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Selling Smartphones to Generation Z: Understanding Factors Influencing the Purchasing Intention of Smartphone

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Abstract

Mobile technologies especially smartphones became a very integral part of our live's particularly in the live's of generation Z (Gen Z for short). Unfortunately, the factors controlling the purchasing decision of smartphones among Gen z are still mixed and unclear. As smartphones became more and more the de-facto tools for computing and communication infrastructure, understanding the factors that control the purchasing decision of these technologies will not only help companies increase sales but build more successful gadgets. Accordingly, this study seeks to explore and develop a model that can explain some of the key factors controlling the purchasing intention of such technologies.

Using multiple regression analysis and data collected from 447 respondents from Gen Z, analysis results showed that some of the most classical influential factors such as price, ease of use and usefulness are no more important. Whereas, Payment Options, Perceived Enjoyment Peer and Social Influence, Product Design, and Product Brand were way more influential on the decision of Gen-z to buy smartphones.

Keywords: Smartphones, modeling technology adoption, purchasing Intention.

INTRODUCTION

Smartphones industry is vast growing industry characterized by high competition and rapid technology advancement. Consequently, smartphones have witnessed numerous and major developments supporting advanced computing and communication features including: very high speed data and network communication features, cutting-edge photo and video capturing and editing capabilities, extraordinary personalization options, high-end designs, and superior processing capabilities. Not only this, but smartphones are becoming ubiquitous and expanding in functionalities to include: entertainment, payment, travel management, video and photo sharing, location services and much more [1].

As smartphones industry expands and their offerings in the market became more complex to include more than just the handset, but also the whole package from software systems, applications and network services. Thus, designing relevant offering and knowing what attracts customers becomes very important to increase sales and revenue. Among the largest and most attractive customer category are youngsters who grew-up during the internet and social media boom known as Gen Z. Gen Z can be defined as young adults who were born around the mid 90's branded as high-tech savvy educated users of technologies [2]. Different studies indicated that there are key differences of consumer behavior between different categories of consumers, (i.e., Generation X, Generation Y, and Generation Z) and in their expectations as consumers [3]. Moreover, seems that Gen Z represent more puzzling generation as they appear to behave differently to earlier generations were they have higher expectations, no brand loyalty and care more about the experience [4].

Most studies of Information and Communication Technology (ICT) adoption, usage and intention to buy often relies heavily on a set of three well-grounded theories: Theory of Reasoned Action [5], Theory of Planned Behavior [6] and Technology Acceptance Model [7]. However, many scholars argue that these theories seem to be outdated nowadays and does not take into account some key "rising factors" [8]. Moreover, we argue that some of these theories do not deliberate on the changes that technology made to the new generations who were born and raised attuned to these technologies. In addition, most of these theories assume too much rationality in human behavior, but it seems that the truth is a little bit different. Human behavior is not always controlled by defined and deterministic factors that have to lead to higher utility. Many of our personal decisions are not based on rational analysis even if we know all the consequences of these decisions. This situation becomes more common among youth people, as most of them are more controlled by emotions, need for acceptance and more often is influenced by their peers' behaviors [9].

With all the rapid technological advancement seen in 21st century, many other factors controlling users' intention to buy and use a technology became almost obsolete. The gap between user intention and actual behavior is almost zero, whereas new technologies make old models somewhat irrelevant. Accordingly, this research seeks to:

1. Explore some "rising" significant factors that can influence Generation Z consumers' intention to buy smartphones.
2. Add to the existing literature by addressing the gaps in purchasing intention to buy smartphones by Generation Z.
3. Extract some useful recommendations that can help technology manufactures, sellers and service providers to improve their offerings and achieve better sales.

The remaining of this research is organized as following: the following section briefly present a literature review on technology adoption and smartphone purchase intention, while we present the theoretical model in section 3. Later in section 4, we outline the methodology and then present the model results and analysis in section 5. Finally, in section 6 we present the research results discussion and implications, before we conclude this work and the future research perspectives in section 7.

