

A Study on Factors Influencing the Adoption of a Crowdsourcing Mobile Application among Generation Y and Z in Maldives

Mohamed Munawwar Ali, Mazuwin Binti Haja Maideen

Abstract : The research aims to identify the factors that would influence the Generation Y & Z to adopt a mobile crowdsourcing app in Maldives. The factors studied were i.e. Perceived Usefulness, Social influence, Hedonic Motivation and Perceived risk and its implication on behavioural intention to adopt crowdsourcing app targeted towards housing, repairing, property & maintenance sector among generation Y and Z in Maldives. A total of 107 respondents were selected where 53.77% represented generation Y and 46.73% represented generation Z. All the respondents were employed and thereby receiving some form of income. Four hypotheses were used to test how the factors impact the behavioural intention to adopt crowdsourcing mobile application in Maldives. The hypotheses were analysed using three statistical measures that is the Pearson Correlation, linear regression and ANOVA. Increase in three independent variables which is Perceived usefulness, Social influence and Hedonic motivation resulted in escalation of behavioural intention to adopt crowdsourcing mobile application. Thus, these three behavioural variables were found to have a positive correlation with behavioural intention. On the other hand, Perceived risk which is another independent variable were found to have a negative correlation with behavioural intention, meaning the higher the perception of risk is associated with using the mobile application, the lesser the intention to use the crowdsourcing mobile application will be. Moreover, it was found that Gen Y, the older generation had a higher behavioural intention to adopt the mobile crowdsourcing app with higher perceived usefulness, higher social influence and higher hedonic motivation than the Generation Z the younger generation. Additionally, women were found to have higher perceived risk than men. Yet women were more hedonically motivated than men while men were socially influenced than women in adoption of mobile application.

Keywords: Crowdsourcing Mobile Application, Generation Y and Z, Maldives, repair and maintenance, perceived usefulness, social influence, hedonic motivation, behavioural intention

I. INTRODUCTION

Crowdsourcing takes place by utilizing web technologies such as internet of things (IoT), global position systems (GPS), microphone, camera and accelerometers facilitating individuals to create a large network of like-minded people to respond with resources to complete the transaction. Thus, crowdsourcing mobile apps enable to conduct transactions through mobile phone applications or websites in real-time. (Goncalves, et al., 2015; Chong, et al., 2016; Laudon & Traver, 2017)

allowing to minimize cost and physical presence to fast-track things with efficiency and effectiveness while reaching a wider audience (Goncalves, et al., 2015). The research is one of the rare studies conducted in Maldives in relation to find behavioural pattern and motivating factors in using internet. Yet no research has been conducted on finding factors influencing mobile banking adoption, or more specifically on factors influencing the adoption of a crowdsourcing mobile application in Maldives, which is one of the research gaps this study is determined to cover. Hence, this research aims to identify the factors that would influence the Generation Y & Z to adopt a mobile crowdsourcing app in Maldives. The factors studied were i.e. Perceived Usefulness, Social influence, Hedonic Motivation and Perceived risk and its implication on behavioural intention to adopt crowdsourcing app targeted towards housing, repairing, property & maintenance sector among generation Y and Z in Maldives.

II. LITERATURE REVIEW

Theoretical Models

Current study is focused on evaluating pre-adoption behaviours of a crowdsourcing mobile app, two constructs from each model will be used as independent variables.

Technology Acceptance Model

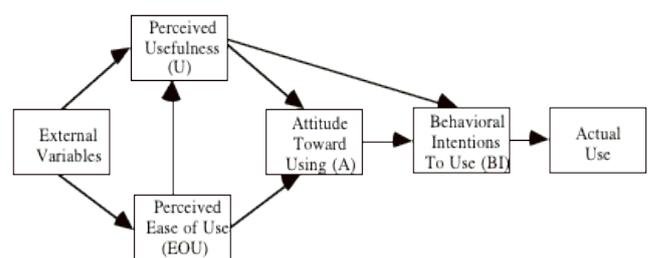


Figure 1: Technology Acceptance Model. Source (Morris & Dillon, 1997)

Though TAM is a commonly used model, it has been criticized for the simplicity and narrow description it portrays on behavioural intention. For instance, it does not reflect the influence of peer pressure or subjective norm on an individual's behaviour. Due to this reason, several researches have proposed modified versions of TAM.

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Unified Theory of Acceptance and Use Model (UTAUT)

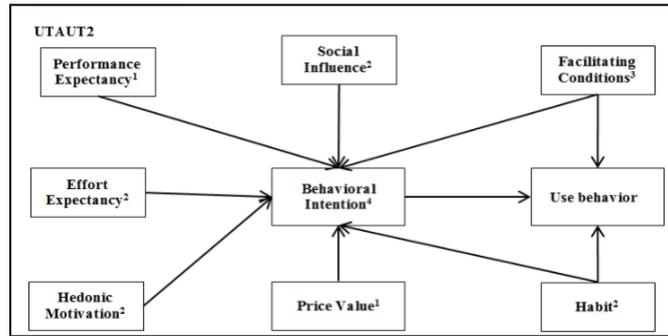


Figure 2: Unified Theory of Acceptance and Use of Technology 2 Model (Tavares & Oliveira, 2016)

One such extended model is Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003) (Mortimer, et al., 2015). Due to limitations of TAM constructs, several studies conducted in developing and developed countries have added constructs as perceived risk, perceived cost and trust and compatibility to evaluate adoption of mobile technology (Singh, et al., 2017). Hence, for this study perceived usefulness from TAM model will be used while and perceived risk will be used as an extended construct (UTAUT) as illustrated above.

Crowdsourcing Mobile Application

Though mobile crowdsourcing has become a popular approach of a business model, literature and researches on mobile crowdsourcing have been very limited in the behavioural studies. This depicts that mobile crowdsourcing is still in infancy stage. Few researches conducted on mobile crowdsourcing highlights that social influence, social relationships play an influential role in the process as mobile users are acting as service providers. Hence, social attributes, selfishness and personal preferences becomes a significant influencer in mobile crowdsourcing. On the other hand, mobile crowdsourcing apps and sites were found to be potential targets of cyber-attacks, and mobile users perceived risk of privacy and security concerns were higher for mobile crowdsourcing services as preservation of private information were less than satisfactory. Hence, mobile users were less passionate to use mobile crowdsourcing services. Thus, these reasons pose challenges for implementing mobile crowdsourcing platform for companies(Yang, et al., 2015). Due to these challenges, the current study is planned to explore the influence of perceived risk and social influence on adoption of crowdsourcing mobile application.

Age Groups (Generation Y and Z)

Description of Generation Y has been conceptualized differently by different scholars. Some researches like Weiler (2005) categorized them by age premise. That is, people born between the years of 1980 and 1994 can be regarded as Generation Y. Generation Z (Gen Z) are people born in 1995 and later. They are known as internet generation, the young adults whom are well educated, members of various networks, innovative and technology savvy. Compared to generation Y, they were born into the digital world where interactions were carried out online and they are familiar with virtual reality and are heavy users of technology. They were found

to have a keen interest in new technologies, have a regard for ease of use of technologies, have the desire to feel secure and safe and they like to escape the realities they face. Moreover, compared to other generations, they are the most challenging for retailers as they are less loyal with not much brand loyalty, and they expect the product to be delivered into their hands. Thereby, these factors create pressure for retailers and retailers have to invest more resources to retain Gen Z attention and their demand (Priporas, et al., 2017; Ozkan & Solmaz, 2015). It can be said both generation Y and Z are digital natives. Yet, while millennials in GenY prefer to communicate through text and voice, Gen Z prefer video communication and spend more time on smartphone and social media. Hence, to attract Gen Z to adopt a new technology, the main area to focus is to take into account their desire for social interaction, facilitate their involvement and provide an experience that is close to virtual reality(Skinner, et al., 2018).

