Department of Policy and Planning Sciences

Discussion Paper Series

No.1330

Behavioral Intention to Use Mobile Entertainment Services among Bangladeshi Students

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Jul 2015

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JAPAN

Behavioral Intention to Use Mobile Entertainment Services among Bangladeshi Students

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Abstract

This study aims to understand why mobile usage in Bangladesh access mobile entertainment services (MES) among young users. We proposed a modified technology acceptance model (TAM) and the theory of planned behavior (TPB) model with some original and additional factors. Questionnaire surveys were conducted in Bangladesh among young adult mobile users. We analyzed the data of 251 effective respondents by four TAM-TPB models. We have chosen the best model with good fits. The three factors of perceived behavior control, perceived value and attitude are important determinants for intention to use mobile entertainment services. Our result is potentially helpful for mobile operators to adopt the mobile entertainment service (MES) market in Bangladesh.

Keywords: Mobile entertainment services; Young users; TAM-TPB model; Perceived value; Perceived Behavioral Control; Attitude.

1. Introduction

Mobile technologies and services worldwide are heralded to create a tremendous spectrum of business opportunities. There are nearly 7 billion mobile subscriptions worldwide according to the estimates by the International Telecommunication Union (May 2014). This is equivalent to 95.5 percent of the world population. Nowadays, mobile Phones are not used for voice services only, but also for mobile services such as texts messaging, gaming, download music, payment services, etc. (Carlsson et al., 2006). According to Kondo and Ishida (2014), the demand of mobile service market in developing countries such as China, India and Bangladesh is growing and researchers and practitioners are giving keen attention to the market.

Most mobile operators in Bangladesh are concentrated in the entertainment category. Mobile services in Bangladesh have categorized in two categories: Entertainment and development services. Among them, general entertainment services (news, religion, games, music, etc.) are the largest used services in Bangladesh, followed by social media, ringtone and the others (services to recharge prepaid, receiver pays for calls/ SMS, missed called alerts, etc.) in a sequential order (GSMA Intelligence, 2014). It seems that operators have a large footprint in the mobile entertainment services (MES) space and the market is rapidly expanding. With the growing importance of Mobile entertainment services (MES), this is essential for service operators to identify the factors relating to customer adoption or intention to obtain MES for current and future service development.

Several researches have been conducted for Bangladesh mobile service market. Most of the recent researches are such as 3G Mobile Service Acceptance in Bangladesh have been researched by Tajmary and latif (2013). Consumer choice behavior towards mobile phone operators in Bangladesh have been measured by Hasan et al., (2013). Islam et al. (2011) found that the factors influencing the adoption of M-commerce for Bangladesh are awareness and knowledge, convenience of mobile devices and handsets, pricing and cost, security and

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privacy, rich and fast information, and perceived usefulness

There is no research that has been conducted covering the mobile entertainment services for Bangladesh market. The present study is an ample step in covering this gap. Here we consider Game, music and ringtone as MES.

User's perception regarding the use of MES has been identified by exploring their behavioral intention in past researches. Okazaki et al., (2008) examined user "intention to use" mobile game application for USA, Spain and Czech Republic customers by using TAM (explained in section 3) model among young users. Quan et. al., (2010) researched a category of mobile transaction services in China using a TAM-TPB (explained in section 3) approach. They found that a combined TAM-TPB model is suitable for evaluating the potential "intention to use" specific mobile commerce services. Nysveen et al., (2005) developed and tested a modified TAM-TPB in order to explain consumers' "intention to use" four types of mobile services. Kondo and Ishida (2014) has examined the "intention to use" most frequent used MES (game, music, ringtone) for Japan and USA by using TAM-TPB model. Even though research in mobile service behavioral intention has used the TAM-TPB extensively, the literature contains little regarding its applicability to MES in developing countries.

Therefore, we examine the factors of student's "intention to use" for Bangladesh which has an expanding mobile market. To understand MES acceptance among Bangladeshi young users, the TAM-TPB is suitable as it is suggested by Kondo and Ishida, 2014. We ground our research framework in two theoretical models. First one is the TAM-TPB model of Kondo and Ishida (2014) with their factors of perceived value, perceived behavioral control, attitude and subjective norm on MES intention behavior of young people. The latter added factors perceived fun, perceived convenience and perceived ease of use were from Okazaki et al., (2008). More details of the model will be provided later.

The rest of the article is organized as follows. The next sections will describe the overview of mobile services in Bangladesh, the basic TAM-TPB model, modified TAM-TPB and then introduces the proposed conceptual model and the hypotheses. These are followed by sections on methodology and statistical results. The last sections present a summary of the findings, conclusions, and directions for future research.

