphone k isstemaal se apnay kaam ma madadgaar sabit hooga)						
3	**I need smartphone for its new features/functions**.(Mujhay Smartpone ki nai khasoosiat aur function ki waja se isski zarurat hay).						
4	**I have intentions to use smartphone in the near future**. (Mustakbil qareem ma Smartphone isstemaal kernay ka irada rakhta hoon)						

Attitude towards existing Product		**1**	**2**	**3**	**4**	**5**	**6**
1	**I do not like the idea of putting so many functions together in a cell phone**.(Main ek mobile phone ma ek sath bohot se functions ya kaam kernay ko pasand nahi kerta)						
2	**I am quite satisfied and have favorable attitude towards normal mobile phones**. (Main bohot mutmaeen hoon aura am mobile phones bohot achay hain)						
3	**I prefer compact and handy mobile phones**. (Main compact aur assan mobile ko targee daita hoon)						

Complexity		**1**	**2**	**3**	**4**	**5**	**6**
1	**Smartphones may be complex to use**. (Smartphone isstemal kernay ma pecheeda hoo sakta hay)						
2	**Understanding and using smartphones may require more skills and or mental effort**.(Smartphone ko sajhnay aur isstemal kernay ma ziada maharat aur zehni koshish ki zarurat hoti hay)						
3	**It may be a bit difficult to understand internet, gaming, mp3, and PDA functions in smartphones**.(Smartphone ma internet, game, aur PDA afaal ko samjhna thora mushkil hay)						
4	**It may be difficult to make updates & put new software in smartphones**.(Ye update kalye Smartphone ma nai software dalna mushkil hay)						

Perceived Risk		**1**	**2**	**3**	**4**	**5**	**6**
1	**Smartphone performance may not meet my expectations**.(Smartphone ki kargardagi meri twaqooaat ko poora ni ker saktay hain)						
2	**I afraid of getting out of battery, while I need to use smartphone for a long time**.(Mujhay ek taweel waqat kalye Smartphone isstemaal kernay ki zarurat hay aur lambay arsay kalye batry bhi isstemal kernay ki zarurat hay)						
3	**I fear of losing much money if I lost/broke my smartphone**. (Mujahy Smartphone gum hoonay aur tootnay se raqam doobnay ka khoof hay)						
4	**I fear of losing my personal information and other important data, if I lost my smartphone**. (Main ne ager Smartphone ko khoo dia to tu meri zaati maloomat degar ahham data khoonay ka khoof hay)						
5	**It is risky to spend relatively more money for buying a smartphone**. (Ye ek Smartphone khareednay nisbatan ziada paisa kharch kernay per khatra hay)						
6	**Smartphone can easily break if dropped etc., and may stop functioning**.(Smartphone girr jai tu tootnay ka khatra aur iss k kaam kerna bhi ruk sakta hay)						

Social Influence		**1**	**2**	**3**	**4**	**5**	**6**
1	**Friends and family are very helpful to me in making decision of buying smartphone**. (Dostoo aur family walay Smartphone khareednay ma bohot madadgaar saabit hotay hain)						
2	**I will ask the openions from my friends and family when buying a smartphone**. (Jab me Smartphone khreedoonga tu apnay dostoo aur family se mashwara ker k loonga)						
3	**Friends and family give me a valuable advice when I buying a smarphone.**(jab me ne Smartphone khareedna hoo to doost aur family walo ne bohot qeemti aara daitay hain)						
4	**I trust my friends and family about their openions and advices of smartphones**. (Mujhay apni family aur dostoo k mashwaray per bohot aitmaad hay)						
5	**I will purchase a smartphones because my friends and family recommend to me.** (Main Smartphone khareedoonga q k meri khandaan aur dostoon ne kaha hay)						

Price		**1**	**2**	**3**	**4**	**5**	**6**
1	**Price is the most important factor when purchasing Smartphone**.(jab smartphone khareedna hoo to qeemat bht aham rukun hay)						
2	**I compare prices of other Smartphone‘s brands and store brands before I choose one**.(Khareednay se pehlay me ne smartphone aur dossray brands ki qeematoon ko compare kia)						
3	**I buy Smartphone because they are worth to used regarding between with their price & usage quality**.(Main ne smartphone isi lye khareeda kuin k ye qeemat aur quality wise bht acha hay)						
4	**I am uncertain which Smartphone‘s brands provide real value for money in terms of product quality** (mujhay thoora shaak hay k smartphone brand asal value daita hay k ni)						
5	**The cheapness of some Smartphone‘s brand suggests to me that they may have some risks, such as low quality**.(Sasta smartphone hoosakta hay laina khatra na hoo quality burin a hoo)						

Emotions		**1**	**2**	**3**	**4**	**5**	**6**
1	**I feel angry with smartphone purchase decision** (Main smartphone ki khareedaari k faislay ma gussa mehsoos kerta hn)						
2	**I feel irritated with your smartphone purchase decision** (Main smartphone ki khareedari k faislay per jalan mehsoos kerta hn)						
3	**I feel frustrated with the usage of smartphone**.(Mian smartphone k isstemal k sath mayoosi mehsoos kerta hn)						
4	**I scared from the usage of smartphone** (Main smartphone k isstemaal se darr mehsoos kerta hn)						
5	**I afraid to buy the smartphone** (Main smartphone khareednay ma khoof mehsoos ker raha hn)						
6	**I am anxious to purchase the smartphone** (Main smartphone ki khareedari kalye bohot fikar mand hoon)						

Consumer Innovativeness (Moderator)		1	2	3	4	5	6
1	**I am really interested in learning about new products (new brands, quality, and improvements)**. (Main nai massnooaat ma dilchaspi rakhta hoon).						
2	**Right now, I am using many of new products**. (Ab tak me ne bohot new cheezain isstemaal ki hain)						
3	**I think new product are really useful** (Meray khayal ma nai cheezain isstemaal k qabil hain)						
4	**I love to try new products before anyone else** (Mujhay nai cheezain isstemal kernay ko pasand kerta hoon)						
5	**Presently I am using new products and services appealing to me** (Main aaj kal nai cheezain isstemaal ker raha hn)						
6	**People often ask me to give my opinion about products (new brands, quality, and improvements)**. (loog mujhay nai masnooaat k baray ma mashwara daitay hain jaisay new brand, qeemat etc)						
7	**Lately, I have been hearing a lot about new products appealing to me** (Haal he ma ne nai cheezo k baray ma bohot suna hay)						

