How Culture Affects ICT Diffusion among SMEs in Bangladesh?

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ABSTRACT

Culture is a broad spectrum of behavioural study which has been illuminated differently in different literature. Applying four cultural dimensions, power distance, uncertainty avoidance, in-group collectivism, and Bengali value, with the two fundamental antecedents of TAM, perceived usefulness and ease of use, this study attempts to look at the effects of culture in ICT diffusion among SMEs in Bangladesh. This study applies a mixed method of research approach. Following an in-depth field study which is analysed through NVivo version 9, a descriptive research design is administered to ascertain the joint impact of the study constructs. Structural equation modelling through PLS graph has been used with a cross-sectional dataset of 51 SMEs in Bangladesh collected through a questionnaire survey. The proposed model was assessed with two step procedure of measuring latent variables structural association. Prior to estimating the structural model, psychometric properties of the model, convergent and discriminant validity, were assessed. The structural model estimation results reveal a significant association of power distance and perceived ease of use with SMEs intention to use ICT. The path analysis furthered a significant effect of intention on actual ICT usage behaviour. The study concludes with implications.

Keywords: ICT, intention and actual usage behaviour, technology acceptance model, cultural dimensions

INTRODUCTION

Culture is a broad spectrum of behavioural study which has been illuminated differently in different literature. In broader sense culture may be defined as sum total of shared learned beliefs, values, norms and customs which guide individual or group behaviour in a society. Hofstede (2001) treats culture as the collective programming of the mind that distinguishes the members of one group or category of people from another. Although the effects of culture on leadership and organisational processes as well as on the individual behaviour have successfully been looked into in many studies (House et. al, 2004), its effects in ICT adoption research are inconclusive.

There is a controversy on the role of culture in the use and adoption of information technology. Some researchers favour the thought that organisations adopt technology that is useful and provides them with some economic benefit where culture has no significant role. While other researchers hold an alternative view that culture plays an important role in determining not only whether organisations in a particular country adopt a certain technology but it also impacts the degree to which it is accepted and the ways it is used (Thatcher, Foster, and Zhu, 2006).

Information and communication technology (ICT) has become an inevitable part of human life in almost every sphere of work around the world. The rapid growth of ICT usage have reshaped the ways of communication and also made changes in the strategies for organization- both in public and private sector. Introduction of ICT, particularly the Internet, in the business sector not only involves changes to the systems, procedures, and processes of relevant services but also affects the way through which customers, suppliers, the regulatory bodies and other external parties deal with business organizations.

Exploring its various advantages, such as lower cost, speed, accuracy, efficiency and opportunity to communicate regardless of time and place, the technology has become as the fastest diffused technological innovation until 21st century.

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Although the study of information and communication technology acceptance has received bulk of researchers' interests in both developed and developing countries (Taylor and Todd, 1995, Methison, 1991, Davis et. al, 1989, Davis, 1993, Moore and Benbasat, 1991, Premkumar and Potter, 1995, Agarwal and Prashad, 1997, Agarwal and Prashad, 1998 Agarwal and Prashad, 1999, Taylor and Todd, 1995, Tan and Teo, 2000, Kendall et, al., 2001, Sathye and Diana, 2001 Venkatesh and Devis, 2000, Vankatesh and Morris, 2000, Venkatesh et. al, 2003, Venkatesh et al, 2008) in the last few decades, the amount of study looking at the ICT in developing country perspective is scarce. The recent internet usage statistics spells out new opportunities for information technology adoption research attracting the researchers' attention towards developing and least developed countries along with the developed countries.

At the end of 2008 nearly 1,596 million people or 23.8 % of total populations of the world had access to the Internet. This represents an increase of 342.2% over the year 2000. Asian countries account for 474.9% growth, its total internet user stands at 657 million or 41.2% of worlds total internet user, while rest of the world grew by nearly 280.7 % in the same period (The Internet Coaching Library, 2009). Thus, it is imperative to initiate much more studies to look at information and communication technology in the Asian region. The internet users in Bangladesh are also growing alike. The total internet population of the country stands at 1,00,000 in the Year 2000 (Azam, 2004) and it reached 4,50,000 in the year 2007 (Azam and Quaddus, 2009c, Azam and Quaddus, 2009d) which proclaims 450% rise in internet population (Digital Bangladesh, 2009).

