INVESTIGATING UNIVERSITY'S STUDENTS' PERCEPTIONS OF SMARTPHONES BUYING BEHAVIOR

A THESIS SUBMITTED TO THE GRADUATE SCHOOL OF APPLIED SCIENCES
OF
NEAR EAST UNIVERSITY

By
HANA A.B ELAMMARI

In Partial Fulfillment of the Requirements for the Degree of Master of Science in Computer Information Systems

NICOSIA, 2018

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last Name:

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To my family…

ACKNOWLEDGEMENTS

ABSTRACT

Technology has become an integral part of peoples' lives with large mobile operating companies joining the mobile industry every year. The large number of mobile companies make it difficult to study, analyse and fully interpret factors behind a buyer's choice of a smartphone. Despite the massive penetration of mobile devices in North Cyprus and other studies which have been conducted in the past, there is a missing gap in the literature as far as the smartphone market is concerned, statistics are hardly available on the factors influencing North Cyprus customers therefore the main aim of this study is to explore and fully understand the factors that influence students' preference to buy smartphones in North Cyprus. A paper-based questionnaire was distributed to volunteer students enrolled at three universities and 472 responses were analysed using SPSS. Results showed that there was no significant difference between gender and all dependent variables (Brand Image, Price of Smartphone and Product Features) except for Peer Group Influence. Furthermore, there was no statistical significant difference between academic position and three dependent variables (Brand Image, Price of Smartphone and Product Features) whereas there was a significant difference between academic position and peer group influence. In addition, there was a significant difference between age and two dependent variables (Brand Image and Price of Smartphone). Results also showed that most students prefer to use Android operating systems to IOS. Information obtained in this study will be beneficial to both academics and practitioners.

Keywords: Mobile devices; higher education; smartphone; buying behaviour; Android; IOS; students

ÖZET

Teknoloji, her yıl endüstriye katılan büyük mobil işletme şirketleriyle insanların hayatlarının ayrılmaz bir parçası haline gelmiştir. Çok sayıda mobil şirketlerinden dolayı alıcılar bir akıllı telefon seçiminin arkasındaki faktörleri incelemek, analiz etmek ve yorumlamakta zorlanmaktadırlar. Kuzey Kıbrıs'ta mobil cihazların büyük ölçüde kullanımına ve geçmişte yapılmış olan diğer çalışmalara rağmen, akıllı telefon piyasasıyla ilgili olarak literatürde eksik bir boşluk bulunmaktadır. Bu yüzden, Kuzey Kıbrıs'ta olan müşterileri etkileyen faktörler hakkında istatistikler çalışmalar neredeyse mevcut değildir. Bu çalışmanın esas amacı, öğrencilerin Kuzey Kıbrıs'ta akıllı telefon satın alma tercihlerini etkileyen faktörleri araştırmak ve tam olarak anlamaktır. Üç üniversiteye kayıtlı olan 472 gönüllü öğrencilere kağıt tabanlı bir anket dağıtılmış ve yanıtlar SPSS ile analiz yapılmıştır. Sonuçlar, bütün bağımlı değişkenler arasında (Marka İmajı, Akıllı Telefon fiyatları ve Ürün Özellikleri), Akran Gurubunun etkisi dışında anlamlı bir fark olmadığını göstermiştir. Ayrıca, akademik konum ve üç bağımlı değişken (Marka İmajı, Akıllı Telefon fiyatları ve Ürün Özellikleri) arasında istatistiksel olarak anlamlı bir fark bulunmazken, akademik konum ve akran gurubu etkisi arasında anlamlı bir fark bulunmuştur. Ayrıca yaş ve iki bağımlı değişken (Marka İmajı ve Akıllı Telefon Fiyatı) arasında anlamlı bir fark bulunmuştur. Ayrıca, sonuçlar öğrencilerin çoğunun Android işletim sistemlerini IOS'a tercih ettiklerini göstermiştir. Bu çalışmada elde edilen bilgiler hem akademisyenler ve hem de uygulamacılar için faydalı olacaktır.

Anahtar Kelimeler: Mobil cihazlar; Yüksek eğitim; akıllı telefon; satın alma davranışı; Android; IOS; öğrencilerin

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3G   A mobile communications standard that allows mobile phones, computers, and other portable electronic devices to access the Internet wirelessly.

4G   A mobile communications standard intended to replace 3G, allowing wireless Internet access at a much higher speed.

CIU: Cyprus International University

EMU: Eastern Mediterranean University

IP   Internet Protocol

ISP   Internet Service Provider

MVC   Model View Controller

NEU: Near East University

CHAPTER 1

INTRODUCTION

This is the introductory chapter that introduces the study aim and problem statement, importance, study hypotheses and summary of the all chapters in view.

1.1 Overview

In the literature, many researchers (Mohan, 2014; Nagarkoti, 2015; Sujata et al., 2016; Azzawi & Ncube, 2014) have explored the various mobile operating systems that exist from Blackberry, Firefox OS, Android, IOS, Windows and Ubuntu touch. To fully understand the subject under study, Chow et al. (2012) defined a smartphone as a device that enables a user to make calls and send emails through the usage of Internet connectivity or mobile data bundles.The massive growth in the mobile industry has led to an increase in mobile brands and operating systems and this plays a vital role in consumer decision making (Ifeanyichukwu & Azikiwe, 2016).

Zhou and Hui (2007) pointed out that nearby firms frequently use the offer of all-inclusiveness to advertise their things and HTC is an example of such endeavor. Not with standing this, the world is contracting into an overall business focus, so it is genuinely critical to investigate buyer's insight to overall brands and components affecting client purchasing conduct.

Recently, there is a prevailing utilization of smart phones, most especially amid youth, is the center motivating component for specialists to dive into their utility in formal and furthermore casual instruction. A colossal number of understudies these days can be seen conveying cell phones, (for example, the Samsung, iPhone and Blackberry) on college grounds. Understudies not just use their cell phones for making voice calls however to view course related material, discovering areas, checking climate figures, obtaining activity updates and interfacing with person to person communication stages, for example, Facebook, LinkedIn, Twitter, Instagram and WhatsApp. Venkatesh et al. (2016) found the standard of the understudies getting to the Internet utilizes the smartphone in doing so.

There is lots of antagonism in the smartphone markets and compatibility with user-specific requirements played a significant part in the innovation upwelling of smartphone technology. The expansion in clients' demand for cutting edge PDAs is clear from the way that the worldwide shipment of cell phones is anticipated to surpass 1.7 billion by 2018, which is around a ten time development in the shipments made in 2009 (Statistica, 2015a). In addition, it is anticipated that 34% of the total populace will have a cell phone by 2017, though, it was just 10% of every 2011. The best 10 cell phone markets for 2015, in regard to developing by esteem are South Africa, Brazil, Pakistan, India, China, Indonesia, Nigeria, Egypt, Vietnam and Bangladesh; the standard of the countries included in this rundown are from creating markets which have re-designed created advertises as the cell phone commercial places is impending fullness in the developed countries (GFK, 2014).

Factors mentioned in the literature play a crucial role when it comes to brand preference and operating system choice for mobile users; price of the smartphone, brand whether Apple or Samsung, Social influence, quality, product features and other factors such as design and colour of mobile device (Mohan, 2014; Ifeanyichukwu & Azikiwe, 2016; Osuagwa, 2014). It is therefore necessary for mobile manufacturing firms to fully understand these underlying factors so as to stay competitive in the market yet offering the best quality products needed by buyers at a fair and affordable price.

1.2   Problem Statement

Most research (Osman, 2012; Osuagwu, 2014; Nagarkoti, 2015) in the past have mainly focussed on understanding the usage of mobile devices amongst buyers. Despite an increase in smartphone ownership among students and the increase in awareness of mobile learning there is a missing gap in the literature regarding statistics to understand the factors behind the choice of mobile phones among university students. It is important to understand the factors that influence smartphone purchase as this affects the mobile industry, it is crucial for manufacturers to understand what affects choice so that they deliver the right products.

Technology has become an integral part of peoples' lives in this digital era with large mobile operating companies joining the mobile industry yearly. The large number of mobile companies

make it difficult to study, analyse and fully interpret factors behind a buyer's choice (Star, 2014). For this reason, mobile companies are willing to invest massive amounts of money in research so as to fully understand the factors behind a buyer's choice so as to streamline their marketing strategies (Ifeanyichukwu & Azikiwe, 2016).

Information obtained in this study will be beneficial to both academics and practitioners.

1.3 Aim of the Study

The study aim to examine the factors that influence student's preference to purchasing smartphones.

1.4 Importance of the Study

This study will be beneficial as it will add information in the body of knowledge. Different stakeholders in the educational sectors as well as mobile manufacturers will benefit from the study in different ways as explained below:

- *Researchers*: For anyone interested in carrying out a new study that relates to this subject area will find this study beneficial as it will provide information related to their study.

- *Practitioners*: These include mobile manufacturers, application developers and other key stakeholders in the industry. Information provided in this study will help them come up with effective marketing strategies as well as plan for the future with a clear understanding of what buyers consider important when buying a smartphone.

- *Consumers*: This study will give an in-depth insight on the functions and features provided by the two major operating systems under study (Android and IOS). With this information, consumers will be able to fully understand the technology and other features which they may not be aware of and this information is key in decision making process whether they opt for Android operating system or IOS. This information is explained under related research as information on the differences between the two operating systems.

- *Marketing companies*: This study will provide an in-depth knowledge on the factors that influence the choice of buyers between the two main operating systems. With this

information, mobile marketers are able to understand how the four main factors (Brand image, price, product features and social influence) affect a buyer's choice of mobile phone. Marketers are able to tailor make their marketing messages so that they suit the needs of students for example advertising how mobile phones are used in learning.

1.5 Limitations of the Study

The following limitations have been noted in this study:

- The study was carried out within a short stipulated time at the period of spring semester of 2018. However, a longer period is recommended in the future.
- The study only focused at three universities in the Northern part of Cyprus namely; Near East University, Eastern Mediterranean University and Cyprus International University.
- The study only focused on students currently enrolled in Technology related programs namely; Computer Information Systems, Information Technology, Computer Engineering and Management Information Systems.
- The study only focused on students, future research is strongly recommended to cover the non-academic sector.

1.6 Overview of the Thesis

The study was grouped into six unique independent chapters, the following explained in details regarding each chapter as follows:

Chapter One is introductory chapter that introduces the study to readers and it comprises the main component of the entire study in details such as the aim, hypothesis, problem statement, importance and finally the study overview of other chapters to follow. It also outlines to whom this research study would be of interest and benefit to.

Chapter Two explains the subject under study in more detail with emphasis on what has been researched before and what other researchers found during their research. This chapter forms the backbone of this study and is key in understanding the principles underlying the study.

Chapter Three was designed as a medium to fully understand the distinction between the two operating systems, Android and IOS. This section compares the features and services offered by the two operating systems. In addition the architectural component of each operating system is analyzed, factors that affect buyers' decision and lastly a conceptual framework of the factors that affect the demand of smartphones is explained in detail.

Chapter Four gives a detailed explanation of the research model that the researcher used, the participants and how they were selected, tools utilized for collecting of data, the adopted methods for analysis of data, scheduling of research, test for checking data reliability of questionnaire dimensions together with a Gantt chart showing how the research progressed over a period of time.

Chapter Five explains the results obtained after data analysis with reference to previous research in order to fully understand the study. Each research question is fully analyzed and results stated.

Chapter Six gives a summary of the entire study with a focus on the results and recommendations for future research. The researcher outlines observations noted during research and how some limitations of this study could be rectified in future research.

CHAPTER 2

RELATED RESEARCH

This chapter explains the subject under study in more detail with emphasis on what has been researched before and what other researchers found during their research. This chapter forms the backbone of this study and is key in understanding the principles underlying the study.

2.1   Consumer Buying Behavior

In the literature, Farheen (2017) pointed out that an increase in smartphone ownership has lured interests among researchers on investigating the consumer buying behavior. The main reasons why people use smartphones is to search the Internet, send messages and to use different applications installed. The researcher pointed out that several internal and external factors influence consumer buying behavior.

In Farheen (2017) marketing activities have also been noted as a key factor influencing buying behavior as it is through these activities that consumers become aware of products available. Furthermore, the researcher has also mentioned that demographic factors are also closely inter-related to ones buying power and behavior. This distinction is due to differences in income, age, job, gender and so forth. A key example mentioned by the researcher is the buying behavior of smartphones, teenagers are more addicted to smartphones contrary to adults hence they tend to buy smartphones more compared to adults.

Khan (2012) study showed there is a high utilization of Smartphone for restorative applications, for example, sickness determination administration and medication reference among therapeutic understudies and junior specialists for training and clinical practice purposes. Rather than flipping books, medicinal learning can be quick and helpful through Smartphone applications. Furthermore, a research was carried out to examine the association in between students in the university and convenience based on each purchasing behavior of smartphones.