Consumer Resistance to Innovation		1	2	3	4	5	6
1	**I will wait to buy smartphone till it proves beneficial for me**.(Maian intezaar karoonga smartphone kalye jab tak ye meray lye faida mand saabit ni hota)						
2	**I need to clarify some queries and justify the reason to buy smartphone**. (Main ne kuch sawaalat ko wazay aur smartphone ko khareednay kalye kiwaja se jawaz paish kernay ki zarurat hay)						
3	**I am waiting for the right time and required capability to buy smartphone**.(main smartphone khareednay kalye darust waqat aur matlooba salahiyat kalye intezaar ker raha hoon)						
4	**Buying smartphone maybe a wastage of money**. (Smartphone khareedna shayad paisay ka zia hay)						
5	**I fear of wasting my time using smartphones**.(Mian smartphone ko isstemaal kertay howay apna waqat barbaad ker k khoof mehsoos kerta hn)						
6	**Smartphone may decrease my autonomy**.(Smartphone meri khud mukhtaari kam ker sakta hay)						
7	**I need to get a solution for some of my complaints / objections before I buy smartphone**.(Main ne apni shikayaat ma se kuch kalye ek hul hasil kernay kalye						

	zarurat hay aur ittrezaat ma smartphone khreednay se pehlay soochta hoon)						
8	**I fear of certain changes smartphone may impose on me**.(smartphone ki kuch tabdeelion se mujhay khoof aata hay)						
9	**It is unlikely that I buy smartphone in the near future**.(Ye mustakbil kareeb ma smartphone khareednay k imkaan nahi hain)						
10	**I don't need smartphone** (Mujahy smartphone ki zarurat nahi hay)						
11	**Smartphone is not for me**.(Smartphone meray lye nahi hay)						

Demographic Information

1- What is your gender?(aap ki jins kia hay)

Male ☐ Female ☐

2- What is Your Province? (aap ka sooba konsa hay)

Punjab ☐ Sindh ☐ Balouchistan ☐ KPK ☐

Please mention your age (Baraay meharbani umer bataien)

20-30 ☐ **30-40** ☐ **40-50** ☐ **50-above** ☐

3- What is your Current Study Program? (aapka mojooda taalemi shooba konsa hay)

Bachelor Degree ☐ Master ☐ PhD

4- Your Mobile Phone Service Provider? (aap kon si mobile service isstmaal kertay hain)

Ufone ☐ Mobilink ☐ Telenor ☐ Warid ☐ Zong ☐

5- Which Type of Mobile Service You May Subscribe? (aap ne konsi service isstmaal ker rahay hain)

Prepaid ☐ Postpaid ☐

6- What is the brand of your Smartphone? (Mention Below) (aap k mobile ka model konsa hay)

Nokia ☐ Samsung ☐ LG ☐ Apple ☐

7- What is your Mod of study?(aapka taleemi silsala konsa hay)

Full Time Student ☐ Distance Learning ☐ Part Time ☐

8- Personal spending monthly? (aapki monthly jaib kharach kitna hay)

10000 ☐

10001-15000 ☐

15001-20000 ☐

20001-25000 ☐

25001-Above ☐

Thank you for your time and effor

APPENDIXES B

Factor Loadings

	ATEP	CI	COM	CR	EMO	MOT	P	PR	RA	SE	SI
ATEP2	**0.86401**	0.151586	0.338389	0.244984	0.318925	0.135107	0.217121	0.135793	0.122311	0.240711	0.142783
ATEP3	**0.84978**	0.210588	0.412482	0.233979	0.292784	0.203931	0.232185	0.178644	0.189764	0.093922	0.156162
CI1	0.288067	**0.7055**	0.22836	0.367091	0.109189	0.554911	0.390715	0.12099	0.492767	0.486107	0.404363
CI3	0.18017	**0.72516**	0.173779	0.336728	0.084461	0.516281	0.388536	0.202691	0.419587	0.456963	0.361685
CI4	0.101426	**0.76036**	0.084251	0.310169	0.024685	0.495414	0.323461	0.145881	0.44043	0.439143	0.355887
CI6	-0.01032	**0.6631**	-0.01006	0.316781	0.026871	0.356006	0.28349	0.067631	0.348376	0.444604	0.330847
CI7	0.028919	**0.70904**	0.089983	0.35416	0.019462	0.453885	0.373524	0.278379	0.393224	0.367407	0.413806
COM1	0.267802	0.142227	**0.73928**	0.277787	0.198959	0.149185	0.229545	0.1939	0.164834	0.06805	0.039954
COM2	0.342944	0.184374	**0.82077**	0.32299	0.253295	0.158702	0.265917	0.218048	0.146849	0.092914	0.165918
COM3	0.394012	0.175567	**0.8393**	0.328935	0.364027	0.199576	0.203053	0.12719	0.19003	0.07571	0.15656
COM4	0.380872	0.07197	**0.73416**	0.191949	0.36515	0.089312	0.116619	0.135015	0.07449	0.011799	0.105671
CR1	0.182127	0.410112	0.269892	**0.92285**	0.235231	0.422583	0.423399	0.226892	0.371977	0.331533	0.37011
CR10	0.173889	0.323115	0.281603	**0.90453**	0.238633	0.351334	0.340807	0.138325	0.286634	0.239513	0.319844
CR11	0.173889	0.323115	0.281603	**0.90453**	0.238633	0.351334	0.340807	0.138325	0.286634	0.239513	0.319844
CR2	0.224539	0.293325	0.150189	**0.53193**	0.11551	0.238891	0.31739	0.263826	0.289203	0.208026	0.278002
CR3	0.3045	0.366234	0.349048	**0.63482**	0.196038	0.333393	0.374202	0.149628	0.347039	0.257564	0.375983
CR7	0.287488	0.269435	0.364342	**0.53354**	0.329123	0.281067	0.296055	0.111043	0.23481	0.138186	0.279259

CR8	0.182127	0.410112	0.269892	**0.92285**	0.235231	0.422583	0.423399	0.226892	0.371977	0.331533	0.37011
EMO1	0.340055	0.115676	0.285011	0.314697	**0.89465**	0.014143	0.137194	0.031384	0.125714	0.057446	0.154821
EMO2	0.324141	0.118674	0.356927	0.203249	**0.83068**	0.024368	0.134742	0.098647	0.093426	0.103645	0.067812
EMO3	0.144904	-0.05679	0.260061	0.145127	**0.63738**	-0.11155	0.010134	-0.02339	-0.01729	-0.03118	0.039216
MOT1	0.188177	0.60992	0.231322	0.434756	0.038539	**0.83619**	0.366206	0.134972	0.583606	0.628272	0.329118
MOT2	0.191076	0.509958	0.096826	0.288037	-0.02656	**0.81832**	0.29908	0.125424	0.579784	0.572795	0.317079
MOT3	0.104053	0.559965	0.1186	0.347571	-0.06256	**0.75308**	0.315477	0.153022	0.494635	0.516998	0.336826
MOT4	0.130086	0.406235	0.144165	0.304003	-0.00282	**0.71944**	0.324728	0.210979	0.488841	0.416022	0.290897
P2	0.309399	0.438024	0.252224	0.399596	0.091926	0.366355	**0.79641**	0.439898	0.327423	0.30433	0.408964
P3	0.189991	0.416459	0.19135	0.352327	0.111804	0.39113	**0.78347**	0.394906	0.390821	0.362154	0.371558
P4	0.119163	0.293152	0.218037	0.389433	0.126284	0.255524	**0.76773**	0.37593	0.319441	0.327593	0.400623
P5	0.145842	0.313864	0.099641	0.191692	0.046471	0.215785	**0.61692**	0.37984	0.240488	0.238096	0.296528
PR2	0.194896	0.241046	0.24539	0.162279	0.04524	0.157132	0.372931	**0.68329**	0.138457	0.056204	0.228864
PR3	0.157118	0.166463	0.223264	0.213704	0.040492	0.158991	0.399454	**0.80768**	0.179522	0.119235	0.242428
PR4	0.104709	0.125607	0.072497	0.166193	0.037757	0.107062	0.384208	**0.7796**	0.145469	0.107998	0.209355
PR5	0.119627	0.140682	0.145327	0.138616	0.070083	0.112083	0.393424	**0.74393**	0.104151	0.125352	0.259643
PR6	0.09176	0.207537	0.092491	0.146061	-0.01296	0.192816	0.416603	**0.68144**	0.237111	0.227329	0.320031
RA1	0.112862	0.513037	0.158128	0.275129	0.001577	0.525379	0.303966	0.13861	**0.74408**	0.459953	0.310999
RA2	0.119145	0.42827	0.135669	0.337136	0.081919	0.576043	0.292005	0.135604	**0.82888**	0.543234	0.344116
RA3	0.205336	0.471044	0.195297	0.321582	0.09256	0.604029	0.333647	0.155185	**0.81514**	0.530149	0.309601
RA4	0.07982	0.417925	0.064456	0.27747	0.053973	0.481376	0.363458	0.200244	**0.72232**	0.457276	0.317679