2. Overview of Mobile Services in Bangladesh:

In recent years, the uses of mobile phones have witnessed tremendous growth in Bangladesh. The country is the ninth-largest market worldwide in terms of mobile subscribers in Q1 2013 with 70 million 'unique' subscribers actively using 112 million mobile connections, i.e. SIM cards (GSMA intelligence, 2014). The total number of Mobile Phone subscriptions has reached 118.493 million at the end of September 2014. Mobile phone penetration rate was 69.5% at August, 2014 (BTRC, 2014). Mobile service users among adults are actually above 50% in Bangladesh (GSMA intelligence, 2014).

There are six mobile phone operators offering their services to customers in Bangladesh. Grameen Phone Ltd. (GP) owned by Telenor (62%) and Grameen Telecom (38%) is the largest and the fastest growing cellular service provider in Bangladesh. It has 50 million subscribers of total. Orascom Telecom Bangladesh Limited (Banglalink), the second largest cellular service provider, has 30 million subscribers in total. It is a wholly owned subsidiary of Orascom Telecom. Robi Axiata Limited (Robi), the 3rd largest cellular service provider in Bangladesh, has 24.966 million subscribers of total. The fourth largest cellular service provider in Bangladesh is Airtel Bangladesh Limited (Airtel) which has 7.901 million subscribers of total. The other two mobile phone operators in Bangladesh are Pacific Bangladesh Telecom Limited (Citycell) with 1.349 million total subscribers and Teletalk

Bangladesh Ltd. (Teletalk) with 3.768 million total subscribers. Robi and Bangalink cellular service providers are most active in MES.

Nowadays, the following new services are in the great use in Bangladesh: Interactive Voice Response (IVR), Unstructured Supplementary Service Data (USSD), and Application Protocol Interface (API), reported by Bangladesh Telecommunication Regulatory Commission. Approved value added services are listed in the below:

Mobile Financial Services: Web/international recharge, e-ticketing, inward remittances, utility bill payment, mobile banking and others are the various services provided under this.
Call Center based Information Services: Information services like health line, agriculture info, education line, legal line, blood bank info, travel line etc. are provided by call center based information service organizations.
Tracking Service: Mobile customers can determine the position of their vehicles and can manage them by using this service. Basing on the customer demand, this service is also used for tracking human/materials/vehicles/water vehicles etc.
Directory / Recharge / Live Information Service: Mobile operators in co-operation with companies having data based facilities, provide yellow page, directory services, dictionary services, public examination results, stock exchange info, entertainment services etc.
News Service: In order to keep the people updated with the latest news of home and abroad news services have been introduced through SMS based news/alert service.

3. Theoretical Framework

Emerging information technology cannot deliver improved organizational effectiveness if it is not accepted and used by potential users. Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB) are the most successful and effective models for measurements of digital device based usage among practitioners and academics.

3.1 TAM

TAM provides a basis for discovering the impact of external variables on internal perceptions (beliefs), attitudes, and intentions (Davis et al., 1992). According to TAM, a person's performance of a specific behavior is determined by his/her behavioral intention (BI) to perform the behavior and BI is jointly determined by the person's attitude (A) and subjective norm (SN) concerning the behavior in question. (Ajzen and Fishbein, 1980).

3.2 TPB

TPB includes an additional construct, perceived behavioral control (PBC). PBC is defined as one's perception of the difficulty of performing a behavior. The TPB views that the people have control over their own behavior lies on a continuum from behaviors that are easily performed to those requiring considerable effort and resources.

3.3 The TAM-TPB Model

In order to form a behavioral intention, customers concern to know what kind of benefit or values them can obtain from the services, this is perceived value. Perceived value defines as "the consumer's overall assessment of the usefulness of a product/service based on perceptions on what is received and what is given (Heinonen, 2004). The consumer's overall assessment of the usefulness of a service depends on the quality and price information for using the services. Perceived value defines the utility derived from the perceived quality and perceived cost when users accept a mobile commerce (Sweeney et al., 1999). The more users will be beneficial, the more they will intend to use the services. Use intention measures the

possibility that a consumer will use the service. The more the user intention, the more their willingness will be to use the service (Dodds et al., 1991). The willingness to use is affected by the perceived value as suggested by (Groth (1995); Heskett et. al., (1997). Perceived value have positive association with decision making which has also indicated by (Zeithaml, 1988; Schiffman & Kanuk, 2000). Therefore, we will observe whether perceived value has any influence on intention to use MES.

Several researches have done by using different theoretical model for mobile service market. TAM model was investigated for mobile application use by Seok Kang, 2014. TPB Model was studied for customers in India on MES (games, music, videos, camera, and internet access) (Kumar and Janaki, 2011). There are very few studies which used TAM-TPB model for MES.