Ismail et al. (2012) conducted a study on emerging technologies such as the way social media has altered the way and manner individuals carryout their day to day social activities in a negative

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manner, their result shows a significant relationship or association exist between students behavior in purchasing and dependency on smartphones.

2.2 Factors Affecting Customers' Preference to Buy Mobile Devices

Buying a smartphone is one of the most important decisions that students go through. There are many factors that affect ones decision and preference when it comes to buying a smartphone and these include brand concern, price, product features, consumer decision process, convenience, dependency and social influence. The following factors will be explained in detail below:

2.2.1 Brand concern

Domie (2013) carried out a study to investigate how the life cycle of human is impacted by the emergence of smartphones, they stated that emergence of smartphones have impacted heavily on the lives of people due to its advance features and people cannot do without them which means people are addicted to them and has some bad effects on our daily lives. They also stated that the smartphone forms the backbone of today communication tool and had shown in recent years an enormous growth. Conclusively, their study discussed positive and negative impact of smartphone which they point out its mobility, SMS, emergency, improve trading, map navigation, entertainment and transfer of data as part of its benefits and injuries to wellbeing, cyber harassment and the degradation of the environment as part of its consequences.

According to Pikturniene (2013) exactly when looking at buyer references to overall brands, various authorities have pointed out the usefulness of quality and reputation of brand figures through that can be seen as mark exhaustiveness roundabout impact customer. In this manner, this investigation focuses at building up a general arrangement of appropriate factors procured from the given writing. Especially, the investigation used apparent brand quality and saw mark notoriety as two intermediating factors to review the effects of apparent brand extensiveness on client purchase likelihood. This examination drove a review on school students containing four universities in the central a bit of Taiwan to understand their perceptions of overall brand versus neighborhood mark.

Azad and Safaei (2012) conducted an investigation of how smartphone users get carried away by brand name, they stated that brand name has a significant influence on how smartphone customers

purchase mobile phones. They claim that this is as a result of gross customer satisfaction toward a brand.

Husso (2011) conducted a research on the influences a brand has on customer decision making in purchasing a smartphone, they stated that a lot of individuals they surveyed strongly agreed that a brand perceived to be good has better purchasing chance, 53% concurred with this claim. The result shows that there is a significant relationship between perceived good brand and customer purchasing decision making.

Dadzie (2011) revealed that none the less, the execution of IOS and Android has been mixed. Overall, the relative business area position of global brands is declining, and the advancement of IOS and Android marks in secured markets has finished, if not changed. Clients have assorted perceptions to outside and nearby brands, even inside a similar thing class.

Banks and Burge (2004) demonstrated that directly, purchasers have more staggering expendable wages and utilize their money more on things past basic necessities. Extraordinarily, buyers in creating markets continue promoting a strong tendency for top neighborhood portable brands from made countries due to their evident splendid and ordinary picture there.

Farzana (2012) carried out a study to examine some of the factors be delving purchasing smartphones by collecting data from 200 smartphone users and carrying out a regression model analysis to determine these factors that affect purchasing smartphones. They found out that individuals purchase smartphone because of perceived good brand notion, they set brand as one of the criteria or factor that affect purchasing smartphone. Furthermore, their result stated that smartphone users see quality, durability, trending technological features and internet browsing capability of a mobile phone as the main factors that affects the purchase of smartphones. In the end he recommends that smartphone manufacturers should look into these factors as part of their criteria for making good mobile phones in the near future.

As indicated by the Freeman Ideas on Liberty (2011) they stated that customer sees smartphone brand as a mark to determine its quality so that users could trust the brands. Consequently, Quaker Oats, Ivory Soap, and Levi have imparted in customers a level of certainty that their unbranded rivalry did not. An expanding number of high – innovation organizations have embraced mark

building activities under the preface that these activities can make an advantage that produce long haul benefit, e.g. Intel inside battle, which started in 1991.

Brand personality is characterized by Mallik (2009) to be "the varying media exchange dress of the brand that communicates, and brings to masterful life". The characterized mark ideas are the watchwords of his examination study and it is essential to his exploration think about.

Healey (2008) carried out a study on smartphone relationship between brand and purchasing smartphones, they stated that making a good mark on brand is very important as it has a significant influence on how individuals buys these smartphones based on perceived good brands. Customer always favor perceived good brands as better options when making decisions in purchasing smartphones.

2.2. 2 Price concern

Kiong et al. (2013) conducted a study about factors that impact behavioral intentions on electronic prices whilst proposing a scale to measure these factors. They stated that price is a way to measure a product value in the market, although not making good measurement could affect customer behavior to purchase or adopt product. Therefore it is of utmost important to make up a good price tag for the product. Although some customers find other factors that can persuade them to buy a product even though a good price measurement isn't good. They collected data from different individuals up to 960 through questionnaires and interviews, whilst carrying out some advanced statistical analysis on the collected data. Their result observed that these behavioral factors on cost are, physical appearance on product, instrumental elements, persuasive communication and customer support.

Star (2014) conducted a research on reasons why measures were taken by the Malaysian government to cut off the hike in prices of smartphones, they further found out that due to the enormous importance of smartphone in today's world and its positive impact on peoples life there is need for everyone to own this gadget, moreover its high price might make some individual unable to own this device. To solve the problem the government had to cut off the hike in price to enable everyone be able to afford it. Lastly, it shows that the hike in price of smartphones make it difficult for individuals to afford the devices.

Kotler and Keller (2012) expressed in their view that there are many number of ways to determine the price of an item with different advantages attached to all these methods. They stated these methods of pricing as promotional, markup, rate going, return target and perceived good pricing of people behavior.

Asohan (2012) indicated that manufacturing a high priced gadget will be detriment to the price reputation of the product, which will be a barrier for purchasing the smartphone because users ought for cheaper smartphones in the market.

As indicated by Isabella (2012) stated that its very important to find a balance between high discount rate and low discount rate of smartphone prices, furthermore he stated that price should showed in its original value if low discount while price should be showed in percentage if high, stating this technique would persuade users decision making in purchasing smartphones.

Chew (2012) carried out a research on the impact of price on customer intention to buy smartphone, the result suggested that price has major role to play in people mind when it comes to buying smartphones.

Chow (2011) also stated that price is key factor when customers purchase smartphone as it has a significantly effect in customer decision making in intention to purchase smartphones

2.2.3   Product features concern

Moslehpour (2014) investigated concerns regarding some key features customers determine when purchasing smartphones, ranging from the device operating system, speed, reliability and ease of use of the operating system. However, the study found out that the most preferred operating system is the Android OS, iOS, Windows, RIM blackberry and Symbian OS respectively. Accordingly, this shows that the most preferred device has some very good design and features bundled together which persuade users to opt in for it. The result stated that it's of utmost important to consider product features and design when manufacturing a smartphone so as to get a lot customers in the long run.

Russell (2012) determined the major factor affecting purchasing of smartphone between the software and hardware component amongst the Malaysian populace, the result showed that most

users buy smartphone because of the capability of the software component only few buy due to the hardware component, it' shows 33% and 17.6% for software and hardware factors respectively.

Osman (2012) also conducted a study about the hardware and software component of smartphone in determining which factor has more preference over the other. They found out that the although some individual use that hardware component of a smartphone as a vital factor that affect the intention to buy smartphone but found out that most people used the software as the major factor that affects them to purchase a smartphone.

As indicated by the Mobile (2011) conducted a study on the hardware and software component of the smartphone but they listed other factors attributed to these hardware and software such as color, screen size, design, weight. For the software attributes they stated the operating system, RAM, and applications. These factors are highly considered when purchasing a smartphone by individuals, but they reported based on their findings that individuals mostly looked at the software component of smartphone as the major factor to consider whilst also considering the hardware factor such as the feel, color and screen size. They concluded that the software factor is most important factor that affect the adoption of a smartphone.

Gonzalez (2008) also conducted a research on factors affecting individuals in adopting smartphones. They selected some popular devices such as Samsung, Apple, HTC, Nokia etc. and termed them the hardware component. While for the software component they selected the Android OS, iOS, Symbian OS etc. and termed them the software components. They collected data through questionnaire and interviews whilst carrying out some statistical analysis on these collected data. Their findings shows that the major factor is the software in determining the operating system to adopt while also some individual finds the hardware component also a vital factor in determining what smartphone to adopt.

2.2.4 Consumer decision process

As indicated by Rahmat and Nasution (2012) a purchaser decision making in determining what kind of smartphone to adopt can be altered by some individuals, such as, the shopper's close relatives and social parts and status. Considering the information gained from the examination towards parts impacting Smartphone purchase direct around Generation Y, some administrative recommendations and proposition of examiner are given, where it could be advantageous for the

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associations for their future frameworks foreseeing improving cell phone bargains. With the enormous open entryways in the cell phone exhibit inside a short traverse of time, cell phone provider should grab the open ways to fulfill what impacts Purchase Decision of customers.

Further to Knapman (2012) shoppers of cell phone are firmly impact by mark with regards to picking Smartphone. Furthermore he stated that some customers can be persuaded by a brand with good reputation as a factor that affects the purchase of smartphones by users.

Kotler and Keller (2012) carried out a study on the behavioral intention adopted by most buyers of smartphone and passed through different stages of behavioral intentions such as recognition of the actual smartphone, searching for vital information regarding the smartphone, making some evaluation of other alternatives out there in the market, making critical decision on purchasing the smartphone and purchase behavior. They stated that individuals carry out a lot of decision making before purchasing a smartphone ranging from limited, extended and nominal. Although they stated that consumer that refuse to carry out these decision process might end up in purchasing a premature smartphone with little value for money in the long run. So that's why customer find it very important to making some critical behavioral intention before purchasing a smartphone in the market.

2.2.5 Convenience concern

Suki and Suki (2013) conducted a study in regards to the association in between a concern of students for conveniences and found that there is a significant relationship. Further, Anthony (2012) stated the need of individuals wanting to carryout operations with their smartphones with so much ease, without wasting much of time in doing so, and they think this will help their business to flourish more and more. They stated that they want to exploit the smartphone mobility which enables them to carry out their day to day activities much like the laptop which gives little conveniences. Operations such as sending emails, social media, games and other important applications all on the run.

Payne et al. (2012) conducted a research on how convenient is using the smartphone, he stated that because these days you can find wifi almost everywhere you go this makes it very convenient for smartphone users for surfing the internet on the go without opting for laptops and other devices that are not mobile in nature. A research conducted that there is a high usage of smartphone by

patients for consulting doctors via smartphone applications. And Liew (2012) stated that people utilize the smartphone as a reading material instead on using textbooks because the smartphone is more convenience it terms of usage.

Ding et al. (2011) revealed in his study that the use of smartphone almost in everywhere and anytime is the main reason why it is convenient for most users and offers simplicity in its usage. He defined convenience as a state where things are done quite easy with no or little difficulty, and little stress.

2.2.6 Dependency concern

Suki and Suki (2013) investigated dependency concern on purchasing smartphone and found a relationship exist in between individuals and behavior shows towards purchase. Lim (2013) stated that the gross use of smartphone has affected the way people communicate and also this has led people to be dependent on using smartphone as a mode of communication.

Ding et al. (2011) that recently many individuals are highly reliant and depended on using smartphones, he furthermore suggested that people are addicted to these smartphones. The study found that the high usage of e-learning in some countries is one of the factors that has led to the high dependency on smartphones. Many individuals use these smartphones for sending emails, social media, playing games, watching videos, writing sticky notes etc. with their smartphones. The study found that there is an association between smartphone dependencies and behavior in making their purchase. According to Gibson (2011) he stated that currently the US is experiencing a high dependency of smartphone which has affected the way and manner individuals relates socially with one another and this is as a result of the gross amount of smartphone application around to work with.

Lisa (2013) stated that recently the people of Malaysia are mostly addicted to using the smartphone and cannot do without it. They mostly interact socially with this smartphones, acquire knowledge, e-commerce etc. With some report suggesting some individuals spend 80% of their daily time on these smartphones.

2.2.7 Social influence concern

Suki and Suki (2013) demonstrated there is a significant relationship on how smartphone influence individuals socially and stated a lot of individuals are dependents on these gadgets.

Farzana (2012) stated that in adopting smartphone the social influence plays a vital role in persuading users on what device to buy, many individuals adopt these smartphones beause of social influence in the communities. Because it's now the trending way of communication using the smartphone, these has led many people adopting these devices ranging from family members, friends and school mates. Based on the result findings they stated that friends and relatives have a social influence in purchasing smartphones.

As per another exploration by Osman (2012), they conducted a research on the social influence on why people adopt smartphones in high numbers and found out that the recent change in the way and manner people communicate is the major reason why individual are persuaded to adopt these smartphones. Ding et al. (2011) furthermore added that the addiction in these smartphones are influenced socially by family and friends. In addition Ernest et al. (2010) stated that the celebrities also could be more influential than family and friends when adopting these smartphones and its addiction.