The seemingly increasing trend of ICT usage, particularly the internet, in business to manage the organisational internal communication, external communication, shop floor management, inventory control and customer integration as well as online order processing and transaction to acquire increased and competitive organisational performance, provide a motivation to the large organizations as well as to the smaller organizations in developing countries to adopt the technology.

The Small and Medium sized Enterprises (SMEs) have been playing an important role for the development of a country. The SMEs of the developed countries contribute substantially in country's growth process. Although lagging behind, the SMEs in developing countries are also contributing positively. The prospects and contribution of Bangladesh's SMEs in its economic development are enormous. SMEs account for about 45% of manufacturing value addition in Bangladesh. They account for about 80% of industrial employment, about 90% of total industrial units and about 25% of total labour force. Its total contribution to export earnings varies between 75- 80% (Economic Census 2001-2003). According to the Bangladesh Bureau of Statistic, SME's provide about 44 per cent employment of the country. The 2003 Private Sector Survey estimated that about 6 million micro, small, and medium enterprises defined as enterprises with fewer than 100 employees, contributed around 20-25% of GDP (The New Nation, 2008). The number of SMEs and its significant contribution to the national economy in terms of employment generation, GDP contribution and export earnings thus create a significant research opportunity to look at the adoption and diffusion of information and communication technology.

In the past research initiatives, the adoption-diffusion phenomena of ICT in organizational perspective has been looked into mostly by anticipating the effects of innovation characteristics, organizational, institutional and environmental forces. The cultural dimensions although important have not been studied widely in addressing the ICT diffusion. This study considers cultural dimensions as antecedents of ICT diffusion among the SMEs in Bangladesh. Thus, the study undertakes an in-depth field study in conjunction with literature review to explore the theoretical framework and estimates the conceptual model in designing a quantitative research to look at ICT diffusion among the SMEs in Bangladesh.

THEORETICAL FRAMEWORK

This research is an initiative of looking at the effects of different antecedents of ICT diffusion among the SMEs in Bangladesh. Various theories and models applicable for ICT adoption-diffusion behaviour thus have been reviewed to make a theoretical foundation of the paper. Theory of Reasoned Action (Fishbein and Ajzen, 1975), Rogers innovation diffusion theory (Rogers, 1983), Theory of Planned Behaviour (Ajzen, 1985), Technology Acceptance Model (Davis, 1986) have been analysed for the study.

According to Rogers (1983), the decision process begins with the knowledge of the existence of the innovation and matures observing persuasion, decision and implementation stage. During the knowledge stage consumer is exposed to the innovation's existence and gains some understanding on how it functions, persuasion stage refers to that period when consumer forms favourable or unfavourable attitude towards the innovation. Often, early adopters who are typically innovators themselves, or in some cases change agents, attempt to convince the general user population of the benefits of the innovation.

In the model of innovation diffusion, it is found that the persuasion stage is very important to form the positive attitude (willingness or intention) to adopt the innovation (Rogers, 1995). Rogers includes all benefits and barriers as well as many other factors that affect the adoption into five attributes of innovation that is "the perceived characteristics of innovation" as perceived by the individual or organization. The characteristics of innovation consist of relative advantage, compatibility, complexity, trialability and observabiltiy.

Theory of Reasoned Action (Fishbein and Ajzen, 1975, and Azjen and Fishbein, 1980) is one of the well-researched theories in measuring the behavioural intention which explains the causes of behavioural intent and illustrates the structures of the relations.

Theory of Reasoned Action (TRA) has two unique factors as attitude toward the behaviour (ATT) and subjective norm (SN) that contribute to behavioural intention (BI), which finally explains the actual behaviour. The basic assumption underlying the theory of reasoned action is that humans are quite rational and make all available information, both personal and social, before they act (Crawley III and Coe, 1990). The theory was reviewed and modified later to explain the behviour comprehensively, thus more theories have been created and applied in the same field. Theory of Planned Behaviour is one of the popular successive theories which explains the individuals' behvaiour in broader perspective than theory of reasoned action.