The TAM-TPB is an effective predictive model in field that leads to a certain degree of behavioral change by individuals have summarized by Kondo and Ishida (2014). They proposed to use the concept of perceived value. Our TAM-TPB model will be constructed by using the following five concepts to deal with entertainments services in the Bangladesh mobile market: Behavioral control, perceived value, attitude towards mobile services, behavioral intention to use, and subjective norm. Therefore, we examine user behavioral intentions based on the model shown in Figure 1. Thus, we postulate the following hypotheses:

H1. Perceived behavioral control positively influences perceived value in Bangladesh.
H2. Perceived value positively influences attitude in Bangladesh.
H3. Perceived behavioral control positively influences attitude in Bangladesh.
H4. Attitude positively influences behavioral intention of overall entertainment services in Bangladesh.
H5. Perceived value positively influences behavioral intention of overall entertainment services in Bangladesh.
H6. Perceived behavioral control positively influences behavioral intention of overall entertainment services in Bangladesh.
H7. Subjective norm positively influences behavioral intention of overall entertainment services in Bangladesh.

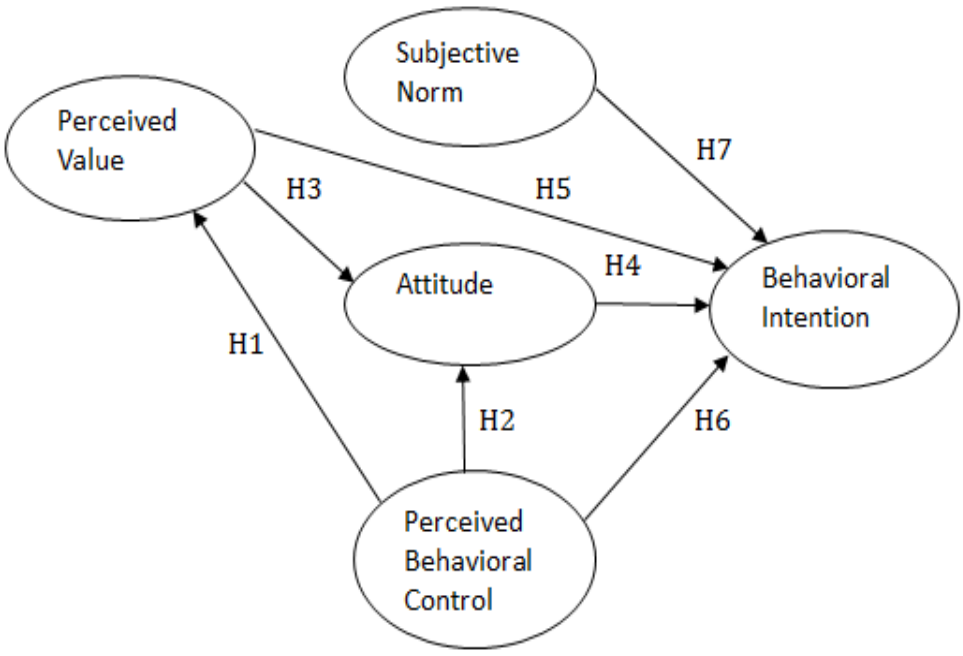

Fig. 1. The TAM-TPB model of Kondo and Ishida (2014)

3.4 Proposed Conceptual Model

We extend our model by adding some factors on behavioral intention to use from related model. We are trying to use the hedonic and utilitarian concept on TAM-TPB model. The hedonic (intrinsic) and utilitarian (extrinsic) value components frame the behavioral intention to use (Holbrook, 1994). Attitude to be ‘‘an overall evaluation, encompassing both utilitarian and hedonic components’’ and find that it completely mediated the effects of two antecedents, fun and usefulness (Bruner and Kumar, 2005). Perceived ease of use, perceived enjoyment and perceived attractiveness are antecedents of attitudes for online gaming adoption which has hedonic and utilitarian instincts (Ha et al., 2007 and Hsu and Lu, 2004). Few previous researches on MES have focus on this concept. Therefore, we will study these three additional factors perceived fun, perceived convenience and perceived ease of use which may have influence on attitude.