Behavioural Intention to use Crowdsourcing Mobile Application

Behavioural intention of adoption is described by Venkatesh et el 2003 as intention of effective use by the consumer of a future product or service (De, et al., 2016). Behavioural intention is found to be influenced by the attitude of the user. It has been repeatedly used in researches on finding factors influencing adoption of mobile banking across different cultures, countries and adoption of mobile payment systems(Al-Jabri & Sohail, 2012; Alsamydai, et al., 2014; Alalwan, et al., 2017; Boonsiritomachai & Pitchayadejanant, 2017; Choudrie, et al., 2018; Mortimer, et al., 2015). Likewise, it is dominantly used in researches related to adoption of crowd sourcing mobile applications and shopping applications (Pentina, et al., 2016; Ahuja & Khazanchi, 2016; Hsu & Lin, 2016; Natarajan, et al., 2017; Kit, et al., 2014; Malik, et al., 2017; Hur, et al., 2017). And intention to use mobile commerce(Singh, et al., 2017). Hence, strong evidence suggests behavioural intention has a significant role in shaping the actual usage and adoption of new systems(Alalwan, et al., 2017). Thus, based on the evidence from literature, the effect on behavioural intention to adopt the crowdsourcing mobile application will be examined by using Perceived Usefulness, Hedonic motivation, Social influence and Perceived risk.



Perceived Usefulness

Perceived usefulness (PU) is one of the fundamental components of TAM model. The literature indicates that PU and perceived ease of use are influential in forming the attitude and measuring user's intent to use and accept an information system. For instance, users will continue using an application that can assist them in enhancing their productivity. Hence, PU proposes that if a user perceives the product or service is useful (for e.g. A mobile application), then the service can help to improve productivity and job performance of the (Priya, et al., 2018; Weng, et al., 2017). That is, for instance users need to perceive the crowdsourcing mobile application will prove to be a faster, convenient and a more cost-effective way to find helpers for housing, property and maintenance needs in comparison to the current way of seeking for helpers which is through referrals. Thus, past researches reveal perceived usefulness formulates strongly a person's intention to use or not use a technology related product or service (Natarajan, et al., 2017). Hence, the first hypothesis is formed.

H₁- Perceived use has a significant and positive relationship with behavioural intention to adopt crowdsourcing mobile application by Generation Y.

Social Influence

Social influence (SI) is the level of influence the opinions of other have on adoption of an information system (De, et al., 2016). Acceptance of new products or new technology by an individual is hugely influenced by the views and reviews received from the people who are important to the individual. Those reviews and perception have a huge influence on the decision making of adopting the technology. For instance, people are motivated to download apps that are popular among their peers, and or if the app is rated highly among app users. Hence, likewise behavioural intention, social influence (SI) has been a popular subject that is being explored in the literature of consumer behaviour and marketing (Malik, et al., 2017). Hence, social influence were found to have a positive impact on an individual's information technology usage (Alalwan, et al., 2017). The influence from social environment were higher on customers who were highly active on social networking, thus they were more likely to adopt trending mobile apps (Malik, et al., 2017). Hence, social influence is considered to have a direct positive impact independently influencing a user's intention to adopt the technology (De, et al., 2016). Hence, the next hypothesis is developed.

H₂- Social influence use has a significant and positive relationship with behavioural intention.

Hedonic Motivation

As per the UTAUT model, hedonic motivation (HM) is evaluated by the fun and enjoyment associated with usage of technology enabling to activate a positive attitude among users. Likewise, the social influence variable, past researches reveal hedonic motivation has a direct and independent effect in shaping the behavioural intention. Thereby, in UTAUT model it has been used as an independent variable, while some studies have used it as mediator variable as a cognitive tool in association with the TAM model. One research explored the willingness to adopt

mobile banking technology based on hedonic motivation. Studies reveal both self-efficacy and hedonic motivation was found to have a positive impact on behavioural intention to adopt technology (Boonsiritomachai & Pitchayadejanant, 2017). Hedonic motivation (HM) plays an influential role in determining technology acceptance and usage. HM acts as a predictor variable of individual behaviour of adopting an app (Ahuja & Khazanchi, 2016) and it is found as the one of the major value creating factors motivating information system use. Thus, higher hedonic motivation led to a higher perceived values and satisfaction which motivated future engagement (Kim, et al., 2013; Alalwan, et al., 2017). Based on above information, next hypothesis is formed.

H₃- Hedonic motivation use has a significant and positive relationship with behavioural intention.

Perceived Risk

Perceived risk (PR) is the degree which an information system user believes that he or she may be exposed to certain risks as social, security, psychological, financial, physical, performance or time risks (De, et al., 2016). Researches validate that risks involved in relation to e-commerce transactions can be either technology driven (risk posed from a fundamental infrastructure) and relationship driven (risk posed from a trading partner or service provider) (Cheryl, et al., 2017). Several literatures in mobile banking validated that user's perceived risk directly determines the acceptance of technology (Kelly, et al., 2010) and it is regarded as an independent variable that affects shoppers behavioural intention to transact. Unlike other variables as social influence, hedonic motivation and perceived usefulness, perceived risk imposes a negative effect on adoption of technology. That is, when the expectation of perceived risk exceeds the user's risk tolerance level it negatively affects the attitude of user (Muñoz-Leiva, et al., 2017) thereby negatively affecting the behavioural intention to adopt e-commerce (Cheryl, et al., 2017). It is found that if perceived risk measured as failure of technology in delivering the perceived outcome occurs, it results in loss to the user thereby negatively impacting the confidence of the user and in turn impacting the perceived usefulness of a technology. For instance, experiences of unpleasant risks in using mobile application, such as the risk of not receiving payment on online, risk of not receiving a taxi or receiving it after a long delay may negatively impact intention to adopt app (Weng, et al., 2017). Hence, based on the above information, the next hypothesis is formed.

H₄- Perceived risk use has a significant and negative relationship with behavioural intention.

Demographic Variables (Respondent Characteristics)

A study done by Ramirez-Correa, et al., 2015 states that the perception of smartphone usage among both genders, male and female is almost similar. However, there are some cases where this contradicts across genders. The research shows that men are more self-perceived in using the internet features of the phones than females which may not entirely be true among young age group.

On the other hand, women are more prone to be media multitasking such as the use of calls, instant messaging than men (Ramirez-Correa, et al., 2015). Therefore, the aforesaid past research indicates that men tend to believe internet is more of like a productive tool and women think of it more of a toy among the smart phone users. This in turn may affect the usage of mobile crowdsourcing application based on gender. According to a research done by Hur et al., 2017, matured age groups would go for online purchase from

A. Research Design

This research was an explanatory study as the research purpose was to find whether there was a relationship and the type of relationship between the variables (the factors) with the behavioural intention to use a crowdsourcing mobile application (Saunders, et al., 2009). Hence, to address the research problem and achieve the research purpose quantitative research method will be used.

Table 1: Summary of research methods

Research Methodology applied for the current study	
Research Philosophy	Positivism
Research Approach	Deductive
Research Strategy	Survey based
Research Purpose	Explanatory
Research Method	Quantitative

B. Sampling Methodology

For the methodology, the sample target population is the citizens of the Republic of Maldives, particularly the focus will be narrowed down to the nationals residing in the capital, Male'. The respondents to participate in the study will be chosen by applying stratified random sampling, a type of probability sampling. This type of sampling is commonly used when intended to statistically test groups of people with certain characteristics from the population whom are referred to as strata. Compared to this method of sampling, simple random sampling is more appropriate to study large groups of population and does not validate whether the population intended to study is proportionately represented in the sample. The strata in this study are the nationals among the working population whom are falling in the category of Generation Y and Z. That is those who are born between 1980 to 1994 and 1995 and above respectively (Akpojivi & Bevan-Dye, 2015; Gurtner, et al., 2014). The main purpose of targeting employed individuals is that the crowdsourcing mobile application requires making online financial transactions, which are likely to be carried out by an employed individual. Moreover, in Maldives, the population below the age of 20 years are generally students, whom are dependents and financed by their parents and part-time employed (National Bureau of Statistics, 2015).

C. Sampling Size

Data was analysed using SPSS software programme. Linear regression was used to test all hypothesis. As Likert scale questions were on interval basis, mean was used to calculate the central tendency, and standard deviation to calculate the variability (Boone Jr. & Boone, 2012) (Refer Table 2). The hypothesis was analysed using this method. Moreover, Person product moment correlation coefficient was used to access the strength of linear relationships between variables of interest (Aljomaa, et al., 2016) and to identify correlation

mobile phones based on intrinsic factors such as personal value and well-being while millennial age groups would mostly be attracted to entertainment and the level of playfulness (Hur, et al., 2017). This indicates that user interface and customer experience can contribute a vital role in the usage of crowdsourcing mobile applications different age group such as adults and millennials.