TPB was proposed by Icek Ajzen (1985; 1991) which is an extension of theory of reasoned action (Ajzen and Fishbein, 1980). TBP was developed to address original model's limitations in dealing with behaviours over which people have incomplete volitional control (Ajzen, 1985; 1991). Thus it overcomes the problematic predictive validity of theory of reasoned action to explain the behaviour under study which is not under full volitional control. Ajzen (1985) made the extension by including additional one construct, perceived behavioural control, to predict behavioural intention and behaviour. Perceived behavioural control refers to "people's perception of ease or difficulty of performing the behaviour of interest" (Ajzen, 1991). A number of external factors (such as environmental, organisational etc.) can make a given behaviour easier or harder to perform.

The theory of planned behaviour (TPB) holds that human action is guided by three kinds of considerations which are: beliefs about the likely outcomes of the behaviour and the evaluations of these outcomes (behavioural beliefs), beliefs about the normative expectations of others and motivation to comply with these expectations (normative beliefs), and beliefs about the presence of factors that may facilitate or hinder performance of the behaviour and the perceived power of these factors (control beliefs). TPB also explains that certain factors or constructs known as control beliefs, may facilitate and impede peoples' behaviour, thus, can influence a persons' adoption intention or purchasing a product or service (Ajzen and Madden, 1986).

The technology acceptance model (TAM) was developed by Davis (1986) to explain information technology (IT) usage behaviour. It is an adaptation of TRA and states that behavioural intention to use a technology is directly determined by two key beliefs: Perceived usefulness and perceived ease of use. Perceived usefulness assesses the extrinsic characteristics of IT, i.e. task oriented outcomes such as 'The prospective users' subjective probability that using specific application will increase his or her job performance within an organisational context". On the other hand, perceived ease of use examines intrinsic characteristics of IT, i.e. ease of use, ease of learning, flexibility and clarity of interface. It is stated as "the degree of which the prospective users expect the target system to be free of effort" (Davis, Bagozzi, and Warsha, 1989).

The earlier version of TAM included subjective norms with perceived ease of use and usefulness as antecedents of behavioral intention which was omitted from the model latter. Social influence has a strong effect in technology adoption in mandatory setting while it has different effects in voluntary setting and in the context of having experience (Venkatesh and Morris 2000). One key benefit of using TAM to understand system usage behaviour is that it provides a framework to examine the influence of external factors of system usage (Hong et al. 1999).

Various external variables such as computer self-efficacy, social influence, experience, voluntariness, diversity of technology, trust, culture, and relevance, have been added in the context of TAM in different settings to get more insight into technology acceptance in previous initiatives (Agarwal and Prasad 1999, Davis, Bagozzi, and Warshaw 1989, Shih 2004, Yoon 2008, Taylor and Todd 1995, Venkatesh and Morris 2000, Hong et al. 1999, Venkatesh and Davis 1996, Venkatesh and Davis 2000, Wang, Wang, and Tang 2003).

Although limited in number some previous studies report a significant link between cultural dimension and different facets of IT use (Bertolotti, 1984, Burn, 1995, Erez and Early, 1993, Gefen and Straub, 1997, Hill, et al., 1998, Ho, Raman and Watson, 1989, Straub, 1994, and Harris and Davison 1999). Erumban and Jong (2006) find that the national culture and the ICT adoption rate of a country are closely related. They further report most of the Hofstede dimensions are important in influencing adoption where Power distance and uncertainty avoidance dimensions seem

to be most influential. Thatcher, Foster, and Zhu (2006) support the outcome in ICT adoption, particularly b2b e-commerce adoption, in Taiwanese electronic industry context.

This study under takes a qualitative search to explore and justify the effects of various cultural dimensions in the diffusion of ICT among the SMEs in Bangladesh. The analysis of the interview transcripts resulted in anticipating the effects of 4 dimensions of culture such as power distance, uncertainty avoidance, in-group collectivism and Bengali values, on the intention of ICT use with the fundamental antecedents of ICT adoption explained in technology acceptance model, perceived usefulness and perceived ease of use. In addition to Thatcher, Foster, and Zhu (2006) this study anticipates the effects of two more dimensions, such as in-group collectivism and Bengali values, on SMEs intention to use ICT.