Perceived fun:

We add to our model, perceived fun which represents the level of the hedonic component of handheld MES. Enjoyment can be defined as the degree to which performing an activity is perceived as providing pleasure and joy in its own right (Venkatesh, 2000). Compared to information system uses, enjoying mobile service is more experience-oriented. Enjoyment affects the use of experiential mobile services (i.e., contact and gaming) more strongly than the use of goal-oriented mobile services for Norwegian users. (i.e., SMS and payment) (Nysveen et al., 2005). In other study, Khalid and Noor (2011) for Jordan and Dai and Palvia (2009) for China obtained no significant relationship between enjoyment and mobile phone services. There is a conflict between the two results. So, here we will observe whether perceived fun influence the attitude that consumers experience in MES. So, our hypothesis is:
H8: Perceived fun will directly and positively affect attitude toward MES in Bangladesh.

Perceived ease of use:

Perceived ease of use, refers to the extent to which an individual believes that the use of a mobile entertainment will be free of effort (Venkatesh, 2000). Previous literature provides inconsistent results that show how perceived ease of use influences attitude significantly (Bruner and Kumar, 2005). They found perceived ease of use has only an indirect effect on attitude. Perceived ease of use has a direct effect on the perceived fun and perceived convenience dimensions, but not on attitude. By the same token, our study proposes perceived ease of use posited by Okazaki et Al., (2008). Thus, the hypothesis is:
H9: Perceived ease of use will directly and positively affect perceived fun and perceived convenience in MES in Bangladesh.

Perceived convenience:

Our model includes perceived convenience as an antecedent of attitude, but not perceived usefulness used in the TAM. This dimension crystallizes the core utilitarian values of MES: simplicity in design, functionality in technology, and practicality in use. Dabholkar and Bagozzi (2002) argue that the dimension of usefulness is appropriate for products such as computer software but not relevant for technology-based self-service, in which the consumer participates but which he or she does not own. By the same token, our study proposes perceived convenience (Okazaki et al., 2008). Our study postulates attitude is the consequence of the perceived convenience that consumers experience in MES. Thus, the hypothesis is:
H10: Perceived convenience will directly and positively affect attitude toward MES in Bangladesh.

Usage patterns of MES may have differences or similarities among countries. We focus

on entertainment services (game, music and ringtones) for Bangladesh analysis. Four factors of mobile services have identified by Ghyas et al., (2011): Information intensiveness (Factor 1), entertainment (Factor 2), low penetration service (Factor 3), and communication service (Factor 4) on Japan data. Factor 2 represents services with entertainment characteristics. In our study, we focus on Factor 2. Specifically, the following entertainment services are examined: Games, music, and ring tones. Kondo and Ishida (2014) also researched these services for USA and Japan.

4. Methodology

4.1 Data Collection

Five surveys were conducted in faculty of Business Administration from five universities in Dhaka, Bangladesh in the period of June-August, 2014. One hundred thirty five mobile phone users at a private university, 40 users at another reputed private university and 50 users at another private university were invited to participate. The rest of two surveys were conducted in two reputed public universities of 68 mobile phone users at a public university and 33 users at another public university. In total, 326 subjects received the questionnaires, resulting in 276 completed responses.

We used responses from young users who were 18- 30 years for this research. We also used responses from experienced mobile device users, following the approach of Kondo and Ishida (2014) that experience is required to form opinions. (2014) eliminated non-mature cell phone users in order to eliminate the strong influence of IT dexterity in their research. We also eliminated non-user and non-mature cell phone users. Therefore, after the elimination, there were 251 respondents for our analysis.

Table 1 shows the descriptive statistics of the respondents based on the questions as follows: Q1. How many years have passed since you started to use the first cell phone? Q2. How much do you spend for cell phone services on monthly average basis, including device price and service charge? Q3. What category (or type) of program are you using?

Table 1 Demographics of Respondents to questions, Q1 – Q3

		Bangladesh	
Category	Values	N=251	(%)
Age	under 20	35	13.9
	20-25	203	80.9
	25-30	13	5.2
Gender	Male	163	65
	Female	88	35
Mobile user	Yes	251	100
	No	N/A	N/A
Q1	less than 6 months	N/A	N/A
	6 months - less than 1 year	1	0.4
	1 year - less than 2 years	12	4.8
	2 years - less than 3 years	20	7.9
	3 years - less than 5 years	48	19.1
	5 years - less than 10 years	142	56.6
	10 years or more	28	11.2

Q2	less than 200tk	42	16.8
	200 - less than 400tk	52	20.8
	400 - less than 600tk	54	21.5
	600 - less than 800tk	33	13.2
	800 - less than 1000tk	31	12.4
	More than 1000tk	39	15.6
Q3	Pre-paid (you purchase calling cards)	237	94.5
	Monthly billing (based on contract with your provider)	14	5.5

Note: 200tk=US$2.57

Our demographic values are compatible to Kondo and Ishida (2014). They had 66.1% (Japan) and 73.7% (USA) respondents of age group 20-25. We have 80.9% for Bangladesh. For male group, they had 66.9% for Japan and 70.1% for USA. We have 65% for Bangladesh. About mature users of more than 5 years, they had 71.9% for Japan and 76.4% for USA. We have 67.9% for Bangladesh.