III. RESEARCH METHODOLOGY

This enables to drive a more objective solution through application of numerical and statistical measures allowing to find the exact type of relationship between the variables. Thus, reducing the biasness of subjectivism and allowing to represent the true characteristics of the population researched (Hopkins, 2000). Below, summarized is the research methodology used for the research (Table 1).

As stratified sampling is used, sample population is mainly targeted to employed nationals. Thereby according to the National Bureau of Statistics, in 2014 the resident employed population of Maldives is 205,570 people, out of which is 145,757 people are national citizens while the rest consists of foreign citizens. From the 145,757 people, 68.06% are labour force participation rate in the capital city Male', which is 99,188 people (National Bureau of Statistics, 2015). Thus, as per the Raosoft sampling size calculator with a Margin of error of = 10% and confidence level of 95%, the minimum recommended sample size for the study is 96 respondents (Raosoft Inc, 2004) (Figure 2). Hence, a total of 100 respondents will be used representing an equal number of 50 male and 50 females. The age group will be categorized from 18 to 25, 26 to 32 and 33 to 38.

D. Data Collection Method

Data collection is mainly from primary and secondary resources. The primary source will be the survey-based questionnaire while the information gathered from the literature review will be used to develop the questionnaire and test the hypothesis. To collect the data, the questionnaire is intended to distribute through online and offline methods so to speed up the data collection rate. As the study is concerned with identifying behaviour of the respondents, anonymity of the participant was maintained.

IV. DATA ANALYSIS

of variables. Table 5 Illustrates the statistical measures used in computing variables measured by using Likert scales.



Table 2:Data Analysis for Likert scale(Boone Jr. & Boone, 2012)

Statistical Measures	Likert Scale
Central Tendency	Mean
Variability	Standard Deviation
Association	Person r
Other statistics	Linear regression

Chapter four presents the results generated from the data collected from the sample of 107 respondents in the capital of Male’, Maldives. The chapter consists of demographic profile of the respondents, frequency distribution of respondent’s reaction on the five tested variables which were used to test hypothesis. Secondly, the reliability of the model is tested in terms of Cronbach Alpha. Third, the hypotheses are tested using Person Correlation and linear regression and the results derived from the calculations will be used to present the findings for the hypotheses. Lastly, additional findings for the study are presented using ANOVA.

Demographic Profile

Table 3:Frequency Distribution of demographic profile

Variable	Frequency	Percentage
Gender		
Male	63	58.9 %
Female	44	41.1 %
Age		
18-23 (Gen Z)	50	46.7 %
24-29 (Gen Y)	24	22.4 %
30-35(Gen Y)	22	20.6 %
36-38 (Gen Y)	8	7.5 %
39 and above (Gen Y)	3	2.8 %
Employment		
Government	13	12.1 %
Private	24	22.4 %
Self Employed	17	15.9 %
Part time	6	5.6 %
Studying and Working	43	40.2 %
Private and Part Time	1	0.9 %
Private and Self Employed	2	1.9 %
Part Time and Dependent		

The first part of the questionnaire was formulated to identify the demographic characteristics of the sample population. As the sample was selected based on stratified sampling method, a rather small percentage of population was selected by limiting focus only on citizens living in the capital city of Male, Maldives. Additionally, the study is narrowed down to people born under Gen Z (Ages 18-23) and Gen Y (Ages 24 years and older). Hence, from the sampling frame of 107 respondents 58.9% were male while 41.1% were female. Among these, 50 respondents represent Gen Z and 57 respondents represent Gen Y. Using this information, differences in perspectives among the generations towards adoption of mobile app will be

calculated and presented in later section of the report.As the service of the crowdsourcing mobile application can be acquired by a person earning an income, it was ensured all the respondents were from the working population. Thereby, majority of the respondents consists of people who were working and studying (40.2%) which is 86% of Gen Z. Most respondents consist of people working in private companies representing 22.4%, while Self-employed people represents 15.9%, government employees consists of 12.1% and part-time consists of 5.6% of the target population. The balance 3.7% of respondents consists of people working in different types of jobs at the same time.

Pearson Correlation

Table 4: Value interpretation for Correlation(Zahir & Gharleghi, 2015)

Value interpretation table for correlation	
r value	Interpretation
$r = 0$	No correlation
$0.1 \leq r \leq 0.3$	Very weak correlation
$0.31 \leq r \leq 0.49$	Weak correlation
$0.5 \leq r \leq 0.65$	Moderate correlation
$0.66 \leq r \leq 0.79$	High correlation
$0.8 \leq r \leq 0.99$	Very high correlation
$r = 1$	Perfect correlation

Table 5: Pearson Correlation

Correlations						
		Perceived Usefulness	Social Influence	Hedonic Motivation	Perceived Risk	Behaviour Intention
Perceived Usefulness	Pearson Correlation	1	.445**	.481**	-.264**	.517**
	Sig. (2-tailed)		.000	.000	.006	.000
	N	107	107	107	107	107
Social Influence	Pearson Correlation	.445**	1	.587**	.055	.407**
	Sig. (2-tailed)	.000		.000	.574	.000
	N	107	107	107	107	107
Hedonic Motivation	Pearson Correlation	.481**	.587**	1	-.077	.546**
	Sig. (2-tailed)	.000	.000		.433	.000
	N	107	107	107	107	107
Perceived Risk	Pearson Correlation	-.264**	.055	-.077	1	-.207*
	Sig. (2-tailed)	.006	.574	.433		.032
	N	107	107	107	107	107
Behaviour Intention	Pearson Correlation	.517**	.407**	.546**	-.207*	1
	Sig. (2-tailed)	.000	.000	.000	.032	
	N	107	107	107	107	107

** . Correlation is significant at the 0.01 level (2-tailed).
 * . Correlation is significant at the 0.05 level (2-tailed).

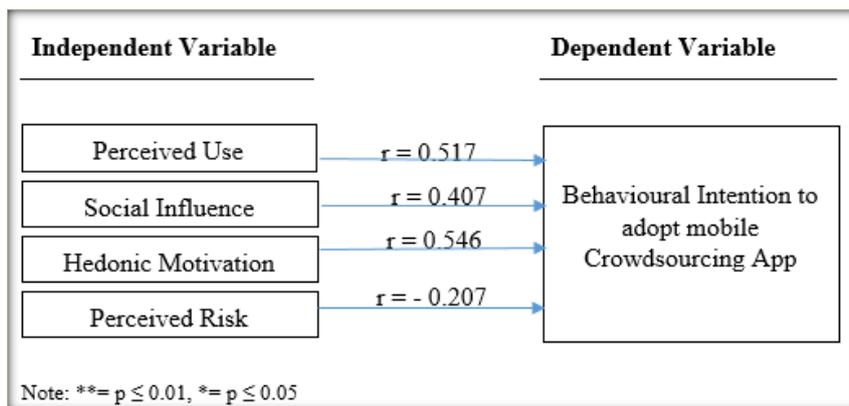


Figure 3: Pearson Correlation for all the variables

Pearson correlation coefficient illustrates the association or relationship between two variables. This relation between two variables are also referred to as bivariate which are continuous in nature. The power of the relationship is identified by the correlation coefficient 'r' while the significance level of relationship is explained by the probability of levels represented by 'p' (J.Salkind, 2011). Hence, Table 19 and Figure 10 shows the result for the hypotheses using Pearson correlation. Thereby, the final interpretation for hypotheses will be presented based on these findings.

Linear Regression

$Y_t = \beta X + \alpha$ (Y= predicted score of dependent variable based on value of X, β = which is beta is slope or direction of line, α = is the point at which the line crosses the y-axis and X= is the score being the predictor mainly the independent variable) (J.Salkind, 2011).In addition to prediction, the hypothesis is considered accepted or rejected based on significance level.