Power distance refers the degree to which members of a collective expect power to be distributed equally.

Uncertainty avoidance refers the extent to which a society, organisation, or group relies on social norm, rules and procedures to alleviate unpredictability of future events.

In-group collectivism refers the degree to which individuals express pride, loyalty and cohesiveness in their organisation and family.

Bengali value is a new cultural dimension, explored in this field study, which may be explained as the values that guide or motivate the individuals to maintain a very close social tie and respectful to Bengali language. This construct has not been explained in previous cultural studies which is an important aspect of Bengali culture. The qualitative search also anticipates negative structural relations in-between cultural dimensions and SMEs intention to use ICT,

Hypotheses:

Based on the above discussions the following hypotheses have been proposed:

H1a: Perceived usefulness has direct positive effects on SMEs intention to use ICT.

H1b: Perceived ease of use has direct positive influence on SMEs intention to use ICT

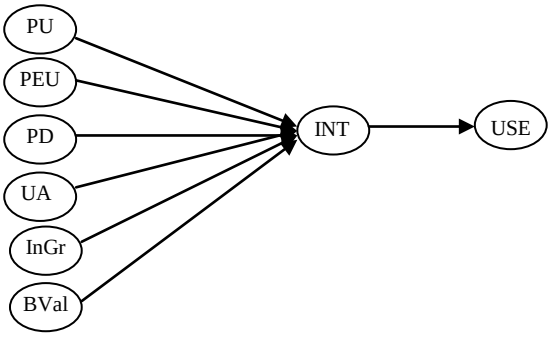
H1c: Power distance has direct negative effects on SMEs intention to use ICT

H1d: Uncertainty avoidance has direct negative effects on SMEs intention to use ICT

H1e: In-group collectivism has direct negative effects on SMEs intention to use ICT

H1f: Bengali value has direct negative effects on SMEs intention to use ICT

H2 : Intention has direct positive influence on SMEs ICT usage behaviour



PD=Power distance, UA=Uncertainty avoidance, InGr=In-group collectivism, BVal=Bengali value, INT=Behavioural intention, USE=Use of ICT

Figure 1: Conceptual framework

RESEARCH METHODOLOGY AND FINDINGS

This study applies a mixed method of research approach. An in-depth field study was administered to explore the study constructs and anticipate the structural link among them. The field study also fine-tuned and contextualised the concept developed through literature review. To test the conceptual model a survey instrument was designed for data collection. The measures used to operationalize the constructs included in the proposed model were adapted from relevant prior studies, with slight modification and expressional changes to fit them to the targeted context and also explored through the intensive field study. The questionnaire was fine-tuned via several runs of pre-test, revisions

and pilot tests. After finalizing the questionnaire a cross sectional survey was administered to the SMEs in Bangladesh. All of the items were measured using a 5 point Likert-type scale with anchors on strongly agree and strongly disagree, respectively.

The survey instrument was administered to the sample which is determined through a probability sampling method. Owners or managers (decision maker) of different SMEs form the population of the survey. With the assistance of a group of trained surveyor 51 survey responses were received. The sample was checked for consistency and scrutinised in view of removing invalid responses. The entire data set was considered as valid for study, thus, finally used for the purpose of the analysis. This study used NVIVO version 9 and PLS graph software to analyse the field interviews and survey data respectively.

At the qualitative phase of the study 11 owners or managers of different SMEs were interviewed. The recorded interviews were converted to text through transcription and analysed to contextualise the model developed through reviewing prior literature. To search for new constructs, items or structural relations in-between constructs under the study is also objective of qualitative study. Due to the limitation of space of the paper, all phases of field study and analysis are not stated in detail but final results of the field study have been quoted duly.

Subject and Sample

As the study utilises probability sampling technique, different types of SMEs have been included in the sample which brings in the logical ground for generalising the inferred outcomes.

The study investigates the opinions and perceptions of the owner or owner manager or manager (decision amker) of SMEs located at or adjacent to Dhaka city. Dhaka has been selected as the sampling area considering the fact that high industry concentration is evident at or nearby Dhaka. The internet penetration is also high which is around 80% of total internet penetration are in Dhaka. The sample consists of 23.5% Owner, 21.6% owner manager, 45.1% manager (decision maker), 9.8% employees.