Our initial survey items were adapted from previous studies, Kondo and Ishida (2014); Mathwick et al., (2001); Dholakia and Baggozi (2002) and Boontaring et al., (2012). We used the following sets of 5 and 10 point likert scales: Strongly disagree/strongly agree; unfair/fair; very low/ very high; definitely won`t/ definitely will. We used the items of Kondo and Ishida (2014) and improved by adding one more questions with their original two questions of perceived value and Attitude. We added one question with perceived value from Boontaring et al., (2012) as follows "MES (game, music, ringtone) have an acceptable standard of quality". We also added one question with attitude from Celik and Yilmaz (2011) as follows: "Using MES (game, music, ringtone) services are beneficial to me".

4.2 Measurement Scales

In order to assess the reliability and validity of the constructs, several measures were computed. The reliability coefficient, composite reliability (CR), average variance extracted (AVE) and the squared inter-correlations (SIC) are reported for Bangladesh in table 2. The Cronbach α Coefficient is the measured value of questionnaire items for each construct from the point of view of internal consistency. If the value of this coefficient was 0.7 or more, the internal consistency of the measurement scale is considered as being high and the reliabilities are adequate. The coefficients for each factor are shown in table 2. Since all values exceeded 0.7, it was concluded that the items of these constructs had common parts. The threshold for CR is 0.70 or higher (Bagozzi & Yi, 2011).

All AVE values were above 0.5 indicating convergent validity. For discriminant validity, the AVE of each construct should exceed the SIC of the construct with other constructs. As shown in the table 3, this holds true for all constructs except subjective norm and perceived convenience. There exists multicollinearity between perceived convenience and perceived fun (0.942). Previous two studies on online gaming adoption (Ha et al., 2007; Hsu and Lu, 2004) found that perceived usefulness has little or no impact on attitude. Nasveen et al., (2005) also found that there are stronger direct effects of perceived usefulness on intention to use goal directed mobile services (test messaging and payment) than on intention to use experiential mobile services (gaming and contact). So, here we will omit perceived convenience with our proposed hypothesis H10. For the correlation between PBC and SN (0.756), we will use the both in the most complex model because they were used in the previous TAM-TPB model by Kondo and Ishida (2014), in which SN were removed later in their best model.

Table 2 CR, AVE, and SIC for Each Construct for Bangladesh

Constructs					1	2	3	4	5	6	7	8
	No. of Items	Cronbach's Alpha	CR	AVE	AVE and SIC							
ATT	3	0.825	0.805	0.580	0.613							
PV	3	0.808	0.721	0.600	0.310	0.600						
PF	3	0.871	0.870	0.700	0.422	0.355	0.700					
PEOU	3	0.863	0.865	0.684	0.536	0.265	0.451	0.684				
PC	3	0.831	0.834	0.628	0.399	0.390	0.942	0.502	0.628			
BI	3	0.817	0.810	0.588	0.329	0.317	0.618	0.441	0.584	0.588		
PBC	3	0.760	0.770	0.533	0.502	0.22	0.252	0.264	0.261	0.105	0.533	
SN	3	0.819	0.758	0.626	0.612	0.247	0.326	0.34	0.342	0.222	0.756	0.626

Note: The values of AVE are on the diagonal and those of SIC on the off-diagonal.