RA5	0.164666	0.440063	0.170033	0.330159	0.148462	0.434781	0.369337	0.204881	**0.70655**	0.443503	0.323212
SE1	0.187737	0.498692	0.094946	0.274632	0.079474	0.550945	0.349564	0.112868	0.548299	**0.86557**	0.312583
SE2	0.155135	0.438619	0.093966	0.227109	0.009134	0.519292	0.257053	0.099973	0.482794	**0.78722**	0.297794
SE3	0.173136	0.511522	0.081232	0.328339	0.085635	0.611601	0.392225	0.183054	0.540178	**0.84223**	0.32882
SE4	0.073898	0.478608	-0.04988	0.141925	-0.01532	0.484456	0.304738	0.120591	0.433413	**0.62415**	0.30794
SI1	0.183165	0.44417	0.158622	0.294996	0.108973	0.344939	0.333822	0.197211	0.377165	0.349227	**0.7208**
SI2	0.066561	0.357702	0.135599	0.300928	0.089336	0.276143	0.373335	0.347103	0.331578	0.239867	**0.77205**
SI3	0.176388	0.438237	0.113098	0.401975	0.109929	0.360866	0.417838	0.292534	0.333419	0.298171	**0.86798**
SI4	0.103617	0.427272	0.098421	0.388034	0.075065	0.353593	0.457885	0.274523	0.316747	0.358272	**0.8017**
SI5	0.15186	0.286531	0.099818	0.228201	0.114609	0.205891	0.333957	0.159459	0.273415	0.256427	**0.68717**

APPENDIX A

UUM
Universiti Utara Malaysia

Awang Had Salleh Graduate School of Arts and Sciences
UUM College of Arts and Sciences
Universiti Utara Malaysia
06010 UUM Sintok
Kedah Darul Aman, Malaysia
Tel: (604) 928 5865/5954
Fax: (604) 928 4997
http://ahsgs.uum.edu.my

Awang Had Salleh Graduate School of Arts and Sciences
UUM College of Arts and Sciences

"KEDAH SEJAHTERA"

UUM/CAS/AHSGS/4-3/26
23 May 2012

Nassir Jabir Farhan Al-Khafaji (93456)
Room 101, Block H, DPP Maybank
Universiti Utara Malaysia

Dear Sir/Madam

DATA COLLECTION FOR PROJECT PAPER/ THESIS

This is to certify that **Mr. Nassir Jabir Farhan Al-Khafaji (matric number: 93456)** is a full-time graduate student in Doctor of Philosophy (Information Technology) at UUM College of Arts and Sciences.

He needs to do his field study and data collection for his project paper/thesis in order to fulfill the partial requirements of his graduate studies.

We sincerely hope that your organization will be able to assist him in the data collection and the distribution of the questionnaires for his research.

Thank you.

"ILMU BUDI BAKTI"

Yours sincerely

ABD. RAHMAN MOHD. ISA
Assistant Registrar
for Dean
Awang Had Salleh Graduate School of Arts and Sciences
UUM College of Arts and Sciences
Universiti Utara Malaysia

c.c UUM/CAS/AHSGS/93456

This is to certify that the signature appears on this document/Certificate/ Marriage Certificate/Birth Certificate is that of Mr. NASSIR JABIR FARHAN AL-KHAFAJI who is from University Utara Malaysia.

Mohd Farriq Osman
Executive Officer
Consular Division
Ministry of Foreign Affairs
Putrajaya Malaysia
18 SEP 2012

MINISTRY OF FOREIGN AFFAIRS MALAYSIA

The Eminent Management University

APPENDIX B

بسم الله الرحمن الرحيم

السيد ---------- المحترم

تحيه طيبة ...

م / طلب مقابلة

يرجى التفضل بالموافقة على اجراء مقابلة مع سيادتكم حول موضوع (تبادل المعلومات بين الدوائر احد تطبيقات الحكومة الاكترونيه ذي قار / العراق) لكوني طالب دكتورة في قسم الحاسبات في جامعة اوتارا الماليزية . هذة الدراسة تعمل على التحقق وكتشاف العوامل التي قد تاثر على عملية تبادل المعلومات بين الدوائر في محافظة ذي قار . هذه المقابلة سوف تساعد على الحصول على المعلومات حول تبادل البيانات او المعلومات بين الدوائر . الناتج من هذا البحث او حصيلة هذا البحث قد تادي الى منفعة الى الدوائر والمحافظة بصورة عامة لمعرفة العوامل التي قد تادي الى فشل او تقلل عملية تبادل المعلومات بالطرق الاكترونيه . دون مساعدتكم ودعمكم في هذا البحث لن يكتمل ولان يرى النور . وتاكد أن جميع المعلومات المقدمة هنا هي لأغراض أكاديمية.

السيد ناصر جابر فرحان الخفاجي، وهو طالب دكتوراه في مجال تكنولوجيا المعلومات في جامعة أوتارا ماليزيا (UUM) / ماليزيا. ويشرف على هذا البحث من قبل:

(1) Dr. Abdul Jaleel Kehinde Shittu abdialeel@uum.edu.my
(2) Prof Madya Dr. Wan Rozaini Sheikh Osman. rozai174@uum.edu.my

شكرا جزيلا لمساعدتي لتحقيق أهداف هذه الدراسة التي هي مهمة جدا في الكشف عن القضايا المصيرية للحكومة الإلكترونية في محافظة ذي قار. لا تتردد في الاتصال بي في +60-1116556123 أو nassirfarhan@yahoo.com أو s93456@student.uum.edu.my إذا كانت هناك حاجة أي معلومات إضافية.