Table 1 demographic profile

	Description	Frequency	%
Industry	Manufacturing	22	43.1%
	Service	13	25.5%
	Wholesale/retail	2	3.9%
	Buying house	14	27.5%
Business Size	Small	35	69.7%
	Medium	16	31.4%
Position	Owner	12	23.5%
	Owner-Manager	11	21.6%
	Top management	23	45.1%
	Employee	5	9.8%
Age	< 35 Years	8	15.7 %
	35-44 Years	34	66.7%
	≥ 45 Years	9	17.6
Education	Post graduate	23	45.1%
	Graduate	**27**	53%
	Primary/Literate	1	2%
Income	< Tk. 30,000.00	11	21.6%
	Tk. 30,000 -Tk. 50,000	10	19.6%
	Tk. 50,000 – Tk. 80,000	23	45.1%
	> Tk. 80,000	7	13.7%
ICT Experience	Started ICT before 2000	12	23.5%
	Started ICT since 2000	39	27.5%
ISO Certification	ISO 9000-14000 certified	15	29.4%
	No ISO certification	36	70.6%

2% of the respondents surveyed have primary education, 53% of the respondents have up to graduation, and 45.1% have post-graduation education. The study includes 15.7 % individuals surveyed with an age below 35 years, 53% 35 years to 44 years, while 17.6% respondents fall into the category of 45 years and above. 21.6% respondents have up to 30000Tk monthly income, 19.6% respondent earned Tk. 30000.00 to Tk 50000, 54.1% earned Tk.50000-Tk 80000 while 13.7% respondents fall into the category of income more than 80000 Taka.

Each of the respondents is using some sort ICT. This survey conform that the firm surveyed have internet and ICT usage experience, 100% firms reported that they have online banking and online communication with main suppliers. 98% respondents have cable broadband connectivity. 23.5% firms have good experience and started ICT operation prior to 2000 while 66.5% started ICT operation after 2000. 29.4% firms have ISO certification.

The distribution of the sample into various types of companies and their staffs results in the strength of generalizability of the sample survey's results.

Model Specification

In the theoretical model, actual usage behaviour (*B*) has been modelled as a direct function of behavioural intention (*BI*). *BI* is in turn, a weighted function of perceived usefulness *(U)*, perceived ease of use *(E)*, power distance e *(P)*, *uncertainty avoidance* (A), in-group collectivism *(C)*, Bengali value *(V)* and error term *(e)*.

$B = w_1 BI + e$ …… (1)

$BI = w_2 U + w_3 E + w_4 P + w_5 A + w_6 C + w_7 V + e$…… (2)

Data Analysis and results

The structural equation modelling is appropriate to analyse the data in accordance with the proposed conceptual framework. A growing number of researchers are adopting causal or structural equation modelling as it allows the analysis of complex networks of constructs, each construct typically measured by multiple variables. Understanding the nature of the study and its practical implications, the data gathered from the survey were analysed by partial least squares (PLS) based structural equation modelling (Barclay, Higgins and Thompson 1995).

Table 2: Measurement Model-I

Construct	Items	Loadings	SE	CR	AVE	Mean	SD
Perceived usefulness	PU 4	0.813	0.190	4.833	0.735	4.985	.105
	PU 3	0.712	0.191	3.914			
	PU 2	0.813	0.190	4.833			
	PU 1	0.563	0.449	1.853			
Perceived ease of use	PEU4	0.982	0.009	105.54	0.785	4.284	1.298
	PEU3	0.944	0.061	15.41			
	PEU2	0.985	0.008	123.33			
	PEU1	0.563	0.169	3.31			
Power distance	PD3	0.634	0.128	4.86	0.647	4.268	1.046
	PD2	0.893	0.052	17.41			
	PD1	0.848	0.092	9.32			
Uncertainty avoidance	UA2	0.947	0.075	12.90	0.779	4.912	.356
	UA1	0.614	0.455	1.70			
In-group collectivism	InGr2	0.750	0.375	2.60	0.594	4.461	1.034
	InGr1	0.511	0.359	1.36			
Bengali value	Ben3	0.790	0.392	2.49	0.95	4.967	.192
	Ben2	0.790	0.392	2.49			
	Ben1	0.983	0.017	56.99			
Intention	Int2	0.945	0.015	62.82	0.88	2.373	1.486
	Int1	0.932	0.020	46.24			
USE	USE2	0.832	0.073	11.49	0.765	2.069	1.493
	USE1	0.913	0.036	24.88			