CHAPTER 3

CONCEPTUAL   FRAMEWORK

This chapter is designed as a medium to fully understand the distinction between the two operating systems, Android and IOS. This section compares the features and services offered by the two operating systems. In addition the architectural component of each operating system is analyzed, factors that affect buyers decision and lastly a conceptual framework of the factors that affect the demand of smartphones is explained in detail

3.1 Mobile Devices

Bhargavi et al (2016) defined a mobile device as a portable, handheld device used mainly for communication purposes and is connected to a wireless network to allow a user to access applications which are available online. A notable number of mobile devices include laptops, tablets, smartphones, Global Positioning System (GPS) devices and wireless, handheld payment terminals. Several technologies can be used to connect mobile devices such as Wi-Fi, Bluetooth or 4G communication services.

Choosing a mobile device in this day and age has become a complex process involving a lot of research before one can ultimately choose the device they desire (Divya et al., 2016). With different mobile device manufactures with similar products, the process of buying a mobile device can be overwhelming. It is therefore crucial for one to embark on research regarding the style preferred, connectivity, size of device, features and brand required before deciding to buy a mobile devices.

3.1.1   Smartphones

According to Cassavoy (2012) smartphone can be characterized to be a gadget that empowers the client to influence phone to call and in the meantime has a few highlights that enable the client to do a few exercises that in the past was impractical except if utilizing a PC or an individual advanced aide (PDA, for example, sending and accepting messages, altering an office record. Also, Gin and Suan (2012) stated that smartphone is a 4 inch device which performs as powerful like a heavy

and big size laptop. It able to do everything like a laptop, keeping everything such as documents, photos, games and apps in one's pocket.

3.1.2 Tablets

Osman (2012) described tablets as portable devices larger than the normal smartphone and have inbuilt mobile operating systems with processing circuits and these devices mainly use Wi-Fi and mobile data. Furthermore, the researcher explained that, just like smartphones, the user has the ability to install applications on the device which the user can use anytime, anywhere and some applications have the ability to fully function when the user is offline.

In addition, input is either entered through a touch screen or using a stylus pen and tablet computers offer various features such as smartphones and computers such as the ability to play music, take photos, play videos and they are integrated with front and rear digital cameras, microphones, GPS features and services, sensors, barometers and flashlights (Star, 2014).

3.2   Mobile Operating Systems

Ifeanyihukwu and Azikiwe (2016) defines an operating system as a group of software that is responsible for managing the hardware and providing services to computer programs. The operating system acts as an interface between computer hardware and the user. There a number of operating systems available for mobile device application development and their basic tasks include file management, process management, file management, security, error detection, controlling peripheral devices such as printers and coordinating software and users. In this section, the researcher will concentrate on the two main operating system IOS and Android which are mostly preferred by users when buying smartphones:

3.2.1 Android mobile operating system

On the 23rd of September 2008, Google launched its first operating system known as Android designed for use on touchscreen devices such as smartphones and tablets (Bhargavi et al., 2016). Android's operating system uses open source code, meaning manufacturers give the right to users to modify the source code and distribute the software for any purpose. In addition, the

programming languages that are used for Android software are C, C++ and Java (Sujata et al., 2016).

3.2.2 IOS mobile operating system

Apple Inc. released its operating system IOS on the 29th of June 2007, designed for use on smartphones and tablets developed by Apple (Divya et al., 2016). IOS operates its software as a closed source meaning the source code is not open for use by the public or available to developers to modify the code and build their own operating systems based on it. The programming languages that are used are C, C++ and other objective C languages (Nagarkoti, 2015).

3.3 Comparing Android and IOS Services and Features

This section compares the two operating systems IOS and Android in detail. Previous studies (Star, 2014; Divya et al., 2016) have attempted to differentiate the operating systems in terms of applications, side loading, customizability, camera, voice assistants, cloud services, security and reliability as described below:

a) Applications and App store usability

Bhargavi et al. (2016) pointed out that as of the year 2016, Android had the highest number of applications (1.3 million) compared to its competitor IOS which had 1.2 million applications. Furthermore, the researcher mentioned that IOS has more potential marketwise compared to android as developers find it easier to develop IOS applications compared to android applications and most applications tend to appear first on the IOS market before they appear on the android market. A notable example given by one of the researchers Ifeanyichukwu and Azikiwe (2016) was that Spotify releases all its new videos first on the IOS platform as well as Instagram, it also releases new updates on IOS platforms first before it releases them to the android platform. On the other hand, it is important to note that Google Play has a higher number of free apps compared to IOS, however, this is a threat to mobile users as it introduces malicious apps and malware due to the openness of its source code (Osman et al., 2012).

b)   Side loading

Side loading refers to the process whereby a user has access to more applications than the ones which are available on app stores. This process however introduces devices to malware as most of the third party apps are not screened for viruses and malware (Nagarkoti, 2015). In android devices, for a user to activate side loading, the user must install an APK file package and select the option for "unknown sources". However, on IOS platforms, the users must install Xcode which is an integrated development environment (IDE) which allow them to design and run their own applications.

c)   Customizability

With IOS operating systems, there is one uniform interface on all its devices, which is contrary to android devices which have different interfaces as there are many manufacturers (Bhargavi et al., 2016). The open architecture of android platforms makes it have unlimited options for customizations compared to IOS platforms. With Apple devices, a few widgets can be added to the notification panel whereas, android allows its users to choose widgets to place on their interface from thousands of widgets available in the app store (ref any). New launchers and customized themes can be installed on android devices bringing a brand new look to the device whereas the only option to unlock various customizations when using an IOS device is to jailbreak the device which is not an option for many users (Osman et al., 2012; Star, 2014).

d)   Security and reliability

Each operating system has its own pros and cons. Tons of malicious software and malware are introduced into the android platform due to the open nature of the operating system (Chow et al., 2012). On the other hand, Apple secures its devices using Touch ID and its operating system pushes updates onto devices making it more advantageous compared to the android operating system (Mohan, 2014).

e)   Cloud services

Cloud services refers to the services that mobile users have access to which are stored in cloud servers and can easily be accessed when connected to the Internet (Pikturniene, 2013). Apple used

iCloud as its cloud server and enables users to access files and information stored on the cloud without having to manually sync the files. Android on the other hand uses Google Drive.

f)   Voice assistants

Voice assistants are smart programmed intelligent robots which assist users in using the mobile devices. Both operating systems have voce assistants, Google voice assistants are more advanced in web searches compared to Siri, the voice assistant for IOS platforms (Lim, 2013).

g)   Camera

In the literature, many researchers (Nagarkoti, 2015; Mohan, 2014; Malviya et al., 2013; Ifeanyichukwu & Azikiwe, 2016) have pointed out that the camera is an important factor which many people consider when buying a smartphone. Both operating systems have devices with different camera megapixels, however apart from megapixel count, Apple devices have the best cameras when it comes to light capturing, colour contrast and other details (Bhargavi et al., 2016).

According to a study conducted by Bhargavi et al. (2016), the researchers classified the differences Android and IOS based on development language, licence, and App store, side loading battery, customizability, security and voice assistant as describe in Table 3.1 below.

Table 3.1: Feature comparison between Android OS and IOS (Bhargavi et al., 2016)

		Android	iOS
PARAMETER	Vendor	Open Handset Alliance	Apple
	Symbol		
	Official Site	www.android.com\	www.apple.com\ios\
	Developed in programming Language	C, C++, Java	C, C++, Objective-C, Swift
	License	Open source	Proprietary
	App Store	Google Play	App Store
	No. of App	1.3 million	1.2 million
	Side loading	Available	Done by installing Xcode7
	Battery Demand	Highest	Less
	Customizability	Highest	Provide few option (allows a few selected widgets to be applied on the notification panel)
	Security	Softest to crack	Hard to crack
	Voice Assistance	Google now	Siri

3.4 Architecture of Android OS

This section describes the architecture of the Android Operating System in detail as depicted on Figure 3.1 below.
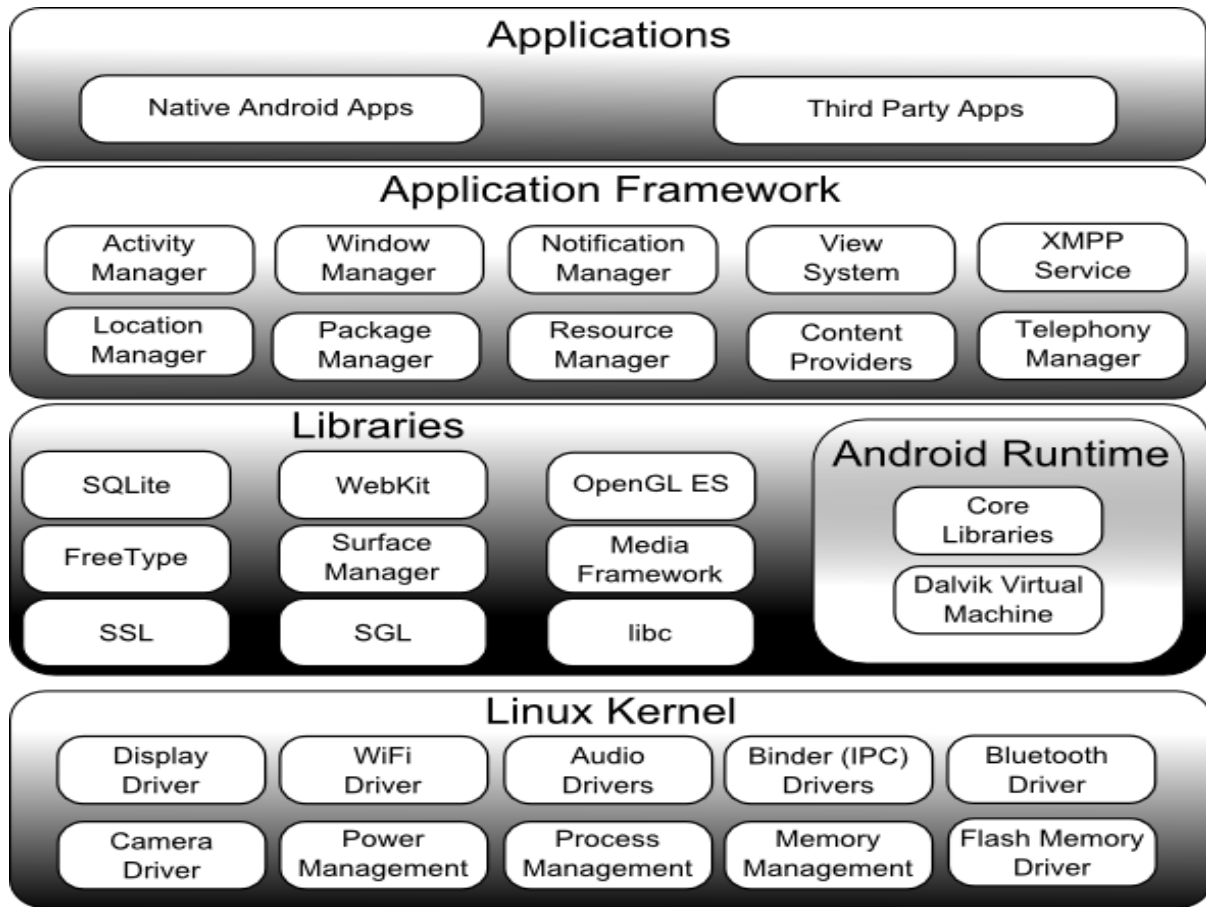
Figure 3.1: Architectural framework of the Android operating system (Divya et al., 2016)

The explanations are based on a study conducted by Divya et al. (2016).

3.4.1 Applications

All applications developed for Android operating platforms are developed in Java and the main applications which come with every device are SMS application, calendar, maps, browser, contacts, client and other default applications.

3.4.2 Application framework

All core programs in the API framework can be accessed by developers. The application framework makes it easy for developers to reuse the source code as it simplifies the reuse of its components. Security of the framework must be followed when accessing components of other applications.

3.4.3 Libraries and Android runtime

Android operating system has two distinct libraries namely, Android Runtime and Android Library. Java core library and Dalvik virtual machine comprise the Android Runtime. The core library is responsible for providing most java functions and the Dalvik virtual machine is responsible for registering virtual machines as well as improving mobile device performance. On the other hand, the Android library is responsible for supporting the application framework and connecting links between the application framework and Linux kernel. In addition, the Android library is developed in C or C++ programming language.

3.4.4 Linux Kernel

Android uses a Kernel system based on Linux 2.6 and it operates as an internal storage server responsible for managing internal processes, Internet protocol, bottom drive and other vital services supported by Linux kernel.

3.5 Architecture of Apple OS

The architectural design of the operating system has 4 distinct layers namely cocoa touch layer, media layer, core services and core OS as depicted on Figure 3.2 below.