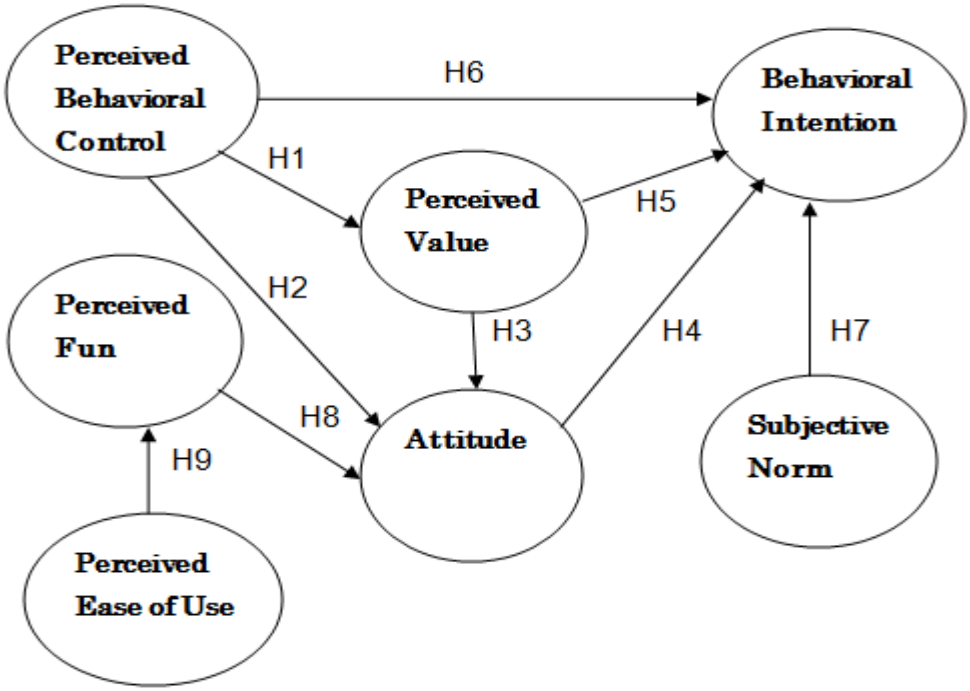

Fig. 2. Proposed TAM-TPB Model

4.3 Analytical Method

The research models were analyzed for Bangladesh via structural equation modeling (SEM) by using the statistical software AMOS version 22.0. The SEM is a statistical approach to understanding social and natural phenomena by identifying a causal relationship between the observed variables and the latent variables that cannot be observed directly. A useful and powerful aspect of SEM is the test of hypotheses across samples (Bagozzi & Yi, 2011).

Based on fit indices, the best was obtained. the classification of these model fit indices as roughly two types, absolute fit indices and comparative fit indices summarized by Hooper et al. (2008). The absolute fit indices include goodness-of-fit (GFI), adjusted goodness-of-fit (AGFI) and root mean square error of approximation (RMSEA). The comparative fit indices include Akaike Information Criterion (AIC), Browne-Cudeck Criterion (BCC), Normed Fit Index (NFI) and Tucker-Lewis Index (TLI). Threshold guidelines exist for these indices. The

overall fit indices of the revised models were examined. A *t*-value was used as a criterion to test the significance of the parameters at the .05 level. A *t*-value was defined as the ratio between the parameter estimate and its standard error (Joreskog & Sorbom 1989).

5. Results

We have conducted four TAM-TPB models in order to establish the best-fit index. The four TAM-TPB models are as follows: The research model in Figure 2 was Model 1. Model 2, 3 and 4 were created by using a step-by-step approach. Model 2 was created by deleting perceived fun and perceived ease of use in model 1 to make better fit measures. Model 3 was created by deleting the non-significant path from subjective norm to behavioral intention in Model 2. Model 4 was created by deleting the non-significant path from PBC to behavioral intention in Model 3. Table 3 shows the fit measures for the four models for Bangladesh data. All fit indices are in the acceptable range for model 4. These results indicate that Model 4 has the smallest AIC value (132.18) and has the information criterion with the most significant estimated coefficients. Therefore, it was selected as the best model. The values for GFI (0 .947) and AGFI (0.914) exceeded 0.9 and are thus in the acceptable range. The RMSEA is 0.049, which is less than 0.05 and thus considered to be a good fit (Tsang et al. 2004). Table 3 shows that the goodness of fit of generated or re-specified models are better compared to the hypothesized model. In summary, generated values for model 4 are superior to those for the other models.

Table 3 Values of Model Selection Criteria on Each Model for Bangladesh

	GFI	AGFI	RMSEA	CFI	AIC	BCC
Model 1 (hypothesized model)	0.804	0.749	0.109	0.798	737.8	749.6
Model 2 (without PF->ATT and PEOU->PF)	0.877	0.825	0.107	0.853	357.8	363.8
Model 3 (without SN->BI)	0.947	0.913	0.050	0.973	133.1	137.0
Model 4 (without PBC->BI)	0.947	0.914	0.049	0.973	132.1	135.9

Since the hypothesized model (Figure 2) did not achieve model fit, the explanation of hypotheses result is based on generated or re-specified model 4. Model 4 shows the highest applicability and well fitting for Bangladesh among all models in this research. The final model for Bangladesh is shown in Figure 3. The coefficients of the measurement variables that explain the latent variables are all significant at the level of 0.1% or less. Therefore, the measurement variables generally appear to explain the latent variables well. Hypotheses from H1 to H5 in model 4 were supported in our analysis for Bangladesh.

H1: Mobile users' perceived behavioral control towards MES has a direct positive impact on their perceived value to use MES with standardized estimate of 0.221 and the hypothesis is accepted.

H2: Mobile users' perceived behavior control towards MES has high positive impact on their attitude to use MES with standardized estimate of 0.452 and the hypothesis is accepted.