ولكم الامر مع التقدير

بسم الله الرحمن الرحيم

م ا الى من يهمه الامر

نؤيدلكم ان السيد ———————— قد اجرى مقابلة مع السيد ———————— بخصوص جمع بيانات حول تبادل المعلومات (تفاعل بين الدوائر احد انواع الحكومة الاكترونيه) بعد ان تم المداوله من خلال طرح الاسئلة الموجهه من قبل طالب الدكتوراه وتمت المناقشة على مرحلتين جميع الاسئلة بصورة مفصلة .

تاريخ اول مقابلة : الوقت :

تاريخ ثاني مقابلة : الوقت :

مع التقدير

اسم مدير الدائرة

ايميل مدير الدائرة او الدائرة

APPENDIX C

First Session of Interviews

1. **Biography of the interviewees (First Section: First Part)**
   1.1 Please, can you briefly introduce yourself?
   1.2 How long you have been working in the agency?
   1.3 Can you share with me your experience in this agency?

2. **General Questions (Second Section: First Part)**
   2.1 Will you please give some information about the project (electronic interaction among local agencies)?
   2.2 What is the purpose of this project (the electronic interaction among local agencies)?
   2.3 How many employees are there in this project (the electronic interaction among local agencies)?
   2.4 When did the project start?
   2.5 Why did you change from traditional to the digital (electronic) applications?
   2.6 At the moment, do you exchange the information among the agencies?
   2.7 What types of information do you exchange among the governmental agencies?
   2.8 What is the information exchange percentage among agencies involved in this project (electronic interaction among local agencies)?
   2.9 What is the type of interaction (electronic information sharing) among agencies?
   2.10 What are the factors that affect the process of the electronic interaction among local agencies?
   2.11 What are the main factors that affect the process of electronic interaction among the local agencies?
   2.12 Is there a noticeable improvement in the process of information exchange at the moment?
   2.13 Regarding Dhi-Qar Province, do you think the agencies are prepared to interact electronically? Why?

Second Session of Interviews

3. QUESTIONS ON THE TECHNOLOGICAL FACTORS

3.1 Costs

3.1.1 Do you think the project (electronic interaction among local agencies) will be completed as it is scheduled? (If yes, why? And if no, why?)

3.1.2 Do you have additional costs for the information exchange project among the local agencies in Dhi-Qar Province?

3.2 Benefits

3.2.1 What are benefits of this project (electronic interaction among the local agencies)?

3.2.2 What are the ways do you think that, the interaction among local agencies will provide benefits to other agencies at local, state and federal level?

3.3 Compatibility

3.3.1 Was it easy to integrate this system with the current computer systems?

3.3.2 Is this project Compatible with the need of your agency?

3.4 Complexity

3.4.1 Do you think that the electronic interaction among agencies is an easy process?

3.4.2 Do you think that the electronic interaction among agencies easy/difficult concept?

3.4.3 Do you think it is difficult to apply this project across all agencies of Dhi-Qar Province?

3.5 Information Security

3.5.1 Do you think that Information Security is very important in this project (The Information sharing among local agencies)?

3.5.2 Are there threats do you expect that may lead to the failure of the project? (If yes, what kind are these threats?)

3.5.3 Can you tell me, how do you take care of the security of the information in the process of the information sharing among the local agencies in Dhi-Qar Province?

4. QUESTIONS ON THE ORGANIZATIONAL FACTORS

4.1 IT Capability

4.1.1 How many Operations are performed electronically among the agencies? (Alternative Question: Do you expect that operations among agencies will be good, if yes, why? And if not, why?)

4.1.2 What is the level of computer literacy among the employees?

4.1.3 How many IT employees there are in your agency?

4.1.4 Does your agency have any professional IT manager?

4.2 Top Management Support

4.2.1 What is the attitude of the top management in Dhi-Qar government towards the project implementation?

4.2.2 Can you tell me if there is any motivation from the Top management to implement the project (electronic interaction among local agencies)?

4.3 Internal Resistances to Change

4.3.1 Have you recorded any resistance from the employees?

4.3.2 What motivate the employees to use the project application?

5. QUESTIONS ON ENVIRONMENTAL FACTORS

5.1 Legislations

5.1.1 Are there any legislations for the electronic interaction among the local agencies (if No, so why did not you create any legislation as the project started 2004)?

5.2 Physical Security

5.2.1 Can you tell me how many offices are involved in this project?

5.2.2 Can you tell me what the specific physical security requirements to fulfil are?

5.2.3 Can you explain to me, is the server under a control system?

5.3 Trust

5.3.1 Briefly please, how are the relationships among the local agencies in Dhi-Qar Province?

5.3.2 Can you tell me how do you create trust among the local agencies?

APPENDIX D

Asian EFL Academy

CERTIFICATE OF THESIS EDITING & PROOFREADING

Document Title (INTERACTION FACTORS THAT EFFECT ON E-GOVERNMENT IN LOCAL GOVERNMENT)

Job Performed

(A) Editing-proofreading

(B) Style editing and formatting

Proofreading request made by :	**NASSIR JARBIR FARHAN (Passport No. G2208252)**	06 October 2013

A) **Proofreading statement**: I hereby declare that the our Academy editor has edited the aforementioned document.

B) Validation procedure was performed by Asian EFL Academy

Employee signature: **Date**: 02 November 2013

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APPENDIX E

وفقا للمقابلات التي اجريت مع عدد من الموظفين في محافظة ذي قار، الذين لديهم علاقة مباشرة مع عملية التفاعل الإلكترونية (الحكومة الإلكترونية). تبينت النتائج التاليه الموضح في الجدول ادناه:

Factors	Agree اتفق	Not Agree لا اتفق
Technological Context		
Benefits • Lack of perceived benefits of the electronic interaction between local agencies, and lack of awareness of the potential benefits of the process of interaction. • قلة الفوائد التي يمكن الحصول عليها من عملية التفاعل الالكتروني (نقصد الحكومة الالكترونيه او تبادل المعلومات الاكتروني) بين الوكالات المحليه (نقصد بين الدوائر في محافظة ذي قار) ، وكذلك هناك قلة وعي من الفوائد المحتملة في عملية التفاعل الاكتروني بين الوكالات المحليه (الحكومة الالكترونيه)		
Costs • Agencies involved in the process of electronic interaction has budgetary constraints, and the process of the electronic interaction between local agencies cause additional costs to the agency associated with maintenance, support and training of staff. • الوكالات المشاركة في عملية التفاعل الإلكترونية (الحكومة الالكترونيه) لديها قيود الميزانية (نقصد لديها مبالغ قليله مخصصه للحكومة الالكترونيه)، وعملية التفاعل الالكتروني بين الوكالات المحلية (نقصد الحكومة الالكترونيه بين الدوائر في محافظة ذي قار) تسبب تكاليف إضافية لوكالة المرتبطة الصيانة والدعم والتدريب للموظفين (نقصد ان هناك مصاريف اضافيه عند الاستمرار بالحكومة الالكتروني).		
Compatibility • Not consistent with the needs of the local agencies involved in the process of electronic interaction and objectives. • لا تتفق مع احتياجات الوكالات المحلية المشاركة في عملية التفاعل الإلكترونية وأهدافها (نقصد ان الحكومة الالكترونيه الان لا تلبي احتياجات الدوائر في محافظة ذي قار) • Not compatible with existing systems previously. • غير متوافق مع الأنظمة الموجودة سابقا (اي ان الانظمة المستخدمة بالحكومة الالكترونيه (وهو نظام لنكس) غير متطابق مع الانظمة الموجوده حاليا (وهو الويندوز)) • Requires the distribution of tasks (Data entry process). • يتطلب توزيع المهام (عملية إدخال البيانات) (نقصد تتطلب طاقه هائله لادخال جميع الوثائق والمعاملات الورقيه الى الحاسوب) • Required training for all staff on the new system. • مطلوب تدريب لجميع الموظفين على النظام الجديد (وهو نظام اللنكس المستخدم في الحكومة الالكترونيه).		
Complexity • Difficulty in using the new system, and difficult to accept the concept of the electronic interaction between agencies • صعوبة في استخدام النظام الجديد (وهو نظام لنكس)، ويصعب قبول مفهوم التفاعل الإلكتروني بين وكالات المحليه في محافظة ذي قار		
Information Security • Fear of the process of sending information by electronic means between local agencies. • الخوف من عملية إرسال المعلومات عن طريق الوسائل الالكترونية بين الوكالات المحلية (بين دوائر محافظة ذي قار). • Requires protection devices as well as software used in the process of electronic interaction between local agencies • يتطلب أجهزة الحماية فضلا عن البرمجيات المستخدمة في عملية التفاعل الالكتروني بين الوكالات المحلية.		

Organizational Context		
IT Capability • IT skills among the staff of limited local agencies, as well as the agencies lack the infrastructure for electronic interaction between local agencies. • مهارات تكنولوجيا المعلومات بين موظفي الوكالات المحلية محدودة (بين موظفي الدوائر الحكومية في محافظة ذي قار)، فضلا عن بعض الوكالات تفتقر إلى البنية التحتية الإلكترونية للتفاعل بين الوكالات المحلية.		
Internal Resistance of Change • Resistance by a number of directors of local agencies to use modern technology in the process of sending data between local agencies. • المقاومة من جانب عدد من مدراء الوكالات المحلية (دوائر محافظة ذي قار) لاستخدام التكنولوجيا الحديثة في عملية ارسال البيانات بالطرق الالكترونيه بين الوكالات المحلية.		
Top management Support • Lack of interest in and support of the managers of some of the agencies of the electronic interaction process; for some reason the limited resources available to the agencies, and the lack of support from the province to the participating agencies the process of electronic interaction. • عدم الاهتمام والدعم من مديري بعض الوكالات من عملية التفاعل الإلكترونية (او الحكومة الاكترونيه)؛ لسبب محدودية الموارد المتاحة للوكالات (عدم وجود اموال اضافيه للدوائر)، وعدم وجود دعم من المحافظة إلى الوكالات المشاركة في عملية التفاعل الالكتروني. • There is no incentive for employees to use modern technology. • لا يوجد هناك اي حافز للموظفين لاستخدام التكنولوجيا الحديثة.		
Environmental Context		
Trust • Problems of relations between local agencies, and the lack of trust between local agencies. • مشاكل العلاقات بين الوكالات المحلية (وجود مشاكل بين بعض الدوائر في محافظة ذي قار)، وعدم وجود الثقة بين الوكالات المحلية.		
Physical Security • Lack of protection devices to prevent any external risk on devices used in the process of electronic interaction among local agencies. • عدم وجود أجهزة حماية لمنع أي خطر خارجي على الأجهزة المستخدمة في عملية التفاعل الإلكتروني بين الوكالات المحلية. • Change places servers frequently result in damage to the devices as well as the constant interruptions. • تغيير أماكن الخوادم يؤدي في كثير من الأحيان في الأضرار التي لحقت الأجهزة فضلا عن الانقطاع المستمر للتيار الكهربائي.		
Legislations • The lack of legislation that support the process of the electronic interaction between local agencies, and obliges agencies to use electronic methods to send information. • عدم وجود التشريعات التي تدعم عملية التفاعل الالكتروني بين الوكالات المحلية (عدم وجود قوانين لتبادل الالكتروني بين الدوائر المحليه في محافظة ذي قار)، وتلزم الوكالات على استخدام الوسائل الإلكترونية لإرسال المعلومات.		

ونرجوا من سيادتكم المشاركه في الجزء الأخير من هذه الدراسة، والتي هي مختصة بالتحقق من النتائج النهائية. مخرجات هذا البحث أو نتائج هذا البحث قد يؤدي إلى الفائدة التي تعود على الوكالات المحليه و كذلك محافظة ذي قار بشكل عام، لمعرفة العوامل التي قد تؤدي إلى فشل أو تقليل تبادل المعلومات بالوسائل الالكترونية. دون مساعدتكم ودعمكم في هذا البحث لن يكتمل. وتأكد من أن جميع المعلومات المقدمة هنا هي للأغراض الأكاديمية.

يمكنك كتابة اي تعليق هنا " يمكنك استخدام اللغة العربيه

مع التقدير

الاسم: **ختم او توقيع**

التاريخ:

APPENDIX J (Nvivo Report)

Aggregate	Classification	Coverage	Number Of Coding References	Reference Number	Coded By Initials

Node

Nodes\\First Group Interviews\\BENEFITS

Document

Internals\\First Group Interviews\\Participant 1-1

No		0.2302	6		
				1	1

Therefore, we are doing our best to overcome these obstacles by applying the modern exchange information and providing computers which will reduce efforts on the employees and will facilitate the citizens' interests and interactions, moreover, the idea of the e-government will compel the citizens themselves to use the modern technologies and as a result the society will progress. In addition, the project will help in making-decision process.

2	1

Actually, the electronic interaction is very important at the present time for Dhi Qar province because of the increasing number of the population especially after 2003, in addition a large number of the people of marshes are now moving to the city so the local agencies have witnessed increase in the number of the visitors.

3	1

The project will facilitate the communication with the remote local agencies in the province which cannot be reached in bad weather.

4	1

The electronic interaction facilitates the work among the local agencies and reduces efforts on employees.

5	1

but most of the exchange information is between the local agencies and the <Agency Name>

6	1

I think the benefits of the project should be identified for both the employees and the managers of the local agencies by the directorate of <Agency Name> so that a large number of the local agencies in the province participate without any rejections.