*Note: AVE=Average variance extracted, ***=Significant at .001*

Measurement model

The measurement model was first assessed by a confirmatory factor analysis though PLS graph. The model, therefore, was assessed for evaluating the psychometric properties of the measurement model in terms of reliability,

convergent validity, and discriminant validity (Fornell and Larker 1981). The reliability of the constructs was assessed by considering composite reliability. Construct reliability for all of the factors in the measurement model were above 0.70, an acceptable threshold suggested by Nunnanly and Bernstein (1994) and Straub (1989) respectively.

Construct validity was evaluated by examining the factor loadings within the constructs as well as the correlation between the constructs (Andrson and Gerbing 1988). The factor loadings on all of the constructs were highly satisfactory in the expected direction with satisfactory critical ratio and level of significance (i.e. ranged between .511 to .983), thus providing evidence of satisfactory item convergence on the intended constructs (see Table 2).

This study used the square root of the AVE and cross loading matrix to assess the discriminant validity as suggested by Igbaria, Guimaraes, and Davis (1995) and Barclay, Higgins and Thompson (1995). According to Barclay, Higgins and Thompson (1995), the model is assessed to have acceptable discriminant validity if the square-root of the AVE of a construct is larger than its correlation with other constructs. The results are detailed in Table 3 with the square roots of the AVEs shown in the main diagonal of the table. The off diagonal elements represent the correlations among the latent variables. Table 4 indicates that the discriminant validity of the latent variables was met, which means that all the latent variables are different from each other.

Discriminant validity of the measures has also been cross-checked through cross loading matrix (Barclay, Higgins, and Thompson 1995). Results of the cross-loading analysis showed that all items loaded higher on the construct that they were measuring than they did on other constructs in the model (Barclay, Cavay, and Thompson 1995). To save space, the cross-loading matrix is not presented in this paper.

Table 3 : Measurement Model-II

Factors	No of Items	CR	PU	PEU	PD	UA	InGr	BVal	INT	USE
PU	4	0.917	**0.857**							
PEU	4	0.933	-0.208	**0.886**						
PD	3	0.843	-0.011	-0.131	**0.804**					
UA	3	0.874	0.056	0.084	0.365	**0.883**				
InGr	2	0.725	-0.153	0.347	0.21	0.02	**0.771**			
BVal	3	0.983	-0.016	-0.082	0.416	0.63	0.068	**0.975**		
INT	2	0.936	0.189	0.235	-0.537	-0.221	-0.158	-0.217	**0.938**	
USE	2	0.866	0.077	0.251	-0.41	-0.069	-0.133	0.043	0.715	**0.875**

Note: CR = Composite reliability, PU = Perceived usefulness,PEU = Perceived ease of use, PD=Power distance, UA=Uncertainty avoidance, InGr=Ingroup collectivism, BVal=Bengali value, Int=Behavioural intention, Use=Use of ICT

Structural model

The structural model deals with testing the hypothesized relationships. Bootstrap method has been used to test the hypotheses. The results detailing the path coefficients and *t*-statistics are summarized in Table 5.

It is observed that among the primary hypotheses H1b, H1c and H2 were supported (significant *t*-values), while hypotheses H1a , H1d, H1e and H1f were not supported (insignificant *t*-values). According to Santosa, Wei, and Chan (2005) the nomological validity or explanatory power of the proposed model can be assessed by observing the R^2 values of the endogenous constructs. The model explains 39% of the variance (R^2) of the intention to adopt Internet and 51.1% of the variance (R^2) of the SMEs actual ICT usage behaviour. All R^2 values exceeded the minimum required value of 0.10 as suggested by Falk and Miller (1992) (see Table 4 and Figure 2).