LITERATURE REVIEW

Smartphones can be defined as multifunctional cell phone devices that provide in addition to the basic voice communication and messaging capabilities over the enhanced wireless networks, an advanced mobile computing capabilities and "smart" applications through a touch interface [10, 11]. However, to understand how these technology are purchased, we need first to look into technology adoption and usage models. In studying the consumer intention to purchase technology in general, different theories have long been used to understand consumers' decision to adopt and use technology. On top of the most utilized models is the technology acceptance model (TAM) presented by Davis [7] for explaining technology adoption and use suggesting that Perceived usefulness and Perceived ease-of-use as most influential factors contributing to technology acceptance and use. Later, the work of Sheth [12] and his colleagues established the "Theory of Consumption Values" which remains a key contribution that tries to explain why we buy. The theory defines five different types of values that control consumer choice, namely: functional value, social value, emotional value, epistemic value and conditional value. In 2000 and in an attempt to explain users' adoption and use of ICT", Ryan and Deci [13] introduced "Self-determination Theory "that distinguish between the effects of extrinsic and intrinsic motivation on behaviors, where extrinsic motivation is perceived to help achieve valued outcomes that are distinct from the activity itself whereas intrinsic motivation focuses on the inherited activity satisfaction rather than their consequence. One of the most recent addition on technology acceptance and intention to use theories, was the Unified Theory of Acceptance and Use of Technology (UTAUT) model in which Venkatesh [14] and his colleagues introduced a modified version of the original TAM model and defined Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions as factors that have influence on technology adoption and as model to identify and test intention to use or buy technology.

However, since the rise of smartphones technologies many researchers argued that smartphone technologies may have special attributes and the factors that influence the adoption and use of these technologies especially among youngsters [15]. In fact, we can easily argue that nowadays smartphones are dominating young people live's while it is heavily used in all their activities from entertainment to education and is defining how they learn and interact with the world [16]. To understand how these technologies are adopted and purchased, researchers had utilized both classical theories such as the Technology Acceptance Model and many other models. For instance, Thokchom [17] used a modified model based on a mix of TAM and marketing mix concept that revealed the significant effect for brand image and price are chief factors for consumer intention to buy a Smartphone. Another similar research by Mekić and Özlen [18] used and extended TAM model to measure acceptance of Smartphones and empirically identified perceived usefulness, Perceived Ease of Use, Security and Privacy and Perceived Enjoyment as the most influential factors for behavioral intention to smartphones acceptance. Another insightful study by Gulera and Parmar in [19] explored the factors affecting consumer preference when buying a Smartphone and specially the effect of smartphone usability features on their choice for buying a smartphone. The study revealed that ease of use, processing speed compatibility and social influence, are major factors affecting consumer preference when shopping for a smartphone. Using a modified version of Theory of Reasoned Action in [20] by Bojei and Hoo indicated that brand awareness, brand association, perceived quality and brand loyalty have positive influence the use of smartphone and its future repurchase intention.

However, when focusing and studying young consumers, a study by Gafni & Geri [15] entitled "Generation Y versus generation X: Differences in smartphone adaptation", explored the difference of "smart" use of smartphones and found that generation Y's tendency to use mobile Internet services when having a personal computer available nearby increases the longer they possess the smartphone whereas they didn't find a significant impact of the period of ownership on generation X's tendency to use mobile Internet services in such situation. Among the interesting studies that investigated the smartphone purchase decision of Malaysian Generation Y, found that smartphone purchase decision of generation Y is influenced by brand concern, convenience concern, dependency concern, price concern, product feature and social influence [21]. In a recent research examining the factors influencing purchase intention of smartphones among young adults in Hong Kong, the study revealed a significant influence for perceived usefulness, perceived ease of use, perceived enjoyment, and perceived value on consumers purchase intention [22].