Internals\\First Group Interviews\\Participant 1-2

No		0.2571	7		
				1	1

The electronic interaction is the essential application of the e-government. Actually this project aims to use the electronic interaction to facilitate the interaction among the local agencies so that modern technologies replace the traditional means which in return will save time and efforts. This will contribute in the development of Iraq

Reports\\Coding Summary By Node Report (2)

Aggregate	Classification	Coverage	Number Of Coding References	Reference Number	Coded By Initials
				2	1

In fact, there are other benefits that we may gain as employees at the e-government in programming and computer engineering.

				3	1

The main purpose after the project is to follow the progress the modern countries witness and to facilitate the local agencies works and interactions with less time and less efforts, and this what every country aims at.

				4	1

Actually, the traditional means are stressful and slow comparing with the modern technology means. Moreover, the modern technologies will save time and reduce effort therefore the employees will feel comfortable to process all of the interactions for the citizens and for the other agencies with safety and confidentiality.

				5	1

Regarding Dhi Qar <Agency Name>, we actually check the names of the [redacted]. This is a system that used in 2003 through which salaries for [redacted] individuals are distributed where the local agencies send the names of their employees regularly so that we check it constantly lest they receive any other salaries from any other agency.

				6	1

I think the percentage among only the involved local agencies does not exceed 20%.

				7	1

Actually, some local agencies do not know the main purpose after the electronic interaction project for both the province and the agency.

Internals\\First Group Interviews\\Participant 1-3

No		0.1481	4

				1	1

I think, first these employees have to be educated on the project and on how this project will benefit the country and will contribute in reducing the corruption and costs and it will offer accurate information

				2	1

Unfortunately, some local agencies are not aware that this project will help them in accessing the information easily.

				3	1

The electronic means specifically the electronic interaction among the local agencies will reduce the waste of money that paid to buy the copy paper documents. Moreover, it will help on future plans in reducing unemployment rate that spread in the province as a result of the administrative corruption and nepotism. However, the e-government is considered an important component to build the modern countries, because without the e-government applications, where the project is a part of it, it would very difficult to provide equal services to the citizens when using the traditional means.

				4	1

still, some managers insist on using the traditional means, however, I think when they know the benefits of the electronic interaction they will change their minds.

Aggregate	Classification	Coverage	Number Of Coding References	Reference Number	Coded By Initials	Modified On

Internals\\First Group Interviews\\Participant 2-1

No	0.1315	4		
			1	1

Regarding the directorate of <Agency Name> in Dhi-Qar, the purpose is to make the interactions of the agency in a continuation process with the other local agencies through spreading the knowledge about the official books and administrative legislations. More significantly, the purpose focuses on creating a real communication between the directorate of <Agency Name> and [redacted] in the province by using recent means through which [redacted] will be able to register and fill the application forms electronically

2	1

Therefore, I believe that the level of information exchange among some participated agencies which involve in the project since it was founded is 3%. This percentage may collapse the project because an employee or an administrator will feel that this project is just a waste of money.

3	1

we strive to educate the other agencies of the interaction benefits because of the importance it can bring to Dhi Qar province agencies and their employees. Dhi- Qar directorate <Agency Name> is considered one of the main service agencies that can benefit of the information exchange because other agencies of Dhi-Qar need to document the certificates and to certify the certificates for applicants who will work in their agencies.

4	1

the lack of awareness about the usefulness of the information exchange, or e-government in the directorate <Agency Name> of Dhi Qar, this obstacle is also important.

Internals\\First Group Interviews\\Participant 2-2

No	0.0737	2		
			1	1

The project will provide a great contribution to Dhi Qar directorate of <Agency Name> because it is the [redacted] directorate in Dhi-Qar province. Therefore, the employees find difficulty to achieve the work because of the large number of the clients who come to the agency. Hence, this contributes in the delay of the completion of the citizens' interests. However, this project provides a good service for the citizens and will reduce overcrowded at the directorate and will also provide the best services for the other agencies.

2	1

Frankly, at the moment I find no benefits out of this project (the e-government) because most of the available applications cannot be used by the unqualified employees.

Internals\\First Group Interviews\\Participant 3-1

No	0.0538	1		
			1	1

the project has been politicized and has become an electoral benefit rather than to be a benefit for the local agencies because non-qualified individuals are employed in the e-government applications which led to the delay of the project due to factors such as the cost and lack of expertise and awareness of the benefits of the project.

Internals\\First Group Interviews\\Participant 3-2

No	0.2647	5		
			1	1

The purpose of the project is mainly to reform and to develop the province. Therefore, if this project is achieved successfully it would be a great step that performed by Dhi Qar province towards progress and serving the citizens. So this project is to organize the work of the local agencies and to reduce corruption as well.

Aggregate	Classification	Coverage	Number Of Coding References	Reference Number	Coded By Initials

2 1

At the present time, there is no exchange of information among the other agencies in the province that is due to several reasons including the large number of the local agencies that have not been involved in the interaction.

3 1

<Agency Name> of Dhi Qar requested the province not to include the [redacted] within a project that does not contain a large number of employees; moreover, it requested more employees to be appointed to enter the information. In fact, I think there are no benefits from the project and that Dhi Qar <Agency Name> will continue with the ways that suit its interests.

4 1

In fact I don't feel any improvement in the interaction between the agencies, in contrary, the opposite is now happening, there is a decrease compared with the previous years.

5 1

Actually, a number of letters have been already sent to a number of local agencies at the beginning of the project. A few numbers of these local agencies responded reluctantly, but the other have not responded yet. These letters are about the participation in this project. However, there are no restrictions compelling the managers to participate in this project. So I think it will take time until all local agencies be ready to participate. In addition, there should be a kind of education about the importance and the benefits of the e-government applications since this project is a part of it.

Internals\\First Group Interviews\\Participant 4-1

No 0.1888 4

1 1

Unfortunately, this project seems as slow as turtles in movement. It is progressing very slowly. Just imagine starting from 2004 until now we are only discussing the factors led to the delay or may stop the project completely if the top management and the project's supervisors continue to neglect this project (the electronic interaction among the local agencies in Dhi Qar province).

2 1

As you know, Dhi Qar directorate of <Agency Name> is one of the important service agencies in the province. However, because of the increase number of the population, the explosions happen in the country and the pollution it is necessary to find other means to control [redacted]. Therefore, this project implemented with a very low rate of information exchange among the local agencies where some information exchanged between Dhi Qar directorate of <Agency Name> and some the other local agencies such as the directorate of <Agency Name> and the <Agency

3 1

Unfortunately, the directorate of < Agency Name> refused to exchange the information because they only want to receive the information of the other agencies, consequently, there would not be any kind of benefits the other agencies to find.

4 1

think it is even difficult to force the current involved agencies to apply the applications because the benefits of this project are not identified clearly to most of the local agencies.

Internals\\First Group Interviews\\participant 4-2

No 0.1042 3

1 1

The main purpose of the electronic interaction among the local agencies in Dhi Qar province is to reduce the effort on the citizens and the employees as well, in addition to offer a good services to the citizens by using the modern electronic means.