Table 4 : Structural Model

	Beta	SE	t statistic	Comments
PU →INT	0.235	0.3196	0.7353	Not supported
PEU →INT	0.292	0.0976	2.9918*	Supported
PD →INT	-0.456	0.2012	2.2659*	Supported
UA →INT	-0.158	2.0306	0.0778	Not Supported
InGr →INT	-0.132	0.1379	0.9571	Not supported
BVal →INT	0.109	1.9968	0.0546	Not Supported
INT →USE	0.715	0.1213	5.8923**	Supported

*** indicates p> .01, * indicates p> .05 Note: R^2 for INT = 0.390, R^2 for USE = 0.511*
PD=Power distance, UA=Uncertainty avoidance, InGr=Ingroup collectivism, BVal=Bengali value, Int=Behavioural intention, Use=Use of ICT

The path coefficient for the model shows that all the constructs under the model are related in expected direction, although some of them are not significant, according to the proposed theoretical framework. The study has shown that the proposed model is applicable in Bangladesh setting to significantly explain intention to use as well as actual use of ICT among the SMEs. Power distance was found to be one of the strongest constructs influencing intention of ICT use, while other cultural dimensions did not produce any significant contribution to SMEs ICT usage intention.

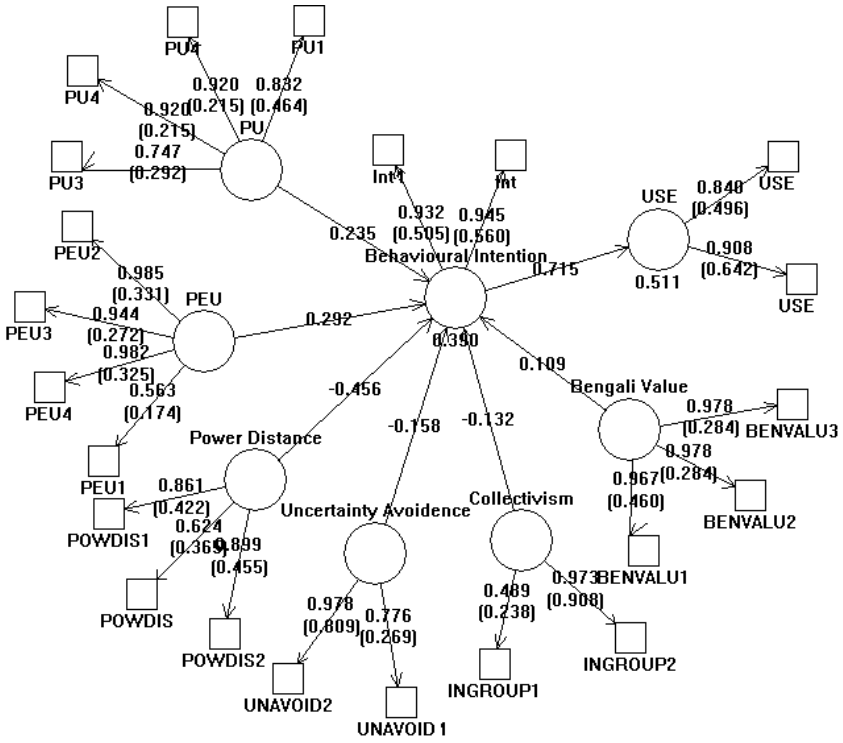


Figure 2: Illustration of Structural Model

The fundamental component of TAM, perceived ease of use, was found to have strong significant effects on behavioral intention while perceived usefulness did not produce any significant effect on intention. Although the result is contrary to some of the previous studies (Szajna 1996, Subramanian 1994, Chau and Hu 2002, Chau 1996), it is partially consistent with some other studies (Igbaria et al 1997, Adams, Nelson, and Todd 1992).