H3: Mobile users' perceived value towards MES has positive impact on their attitude to use MES with standardized estimate of 0.214 and the hypothesis is accepted.

H4: Mobile users' attitude towards MES has a direct positive impact on their intention to use MES with standardized estimate of 0.250 and the hypothesis is accepted.

H5: Mobile users' perceived value towards MES has positive impact on their behavior intention to use MES with standardized estimate of 0.243 and the hypothesis is accepted.

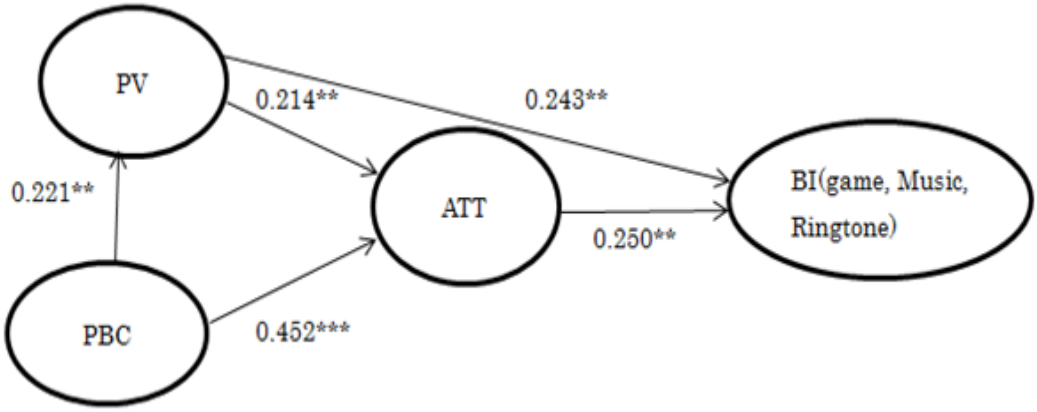

Fig. 3. Path Analysis of Model 4 for Bangladesh at significance level
Note: ***p <0.001; **p <0.05; *p <0.1.

Table 4
Standardized Estimates on Model 4 for Bangladesh

Hypotheses	Paths	Standardized Estimate	S.E.	t- value
H1	Perceived behavioral control →Perceived value	0.221**	0.227	2.619
H2	Perceived behavioral control →Attitude	0.452***	0.088	5.105
H3	Perceived value →Attitude	0.214**	0.029	2.714
H4	Attitude →Behavioral intention	0.250**	0.136	2.904
H5	Perceived value → Behavioral intention	0.243**	0.050	2.820

Note: ***p <0.001; **p <0.05; *p <0.1.

Our hypothesized model 1 with additional constructs: perceived fun, and perceived ease of use did not show a good model fit. There are some previous researches that also suggesting that perceived enjoyment does not positively influenced the using behavior to use a technology system (Fagan et al., 2008; Shin & Kim, 2008; Venkatesh et al., 2002). So, it appears to have happened for model 1.

We observed from our result that perceived behavioral control, perceived value and attitude are positively significant determinants on intention to use. We got positive significant values of standardized estimate for the dependent and independent variables. The result shows that behavioral control concerning mobile information services is a very important driver of attitude. Then Attitude has strong positive indicator for behavioral intention. We can state that attitude and perceived value is important indicator for behavioral intention. Also, Perceived behavioral control is a good determinant of perceived value and perceived value has moderate influence on attitude.

Our results of selected model 4 are generally compatible with the results on MES reported in Kondo and Ishida (2014). Our result also an agreement on gaming services reported in Nysveen et al., (2005) concerning Norwegian customers. Perhaps, our data was for 2014 and, Kondo and Ishida (2014) was for Japan and USA data in 2009. There had time difference but the results seem similar because Bangladesh in 2014 is at the same stage of provided 3G mobile services where USA and JAPAN were in 2009. The result provided an interesting implication that the TAM-TPB model could be applied in both developed countries and a

developing country after the adjustment of technology diffusion timing.

6. Discussion

Our results for Bangladesh mobile service usages by young adults through our proposed TAM-TPB model have led to similar results to those of Nysveen et al., (2005) concerning Norwegian customers and Kondo and Ishida (2014) concerning USA and Japan customers. Our result in the best TAM-TPB model confirmed the significant paths from perceived behavioral control to perceived value and perceived value to attitude. This means that users' positive attitude is influenced by the positive value perception of using MES. The perception of value is affected by the user's positive perception of their ability to using entertainment services. Our analysis also found strong impact of attitude to behavioral intention, perceived behavioral control to attitude and perceived value to behavioral intention for MES.