2 1

However, there is a difficulty to accept the electronic interaction among the local agencies in Dhi Qar province. Regarding the vague possible benefits of the process, Dhi Qar <Agency Name> hesitated to continue in this project. This will obstacle the work and applying it in all of the local agencies in the province.

Aggregate	Classification	Coverage	Number Of Coding References	Reference Number	Coded By Initials

3 1

In fact, there are many factors. For example, some departments' managers do not accept the project because they are not aware of the benefits the project will bring for Dhi Qar < Agency Name>.

Internals\\First Group Interviews\\participant 5-1

No 0.2033 4

1 1

The main purpose of the electronic interaction among the local agencies is to reduce effort and time; moreover, it is also to eliminate the traditional means (documents) procedures which waste much money in copy papers and inks. In addition, the electronic interaction will create confidentiality for the information exchange. More importantly, the electronic interaction will eliminate corruption. These are the most expected requirements from this project to fulfill.

2 1

Generally, the e-government will benefit the citizens and the government respectively. In fact, this project is a form or a part of the e-government. Unfortunately, the province authorities are unaware of the benefits the project will bring to the province and to Iraq in general. The project will make a great step of changing from the traditional means (the documents) which waste effort and time to the most easily, safe electronic means which reduce costs. Frankly, at the beginning of the project there will be more costs, but there will be good results when the information exchange starts.

3 1

Actually there is no clear vision to apply the electronic interaction by the electronic means.

4 1

Moreover, it is also due to the unknown benefits the project may offer to Dhi Qar province.

Internals\\First Group Interviews\\Participant 6-1

No 0.1745 5

1 1

One important application is exchanging the information among the local agencies. We are doing our best in order to help the citizens; instead of going to every single agency, their procedures would be available and would be easily processed electronically. More importantly, the project will save time and effort and will reduce the financial and administrative corruption so that in the future the citizens will be able to process any local agency and pay the electricity and water bills from their houses through the portal. The portal will contain a page for complains and interactions.

2 1

The main reason behind this project is to benefit the citizens through processing all of their procedures from one local agency rather than they visit all of them.

3 1

Iraq is trying to pace development in modern sciences where most of the countries recently use the modern technologies to serve their own citizens and to save time and costs on one hand and to reduce efforts on their employees on the other where the traditional means (the use of pen and paper) in paying invoices, job applications and issuing passports are almost disappeared. Therefore, we are trying to get rid of this boring routine to development same like other countries as well as to reduce the financial and administrative corruption. According to the United Nation's report on the most corrupted countries in the world, Iraq is listed as one of these corrupted countries.

4 1

In addition the traditional means waste much money, time and efforts. Regarding Dhi Qar province, the population is in increase so the traditional means do not suit the needs of the local agencies hence the current project is considered to be a step forward, but there are so many factors that may obstacle the project.

Reports\\Coding Summary By Node Report (2)

Aggregate	Classification	Coverage	Number Of Coding References	Reference Number	Coded By Initials

5 1

Besides, the information that sent between the <Agency Name> and the other agencies in order to know about the tenders, since most of these information are considered to be services and contain confidential details that must be secret in the process of the information exchange as well as there are important information that should never be delayed in the information exchange process between the general directorate for <Agency Name> and the other local agencies and that the traditional means may delay and hinder the work

Internals\\First Group Interviews\\Participant 6-2

No 0.1248 3

1 1

Moreover, one more benefit for the e-government is that it will help in securing the information which is a priority that Iraq needs at the moment. Therefore, we are in need for more promotion and education for this project. In addition, the project will symbolize the trend to good governance; I mean transparency, integrity, democracy and electronic election in addition the information exchange will help in the census, through which budgets are allocated for each province, which is facing political obstacles and maintaining stability and security in the province.

2 1

Moreover, the project will reduce the traditional means among the local agencies where most of them are still using the traditional routine means. For example, they send a certain individual from one agency to another to certify a particular document or to pay the invoices.

3 1

Because of the unstable political and administrative situation in Iraq, conflicts arise and, consequently, these conflicts will negatively affect the construction process in Iraq and Dhi Qar province in particular. The available employees at the project are not aware of the importance of what this project may offer for the province and for the citizens in general

Internals\\First Group Interviews\\Participant 7-1

No 0.2717 4

1 1

Anyhow, the interaction exchange, as a part of the e-government, is already applied but it is limited to several agencies because of the lack of education and awareness of the importance of the electronic interaction among the agencies.

2 1

The traditional means of corresponding information among the agencies are not sufficient at the present time because the number of the employees in the province is huge; moreover, the number of the local agencies in the province is increased. Consequently, the use of the traditional means makes it difficult for the agencies because of the accumulated documents. Therefore, it is of necessity to convert all these documents into a smaller accurate process that saves time and effort. Thus, this electronic interaction will benefit the directorate <Agency Name> in Dhi Qar province, consequently, we accept the project

3 1

Just imagine the situation that we are using the documents for more than 40 years and these documents are kept in stores belong to the offices. Therefore, there is a large amount of documents in all agencies and ministries that occupy vast space in addition that they can be damaged while all these documents can be converted electronically in a CD or a hard desk. Moreover, as I stated earlier, that the modern technology facilitates the work no matter if the size is huge or small and provide accurate services for the citizens and this is what the government tries to fulfill.

4 1

As a manger for the <Agency Name>, I agree on the applications of the project, but the problem is that some of the local agencies do not know that the connection of all the agencies to the network will facilitate the work among the agencies and the province. This is considered as a contribution to the agencies and a better way for them than using the traditional means.

Aggregate	Classification	Coverage	Number Of Coding References	Reference Number	Coded By Initials

Internals\\First Group Interviews\\Participant 7-2

No		0.3046	5		
				1	1

In fact, the real benefit behind the application is to convert all the available documents at the local agencies to computers and deal

2	1

In fact, the electronic interaction among the local agencies will facilitate the process of inquiry about the information sent from the province. Moreover, it will contribute even statistically. In addition, the project will save the information for a long time without any damage. This was the main reason that encouraged the <Agency Name> to be one of the participants in this project. In fact, we do not care if other agencies could get the information we have or not.

3	1

The only motivation that encouraged the <Agency Name> to contribute in this project is that electronic interaction is extremely effortless and interesting process; in addition, the information will be available at any time whenever I need it, therefore, the shift to the digital means will put an end to the huge documents.

4	1

Regarding Dhi Qar <Agency Name>, the province depends on it too much because it supplies all the other local agencies as well as the electric [redacted] such as petrol or diesel. The supply process is implemented based on the information that sent by the province, the <Agency Name> or other local agencies. Therefore, applying the electronic interaction will make the work more accurate and will reduce the corruption; moreover, it will create transparency where the [redacted], the local agencies processed and the date of the delivery will be known to the province through the electronic interaction which the directorate of the communication will provide. Thus, this will protect the <Agency Name> of any suspicious in case of robbery.