Figure 3.2: Architectural structure of the IOS operating system (Divya et al., 2016)

Divya et al. (2016) explained the architectural design in detail as described above:

3.5.1 Cocoa touch layer

This layer contains the main frameworks that are used for building IOS applications. In addition, the layer supports technologies responsible for multitasking, touch-based input, push notifications and other useful services. This layer is founded upon the Model View Controller (MVC).

3.5.2 Media layer

This layer contains audio, graphics and video technologies. Graphics in this layer are a package of core graphics, animations and open GL technologies that are responsible for handling 2D vector and animating views. Audio technologies supports various formats from rich audio and video technologies support a range of video formats ranging from .mp4. .mov, m4v and .3gp file extensions.

3.5.3 Core services

This layer contains all major applications that are used on all devices such as iCloud storage which stores all your files and data in one central location. The core service framework contains the address book, and core data for user accounts used for managing model view controller applications.

3.5.4 Core OS

This layer contains the accelerate framework which has all low-level features such as Bluetooth and external accessory framework. The accelerate framework has numerous interfaces for performing algebra, image processing and DSP. Developers are able to interact by using the Bluetooth framework. On the other hand, the external accessory framework enables devices to communicate with each other.

3.6 A Conceptual Model of Factors Influencing Preferences between Buying Smartphones

In the literature, Sujata et al. (2016) came up with a model that comprises of 5 factors that affect buyers' decisions when buying a smartphone. The factors include technology factors, hardware, brand factors, financial facts and other basic facts as explained in detail below:

a) Technology factors

Technological factors play a crucial role in a buyer's smartphone preference and this includes, the level of security, the version, supported applications, changes that happen to the phone based on updates and compatibility with other devices. A good example is that apple devices are only compatible on other IOS devices which makes it a disadvantage when you try to switch from one brand to another (Osuagwa, 2014).

b) Hardware factors

The various hardware components in a smartphone or tablet play an important role in a buyer's decision. These include, network coverage, display, memory capacity, sound, battery life, camera and the overall appearance and style (Sujata et al., 2016).

c) Basic Factors

These include the basic factors that buyer's consider before purchasing a smartphone such as phone size, Internet connection, color, weight, user-interface and screen resolution. The user interface is expected to be livelier, customizable and it must easily adapt to the user's changing requirements.

d) Branding factors

Brand plays a crucial role in today's generation when choosing which smartphone to purchase. The brand's presence is important to the buyer as it assures the buyer that the product has gained a certain position or status in the market. Mobile companies spend thousands in marketing campaigns and ensuring that their devices have the best to offer as buyers tend to spread the message once satisfied hence influencing their peers.

e) Financial factors

Money plays an important role in determining the brand one will pick. One needs a good phone with all the necessary features and applications at an affordable price. Most users tend to use android phones as they are cheaper compared to IOS phones. Among IOS users, most of them buy their phones on an installment plan so the payment plan is affordable in the long run as it is split over a longer period of time (Osuagwa, 2014).
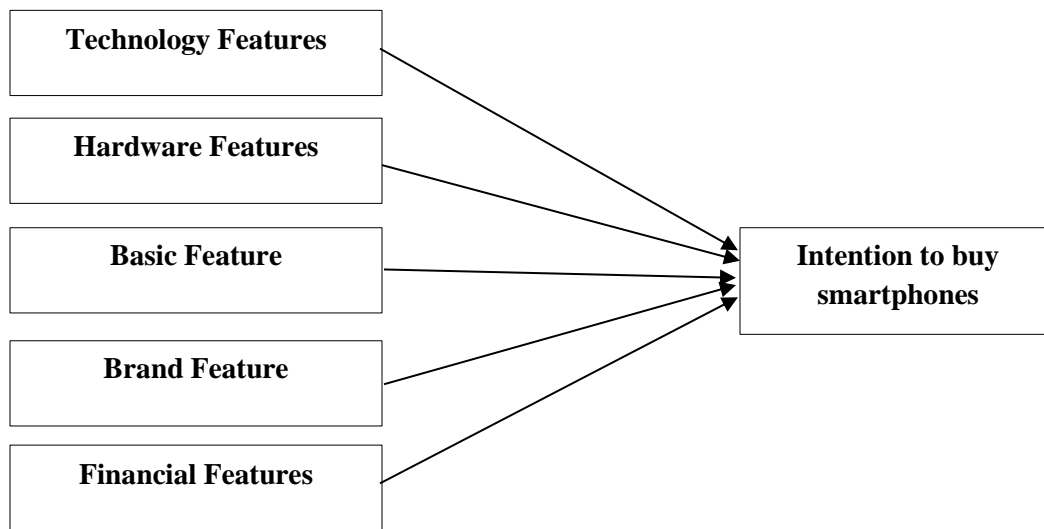
Figure 3.3: A conceptual model of factors influencing preferences between IOS or Android (Sujata et al., 2016)

Chow et al. (2012) described the factors that affect the demand of smartphones with reference to the Android and IOS mobile market as depicted in Figure 3.4 below.
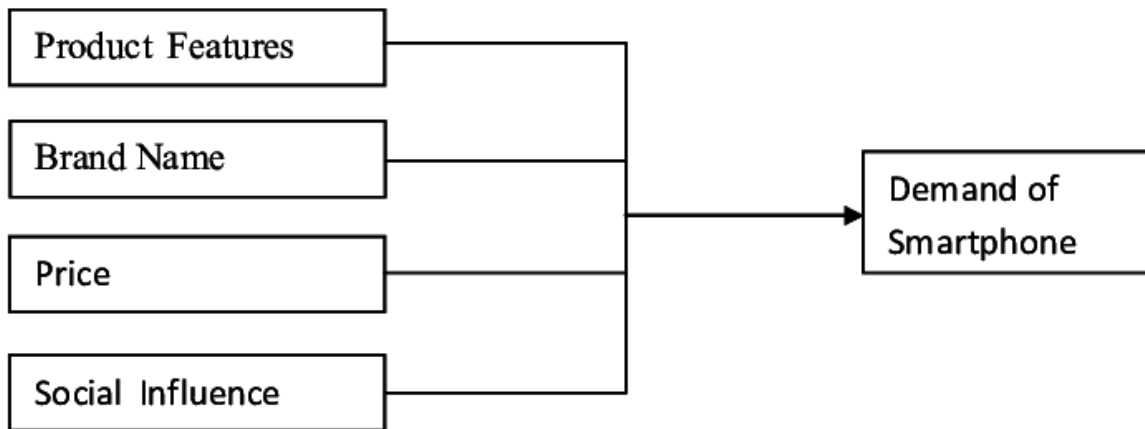
Figure 3.4: A model of factors affecting demand of smartphone (Chow et al., 2012)

a)   Product features

These refers to the different attributes that a product has which aim to satisfy and meet the needs of the user (Ifeanyichukwu & Azikiwe, 2016). Different features on mobile devices bring different levels of satisfaction to users. In this digital era the features that are key include a built-in web

browser, wireless connectivity, multimedia, file management system, storage capacity and movement sensors. Each operating system has different and unique features which are key to consumers when deciding which operating system to choose from.

b)   Brand name

A brand name is seen as a valuable asset to an organization and it suggests quality and price of the product (Nagarkoti, 2015). It is important for companies in the technological sector to improve their product as this will help in distinguishing the product from that of competitors. If buyers perceive one mobile brand to be superior they are most likely to buy the one that people value most. Chow et al. (2012) stated that brands influence a buyer's purchasing behavior which eventually affects their decision.

c)   Price

Price is a critical factor for most buyers when deciding which mobile phone to buy and the brand to choose from (Chow et al., 2012). Price is directly linked to the image and quality of the smartphone, however, some researchers (Azzawi & Nzube, 2014) tend to differ with this assertion. Consumers tend to interpret a higher price as associated to a high quality brand and a low price to an inferior quality. If the price is high and the features comply with the expectations of the buyer, the buyer is most likely to purchase the smartphone despite the high price.

d)   Social Influences

This refers to the process whereby one is forced to change their mind intentionally or unintentionally as a result of the people around him/her influencing the way the person behaves, thinks and acts (Chow et al., 2012). Regarding the reviewed literature, a lot of scholars (Osuagwa, 2014; Divya et al., 2016; Azzawi & Nzube, 2014) have found out that social influence plays a critical role during the buyer's decision making stage.

e)   Demand

This refers to one's ability and willingness to purchase a product at a given price. Nagarkoti (2015) mentioned that, before a buyer decides the phone he/she wants, they go through a process of

information search, evaluation, review and brand recognition. Consumer characteristics often portray the behavior consumers have when purchasing mobile devices such as the extent to which one is willing to pay a high price for a phone with more advanced features. It is therefore important to fully understand the factors that affect the decisions that consumers make when buying smartphones (Chow et al., 2012).

CHAPTER 4

RESEARCH METHODOLOGY

This section gives a detailed explanation of the research model that the researcher used, the participants and how they were sampled, tools for data collection, methods of analyzing data, the study schedule, reliability tests of questionnaire dimensions together with a Gantt chart showing how the research progressed over a period of time.

4.1 Research Model

In order to fully understand the influence of the independent variables on dependent variables in the study, the researcher developed a model using questionnaire dimensions obtained from various researchers who have indicated throughout the literature that the effects of brand image, price, product features and peer group influence on purchase intention. In order to fully achieve this key aim of the study, the researcher will find the relationship between independent variables (brand image, price, product features and peer group influence) on the dependent variable (purchase intention). The analysis will also indicate how significant is the influence of individual dimensions on the purchase intention. The survey method was utilized for the study to collect data from the participants. The research model together with the labels of the research hypotheses is depicted in
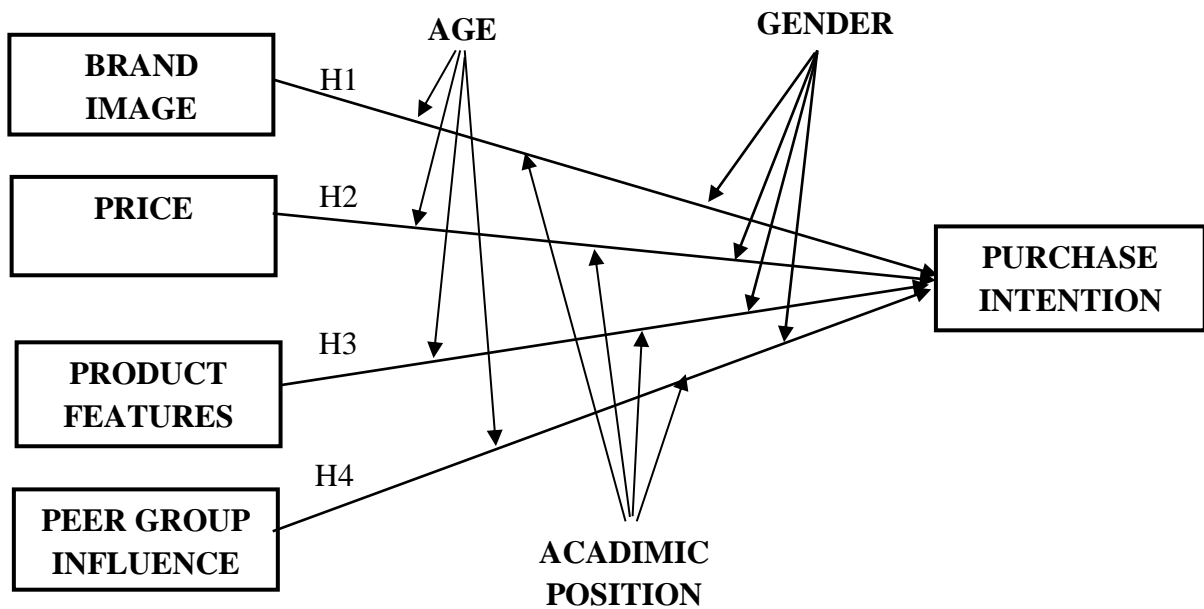
Figure 4.1: Adopted model for this study

4.2 Hypotheses

The main hypothesis of this study is that there exist significant relationships between the dependent dimensions and the independent dimension. In other words, purchase intention of a smartphone lies on brand image, price, product features and peer group influence. To understand whether other Dimensions have a significant influence on Purchase Intention, the researcher developed the following premises based on the dimensions:

Brand image

Brand image could be existed through advertisements, promotions or by the users' experience or through the features of the product. Consumers purchase well-known products with a good brand image because of perceived quality and low risk. Good brand image will definitely receive good comments from consumers. Thus, brand image is believed tend to have influence on perceptions towards products. This is because satisfaction in a brand over its competitors increases the chances of repurchase (Tee, Behrooz, & Benjamin, 2013). Knapman (2012) highlighted that consumers of the smartphone are strongly influenced by brand when it comes to choosing Smartphone. He stated also that a strong and clear brand image can increase consumer confidence and convince consumers to purchase. Thus, the researcher hypothesized