Bangladeshi users find that mobile phones are very important device in daily life, apart from talking they have perceived many other benefit from mobile phone like hearing music, playing games, download ringtones, etc. which made this attitude strong for good intention to use mobile phone for entertainment and behavior to adopt it. Their intention to adopt MES appears to be determined to a greater extent by perceived benefits that they are receiving. Bangladeshi young users feel that they have skills, ability, money, time and others resources to use MES such as game, music, ringtone.

Our analysis found that hypothesized model with perceived fun has not fitted well for Bangladesh. This result is consistent with previous researches by Khalid and Noor (2009) for Jordan and Dai and Palvia (2009) for China. Students of Jordan use the mobile phone for other purposes such as making and receiving calls, SMS service, discussing studying issues but not for enjoyment. Chinese young focus on needs, values and expenses rather than hedonic characteristics of mobile commerce in their intention to use. The plausible reasons for Bangladesh can be entertainment system and structure via mobile phone might have not developed enough that young users do not find fun aspects. Bangladeshi students may have many services to enjoy more than MES, such as, internet music, computer games, sports, etc. We may be able to summarize that perceived fun is not supported for developing countries whereas it is supported for developed countries. Providing high enjoyment quality with affordable price in entertainment services needed to be addressed for future.

Subjective norm was not a good indicator of Behavioral Intention to use in our research. This follows what were found in previous research of Kondo and Ishida (2014) and Okazaki et al., (2008). They also exclude subjective norm from their model. Since the participants in this study are young people who have good education and experience with technology, the effect from Social Influence may decline.

Clearly, there are more similarities than differences among the youth "intention to use" MES on TAM-TPB framework. Mobile entertainment technology appears to be a ''nice-to-have'' accessory among the cross-border youth segments. As yet, however, there are few empirical studies of the factors connecting youth and adoption of mobile entertainment technology. Therefore, this pattern can be considered as universalities of mobile entertainment service use on youth segment.

If the determinants of perceived value, attitude and perceived value have a measurable effect on usage intention in some countries, then there is an opportunity that it will be accepted by another country also. Therefore, it can be said that this framework is useful in international markets by being able to identify opportunities and threats to consumer acceptance of mobile services. Our analysis also has providing an expectation of further expansion of its future market among young generation in a developing country.

Young generations in Bangladesh want to be more entertained by using the newly

introduced technologies of 3G spectrums and the smart phones. Also, gaming is the second most used 3G services in Bangladeshi young users (78.9%) (Tajmary et al., 2013). These can surmise that Bangladesh mobile entertainment service market is a potential market for the mobile entertainment business now. Therefore, it demands to adopt the correct marketing strategy and business model to catch on the potential customers.

7. Limitations

Our study has some limitations. All of the respondents are young students who have good education and knowledge in technology who had attended business classes of several universities in a capital city. Also, they are convenience samples. Thus the results cannot be generalized to the whole population in Bangladesh. Although the limitations exist, the usage of such samples provides useful insights on describing an emerging market of MES among young adults who are innovative users, which are otherwise not available

8. Conclusion

This study represents an attempt to explain mobile ringtone, music and gaming adoption in Bangladesh context. Despite increasing empirical research, there is a serious lack of studies that examine specific mobile entertainment service applications in Bangladesh. Our study serves as one of the good attempts in this area. The study conducted the survey based on the modified TAM-TPB model captures relevant antecedents of the attitude-intention chain for Bangladeshi young. The result provides a good fit and significantly positive results for the model with four constructs: Behavioral control, perceived value, attitude, and behavioral intention to use mobile services. The estimated coefficients shows that the generated model fits generally well with the data for Bangladesh. The outcomes from this study revealed that the TAM-TPB model with attitude, perceived behavioral control and perceived Value could be applied to understand Bangladeshi young behavioral intention to use MES. However, perceived fun was not supported for Bangladesh, possibly in developing countries. Our result indicates that whenever customers make decision to use mobile ringtone, music and gaming application, they will think whether these are worth to use or not.

Concerning the impact of perceived value, perceived behavioral control and attitude on intention to use MES, we found almost similar results in Bangladesh to the previous research results in Japan and USA. In order to examine the applicability of the TAM-TPB framework, we recommend researchers to conduct researches on these three factors for intention to use MES in different countries, especially developing countries.

For the better development of the competitive mobile entertainment service market in Bangladesh, the developer should note our findings that the three factors are the important determinants for intention to use MES. It may be possible to assume from our study that a homogeneous youth segment exists across borders. This segment seeks innovative technology that provides enjoyable and efficient pastimes, in which young consumers perceive these three factors as important determinants of behavioral intention to use MES.

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