In fact the list of previous relevant research is very huge and insightful, however based on an extensive literature, we can argue that we need a mix between the long used theories of technology adoption and purchase intention and the different factors that control Gen Z consumer's decision to buy a smartphone. This mix needs to take into account that this young generation is driven by the constant technology innovation in the smartphone industry along with the reduced time to market, easy to use devices, superior device capabilities to be able to understand and re-model the purchasing intention process and factors.

Theoretical Model:

After a comprehensive literature review analysis for the subject matter research associated with purchase intention and technology acceptance and adoption, the proposed research framework (see Figure 1) was defined to consist of one independent variable (Purchase intention), and eight dependent

variables namely: IV: Perceived ease of use, Perceived Usefulness, Perceived Enjoyment, Peer and Social Influence, Product Design, Product Price), Payment Option, and Product Brand.

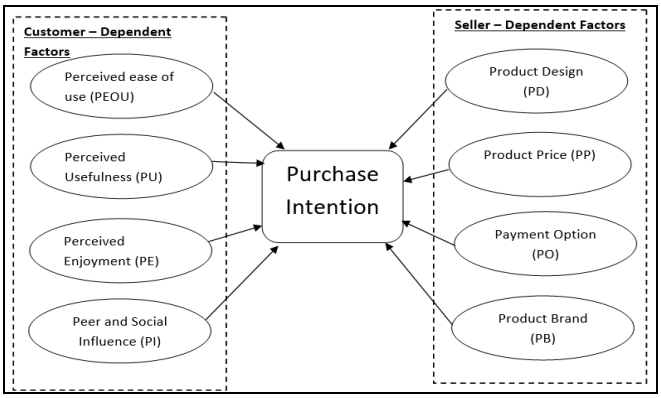

Figure 1. Theoretical Research Model

Independent Variable: Perceived ease of use (PEOU), Perceived Usefulness (PU), Perceived Enjoyment (PE), Peer and Social Influence (PI), Product Design (PD), Product Price (PP), Payment Option (PO), Product Brand (PB). Dependent Variable: Purchase Intention (PIN)

Following; each of the model variables are defined and the research model hypothesis to be tested is defined:

Dependent Variable Purchase intention: Purchase intention is seen as the probability that a consumer attempt to buy a product [23] and the consumers' tendency to take actual purchase action of the product in the future and resist switching to other brands [24]. In fact, purchase intention shows that consumers assess a number of alternatives or options based on different factors and willingness to buy one of these options [25].

Peer and Social influence: the impact of peer and social influence has long been seen as a key factor in consumers' adoption and use of products [26]. Using the principles and practices of hermeneutic phenomenology, some studies found that students' smartphone use is subject to influence from their peers, parents and the community at large when it comes to using these smartphones for formal and informal learning [see 27]. In general, consumer behavior has always been influenced by social factors, such as the consumer's small groups, family, and social roles and status especially when these consumers are young consumers' [28]. In addition, Peer and Social influence is frequently found to have positive impact on purchase behavior of university students and recommended that marketers could possibly stimulate positive word-of-mouth among friends and family to encourage more university students in using smartphones [see 29]. However, how much does this factor influence Gen Z intention to buy smartphones? Thus, following hypothesis will be tested:

H1: Peer and Social Influence have a statistically significant effect on Smartphone purchase intention among Generation Z.

Perceived Usefulness: One of the key factors that have longed believed to predict the behavioral intention of adoption or use and buy is perceived usefulness. Perceived usefulness refers to "the degree to which a person believes that using a particular system would enhance his/her job performance" [7]. However and despite the many previous research that found a positive impact for perceived usefulness, our case will re-test this argument to see if these young smartphone buyers believe that a smartphone can help them enhance their performance in their daily live's' from studying to communication to any activities. Hence, the following hypothesis will be tested:

H2: Perceived usefulness have a statistically significant effect on Smartphone purchase intention among Generation Z.

Perceived Ease of Use: Perceived ease-of-use is defined as "the degree to which a person believes that using a particular system would be free from effort" [7]. Although, we believe that Gen Z are not supposed to face any challenge in using smartphones as they have been very much familiar with using these devices, we need to test if this may hold. In fact, sometimes the rapid development in smartphones can create some challenge to those customers. Moreover, since perceived ease of use have been found to be a significant factor of behavioral intentions to use new technology. Thus, following hypothesis will be tested:

H3: Perceived ease-of-use have a statistically significant effect on Smartphone purchase intention among Generation Z.

Perceived Enjoyment: perceived enjoyment can be defined as the extent to which the activity of using the IT device is perceived to be enjoyable in its own right, and this property is separate from any beneficial performance consequences that may be anticipated [7]. As perceived easy of use and perceived usefulness, previous literature revealed that perceived enjoyment showed a positive effect on purchase intention ([22]. Hence, this research will need to re-test this relation in order to validate if this relation still holds in the case of Gen Z:

H4: Perceived enjoyment have a statistically significant effect on Smartphone purchase intention among Generation Z.

Product Brand: Brand can be a name, term, symbol, design or all the above, and used frequently to distinguish a product or services from others [28]. Brands play an important role in customer purchase decision [30]. A study by Bojei and Hooin [20], titled "Brand equity and current use as the new horizon for repurchase intention of smartphone" found that brand equity dimensions (brand awareness, brand association, perceived quality and brand loyalty) have positive influence on smartphone use and repurchase intention. Moreover, many recent research stressed the rising key role for brand and

showed that brand is becoming more and more a key influencer on purchasing intention [31]. Thus, following hypothesis will be tested:

H5: Brand have a statistically significant effect on Smartphone purchase intention among Generation Z.

Product Price: "Price is the amount of money charged for a product or service, or the sum of the values that customers exchange for the benefits of having or using the product or service" [28]. In fact, Gentry [32] and his colleagues have long argued that consumers (especially in developing countries) are sensitive to the price of products. In fact, purchase intention tends to be lower when the actual price on products is high and as the prices of products of services goes down the customer willingness to buy increases [23], hence the following hypotheses need to be tested:

H6: Product Price have a statistically significant effect on Smartphone purchase intention among Generation Z.

Product Design: Product features (hardware and software) including hardware and software play in important role in customer choices. However, recent studies showed that with the huge advancement and similarity in most smartphones features, product features became not that important. In fact, Osman [33] found that consumer design is the most significant attribute of product features that consumers look for when deciding their smartphone choices. Another relevant study in [34] that explored the factors affecting customers buying decision of mobile phone, found that some of the most important factors controlling consumers' decision are related to product physical attributes. Recently Filieri and Lin [35] found that smartphone is viewed as a fashion item and young consumers look at design as a very important factor and as a symbol of their style and as a way to distinguish themselves from other people. Thus, following hypothesis will be tested:

H7: Product design have a statistically significant effect on Smartphone purchase intention among Generation Z.

Payment Option (type): Based on one-to-one interviews with 27 students from Gen Z, revealed that payment options are very important factor in their purchasing decision to buy any smartphone. The option to pay for the smartphone using instalment not cash is a huge advantage. If we take into account that most of Gen Z are not employed and their income is very much limited and dependent on their parents and social status, we can easily understand that giving these customers not to pay the full amount but as a loan or an installment. Thus, the following hypothesis need to be tested:

H8: Payment options have a statistically significant effect on Smartphone purchase intention among Generation Z.

RESEARCHMETHODOLOGY

Sample, Data collection and Statistical analysis

Due to the huge number of the study population, a convenient sample was used with a target of 600 participants. The primary data has been used in this research was collected using a questionnaire that was developed based on the theoretical model (secondary data). Data was collected using both online and offline questionnaire survey comprised of two main parts: demographics and factors. Multiple-choice questions and 5-point Likert scale questions were employed for the second part. The 5-point Likert scale; ranged from 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly agree.

Out of the 600 surveys distributed, 447 valid respondents were received. The survey was conducted at the University of Jordan during the period of March 5th, 2017 to May 21st, 2017. The participants were between the age of 18 and 21 years old with female (52%) and male (48%).

As for the statistical analysis all data collected from the survey were analyzed using the Statistical Package for Social Science (SPSS) software version 22. Outliers were identified through Mahalanobis' Distance and eliminated while all missing responses were excluded from analysis.

Following table (table 1) shows the key socio-demographic characteristics of the respondents.

Table 1. Socio-demographic characteristics of the Sample

Category		Respondents	Rate
Gender	Male	213	47.6%
	Female	234	52.4%
Age	18	129	28.8 %
	19	146	32.6 %
	20	112	25.1 %
	21	60	13.5 %
Average Allowance per month (income)	Less than 500 $	387	86.6%
	Between 500-1000 $	48	10.7%
	Above 1000 $	12	2.7 %
Frequency of changing smartphone	More than once a year	197	44.1%
	Almost Every year	178	39.8%
	I don't know	72	16.1%

Validity, Reliability and Multicollinearity

Although most survey items were adopted from previous and related literature review then to ensure face validity the

questionnaire was reviewed by seven experts from academia and revised based on their recommendations.

As for reliability, Cronbach coefficient alpha test was conducted on all factors to test the reliability of all of the item variables (See table 2). Cronbach's alpha coefficient for all the constructs range from 0.701 to 0.825, which were all above the recommended value of 0.7, suggesting sufficient internal levels of reliability [36].

Table 2. Reliability test result

Factor	No of Items	Cronbach's Alpha
Product Brand	3	0.810
Product Price	3	0.784
Product Design	4	0.803
Payment Options	3	0.701
Perceived Usefulness	4	0.745
Perceived Enjoyment	3	0.713
Perceived Ease of Use	3	0.767
Peer and Social Influence	4	0.733
All variables	27	0.825

Later multicollinearity among the factors was examined using the variance inflation factor (VIF). The results of the VIF analysis were all between (VIF=2.32) and (VIF= 6.17) indicating low multicollinearity between the factors used, based on the guidelines of Tabachnick and Fidell in [37] that an VIF value of more than 10 will indicate high multicollinearity.

MODEL ANALYSIS AND RESULTS

Based on the previous established research recommendation and in order to test the hypothesis of this study, multiple regression analysis was adopted to identify the most significant factors that impact Gen Z intention to purchase smartphones. All regression parameters were estimated using Ordinary Least Squares.

Following table 3 shows the overall contribution of the factors derived from the theoretical mode to explain purchase intention. The overall results showed that R-squared value was at (0.677) indicating that the combined effect of all independent variables can explain 67.7% of the dependent variable.

Table 3. Model summary

Model	R	R Square	Adjusted R Square	Standard error of the estimate
1	.823a	0.677	0.659	0 .562
a. Predictors: (Constant), Perceived ease of use (PEOU), Perceived Usefulness (PU), Perceived Enjoyment (PE), Peer and Social Influence (PI), Product Design (PD), Product Price (PP), Payment Option (PO), Product Brand (PB).				

To determine whether the model is a good fit for the data, the results of F-test in the next ANOVA table, shows that the p-value is (< 0.05) for the model leading to strong evidence that the model is actually a good fit for the data and the final model may significantly predict smartphones purchasing intention among Gen Z.

Table 4. ANOVA[b] Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17474.261	8	2184.282	65.793	.000([a])
	Residual	14541.315	438	33.199		
	Total	32015.576	446			
a. Predictors: (Constant), Perceived ease of use (PEOU), Perceived Usefulness (PU), Perceived Enjoyment (PE), Peer and Social Influence (PI), Product Design (PD), Product Price (PP), Payment Option (PO), Product Brand (PB).						
b. Dependent Variable: Purchase Intention (PIN)						

The results of multiple regression analysis for the eight hypotheses used in the theoretical model are presented in the following table (table 5). The results show the variance explained by each factor in explaining purchase intention of Gen Z.

Table 5. Regression Analysis and Coefficients a

Model	Variables	Unstandardised coefficients	Standardized coefficients			
		B	Std.error	Beta	t	Sig.
1	(constant)	0.209	0.037		16.274	0.001
	Perceived Ease of Use	0.012	0.109	0.010	0.742	0.251
	Perceived Usefulness	0.126	0.167	0.125	0.913	0.073
	Perceived Enjoyment	0. 180	0.039	0.178	6.122	0.001
	Peer and Social Influence	0.173	0.071	0.172	7.937	0.003
	Product Design	0.410	0.063	0.203	10.926	0.000
	Product Price	-0.024	0.108	-.021	-1.155	0.152
	Payment Options	0.535	0.095	0.431	12.412	0.001
	Product Brand	0.430	0.048	0.352	9.757	0.002

a. Dependent Variable: Purchase Intention (PIN)

As the results shows in Table 5, Perceived Enjoyment, Peer and Social Influence, Product Design, Payment Options and

Product Brand computed p-value was greater than 0.05. and indicating a positive impact on smartphone purchasing intuition of Gen Z. In fact, Payment Options seems to be the most important factor affecting smartphone purchasing intuition with beta (ß = 0.431 and p=0.001), followed by Product Brand and Product Design respectively.

However, perceived usefulness, perceived ease of use and product price seems not to have any significant impact on smartphone purchasing intuition among Gen Z as the results showed that the computed p-value for these three factors were greater than 0.05.

DISCUSSION AND IMPLICATIONS

As the results revealed, most of the factors controlling the purchase intention of smartphones among Gen Z were in-line with many previous research. In fact, Perceived Enjoyment, Peer and Social Influence, Product Design, and Product Brand have long been considered to have a positive effect on purchase intuition (See: [18], [22], [9], [32], [35], and [29]).

However, in contrary to some of the findings using the technology acceptance model [7], perceived ease of use and perceived usefulness did not reveal a significant influence on Gen Z purchase intention of smartphones. In fact, we cannot say that this is surprising since different key studies found that perceived ease of use and perceived usefulness are no more relevant as using the technology and Internet is easy and their benefits are well acknowledged (see [38], [39], and [40]). Not only this, but some researchers argue that TAM perceived usefulness and ease of use made us ignore some other important factors contributing to the adoption of technology [8].

What was surprising from the results, is the positive impact for the Payment Options. The more the payment options the seller or service provider present, the more likely the customer from Gen Z will be willing to buy the smartphone. In explaining this, we argue that as many of Gen Z are less likely to have enough money to buy the "smartphone they love", giving them the option to pay the total amount as monthly instalment for instance will help to increase their appetite and willingness to buy the smartphone.

Overall, in order to grow the sales of smartphones among Gen Z, the overall results suggest that both manufacturers and sellers should focus more on enhancing smartphone features (both soft and hard including design) while working on building a focused image and brand that is attractive to young customer. Moreover, advertisement and marketing through peer and social influencers need to be considered heavily while targeting Gen Z. In addition, we argue that both end sellers need to work on providing more payment ways and options which will decrease the buying barriers. In fact, we argue that renting, especially in crowd-based and service –oriented rising economy can help increasing the sales in a significant way.

CONCLUSION AND FUTURE RESEARCH

This study presented an empirical approach to explore some of the key factors controlling the purchasing intention of smartphones among Gen Z. Using a well-developed theoretical model based on an extensive literature review, the analysis from 447 respondents, showed that Payment Options, Perceived Enjoyment, Peer and Social Influence, Product Design and Product Brand were key influential factors that control the buying decision of Gen Z. Among the main insights this study has revealed, is the key role of providing the proper financial tools for consumers, which can heavily minimize the barriers to buy smartphones especially among Gen Z.

Yet, like any other research study the present study entail some limitations related to the small sample size, population characteristics, time frame and model. Thus, we argue that generalization of these findings needs further investigation while expanding the model to account for financial, branding and social aspects.

Finally, we believe that this dealing with Gen Z and the next generations will need new models which can be very much different from those used in the literature and will require new tools for analysis and will open new selling, marketing, branding and advertisement strategies.

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