H1: *Brand Image has a significant influence on Purchase Intention of a smartphone.*

Price

Price has been one factor believed to attract consumers to a product; providing greater value at a discounted rate. Companies maintain margins in order to stay relevant in competition. Additionally, while price discounting is believed to attract consumers, such discounting may have negative effects on the purchase intention. Price discounting may even hurt a company's overall brand image. These issues warrant further investigation (Grewal, Baker, R., & Norm, 1998). Thus, the researcher hypothesized

H2: *Price has a significant influence on Purchase Intention.*

Product/Application Features

It was believed that Product/Application Features is a key determinant of consumers' judgments of value and eventual purchase intention. This is particularly important since other factors such as Brand Image or Price might as well be accompanied by either low or higher quality Application/Product Feature. On this account need to check whether Application/Product feature had a significant effect on purchase intentions (Grewal et al., 1998). Thus, the researcher hypothesized

H3: *Product/Application Features has a significant influence on Purchase Intention.*

Peer Group Influence

The net effect of peers on purchase intention of a smartphone is another important factor that communicates prior impressions from peers. This believed to be fueled by the desire to be accepted by and feel relevant among peers; it might be individual's desire to achieve prestige and recognition from others, without necessarily meaning that the brand image, price and products features been taken into account (Río, Vázquez, & Iglesias, 2001). In line this, the researcher hypothesized

H4: *Peer Group Influence has a significant influence on Purchase Intention.*

Following these hypotheses, the researcher made the body of the question; *do other Dimensions have a significant influence on Purchase Intention?* And that will equally build the research model together with the hypotheses are as follows:

Gender, Academic Position and Ages across all the Dimensions

Other hypotheses were made in order to understand whether there exists a significant difference between a group of the participants. The groups are categorized based on Gender, Age and Academic Position. Thus, the following premises are made based on the categorical groups against the continuous dimensions:

>   **H5:**   There is a significant difference between genders across all the dimensions
>
>   **H6:**   There is a significant difference between Academic Position across the dimensions
>
>   **H7:**   There is a significant difference between Ages across the dimensions

4.3 Research Participants

The study laid it focused majorly on students that are presently in their active state in their various institutions in three universities in Northern part of Cyprus which are NEU, EMU and CIU. The three universities were selected as they are the ones closer to where the researcher stays and the researcher frequently visited these universities. The participants were students enrolled in IT related departments namely; Management of Information Systems, Computer Engineering, Information Technology and Computer Information Systems.

Volunteer participants were chosen who were using IOS and Android phones. A total of 472 students participated in the study. Random sampling method was used to select participants at the 3universities. Utilizing Raosoft test estimate number cruncher, the populace measure from four divisions was 1000 and the confedence level was 95% on the grounds that the overview questions was in excess of 20.The Raosoft test estimate adding machine gave the base prescribed size of the study to be 278.For this review the focused on understudies was 472 which is approximately to the Raosoft adding machine suggested measure.

4.3.1 Demographic information

The following Table 4.1 depicts the research participant demographic data. As seen from the results, it can be seen that 55.7% of the participants were male students, whereas 44.3% were female students. The age group with most participants was the 18-22 years followed by the 23-27 age group and lastly the 28 years and above age group which had 38.3%, 37.1% and 24.6% participants respectively. For academic positions for participants, 51.3% were undergraduate students, 38.6% masters students and 10.2% were PhD students. Participants came from four different departments namely; Management Information System, Information Technology, Computer Information Systems and Computer Engineering and they had 24.8%, 43.9%, 28% and 3.4% participants respectively. In addition, the students selected were from 3 faculties and 52.2% were from the Applied Sciences, 37.1% Engineering and 10.4% Education.

Since North Cyprus is a multi-national country, it was ideal for the researcher to understand where each participant originated from. It can be seen that 4.2% were Cypriots, 12.1% were Turkish, 25.2% were Nigerians, 34.7% were Libyans, 15% were from Iraq and 8.7% other nationalities

Table 4.1: Demographic information of research participants (472 participants)

Demographic Variable		Number	Percentage (%)
University	NEU	172	36.4
	CIU	144	30.5
	EMU	156	33.1
Gender	Male	263	55.7
	Female	209	44.3
Age group	18-22	181	38.3
	23-27	175	37.1
	28+	116	24.6
Academic Position	Undergraduate	242	51.3
	Postgraduate	230	48.7
Department	Computer Information Systems	117	24.8
	Management Information Systems	16	3.4
	Information Technology	132	28.0
	Computer Engineering	207	43.9
Faculty	Applied Sciences	248	52.5
	Engineering	175	37.1
	Education	49	10.4
Nationality	Cypriot	20	4.2
	Turkish	57	12.1
	Nigerian	119	25.2
	Libyan	164	34.7
	Iraq	71	15.0
	Other	41	8.7

NEU: Near East University, CIU: Cyprus International University, EMU: Eastern Mediterranean University

4.3.2 Preferred Mobile Operating System

An analysis of the two operating systems was done, Android and IOS and responses obtained from the participants were analyzed in the Table 4.2 below. Students were also asked to select the mobile operating system they preferred and results showed that 60.4% of the participants preferred Android and 30.9% IOS whereas 8.7% preferred both.

Results have shown that 8.1% of participants spend an hour or less, 8.9% spent 2-3 hours on the internet, 28.6% spend 4-5 hours and 54.4% spend more than 6 hours. In addition, 48.9% prefer to use Play Store and 51.1% prefer to use App Store. Furthermore, students use different internet connections and results have shown that 10.6% of the participants use 3G technology, 41.7% use 4G technology and 47.7% use Wi-Fi to connect to the internet.

Table 4.2: Preferred Mobile Operating System of participants

Demographic Variable		Number	Percentage (%)
Operating system preferred	Android	285	60.4
	IOS	146	30.9
	Both	41	8.7
Hours spent on the internet in a day	0-1 hour	38	8.1
	2-3 hours	42	8.9
	4-5 hours	135	28.6
	6+ hours	257	54.4
Mobile phone have been using	0-1 year	36	7.6
	1-2 years	41	8.7
	3-5years	133	28.2
	6+ years	262	55.5
What influenced your decision to buy a smartphone?	Price	64	13.6
	Carrier network	129	27.3
	Availability of Apps	95	20.1
	Quality of operating system	100	21.2
	Ability to multi-task	84	17.8
Application store preferred	Play Store	231	48.9
	App Store	241	51.1
Internet Connection used	3G	50	10.6
	4G	197	41.7
	Wi-Fi	225	47.7

4.4 Data Collection Tools

A paper-based questionnaire was used to collect data. There were three sections; demographic data, operating system usage, and 37 psychometric items divided into five dimensions as follows: brand image, the price of the phone, product features, peer group influence, purchase intention (see Appendix 1). The first 2 sections were used to get an overall idea of mobile preference and personal information of the respondents and the five dimensions were based on responses ranked on a 5 Likert scale.

Section I: Demographic Information: Amid collecting data from participants for this study, after deciding on the nature of the participants which were precisely universities students. Consequently, the collected university student's data was divided into various data groups based on demographic information congregated from the questionnaire. Precisely, this section provides with a detailed explanation of the demographic information of participants, such as their age, department, nationality, school as well as their level of study.

Section II: Preferred Mobile Operating System: The study tries to investigate the factors that influence student's preference to buy smartphones whilst trying to investigate the different types of operating system used as a data parameter of the gathered questionnaire. Questions like *'Which of these operating systems do you use/prefer'*, *'What influenced your decision to buy either of the above smartphones?'*, *'Which application store do you prefer the most?'*, *'How many hours do you spend on your mobile phone?'*, *'How do you connect to the Internet?'*, *'How long have you been using a mobile phone?'* and *'Does your device have an anti-virus?'* to help in achieving some of the primary objective of this study, the researcher examined the above research questions: Furthermore this section provides detailed information on the usage of operating systems that are used by participants in terms of the preferred operating systems and functionality.

Section III: Factors Influencing Purchase Intention:

A total number of 37 questions were asked regarding the scaling factors influencing university students' preferences to smartphone as part of the thesis objectives. Furthermore, the researcher distributed 500 questions among the three aforementioned universities in North Cyprus. A total of 19 questionnaires went missing and could not be retrieved resulting in a total of 481 questionnaires collected. During data entry into the Statistical Package for the Social Sciences (SPSS), a total of

9 questionnaires were not fully completed and these were removed from analysis resulting in a total of 472 questionnaires that were entered into SPSS and analyzed.so the return rate was 94.4%. Conclusively, this section gives detailed information on the four main factors that affect smartphone purchase among students such as price, brand image, peer group influence and product features.

SECTION I

Demographic Information
- 7 Items

SECTION II

Perfered Mobile Operating System
- 7 items

SECTION III

Factors influencing smartphone purchase
- Brand Image (5 Items)
- Price (5 Items)
- Product Features (13 Items)
- Peer Group Influence (11 Items)
- Purchase Intetion (3 Items)
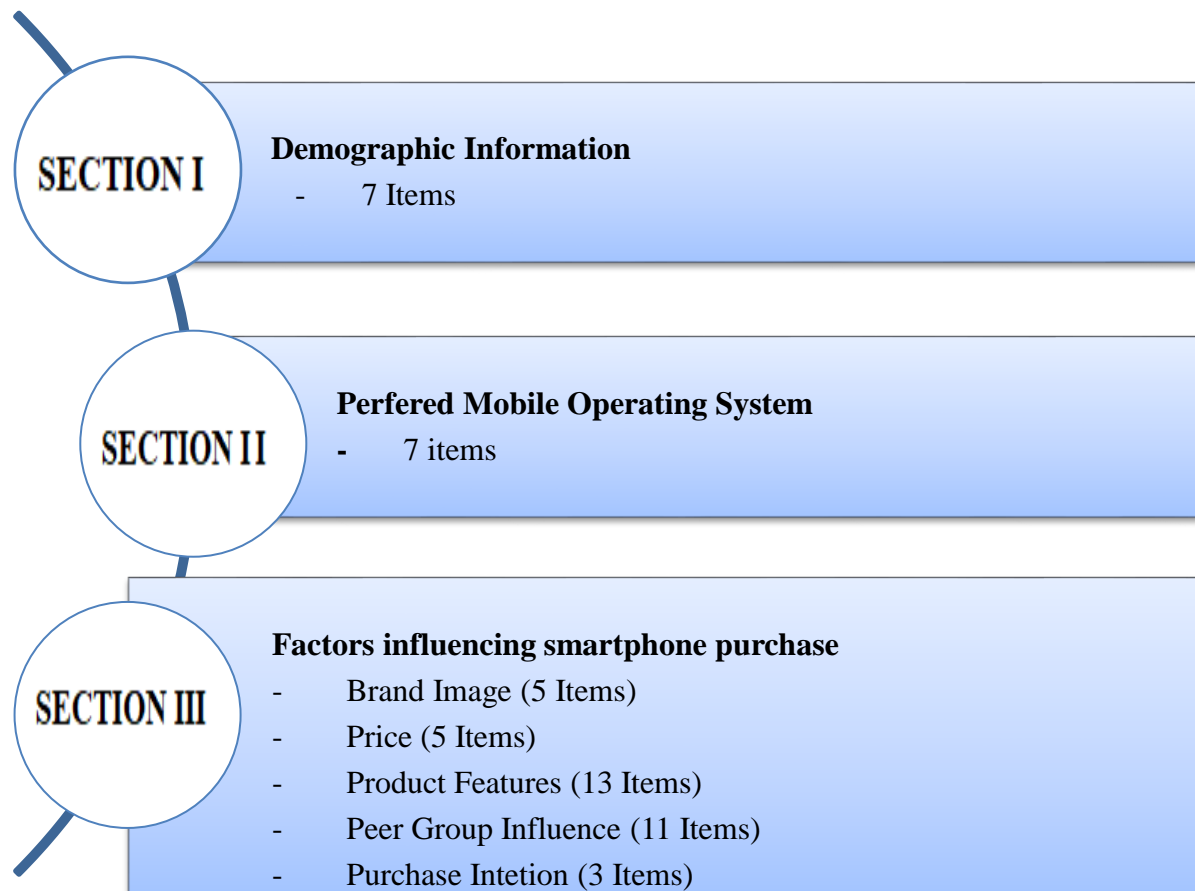
Figure 4.2: The illustration of questionnaire structure

4.4.1 Reliability

In order to assess the reliability of the questionnaire, a Cronbach alpha was computed in SPSS and results showed that the questionnaire was reliable as evidenced by a total Cronbach alpha of .916. The highest Cronbach alpha was found in the product features/ applications dimension which had a total of .863, followed by Brand Image dimension which had a total of .804, followed by Purchase Intention which has an alpha of .758. Lastly Price of Smartphone dimension and Peer group influence which have Cronbach alpha .736 and .658 respectively. Robinson et al. (2013)

argued that the Cronbach's Alpha value should be at least 0.6 before it can be considered satisfactory. From these results, we can clearly see that the reliability of the entire questionnaire was excellent.