The result of rejecting the hypothesis on the significant association between perceived usefulness and behavioural intention is contrary to the fundamental assumptions of TAM as supported by many previous studies (Davis 1989, Davis, Bagozzi, and Warshaw 1989, Lu et al. 2003, Mathieson 1991, Taylor and Todd 1995, Venkatesh and Davis 2000, Szajna 1996, Yoon 2008). Finally the structural model depicts intention as a strong significant determinant of actual behaviour which refers actual use of the ICT among the SMEs in Bangladesh. The finding supports previous theories and empirical studies (Ajzen and Fishbein 1980, Azam and Quaddus 2009d , Chang 1998, Fishbein and Ajzen 1975, Mathieson 1991, Taylor and Todd 1995, Taylor and Todd 1995, Taylor and Todd 1995, Venkatesh and Morris 2000, Venkatesh and Davis 2000).

DISCUSSION AND CONCLUSION

The structural equation model explains the joint effects of all constructs used in the model. The study depicts the magnitude and degree of effects of the antecedent factors of ICT usage among the SMEs in Bangladesh. The study found that power distance has a negative direct effect on behavioural intention while other cultural dimensions didn't exhibit any significant effect on intention, thus hypotheses $H_{1c,}$ was accepted and H_{1d} , H_{1e} , and H_{1f} were rejected. Besides, each of the cultural dimensions have produced negative association with intention except Bengali value which although is not significant but positively related to intention. The results show that the culture of Bangladesh is not supportive to the SMEs intention to use ICT. Power distance showed significant negative influence which means the SME's owners or decision makers still hold such programming in their mind which supports the environment of holding a discriminatory power in-between top management and the employees. In this organisational environment

the employees' role is only to follow their leaders blindly. Introducing ICT in the organisation builds a working environment which eliminates the discriminatory power among different employees in the organisation. As power distance is a strong dimension in the national culture of Bangladesh, the SMEs are also holding that cultural values. The power distance inside the organisation should be reduced in terms of promoting use of ICT among SMEs in Bangladesh.

The Bengali values are positively related to ICT usage intention as the people of Bangladesh are now very familiar to maintain their social contact with friends and families through online communication and online social network such as Facebook. The rapid expansion of Facebook generation induces online communication through Bengali language which is a great development. The people of Bangladesh are very respectful to their language and language martyrs so they feel proud and comfortable in communication through Bengali. As it becomes easier and convenient to maintain social interaction by using online networking through own language, the construct which was explored by the field study exhibited positive association with intention while all other cultural dimensions showed their negative influence.

Consistent with the prior technology acceptance studies, perceived ease of use has a positive direct effect on behavioural intention, thus hypotheses H_{1b} is supported. As postulated in hypothesis H_{1a} perceived usefulness doesn't affect behavioural intention. The respondent or subject of this study are either owner or manager who has the ability to decision making of the organisation, thus they all have a clear understanding and positive perception about the usefulness of ICT usage in their organisation although not intended to use ICT. They show their intention to use ICT considering the technology is easy to operate by the employees, or whether they are compelled to use ICT as the requirement of their suppliers or parent companies. The organisations also consider whether the resources they have are adequate to use ICT and to reap the benefits resulted through ICT operation.

Finally a strong and significant effect of behavioural intention on actual usage behaviour is found. Thus hypothesis H_2 is supported.

The SMEs is considered as incubator of our national economy. The economic development of the country is largely dependent on the development of small and medium enterprises. Adoption and utilisation of ICT may help develop SMEs to acquire efficiency in their operations and to stay ahead in the competitive global environment.

The government of Bangladesh is dedicated to establish a computer driven society and utilise the potentials of information and communication technology into the country's economic development. Thus ICT has been considered as thrust sector of the country and numerous policies and priorities have been adapted to promote ICT usage in the country. The government has also launched some motivational programmes to boost up ICT usage in different sectors.

The present government of the country moves ahead with a slogan of establishing the Digital Bangladesh by 2021. To attain the target the government has also introduced some grants and subsidies and some other financial and infrastructural supports. This study explored a different aspect of ICT diffusion among the SMEs in Bangladesh. It is believed that a significant development will be evident if government considers the cultural issues and motivates the SMEs owners and other parties concerned to overcome the traditional hierarchical organisational systems where the authority and power is concentrated at the top of the hierarchy. In conjunction with the existing policies, supports, grant, subsidies and various motivational programmes, establishing a class-free network type working environment may foster the rapid expansion of ICT usage among the SMEs in Bangladesh which certainly will result in an improved organisational performance.

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