5	1

I think if the local agencies realize the benefits of the project for them and for the province, I they will prepare to participate.

Internals\\First Group Interviews\\Participant 8-1

No		0.2250	4		
				1	1

However, <agency Name> offers administrative support for the local agencies in the province. The project is provided with additional servers in addition to some other computers connected with them. This project will help the managers to get precise information on one hand and will reduce time and effort on the citizens and getting good services on the other.

2	1

Let me add something, this project will eliminate the administrative corruption where there are cases of corruption in some local agencies, for example, in the process of entering the information into computers, some case of corruption regarding the salaries was revealed and that the salaries under false names were received by one employee at the agency.

3	1

the modern means work can be achieved very fast with less cost. In addition, the information remain completely secret as well as to keep up with the other countries that near Iraq such as Bahrain, Jordan and United Arab of Emirates which are considered to be advanced countries in applying the e-government and its applications.

4	1

There are many important factors. For example, the lack of qualified individuals in the local agencies, the absence of lawful legislation and some of the local agencies do not have the tendency to participate in the project though they can. Moreover, some individuals do not trust the project. They think this project will change the agency and will not bring any financial benefits to the local agency. In addition, other local agencies are not enough aware of the project.

Aggregate	Classification	Coverage	Number Of Coding References	Reference Number	Coded By Initials	Modified On

2 1

Actually managers should motivate their employees. For example, if the managers are well aware of the benefits the project may bring into the agency, they will encourage the employees to have training-courses and to participate in the interaction. Similarly, if the managers, there are many of them, are not aware of the importance of the project, I think the motivation will be weak.

Nodes\\Second Group Interviews\\Organizational Context\IT Capability

Document

Internals\\Second Group Interview\\Participant 1-1

No 0.0843 4

1 1

I have mentioned in the previous interview that the percentage of the information exchange is exceeding 25%. Actually, this percentage is good comparing with the percentage in any other local agencies.

2 1

I think all of the employees are fond and have enough experience on using the computers, therefore, they will feel comfortable when they use computers.

3 1

There are around 7 experienced employees with higher certificates that qualifying them for the project applications and, if necessary; they can design the applications by themselves.

4 1

Certainly Mr. [redacted] is a good candidate for this position for his expertise in administrative applications because he had several training courses in the field of e-government applications in some different countries in the world.

Internals\\Second Group Interview\\Participant 1-2

No 0.0674 4

1 1

As I mentioned earlier, 20% percent of the electronic interaction process among the local agencies is recently happening in Dhi Qar province.

2 1

There are enough number of the qualified employees in computer skills in the province and they feel comfortable with these applications, however, the number differs from one agency to another based on the knowledge and skills among the employees.

3 1

There are around 7 individuals between engineers and technicians, in addition to the manager Mr. [redacted].

4 1

I think Mr. [redacted], the manager of the e-government in Dhi Qar province is well-qualified and he has enough experience on the e-government applications because he was trained well in Italy, turkey and Jordan.

Aggregate	Classification	Coverage	Number Of Coding References	Reference Number	Coded By Initials	Modified On

Internals\\Second Group Interview\\Participant 1-3

No 0.0703 4

1 1

There are a large number of interaction operations and correspondences that are applied now. In fact some agencies are still using the traditional means; however, others use the electronic interaction and the number is in increase.

2 1

In [redacted], there is enough number of employees who are familiar with computers. Certainly, there is still a need to train them, but I think the recent number is enough.

3 1

There are around 7 individuals between engineers and technicians. According to my experience, I think the number is sufficient and to give training opportunities for others in the province.

4 1

As I told you earlier, in [redacted] there are enough experienced employees on the e-government applications. I am here the responsible manager for the information.

Internals\\Second Group Interview\\Participant 2-1

No 0.0951 4

1 1

Regarding Dhi-Qar province, there is electronic exchange among the [redacted] and the [redacted] and the [redacted] of Dhi-Qar. But for the rest of the agency, there seems no motivation to use the interactional exchange due to many reasons. However, the interaction exchange does not exceed 3%.

2 1

Regarding the [redacted] in Dhi Qar, there is a good number of employees who can use the computer skillfully. In addition, there are computer courses to educate them to use some electronic applications such as documents management systems. Moreover, there are some employees who find it difficult to use computer, therefore, they resort to the use of documents. This kind of employees includes a number of managers. They are regarded as an obstacle to the progress of the province.

3 1

There are a few numbers of them in Dhi Qar [redacted]. I cannot determine the exact number, but they are less than what the directorate of education needs.

4 1

In Dhi Qar [redacted], there is a section which is specialized in educational maintenance applications and simple applications. As for the e-government, the number does not exceed three individuals and I am the person who is supervising the project in Dhi Qar [redacted] with the help of qualified professors.

Internals\\Second Group Interview\\Participant 2-2

No 0.0777 4

1 1

Regarding Dhi Qar [redacted], which is the first contributor in this project, the rate of information exchange is 2%. Regarding the other agencies involved in the project, I think the interactione xchange is less.

2 1

A few months ago all the employees of [redacted] were tested in their ability to use simple applications of the computers. The result showed that the majority of them face difficulties to adapt with these applications though they are very simple applications in comparison with the e-government and the systems it uses.

Reports\\Coding Summary By Node Report

Aggregate	Classification	Coverage	Number Of Coding References	Reference Number	Coded By Initials	Modified On

3 1

The number of the employees does not exceed 12%. This number is actually not enough to process all the needs of the [redacted]. Therefore, we requested the authorities to provide us with some employees. Unfortunately, the request is still in process since a year ago.

4 1

Absolutely, especially at the computer center at Dhi-Qar [redacted] where there are two experienced individuals in the e-government applications.

Internals\\Second Group Interview\\Participant 3-1

No 0.0728 4

1 1

The operations that exchanged by electronically do not exceed 2%, this does not include all the participating local agencies. Some local agencies do not interact when the information is exchanged electronically and prefer traditional means in the process of information exchange.

2 1

There are several well-qualified employees, but unfortunately some of the professors cannot use the computers especially professors of history and science.

3 1

There are a small number of the employees. Actually I do not know the real number of the computer technology's professors and technicians.

4 1

In Dhi Qar [redacted] there is a computer center and it is the responsible for e-government and there is a well-qualified manger as well as professor [redacted] and professor [redacted].

Internals\\Second Group Interview\\Participant 3-2

No 0.0904 4

1 1

The percentage does not exceed 1%. This is only about the processes among the [redacted] and the [redacted].

2 1

It depends on the type of the local agencies. However, there are agencies who still use the traditional means as a result the number of the employees who use computers is low, an example is the directorate of tax where the employees who can use computers is very low.

3 1

There is a good and enough number of the employees. However, the problem is not with the number of the employees rather it is about training them where a number of them are sent outside Iraq for training on the application of the e-government, moreover, most of these employees have no experience in the computer skills and because they were selected inappropriately.

4 1

I am the responsible director of the computer center in [redacted].

Reports\\Coding Summary By Node Report