Table 4.3: Questionnaire dimensions and reliability test

Dimensions	Reference	Number of Items	Cronbach Alpha
Brand Image	Tee et al. (2013)	5	.804
Price	Cheong and Park (2005)	5	.736
Product /Applications Features	Jainarain (2013)	13	.863
Peer Group Influence	Lee (2013)	11	.658
Purchase Intention	Ling(2011);Ching Fu and Yu Ying(2008); Tom and Kristin(2005)	3	.758
TOTAL		37	.916

4.5   Data Analysis Methods

The collected data analyzed using the following data analysis methods:

- Descriptive Statistics for demographic information and related analyses
- Parametric and/or non-parametric techniques for groups comparison
- ANOVA for age analysis

4.6 Ethical Consideration

In order to conduct the research at three universities in North Cyprus (Near East University, Cyprus International University and Eastern Mediterranean University an ethical approval letter was requested at the university research board in order for the research to be conducted in a fair manner without any discrimination. The Ethical committee for scientific research reviewed the proposal and questionnaire and granted the researcher an ethical approval letter which is attached on the appendix section of this study. Confidentiality of data collected was preserved and kept confidential.

4.7 Research Procedure

Table 4.4 below shows the different stages that the researcher went through during thesis writing as well as the duration it took for each phase to be completed. In summary, the steps followed are described below:

1. A literature was done during the entire writing of the thesis to fully understand what has been done before and to monitor current trends in the mobile sector that might affect students' preference of buying smartphones.

2. A thesis proposal was submitted to the Computer Information System Department for review.

3. Feedback was constantly given by the supervisor on key areas.

4. Ethical committee conducted a review on the ethics covering the research area

5. The researcher distributed the questionnaires to the 3 universities.

6. After a period of data collection, the results were entered into SPSS ready for analysis.

7. Data was analyzed using the most appropriate data analysis method and results were reported.

8. The supervisor was well informed during each phase and corrections and feedback obtained was taken into consideration.

9. The final version of the thesis was presented to the Jury board and further feedback and corrections were taken into consideration until the final thesis was approved.
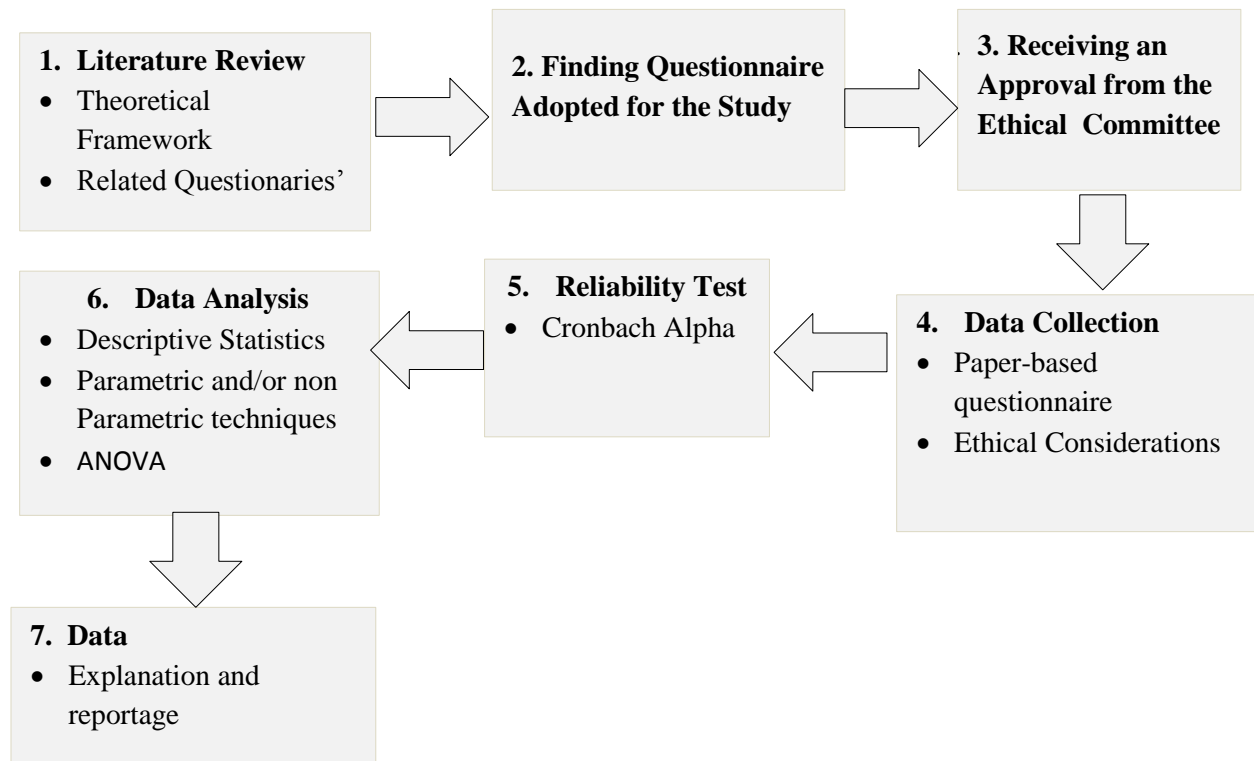
Figure 4.3: Research process or procedure

4.8 Research Schedule

Conducting a study or research can be of different kind based on the activity that is needed to be carried out right from the start, carrying out a research can be extremely difficult. However, the study kicked off since November in the year 2017 and was completed during the Spring of March 2018. The scheduling was grouped into four in order to have more understanding of the research schedule, while each stage was dependent on its later, the groups shows how the whole process of the timing was been carried out. The following shows the description of the task and duration of each parameter while providing the actual tasks involved in doing the research and how long each likely took to be completed.

Table 4.4: Thesis research schedule

| PROCEDURE	DURATION (WEEKS)
Literature review (until thesis defence)	10
Thesis proposal	5
Consulting IT mobile experts	1
Drafting questionnaire	1
Testing Questionnaire on a sample	1
Analysing sample data and feedback	1
Drafting final questionnaire and distributing t students	2
Data collection, entering data into SPSS and data analysis	11
Writing chapter 4, 4 and 6	3
Thesis submission for review	2
Corrections and amendment of the thesis	1
Jury and Final corrections	2
Total	40 Weeks
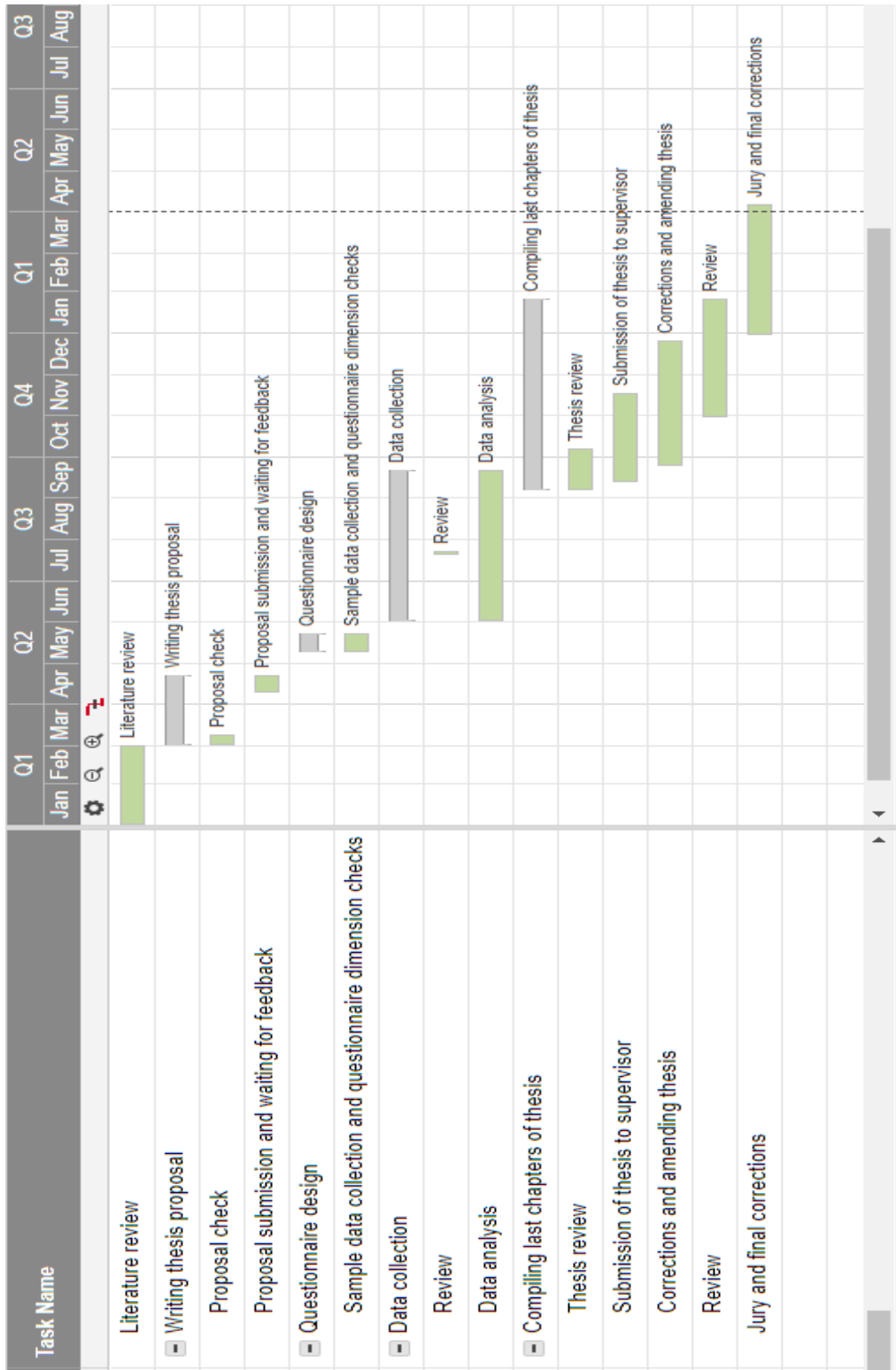
Figure 4.4: Gantt chart of the study

CHAPTER 5

RESULTS AND DISCUSSION

For this chapter it tries to explain the study findings that was obtained after data analysis with reference to previous research in order to fully understand the study. Each research question is fully analyzed and results stated.

5.1 Dependencies between the Dimensions

This section wishes to explore all possible correlations between the constructs of the research model followed by the key findings on the influence of individual dimensions on purchase intention. The following table depicts the correlation matrix, which summarizes the linear dependence between an assorted pair of dimensions:

Table 5.1: Correlation matrix

Dimensions	1	2	3	4	5
Brand Image	1				
Price	$.188^{**}$	1			
Product/Application Features	$.840^{**}$	$.256^{**}$	1		
Peer Group Influence	$.682^{**}$	$.419^{**}$	$.663^{**}$	1	
Purchase Intention	$.708^{**}$	$.168^{**}$	$.755^{**}$	$.477^{**}$	1

**Level of 0.001 (2-tailed) shows that correlation is significant

Significant positive correlations existed between all the intersected dimensions. It implies that with an increase in one dimension there will be an increase in the other corresponding dimension.

The strongest correlation was recorded on Product/Application Features – Brand Image (correlation coefficient=0.840) followed by Purchase Intention – Product/Application Features (correlation coefficient =0.755) in that order. These values indicate high dependence between the pairs. That's to say with a high increase in the perceived influence of Product/Application Features there will be a high increase in the perceived influence of Brand Image and Purchase Intention toward acquiring a smartphone.

From the above correlation matrix, we clearly understood the directions of dependencies by considering the magnitude and signs of the correlation coefficients. Thus, a description of the observed linear dependence between any two assorted dimensions can either be positive or negative (i.e. direct or indirect dependence) and a strong one or weak. However, this isn't enough to falsify the formulated hypotheses, we need to view all possible influencing relationships from the main independent dimensions (i.e. Brand Image, Price, Product/Application Features, Peer Group Influence) toward the proposed dependent dimension (i.e. Purchase Intention), such relations that can be considered in understanding which dimension could significantly predict the Purchase Intention. Hence, the researcher employed regression analysis in the subsequent section.

5.2 **Influence of Brand Image, Price, Product/Application Features and Peer Group Influence on Purchase Intention**

Linear Regression Analysis was applied in estimating the model results as categorically explained in the following table and subsequent subsection:

The researcher built relevant hypotheses based on the assumptions that; Brand Image, Price, Product/Application Features and Peer Group Influence will serve as indicators of students' belief these dimensions influence their purchase intention.