That is if P or probability value which is represented by significance level shows that if it is less than 0.05 or 5%, the alternative hypothesis (H1) is accepted (J.Salkind, 2011). Hence, all the hypothesis will be analysed based on these measures.

Hypothesis 1

H₁: Perceived Usefulness (IV1) has a significant and positive relationship with Behavioural Intention (DV).

Model Summary ^b									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.517 ^a	.267	.260	.531	.267	38.235	1	105	.000

a. Predictors: (Constant), Perceived Usefulness
b. Dependent Variable: Behaviour Intention

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.629	.342		4.762	.000
	Perceived Usefulness	.510	.082	.517	6.183	.000

a. Dependent Variable: Behaviour Intention

Table 6: Linear regression for Hypothesis 1

For the current study it is found Perceived usefulness has a moderately positive ($0.5 < 0.517 \leq 0.65$) and direct correlation ($r = 0.517$ $p \leq 0.05$) with behavioural intention to adopt mobile crowdsourcing app. Hence, this means increase in PU will lead to an increase in BI. Therefore, as respondents' perception of usefulness such as majority

agreeing that crowdsourcing mobile app will be a convenient and cost-effective method to find workers and it will help them to accomplish tasks efficiently than otherwise would be possible will motivate and influence their intention to use the app.

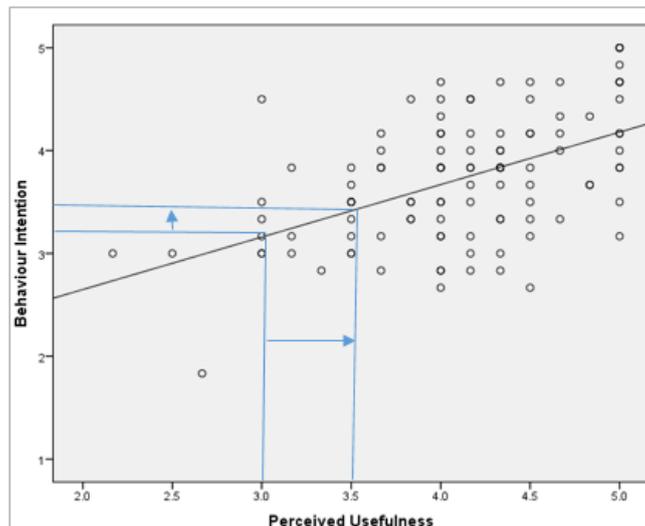


Figure 4: Scatter plot for Hypothesis 1

Hypothesis 2

H₂: Social Influence use has a significant and positive relationship with behavioural intention.

Table 7: Linear regression for Hypothesis 2

Model Summary ^b									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.407 ^a	.166	.158	.566	.166	20.866	1	105	.000

a. Predictors: (Constant), Social Influence
b. Dependent Variable: Behaviour Intention

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.296	.317		7.246	.000
	Social Influence	.375	.082	.407	4.568	.000

a. Dependent Variable: Behaviour Intention

Looking at linear regression (Table 21), the significance level $p=0.00$ shows the p value is $p \leq 0.05$, hence Hypothesis 2 is accepted. The beta coefficient 0.375 is positive and standard beta coefficient with positive value of 0.407 depicts positive correlation hence more SI is associated with increase in BI.

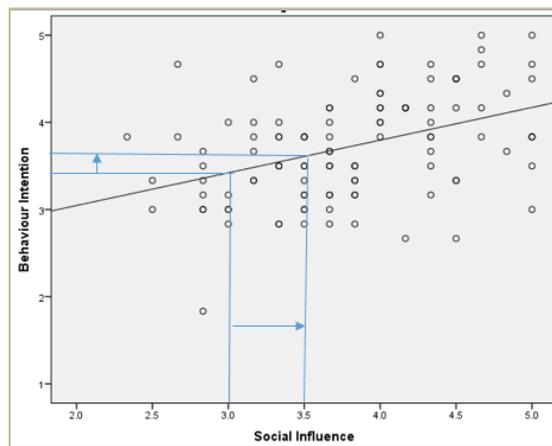


Figure 5: Scatter plot for Hypothesis 2

Referring to scatterplot (Figure 12) shows a positive upwards sloping line which reflects positive correlation. The regression line for SI from 3.0 to 3.5 (0.5 units) increases BI by merely 0.2 units. Thereby the effect of SI on BI is less than influential which is different than expected at the earlier phase of the study.

Thereby, based on correlation and linear regression, SI has a mildly positive correlation with behavioural intention to adopt crowdsourcing mobile application. Hence, Hypothesis 2 is accepted.

Hypothesis 3

H₃: Hedonic motivation use has a significant and positive relationship with behavioural intention.

Table 8: Linear regression for Hypothesis 3

Model Summary ^b									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.546 ^a	.298	.291	.520	.298	44.604	1	105	.000

a. Predictors: (Constant), Hedonic Motivation
b. Dependent Variable: Behaviour Intention

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.792	.293		6.111	.000
	Hedonic Motivation	.497	.074	.546	6.679	.000

a. Dependent Variable: Behaviour Intention

Based on Table 19 and Figure 10, it is found, Hedonic motivation has a moderately ($0.5 < 0.546 \leq 0.65$) positive and direct correlation ($r = 0.546, p \leq 0.05$) with behavioural intention to adopt mobile crowdsourcing app. Hence, increase in HM will lead to an increase in BI. That is if the

mobile app proves to solve a problem and have an attractive user interface it will influence the intention of people in a positive way to start using the app. Hence, it can be deduced that based on Pearson correlation, the hypothesis 3 can be accepted.

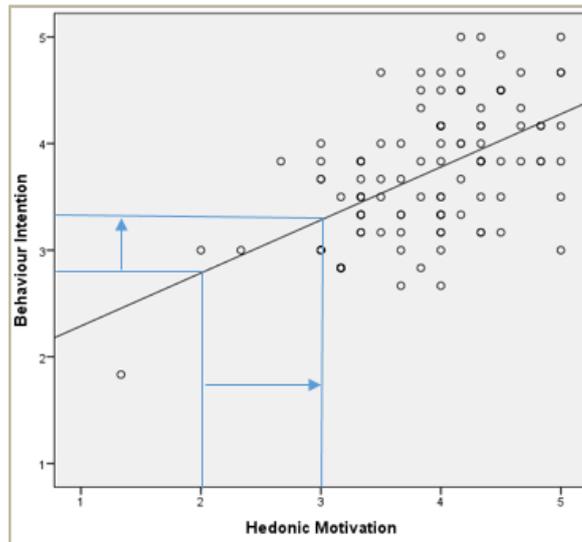


Figure 6: Scatter plot for Hypothesis 3

Referring to the scatterplot (Figure 13) shows a positive upwards sloping line which reflects positive correlation. The increase in HM from 2 to 3 units (1 unit) increases BI significantly by 0.6 units. Thereby the effect of HM on BI is the most influential of all the variables. This was an unexpected finding.

Thereby, based on Pearson correlation and linear regression, HM has a significant and positive correlation with behavioural intention to adopt crowdsourcing mobile application. Hence, Hypothesis 3 is accepted.

Hypothesis 4

H₄: Perceived risk use has a significant and negative relationship with behavioural intention

Table 9: Linear regression for Hypothesis 4

Model Summary ^b									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.207 ^a	.043	.034	.607	.043	4.696	1	105	.032

a. Predictors: (Constant), Perceived Risk
b. Dependent Variable: Behaviour Intention

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	(Constant)	4.175	.217		19.199	.000
	Perceived Risk	-.156	.072	-.207	-2.167	.032

a. Dependent Variable: Behaviour Intention

Compared to other variables, for linear regression (Table 23) perceived risk has yielded a significance level of 0.032, yet the p value being less than 0.05 ($p \leq 0.05$), depicts perceived risk has a relationship with behavioural intention. However, though perceived risk does affect BI, the beta coefficient is negative at - 0.156 and standard coefficient is negative at -0.207 which depicts as PR increases the

Behavioural intention to adopt mobile app will decrease. Therefore, PR has a negative relationship with BI, hence hypothesis can be accepted of negative correlation. This was previously anticipated, as unlike other variables perceived risk is associated with negative feelings, hence it is likely to negatively impact intention to use any technology.

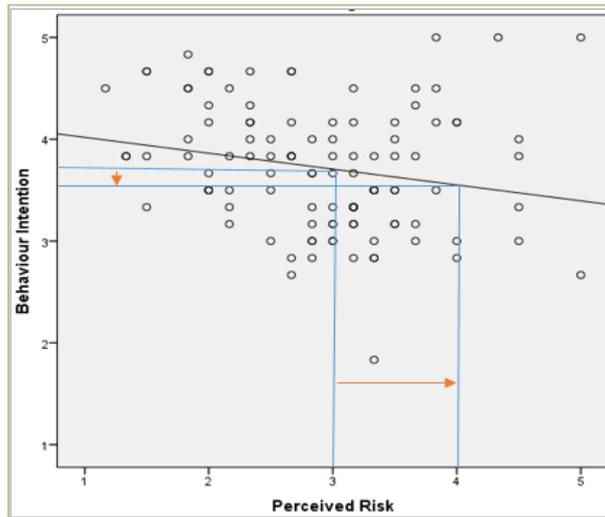


Figure 7: Scatter plot for Hypothesis 4

For the scatter plot, the slope of line is different from other variables. The slope of line is downward in a slanting manner as relationship is negative between PR and BI. For instance, at 3 units of PR causes 3.8 units of change in BI, however as PR increase to 4 units BI decreases to 3.7 units

which is inverse relationship (Figure 14). Thereby, based on correlation and linear regression, Hypothesis 4 can be accepted that PR has a negative correlation with behavioural intention yet not a significant correlation, rather a very weak correlation to adopt crowdsourcing mobile application.

Other Findings (ANOVA) – Gen Y and Z differences for the Variables.

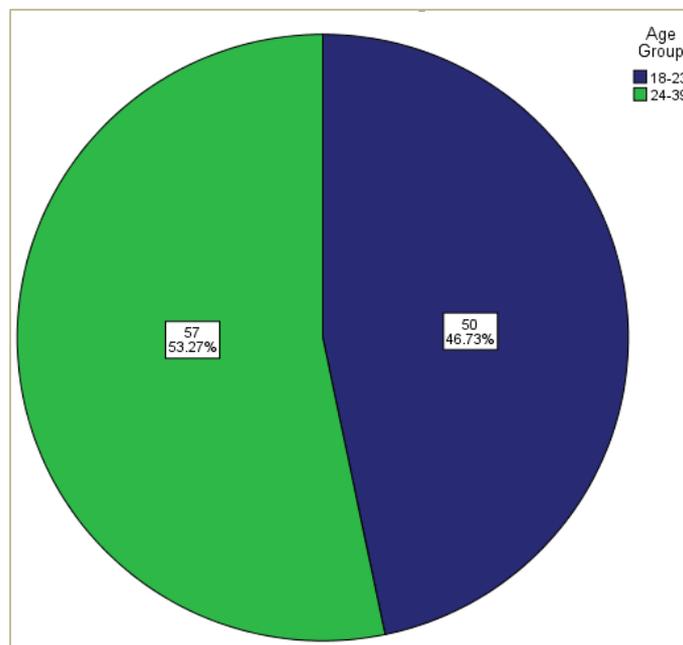


Figure 8: Pie Chart for Generation Z and Generation Y

To test the differences between generation Z and generation Y towards the variables, the age groups have been categorized in to two groups. That is generation Z is defined by age group 18 to 23 and generation Y is defined as 24 years to 39 years and above. The pie chart below shows (Figure 15) the categories of both generations. Hence, to find the differences of perspective between the two generations among the different variables, One-Way Anova is used.

Table 10: One-Way ANOVA for PU, SI, HM, PR and BI for Gen Z & Y

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Perceived Usefulness	Between Groups	.840	1	.840	2.172	.144
	Within Groups	40.591	105	.387		
	Total	41.431	106			
Social Influence	Between Groups	.258	1	.258	.572	.451
	Within Groups	47.283	105	.450		
	Total	47.541	106			
Hedonic Motivation	Between Groups	2.764	1	2.764	6.316	.013
	Within Groups	45.958	105	.438		
	Total	48.723	106			
Perceived Risk	Between Groups	3.894	1	3.894	6.086	.015
	Within Groups	67.177	105	.640		
	Total	71.071	106			
Behaviour Intention	Between Groups	2.644	1	2.644	7.359	.008
	Within Groups	37.732	105	.359		
	Total	40.376	106			

One-way ANOVA is used as only one factor (Age groups) are being tested and its effect on the groups or other variables, thus this is the simple analysis of variance. To test for ANOVA, the F test is used to find overall differences in groups. Thus, the equation to calculate F value is as below and the results are shown in Table 24. $F = \frac{\text{Mean Square between Groups}}{\text{Mean Square within groups}}$ (J.Salkind, 2011).

First the significance level which is the p value had to be lower than 0.05 to validate that there is a relationship between two variables. Second, the F value must be extremely deviating from p value at less than 0.05. In other words, the higher the F score gets the lower the significance level will become. Thus, then it can be said the age groups or Generation Y, or Z do have a significance relationship with the dependent variables. In this case the dependent variables are the Perceived usefulness, Social influence, Perceived risk, Hedonic motivation and Behavioural intention. Thereby, for perceived usefulness the significance level is = 0.144 where p is greater than 0.05 ($p \geq 0.05$). Meaning, there is not much deviation from significance level and validates there is no relationship between Gen Y/Z and Perceived Usefulness (PU).

The second variable is Social influence where the significance level is = 0.451 where p is greater than 0.05 ($p \geq 0.05$). Moreover, the $F = 0.572$, means there is merely a deviation from significance level, an extremely low value. Hence this validates there is no relationship between Gen Z Mean Plot Interpretation

& Y and social influence or change in generations or age does not impact social influence.

The third variable, the hedonic motivation has a significance level of 0.013 where p value is lesser than 0.05 ($p \leq 0.05$). The F value is also extremely deviating at 6.316 from significance level, hence this validates change in age or generations does significantly cause changes in hedonic motivation. Thereby, change in generations or age does impact hedonically motivating factors to adopt crowdsourcing mobile application.

The fourth variable, the Perceived risk has a significance level of 0.015 where p value is lesser than 0.05 ($p \leq 0.05$). the F value is also deviating at 6.086 from significance level, hence this validates change in age or generations does cause changes in perception of risk. Even though the relationship is less significant than hedonic motivation, it still validates there is a relationship between Gen Z and Gen Y and Perceived risk.

The last variable, Behavioural intention has a significance level of 0.008 where p value is lesser than 0.05 ($p \leq 0.05$) and F value at 7.359. Among all the variables, behavioural intention is having the highest or most significance impact from age differences or Generation differences on intention to adopt crowdsourcing mobile application. Hence, this validates there is a relationship between Gen Z and Gen Y and behavioural intention to use mobile application.

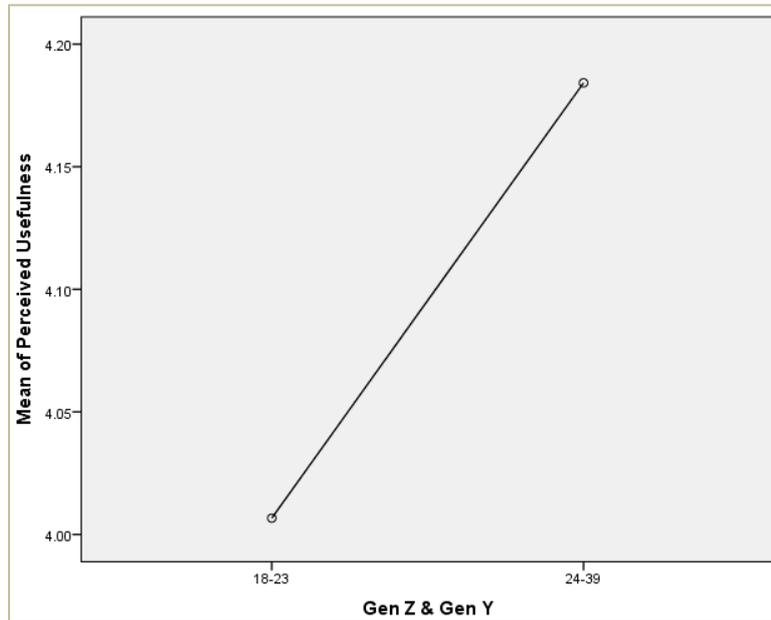


Figure 9: Mean Plot (ANOVA) between Gen Z and Gen Y and Perceived Usefulness

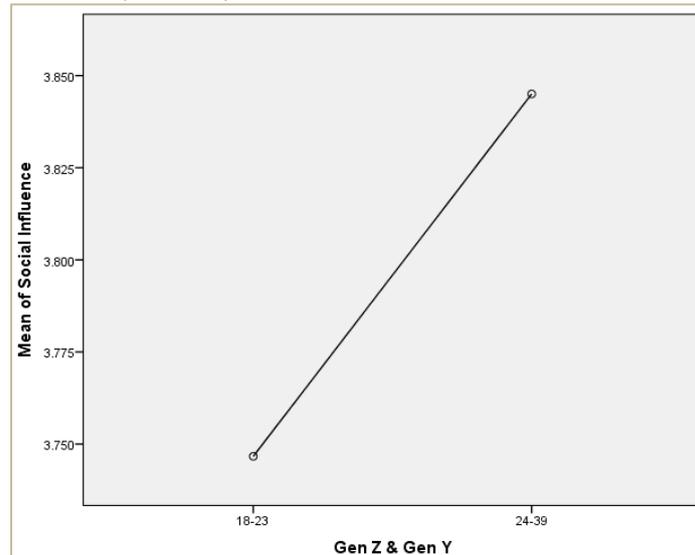


Figure 10: Mean Plot (ANOVA) between Gen Z and Gen Y and Social Influence

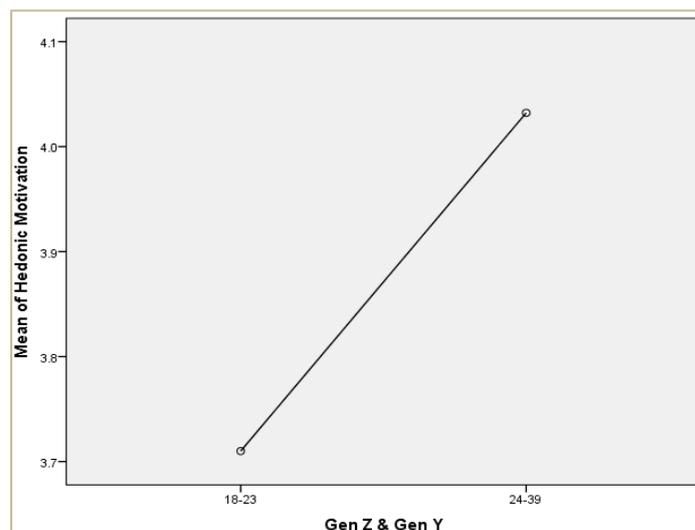


Figure 11: Mean Plot (ANOVA) between Gen Z and Gen Y and Hedonic Motivation

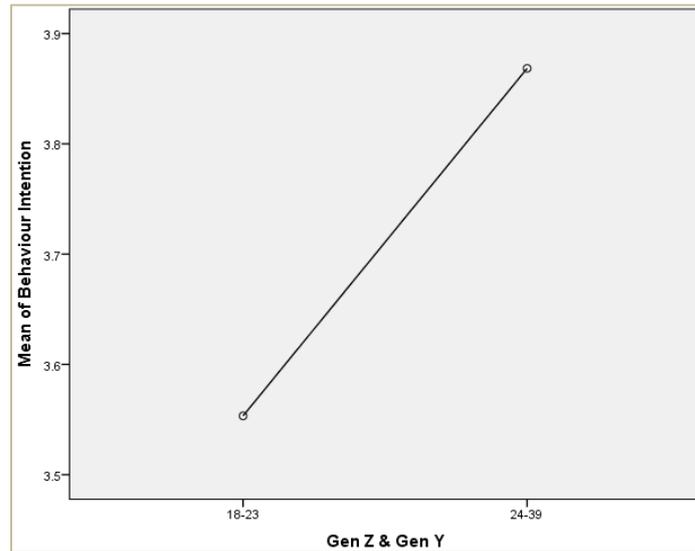


Figure 12: Mean Plot (ANOVA) between Gen Z and Gen Y and Behavioural Intention.

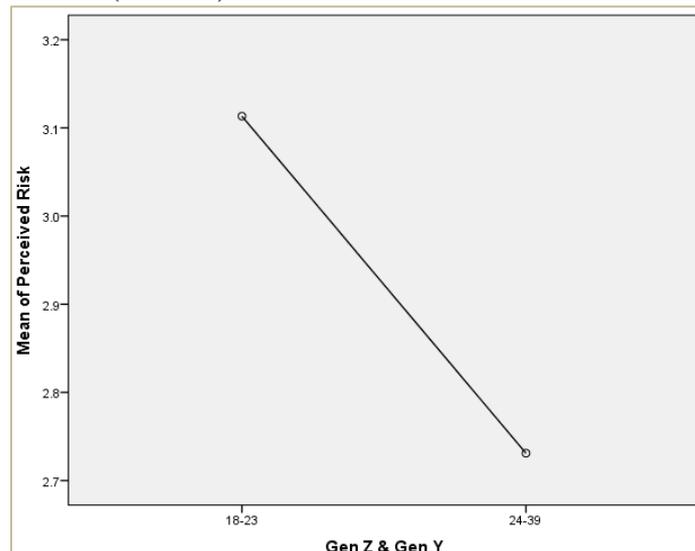


Figure 13: Mean Plot (ANOVA) between Gen Z and Gen Y and Perceived Risk

The figures 16, 17, 18, 19 shows the mean for both the generations Gen Z (18-23) and Gen Y (24-39) and its effect on PU, SI, HM and BI. It can be noted that for all these four variables, the mean plot has an upward sloping curve. This means as age increases the perceived usefulness, social influence, hedonic motivation and behavioural intention to adopt crowdsourcing mobile application increases. Thus, Generation Y, which is the older generation has higher perceived usefulness, social influence, hedonic motivation and behavioural intention to adopt mobile app than Generation Z which is the younger generation. On the other hand, the Figure 20 shows the mean plot for Perceived risk for both the generations. Hence, with a downward sloping

curve, it can be seen perceived risk shows a very different result from other variables. That is, as age increases the perceived risk decreases hence there is an inverse relationship between age and PR. Hence, the generation Z (the younger generation) has a higher perception of risk towards adopting mobile app than generation Y (the older generation). This was an unexpected finding. This might mean that, with increase in age the perception of risk towards adoption of new technology such as crowdsourcing mobile app decreases. This is maybe due to increase in age is associated with more experience in using technology, which in turn increases confidence and thereby reducing perceived risk in using new technology.

Gender Differences – ANOVA

Table 11: One-Way ANOVA for PU, SI, HM, PR and BI for Gender

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Perceived Usefulness	Between Groups	.101	1	.101	.258	.613
	Within Groups	41.329	105	.394		
	Total	41.431	106			
Social Influence	Between Groups	2.167	1	2.167	5.014	.027
	Within Groups	45.374	105	.432		
	Total	47.541	106			
Hedonic Motivation	Between Groups	.030	1	.030	.064	.801
	Within Groups	48.693	105	.464		
	Total	48.723	106			
Perceived Risk	Between Groups	.610	1	.610	.909	.343
	Within Groups	70.461	105	.671		
	Total	71.071	106			
Behavioral Intention	Between Groups	.491	1	.491	1.292	.258
	Within Groups	39.886	105	.380		
	Total	40.376	106			

From the above table (Table 25), depicts for the variables perceived usefulness, hedonic motivation, perceived risk and behavioural intention, the significance level is more than 0.05 ($p \geq 0.05$) with slightly deviation F values. Hence, this suggests gender in general does not have an impact of any of the four variables. However, for Social influence, the Mean Plot Interpretation

significance level is at 0.027 lower than 0.05 ($p \leq 0.05$) with a significantly deviating F value at 5.014. This suggests, the only variable gender has a significant impact is on social influence. Thereby, being male or female does make a difference in being socially influenced to use the crowdsourcing mobile application.

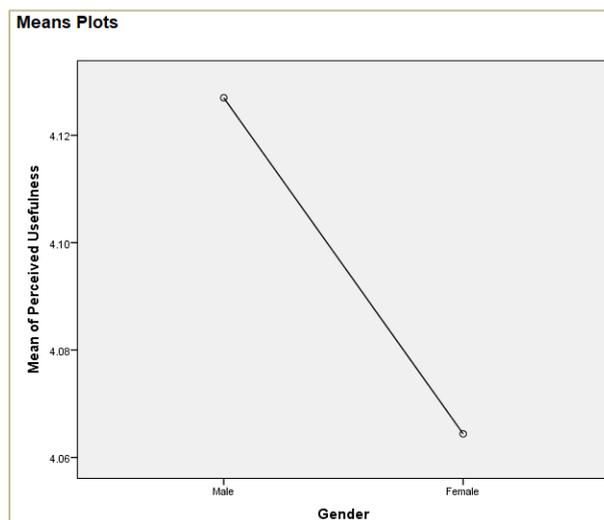


Figure 14: Mean Plot (ANOVA) for Gender and Perceived Usefulness

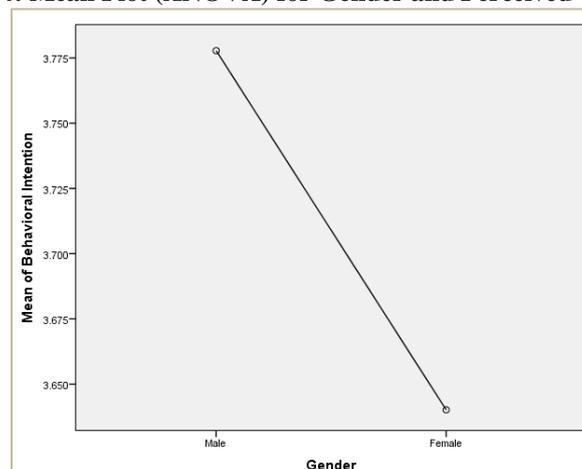


Figure 15: Mean Plot (ANOVA) for Gender and Behavioural Intention

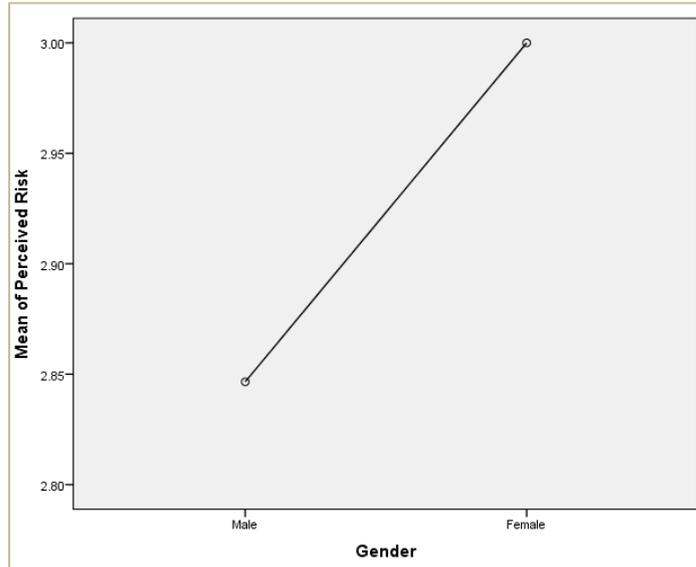


Figure 16: Mean Plot (ANOVA) for Gender and Hedonic Motivation

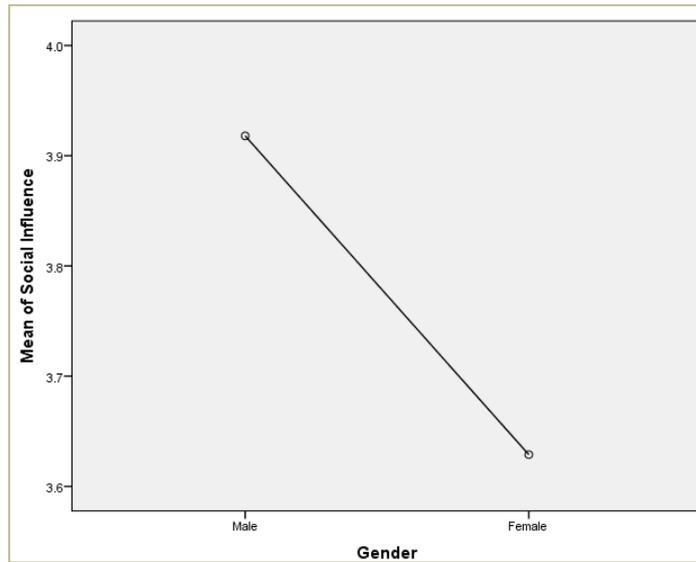


Figure 17: Mean Plot (ANOVA) for Gender and Social Influence

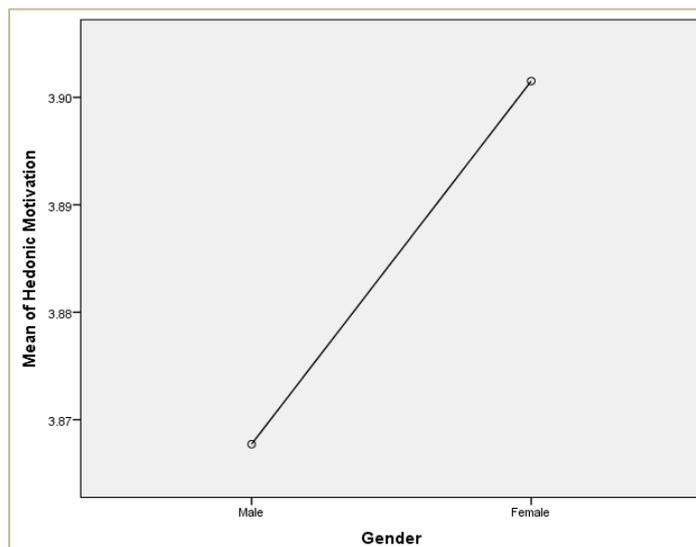


Figure 18: Mean Plot (ANOVA) for Gender and Hedonic Motivation

Gender differences revealed interesting results for the variables. For the perceived usefulness, Social influence and behavioural intention (Figure 21, 22, 23), the mean plot resulted in a downward sloping curve in relation to male to female. Thereby, it was found that males were more socially influenced and had higher perceived usefulness and thereby higher behavioural intention to adopt mobile crowdsourcing app than females. Compared to this, perceived risk and The objective of the research is to find how perception of risk, perceived usefulness, social influence, hedonic motivation affects behavioural intention to adopt crowdsourcing mobile application in Maldives designed for the housing, repairing, property and maintenance sector. Thereby, 107 respondents were surveyed, and the findings were used to test the four hypotheses which enabled to answer the research objectives. Below is a summary of the results.

A. Hypothesis Testing - Correlation and Linear Regression

Both Pearson correlation and linear regression yielded similar results in the sense of correlation. Perceived

hedonic motivation has an upward sloping curve in relation to male to female. Hence this suggests females had higher perceived risk and were more hedonically motivated in adopting crowdsourcing mobile app than males (Figure 24, 25).

V. DISCUSSIONS

usefulness, Social influence, Hedonic motivation has a positive and direct relationship with behavioural intention to adopt crowdsourcing mobile application. This mean increase in these variables will increase BI. However, PU and HM had a moderate correlation while SI had a weak correlation. On the other hand, perceived risk had a very weak negative relationship hence higher PR is associated with lower behavioural intention to adopt mobile application. Moreover, it was perceived usefulness and hedonic motivation having largest impact on BI causing a 26.7 % to 29.8 % variation in behavioural intention to adopt mobile app (Table 28).

Table 12: Summary of results of Hypotheses

Hypothesis	Accept or reject	Pearson Moment Correlation	Linear regression, R square
H1- Perceived use has a significant and positive relationship with behavioural intention.	H1-Accept	Moderately Positive correlation.	Positive Beta PU cause a 26.7 % variation in BI
H2- Social Influence use has a significant and positive relationship with behavioural intention.	H2-Accept	Weak Positive correlation.	Positive Beta SI cause a 16.6 % variation in BI
H3- Hedonic motivation use has a significant and positive relationship with behavioural intention.	H3-Accept	Moderately Positive correlation.	Positive Beta HM cause a 29.8 % variation in BI
H4- Perceived risk use has a significant and negative relationship with behavioural intention.	H4- Accept	Very Weak Negative correlation	Negative Beta PR cause a 4.3% variation in BI

Analysis of Variance (ANOVA)

Table 13: Results from ANOVA- Impact Gender and Generation Y & Z had on the Variables

Variables	Generation Y and Z	Gender (Male to Female)
Perceived usefulness	No effect	Higher for Male than Female
Social Influence	No effect	Higher for Male than Female
Hedonic Motivation	Does have an Impact- Higher for Y than Z	Higher for Female than Male
Perceived Risk	Does have an Impact- Higher for Z than Y	Higher for Female than Male
Behavioural Intention to adopt crowdsourcing mobile app	Does have an Impact- Higher for Y than Z	Higher for Male than Female

Through additional findings (Table 29) it is found that differences in Generation Z & Y does not have any impact on perceived usefulness and social influence. However, it did have an influence on hedonic motivation, perceived risk and behavioural intention. Moreover, looking at how gender differences impact the variables, the only variable impacted

by gender was social influence. Other variables were not influenced by being male or female.

Implications of the Test Results

The results of the hypotheses yielded interesting results which were found to be true for most assumptions made as per the discussions in the literature review. Thereby, in the following section the implications of the results are discussed for each independent variable.

Perceived Usefulness

It is important for the app developer to verify the capability of companies and contract workers who register on the app to be efficient people who can provide quick, high quality and hassle-free service to customers. Moreover, the app need to be able to provide on demand services as conducting financial transactions, providing quotations and real time communication between service providers and customers. Moreover, it was assumed in literature review, with higher hedonic motivation and social influence the perceived value towards the app will increase thereby increasing perceived usefulness. Hence, from correlation it was found that perceived usefulness has a positive and direct relation with hedonic motivation ($r = 0.481$) and social influence ($r = 0.445$) (Refer Table 19 and Figure 10). Hence with higher social influence and hedonic motivation the higher the perceived usefulness be towards adoption of mobile app.

Social Influence

Social influence was assumed to be a dominant factor that will influence behavioural intention of people to adopt mobile application. This assumption was true for some statements. That is use of app by family and friends and other people's opinion and reviews and being able to meet talented people and share common interests and knowledge through the app were moderately influential factors in motivating respondents to start using the mobile app. Initially it was thought that people will use the app to make a good impression on other people. However, this assumption was wrong. This might be the fact that unlike social media apps like Instagram or Snapchat which are highly impacted by hedonic and socially influencing factors, this app is more of a combination of a utilitarian and hedonic app. Meaning, it is more like a service app. Hence, higher hedonically motivating factors and higher perceived usefulness factors are dominantly important in influencing people to use this type of applications which in turn is expected to create a positive potential impact on social influence among the community motivating to use the app. Thus, it was found that higher PU and HM is associated with higher SI and vice versa. Thereby, increasing the efficiency and usefulness of the app is most important to induce higher impact on SI among people.

Moreover, from past studies conducted in Maldives by Zahir & Gharleghi, (2015), it was found social influence has a very weak negative correlation on behavioural intention to use internet banking. However, findings of this study proved it different when it came for adoption of a crowdsourcing mobile app, as it showed social influence has not a negative but a positive yet weak influence on intention to use this type of applications. Hence, this might suggest, now the perception of people are changing towards a more favourable view towards using new technology. Hence, this is a good news when planning to introduce a new concept as crowdsourcing mobile application.

Hedonic Motivation

According to past researches hedonic motivation which is enjoyment and fun associated with using technology were assumed to be a mediating to mildly dominating factor influencing behavioural intention to adopt information systems (Boonsiritomachai & Pitchayadejanant, 2017). However, in this study it was the most dominating factor of all the variables causing a positive 29.8% variation on behavioural intention while the rest of the factors as SI, PU and PR were causing a much lesser impact on intention to adopt app. Hence, this is an interesting finding. This suggests, respondents highly desired an attractive user interface and enjoyable experience in using the app making the experience entertaining. Thereby, these factors need to be considered when developing the app to induce the intention of people to start using the app more.

Perceived Risk

Perceived risk proved to have a negative impact on behavioural intention to adopt app. Hence with higher risk of perception was associated with lower intention to use the app. Yet, the impact PR has on BI was the lowest among all the variables causing a 4.3% variation intention to use the app. It was found that PR is a very isolated factor as it did not have any correlation with perceived usefulness, social influence or hedonic motivation. Hence, neither of these variables are either increasing or decreasing perception of risk. Respondents do believe that certain risks as financial risks such as making payment through the app might be risky, however majority are not concerned with the use of their personal information, or that it might lead to fraud and they are not highly anxious in conducting online transactions either. Hence, this reflects people are placing a high trust on online technology now and this is good news when planning to introduce an app. Hence, to strengthen the trust of the people, it is important to ensure the personal information and financial information to be maintained at a confidential level. Thereby, if people perceive the app to be reliable in long term which will lower the perceived risk, it is likely to increase intention to use the app more.

Behavioural Intention

To increase the intention to adopt the app, it was found that increasing the perceived usefulness, hedonic motivation and social influence were important to increase demand for the app while reducing perception of risk such as financial risk, security risk, performance risk and psychological risks. Hence, this combination is likely to increase people's intention to use the app. In addition to this, the compatibility of the app to the mobile phones used, the networking speed of the service providers and efficiency of the app are important factors that will induce people to use the app.

Gender and Variables

In the initial stage of the study, it was found that women exhibited higher risk levels and lower trust than men towards online purchases. Well, this assumption was true, as women were found to have higher perceived risk than men. Yet women were more hedonically motivated than men, thus motivated to use the app if it involves more enjoyment and fun during usage of app.

However, men were more socially influenced in using the app and they attributed a higher perceived usefulness to adoption of technology or in adoption of the mobile app. Hence, this again rises the importance of creating a socially acceptable app with smooth running interactive user interface to increase demand for the app.

Age Group and Variables

It was interesting to find if there were any differences in perspectives between the older generation (Gen Y) and younger generation (Gen Z). To define both generation the age groups were divided into two groups, where generation Z is 18 years to 23 while Generation Y is 24 years to 39 years and above. Thus, past researches validated that with the increasing age the confidence level to use self-service technologies decrease (Marriott & Williams, 2018; Kelly, et al., 2010). However, this assumption proved to be wrong according to the results of this study. That is, the Gen Y, the older generation had a higher behavioural intention to adopt the mobile crowdsourcing app with higher perceived usefulness, higher social influence and higher hedonic motivation than the Generation Z, which is the younger, more tech savvy and digitally influenced generation whom were thought to have higher influence on the PU, SI and HM variables. Moreover, it was also assumed the younger generation (Gen Z) to have a lower perception of risk towards technology as they were born into technology. However, this assumption also proved to be wrong as Gen Z had a higher perception of risk than Gen Y when it comes to adopting of the app. Hence, this might imply that the younger generation of Maldives are different from the populations studied previously of Gen Y. That they are less confident and more anxious to use new concepts as the crowdsourcing mobile apps than Gen Y of other countries. However, on the other hand this can be a good news as it can be expected with increasing age they will become more confident in using new technologies as it was found the higher the age the perception of risk became lower.

VI. CONCLUSION

For future research it is recommended, once the mobile app is introduced in the market to carry out a research, to find the feedback from users experience in using the application. Variables such as performance expectancy, perceived ease of use and perceived value can be used in the research to find post experience. Moreover, the constructs used for the social influence for the current study can be changed to include more relatable statements with a higher reliability, so it will reflect more strongly people's opinion towards social influence.

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