Do all other Dimensions have a significant influence on Purchase Intention? This is what the following hypotheses are made-up as a body of premises to structure the research model. The hypotheses are as follows:

H1:   *Brand Image* has a significant influence on *Purchase Intention*.

H2:   *Price* has a significant influence on *Purchase Intention*.

H3:   *Product/Application Features* has a significant influence on *Purchase Intention*.

H4:   *Peer Group Influence* has a significant influence on *Purchase Intention*.

After computing a Regression Analysis model, the following results were recorded:

Table 5.2: Influence of the Dimensions on Purchase Intention

	β	t	p	Remark
Brand Image	.300	5.170	.000	H1 Supported
Price	.012	.375	.708	H2 Unsupported
Product/Application Features	.576	10.266	.000	H3 Supported
Peer Group Influence	-.115	-2.565	.011	H4 Supported

* Level of .05 shows that difference in mean is significant

From table above, we could say all the hypotheses under consideration are supported by the responses except for H2 (*Price* has a significant influence on *Purchase Intention*) and H4 (*Peer Group Influence* has a significant influence on *Purchase Intention*) which has significant influence but opposite to the hypothesized direction. This is further depicted in the following figure:
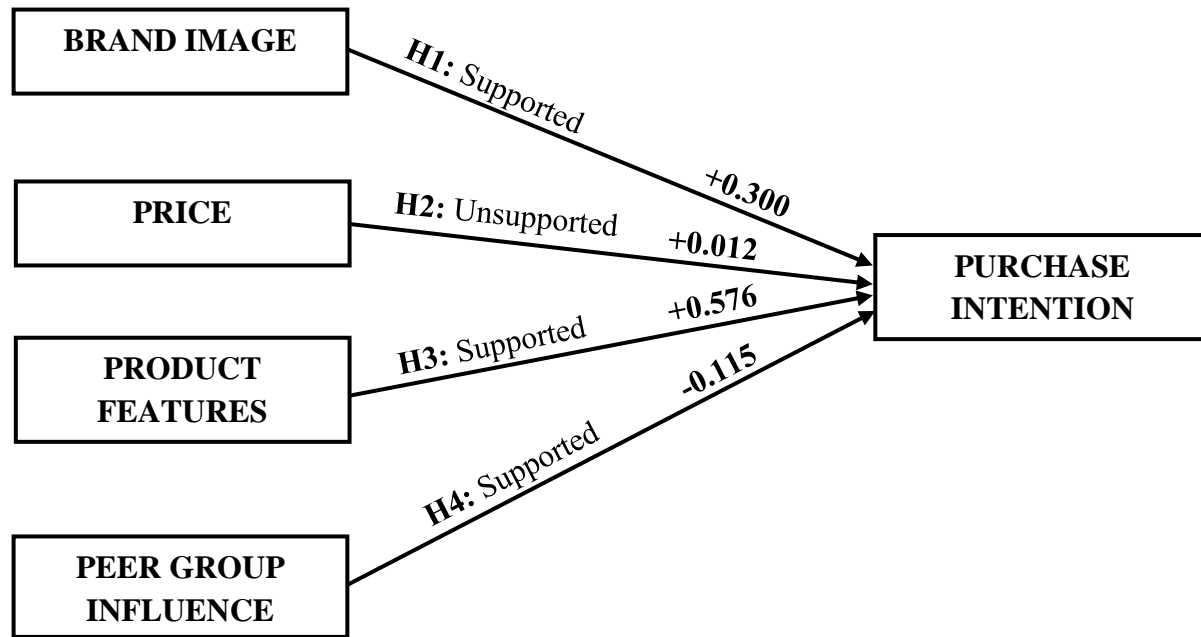
Figure 5.1: Overview of the results

Considering the coefficients from Table 5.5 under Brand Image with coefficients (β=.300, t=5.170 and p<.05); we could deduce that the overall regression model is significant. β=.300 denoted that Brand Image accounts for 30% of the variance in Purchase Intention. (p<0.05), indicated that "Brand Image" had a significant positive influence on "Purchase Intention". Thus, H1 is supported. This shows that the perceived belief in Brand Image has a strong impact on Purchase Intention of a smartphone. Improving the belief in Brand Image in students will make a higher influence on

smartphone Purchase Intention. A similar result was recorded by (Grewal et al., 1998; Río et al., 2001).

On the contrary, by considering the coefficients under the second dimension; Price (β=.012, t=.375 and p>.05); we could deduce that the overall regression model is not significant. (p>0.05), indicated that "Price" had no significant influence on "Purchase Intention". Thus, H2 is not supported. This shows that the Price has no strong impact on Purchase Intention of a smartphone. Reducing the Price for students might not make a significant influence on smartphone Purchase Intention. A similar result was recorded (Tee et al., 2013).

A similar explanation as in H1 goes for H3 by considering the coefficients under Product/Application Features with coefficients (β=.576, t=10.266 and p<.05); we could deduce that the overall regression model is significant. β=.576 denoted that Product/Application Features accounts for 57.6% of the variance in Purchase Intention. (p<0.05), indicated that "Product/Application Features" had a significant positive influence on "Purchase Intention". Thus, H3 is supported. This shows that the perceived belief in Product/Application Features has a strong impact on Purchase Intention of a smartphone. Improving the belief on Product/Application Features in students will make a higher influence on smartphone Purchase Intention. A similar result was recorded (Maha & Mac, 2012).

As opposed to the hypothesized direction, Peer Group Influence with the coefficients Price (β=-.115, t=-2.565 and p<.05); we could deduce that the overall regression model is significant. (p<0.05) indicated that "Peer Group Influence" had a significant negative influence on "Purchase Intention". Thus, H4 is supported but in the opposite direction. This shows that the perceived belief in Peer Group Influence has a negative impact on Purchase Intention of a smartphone. Improving the belief on Peer Group Influence in students will make a higher negative influence on smartphone Purchase Intention. This contrary to the findings recorded in (Tee et al., 2013).

5.3   The Difference between Genders across all the Dimensions

An independent t-test was computed in order to find out the difference between gender and each of the five dependent variables (Brand Image, Price of Smartphone, Product features, Peer Group Influence, and Purchase Intention). In other words, to test all the dimensions based on the first hypothesis (H5: There is a significant difference between *genders* across the dimensions). The

Levene's Test for Equality of Variance was used to determine the variability between the scores of the independent and dependent variables. As shown in Table 5.1 below, p > .05 for Brand Image, therefore we conclude that there is no statistically significant difference between gender and brand image (t = -.50, p=0.62) males metric values is (M=2.71, SD=0.72) while the females metric value is (M=2.73, SD=0.57). Similar findings were found by Asohan (2012) who conducted a study in Germany to find factors influencing students' preference to buy smartphones. Results shows that between brand image and gender is no difference.

The rate for p > .05 for the price of a smartphone, therefore the study ascertain that between price of smartphone and gender exists no statistical significant difference (t = -.51, p=0.61) males metric values (SD=0.80, M=2.39) while the females metric value (SD=0.64, M=2.36). Similar findings were also found by many researchers (Lim, 2013; Nagarkoti, 2015; Domie, 2013) who concluded that there is no different for males and females regarding the price they are willing to pay for smartphones.

Since p > .05 for Product features, therefore we conclude that no statistical significant difference between product features/applications and gender (p=0.13, t = 1.50) males metric scores is (SD=0.72, M=2.59) while females metric scores is (SD=0.61, M=2.49). Contrary results were found by mobile (2011) in Qatar who found out that between product features and gender exist no significant difference. Differences in results could be due to differences in settings used as Mobile (2011) conducted his study at 3 companies interviewing employees.

We can clearly see that p <= .05 for Peer Group Influence, therefore we conclude that there is a statistically significant difference between gender and peer group influence (t = 1.91, p=0.05) in males metric values (M=3.00, SD=0.53) and females (M=2.91, SD=0.55). This suggests that the people whom one associates with greatly influence the choice of smartphone one will buy. One is most likely to buy a smartphone that is approved by his/her family/friends. If friends are using Android smartphones, the probability of buying an Android phone is higher as a result of peer group influence compared to buying an IOS smartphone. Similar findings were found by Domie (2013) who conducted a study among 181 college students in Namibia and found out that between peer group and gender exist no significant difference and influence with higher levels evidenced in male students. The researcher stated that most males are interested in technology and always consult friends to hear their opinions about a product before making the decision to buy.

Table 5. 3: Showing the difference between genders across all the dimensions

Factor	Gender	N	Mean	Standard Deviation	Difference in Mean	t	p
Brand Image	Male	263	2.71	0.72	-0.03	-.50	.62
	Female	209	2.73	0.57			
Price of Smartphone	Male	263	2.39	0.80	0.03	.51	.61
	Female	209	2.36	0.64			
Product Features/Applications	Male	263	2.59	0.72	0.09	1.50	.13
	Female	209	2.49	0.61			
Peer Group Influence	Male	263	3.00	0.53	1.0	1.91	**.05***
	Female	209	2.91	0.55			
Purchase Intention	Male	263	2.50	0.95	0.08	1.40	.32
	Female	209	2.28	0.82			

* Level of .05 shows that difference in mean is significant

5.4 Differences in between Academic Position across all the Dimensions

An independent t-test was computed in order to find out the difference between academic position across all the dimensions. In other words, to test all the dimensions based on the second hypothesis (H6: There is a significant difference between *Academic Position* across the dimensions). The Levene's Test for Equality Variance was used to determine the variability between the scores of the independent and dependent variables. As shown of Table 5.2 below, p < .05 for Brand Image, therefore we conclude that there is the statistically significant difference between academic position and brand image (t = -3.12, p=0.02) the metric scores for undergraduates is (SD=0.62, MD=2.70) while for postgraduates is (SD=0.71, M=2.78) contradictory results were found by many researchers (Chew, 2012; Isobella, 2012; Kiong et al., 2013) who found that despite your level of study, brands does not play a role and for that reason, you will notice different mobile brands among different educational levels. In addition, Divya et al. (2016) also found out that brand and position are not significant in a study in Ghana at 3 oil firms. The researcher concluded

that position held in the company did not have any significant difference as far as the mobile brand used by the employee was concerned.

$P > .05$ for price, therefore we conclude that there is no statistical significant difference between academic position and price (t = -1.24, p=0.21) undergraduates metric values (SD=0.59, M=2.45) while postgraduates is (SD=0.64, M=2.53). Contrary results were found by Bhargavi and Dipti (2016) who found out that there was a significant difference between position held and price of a smartphone. The researchers conducted their study in Taiwan at 3 banks among employees at different levels. Results showed that employees at lower levels had cheaper phones compared to top management. Differences in results could be due to differences in settings as students are most likely to have phones based on their parent's level of income.

$P < .05$ for product features, therefore we conclude that there is statistical significant difference between academic position and brand image (t = -3.0, p=0.00) undergraduates metric scores is (SD=0.64, M=2.51) while postgraduates (SD=0.73, M=2.60). Similar findings were found by Nagarkoti (2015) in India who conducted a study to find acceptance of mobile technology among 506 students. Findings revealed that 86% of participants from different educational levels were not concerned about product features. The researcher emphasized that what people consider as important is functionality, as long as the product can do what the user expects it to do, other features are not a concern.

There was significant difference between academic position and peer group influence at (t = 1.25, p=0.01) undergraduates metric scores is (SD=0.51, M=3.05) while postgraduates (SD=0.57, M=2.91). This further suggests that peer group influence is a major factor when it comes to buying decision despite the academic position held by an individual. Domie (2013) found out that academic position and peer group influence were significant to each other. However, the researcher pointed out that peer influence is greatest among undergraduate students and as the ladder goes up, it decreases as people tend to become more independent and they can make decisions on their own.

Table 5.4: Showing the difference between academic positions across all the dimensions

Dimension	Academic Position	N	Mean	SD	Mean Difference	t	p
Brand Image	Undergraduate	242	2.70	.62	-0.08	-3.12	**0.02***
	Postgraduate	230	2.78	.71			
Price of Smartphone	Undergraduate	242	2.45	0.59	-0.84	-1.24	0.21
	Postgraduate	230	2.53	0.64			
Product Features/ Applications	Undergraduate	242	2.51	.64	-0.09	-3.0	**.00***
	Postgraduate	230	2.60	.73			
Peer Group Influence	Undergraduate	242	3.05	.51	0.14	1.25	**.01***
	Postgraduate	230	2.91	.57			
Purchase Intention	Undergraduate	242	2.33	0.43	0.21	1.54	0.32
	Postgraduate	230	2.46	0.56			

* Level of .05 shows that difference in mean is significant

5.5 Differences that exist between Age across all the Dimensions

In determining the age differences across all the dimensions an analysis of variance was deployed called one-way ANOVA. In other words, to test all the dimensions based on the second hypothesis (H7: There is a significant difference between *Ages* across the dimensions). The supposition of Levene's test of homogeneity was used to check the differences between the independent and dependent variables. As shown in Table 5.3 below, between age and brand image shows significant difference at $p <=.05$ and having the following values (F= 5.04, p=0.0). Furthermore, a Tukey HSD test was conducted to find the post hoc comparisons between all academic positions. A mean scores of (SD=0.67, M=2.78) was found based on the result for ages between 18-22 years, these differed from ages between 23-27 years (SD=0.61, M=2.78) and ages between 28 years and beyond (SD=0.67, M=2.56). Similar results were found by Asohan (2012). Findings of the study stated that between age and brand there exist significant difference. The younger students were concerned more about mobile brand compared to the older students who were only concerned

about functionality as opposed to the brand. The younger students pointed out that brand image goes along with status.

Between age and price of a smartphone there exist a significant difference at $p \leq .05$ and having the following values (F= 3.24, p=0.04). Furthermore, a Tukey HSD test was conducted to find the post hoc comparisons between all academic positions. Results describe mean scores for 18-22 years as (SD=0.75, M=2.40) these differed from the 23-27 years age set (M=2.45, SD=0.73) and 28 years and beyond (SD=0.69, M=2.23). This suggests that as people get older their knowledge increases and brand become an important factor to them when deciding which smartphone to buy.

Between age and product features/applications there exists no significant difference at $p > .05$ and having the following values (F= 1.61, p=0.20). Furthermore, a Tukey HSD test was conducted to find the post hoc comparisons between all academic positions. For ages between 18-22 years the mean metric value is (SD=0.68, M=2.48) these differed from ages of 23-27 years (SD=0.49, M=2.98) and the metric value for ages between 28 years and beyond is (SD=0.71, M=2.54). This suggests that as people get older price become an important factor to them when deciding which smartphone to buy. Contrary findings suggested by Divya et al. (2016) who concluded that age have no whatsoever significant difference with product features in a study conducted at 3 universities. The researcher pointed out that the older the students get the more applications they use both academically and socially and for that reason, they require certain features to be available on their mobile devices.

Between age and peer group influence there exists no significant difference at $p > .05$ and having the following values (F= 0.96, p=0.38). Furthermore, a Tukey HSD test was conducted to find the post hoc comparisons between all academic positions. The mean metric scores for ages between 23-27 years categories based on results is (SD=0.56, M=2.98) these differed from the 23-27 age group (M=2.98, SD=0.49) and metric scores for 28 years and beyond group is (M=2.90, SD=0.59). Similar results were found by Isobella (2012) and Banks (2004) who found out that age and peer group influence go hand in hand. Both researchers used the term social influence in their studies and concluded that peer influence is greatest among undergraduate students who tend to be easily influenced by others and this is evidenced in our results as we have higher mean results under that level.

Table 5.5: Showing the difference between ages across all the dimensions

Dimensions	Age	N	Mean	Standard Deviation	F	p
Brand Image	18-22 years	181	2.78	.67	5.04	.00*
	23-27 years	175	2.78	.61		
	28 and above	116	2.56	.67		
	Total	**472**	**2.72**	**.66**		
Price of Smartphone	18-22 years	181	2.40	.75	3.24	.04*
	23-27 years	175	2.45	.73		
	28 and above	116	2.23	.69		
	Total	**472**	**2.38**	**.73**		
Product Features/ Applications	18-22 years	181	2.48	.68	1.61	.20
	23-27 years	175	2.61	.64		
	28 and above	116	2.54	.71		
	Total	**472**	**2.54**	**.68**		
Peer Group Influence	18-22 years	181	2.98	.56	.96	.38
	23-27 years	175	2.98	.49		
	28 and above	116	2.90	.59		
	Total	**472**	**2.96**	**.54**		
Purchase Intention	18-22 years	181	2.45	.49	.78	.47
	23-27 years	175	2.71	.58		
	28 and above	116	2.90	.82		
	Total	**472**	**2.96**	**.54**		

* Level of .05 shows that difference in mean is significant

5.6 Summary of Research Findings

To conclude the analysis, a summary of all the hypotheses regarding demographic information examined and the outcome given in Table 5.4 below:

Table 5.6 Summary of research findings

Hypothesis	Independent Variables	Dependent Variables	Statistical Difference	P value	Remark
Hypothesis **H5**	Gender	Brand Image	No	0.62	
	Gender	Price of Smartphone	No	0.61	
	Gender	Product Features	No	0.13	
	Gender	Peer Group Influence	Yes	**0.05***	**H5 Supported**
	Gender	Purchase Intention	Yes	0.13	
Hypothesis **H6**	Academic Position	Brand Image	No	0.21	
	Academic Position	Price of Smartphone	No	0.91	
	Academic Position	Product Features	No	0.39	
	Academic Position	Peer Group Influence	Yes	**0.00***	**H6 Supported**
	Academic Position	Purchase Intention	No	0.39	
Hypothesis **H7**	Age	Brand Image	Yes	**0.00***	**H7 Supported**
	Age	Price of Smartphone	Yes	**0.04***	**H7 Supported**
	Age	Product Features	No	0.20	
	Age	Peer Group Influence	No	0.38	
	Age	Purchase Intention	No	0.38	

* Level of .05 shows that difference in mean is significant

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

This part of the study tends to summarize the whole research with a focus on the results and recommendations for future research. The researcher outlines observations noted during research and how some limitations of this study could be rectified in future research

6.1 Conclusion

This study focused on investigating the factors that influence students' preference to buy smartphones in North Cyprus. Based on the research model, factors influencing the purchase intention of students was investigated. The predictions might benefit both researchers and mobile companies to understand and fully interpret factors behind a buyer's choice of a smartphone. This research is a step toward bridging the missing gap in the literature as far as the smartphone market is concerned, and unavailability of statistics on the factors influencing North Cyprus customers.

A summary of the findings is explained below:

- Between the dependent variables and the gender exist no significant differences (Brand Image, Price of Smartphone and Product Features) except for Peer Group Influence. This suggests that the people whom one associates with greatly influence the choice of smartphone one will buy. One is most likely to buy a smartphone that is approved by his/her family/friends. If friends are using android smartphones, the probability of buying an android phone is higher as a result of peer group influence compared to buying an IOS smartphone.

- Between three (3) dependent variables and academic positon exists no statistical significant difference (Brand Image, Price of Smartphone and Product Features) whereas there was a significant difference between academic position and peer group influence. This further suggests that peer group influence is a major factor when it comes to buying decision despite the academic position held by an individual.

- Between two (2) dependent variables and age showed a statistical significant difference (Brand Image and Price of Smartphone). This suggests that as people get older their

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knowledge increases and brand as well as price become an important factor to them when deciding which smartphone to buy.

- The researcher demonstrates that Brand Image, Product Features/ Applications, Peer Group Influence are the important factors that positively influence Purchase Intention, while Price does not have significant influence on Purchase Intention.

6.2 Recommendations

There are a number of limitations to this study. For that reason, the researcher recommends the following for future research:

- Future research is strongly recommended focusing at more research participants in different departments. This study only focused at students at three universities. Future research can target many universities.
- The researcher greatly recommends research to be done over a longer period of time that can stretch from 6 months and beyond. This will help in gaining more insight on the factors that influence students when buying smartphones.
- Qualitative studies that involve in-depth interviews can also be conducted to gain an in-depth view as to what students really consider as important when buying smartphones.

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APPENDICES

APPENDIX 1

ETHICAL APPROVAL LETTER:

YAKIN DOĞU ÜNİVERSİTESİ

BİLİMSEL ARAŞTIRMALAR ETİK KURULU

25.10.2017

Dear Hana A.B Elammari,

Your application titled **"Factors Influencıng Students' Preferences To Buy IOS Or Androıd Mobile Operating System Platform"** with the application number YDÜ/FB/2017/11 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Assist. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee

Direnc Kanol

Note: If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this document.

APPENDIX 2

THE QUESTIONNAIRE:

INVESTIGATING UNIVERSITY'S STUDENTS' PERCEPTIONS OF SMARTPHONES BUYING BEHAVIOR

This questionnaire aims to investigate the factors influencing students' preferences to buy iOS or android operating system platform. You are kindly requested to choose the best answer that you feel is correct. The result of this research will solely be used for an analysis in a Master Thesis, and will not be provided to any institutions or organizations in any way and will be kept in strictest confidence possible.

Thanks in advance for taking time to answer our questionnaire.

<div align="right">

HANA .A.B.ELAMMARI (Master student)
Prof. Dr. Nadire CAVUS (Supervisor)

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SECTION I: Demographic Information (please tick the choice most appropriate for you)

1) **Gender:** **a**) Male **b**) Female
2) **Age:** **a**)18-22 **b**)23-27 **c**) 28 and above
3) **Nationality: a**) Cypriot **b**) Turkish **c**) Nigerian **d**) Libyan

 e) Iraqi **f**) Other _____

4) **Department**: **a**) Computer Information Systems **b**) Computer Engineering

 c) Information Technology **d**) Management Information Systems

5) **Faculty: a**) Applied Sciences **b**) Engineering **c**) Education
6) **University: a**) NEU **b**) CIU **c**) EMU
7) **Academic position: a**) Undergraduate **b**) Postgraduate

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SECTION II: Preferred Mobile Operating System (Please kindly tick the choice you prefer most)

1) Which of these operating systems do you use/prefer? **a**)Android **b**) iOS **c**)Both
2) What influenced your decision to buy either of the above smartphones?

a) Price   b) Carrier network   c) Availability of apps   d) Quality of operating system

e) Ability to multi-task

3) Which application store do you prefer the most? a) Play store   b)App store

4) How many hours do you spend on your mobile phone?
a) 0-1 hour   b) 2-3 hours   c) 4-5 hours   d) 6+hours

5) How do you connect to the Internet? a)3G   b)4G   c) Wi-Fi

6) How long have you been using a mobile phone? a)0-1 year   b) 1 - 2 years
c) 3 – 5 years   d) 6+ years

7) Do you have anti-virus program in your device? a)Yes   b)No   c) Don't know

SECTION III: Scale for the factors influencing students preferences to buy iOS and Android operating system platform (please tick the most appropriate to you).

Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
BRAND IMAGE					
1. The phone brand image has social status and gives confidence.					
2. The phone brand image influenced me to purchase the smartphone.					
3. The brand of the phone is a consideration when buying smartphone with higher price.					
4. Smartphone brand name is the main reason when making a purchase decision.					
5. Smartphone brand reputation is a consideration before purchasing.					
PRICE					
6. Price is an important factor when purchasing a smartphone.					
7. Different smartphone brand prices are evaluated before making a purchase decision.					
8. Usage quality and price of the phone determine the purchasing decision of a smartphone.					
9. It is uncertain which smartphone brand provides real value for money in terms of product quality.					
10. Low cost smartphones may have faults.					
PRODUCT /APPLICATION FEATURES					
11. The smartphone with the best feature is a consideration before Making a decision on which phone to buy.					
12. The smartphone that has more open source software is a consideration Before making a decision on which phone to buy.					
13. The smartphone with better security is a consideration before making a decision on which smartphone to buy.					

Statement					
14. The smartphone with better and higher storage memory is a Consideration before making a decision on which smartphone to buy.					
15. The smartphone with fastest network connectivity is a consideration before making a decision on which smartphone to buy.					
16. The smartphone with longer battery life is a consideration before making a decision on which smartphone to buy.					
17. The smartphone size, shape and color are considerations before making a decision to buy.					
18. The screen resolution and size are considerations before making a decision on which smartphone to buy.					
19. The sound system of the phone is a consideration before making a decision on which smartphone to buy.					
20. The camera quality of the smartphone is a consideration before making a decision on which smartphone to buy.					
21. The smartphone better application in the app store is a consideration before making a decision on which smartphone to buy.					
22. The smartphone that connects easily with computer is a consideration before making a decision on which smartphone to buy.					
23. The smartphone that is easy to use and works faster are the considerations before making a decision on whichs smartphone to buy.					
PEER GROUP INFLUENCE					
24. The smartphone that has good impression amongst my peers is a consideration before making a decision on which smartphone to buy					
25. Peer preference is a consideration before making a decision on which smartphone to buy.					
26. The opinions of my friends are required before purchasing a smartphone.					
27. The brand of the smartphone is considered before buying it.					
28. Friend recommendation is considered before buying it.					
29. Apple brand influences the purchase decision.					
30. Samsung brand influences the purchase decision.					
31. The iOS is considered as one of the most secured OSs for smart phones.					
32. Android is an open source OS.					
33. Social status influences the choice of smartphone usage.					
34. Technical aspects of the smartphone are considered before making a purchase.					
PURCHASE INTENTION					
35 .I intend to buy smartphone in near future.					
36. I will recommend my friend to buy smartphone.					
37 .I search for information about smartphone from time to time.					

Please check that you have completed the questionnaire in full.

Thank you for completing our survey, your input is greatly appreciated.

APPENDIX 3

SIMILARITY REPORT: