2013

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Completed Research Paper

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ABSTRACT

Emerging economies appear to be powering growth in their regions. While China is seen to lead growth in the emerging markets of Asia, 98% of its manufacturing and production base is powered by small businesses. These businesses represent the majority of all businesses in emerging countries and their growth increases with their successful adoption of Information Technology. As the driving force behind the economic growth of China, Information and Communications Technologies (ICTs) are shaping the ways in which small businesses are able to grow. The majority of current research into the user acceptance and adoption of ICTs focusses on the perceptions of users in large organizations often in developed countries. Since the growth of an emerging economy such as China is being powered by ICTs, this paper investigates what factors affect the acceptance of ICTs by small business owners in two provinces in China. Following an analysis of data collected from small business in a high growth province and a largely rural province, this paper arrives at a set of factors that affect the acceptance of ICT in China and their outcomes on small business development. Further research is being conducted into the outcomes of acceptance on development.

Keywords

ICT Adoption, Small Business, Sustainable Development.

INTRODUCTION

Emerging markets are high growth economies that are transitioning from largely rural agricultural production bases to more industrialized, technology driven industries. While there is no commonly accepted definition of an emerging market, increasing average per capita incomes, growth and economic liberalization appear to be accepted by scholars as they key characteristics of emerging markets (Roztocki and Weistroffer, 2011; Arnold and Quelch, 1998; Li, 2003; Samoilenko, 2008). In particular, the role of ICTs in emerging economies is seen in some cases to bring about higher growth rates (Samoilenko and Weistroffer, 2010; Ngwenyama and Morawczynski, 2009).

This paper considers China in that it fits the generally accepted definition of an emerging economy. It is also part of the powerful set of BRIC countries whose growth is powering that of their neighbors: Brazil Russia, India and China. China's informatization strategy also has the potential to provide its citizens with better growth opportunities through improvements in telecommunications and information infrastructures, better intellectual property rights and cybercrime legislation (Hanna and Qiang, 2010). Small and medium enterprises (SME) in China contribute more than 60% of China's GDP, more than 50% of taxation, more than 70% of international trade and 80% of jobs of cities and towns in China, which represent 99% of all businesses in China (Smallbusiness, 2013; The Economist, 2009). The use of Information and Communication Technologies (ICTs) provides new opportunities for SME as well as this emerging economy. Small businesses are critical to economic development in China for a long time (Yu et al. 2011). Their survival and growth contributes to the creation of jobs and wealth in that economy. If small businesses are able to use information systems effectively, they can grow, reap the benefits from their technology, and become profitable (Qureshi & York, 2008). That is why this paper investigates the factors that affect the adoption of ICT by small businesses in China.

The ICTs redefine and make it easier than ever to market products and services across the world. While the definition varies between countries and industries, a small business is a business that is privately owned and operated with a small number of

employees and relatively low volume of sales. In the United States, a small business is defined as fewer than 500 employees, and in general with $7 million in average annual receipts (Summary, 2011). In the United States, small businesses currently represent 99.7 percent of all businesses (USSBA, 2011; Kobe, 2007; CHI Research, 2003). In China, small businesses represent 99 percent of all businesses, and they generated 75 percent of all new jobs in the country. Small businesses account for 60% of China's GDP and half its tax revenues. In China, the number of employees ranges from 10 to 100.

It is well known that small businesses comprise the majority of businesses in regions of the world that are developing (Schriener and Woller, 2003; Riemenschneider, et al., 2003). They also comprise the majority of employment in Nebraska (SBA, 2009) and the manufacturing and services sector in China (The Economist, 2009). A world bank study has shown that when small businesses adopt Information and Communications Technologies (ICTs) in their business process, their ability to grow increases (Qiang et al., 2003). Qureshi et al (2009) found that targeted IT intervention in micro-enterprises increase their chances of survival and stimulate their growth. Other studies in the adoption of IT in micro-enterprises have shown that effective IT interventions may have considerable potential for facilitating IT adoption among micro-enterprises across the United States and the world (Song and Qureshi, 2010, Kamal et al., 2010).

A number of studies on the implementation of technology have been performed to identify and assess organizational characteristics that could potentially lead to an information system success or failure (Ginzberg, 1981). In Venkatesh et al (2003)'s UTAUT model, there are several components, Performance Expectancy, Effort Expectancy, Attitude toward using technology, Social influence, Facilitating conditions, Self-efficacy, Anxiety, Behavior intention to use the system. Based on the UTAUT model, a survey was designed and data collected from 180 small business in China. User acceptance is one of the key fundamentals for development and success of small business development. However, it is yet not clear which factors apply to an emerging economy, such as China. In this paper a set of variables from the IS literature have been identified that would enable this research question to be answered: What factors affect the adoption of ICT by small businesses in China? These variables where to used develop a survey instrument used to collect data from small business owners in two provinces, Zhejiang and Sichuan. Zhejiang is a more developed provide with high growth technology industries while Sichuan is less developed with a largely rural population. In doing so we were are able to arrive at a more representative sample of small businesses. Following a factor analysis of this data, this paper isolates a set of variables that influence the acceptance and adoption of ICTs in China. This has implications for further research into the role of ICT for Development in China.

THEORTICAL BACKGROUND

Development

The concept of Development has its roots in the economics of the firm. Development is defined as "the interruption of the business cycle" according to Schumpeter (1934) and is often used to describe growth in organizations and the regions in which they reside. Development has been seen as an economic phenomenon that leads to better livelihoods. Also, the main purpose of development is to spread freedom and its "thousand charms" to the unfree citizens. (Sen, 1999). Development is a concept which is considered both theoretically and politically, and is inherently both complex and ambiguous (Summer and Tribe, 2008). The liberalization of economies replaced the animated development practice in 1950s and 1960s. Willis (2005) refers the 'Modernity' to a 'condition' if being modern or being like the industrialized counties of Western Europe and North America in particular. The Modernity encompasses industrialization, urbanization, increased use of technology and application of rational thinking (Willis, 2005).

There are a diversity of development theories and practices (Willis, 2011). Some scholars define development as the diffusion of modernity (Habermas and Ben-Habib, 1981). Some scholars define development as economic growth (Sachs 1999; Greig et al. 2007). The United Nations Development Program defines development as human progress. The Millennium Development Report (United Nations, 2011) breaks development into eight goals: 1. Eradicate extreme poverty and hunger. 2. Achieve universal primary education 3. Promote gender equality and empower women 4. Reduce child mortality 5. Improve maternal health 6. Combat HIV/AIDS, malaria and other diseases 7. Ensure environmental sustainability and 8. Develop a global partnership for development. For the purpose of this paper we use the following definition; The concept of development has its roots in the economics of the firm. Development is defined as "the interruption of the business cycle" according to Schumpeter (1932) and is often used to describe growth in organizations and the regions in which they reside. The outcomes from the adoption of ICTs on development can be assessed in a number of ways. The measures of economic development most often used are in terms of: increase in income, job creation and clientele (Qureshi et al, 2009). These measures will be used to assess development in small businesses in this research.

Technology

Technology is a central ingredient in economic development (Malecki, 1997). Information Technology is a driving force behind economic growth and has fundamentally changed the way people live, not only in developed countries, but also in developing countries. Information and communications technology (ICT) are used by many private enterprises to improve the performance, productivity and competitiveness in the marketplace (UNCTAD, 2011). However, the use of ICT is a challenge in both developed and developing countries (Wolcott, et al,. 2008; Schreiner and Woller, 2003;). The world is increasingly interconnected through high-speed mobile communications. Growing demand for information and communications services, combined with technological advances, growing infrastructure and falling prices, are allowing more and more people across the globe to join the information society.

The outcomes from the adoption of Information and Communications Technology on development can be assessed in a number of ways. The measures of economic development most often used are: Increase in income, job creation and clientele (Qureshi et al 2009). These metrics used to assess development in small businesses. In this model the arrows are bidirectional because the growth of and development of the businesses can bring about greater IT adoption and lead to more technology being purchased and an improvement in the organization and its environment. The process of Creative Destruction by Tripsas (1997) and Schumpeter (1934) suggests that entrepreneurs drive capitalism with innovation. These innovations, when implemented challenge the status quo and upset the equilibrium. Warschauer (2004), states that the greatest gains to development are not from the adoption of ICT in itself, but from the innovative ways in which technology has been adopted. According to Schumpeter (1934) it is the innovations that enable businesses to survive businesses cycles that would otherwise destroy them. He suggests that innovation is the implementation of a new change that affects and alters a market. Innovations are not just inventions, but can be new processes or new markets. Schumpeter suggests that the Entrepreneur is the agent of innovation whose adoption of the innovations will enable the business to survive and potentially grow. Therefore, IT adoption appears to be important for small businesses in developing countries, especially China, the largest developing country in the world.

Information Technology Adoption

Preliminary results from qualitative research have shown that IT adoption is an important determinant of how ICT can bring about development in micro-enterprises. In a study by Xiong and Qureshi (2013) of Chinese and US small businesses, Perceived usefulness, cost of technology and licensing fees enables IT adoption in small business and its sustainability. The paper also points out those intervening conditions of human capital such as the education and IT skills of employees that effect economic and social development. Information systems are often relied on to assist growth and development, although small businesses often find technology difficult to implement due to resource constraints (Street and Meister, 2004). Kamal and Qureshi (2009) explore two trends relating to how ICT adoption in micro-enterprises can bring about development. First, micro-enterprises contribute to both economic and social development. Second, ICT can facilitate achievement of an underserved region's development strategies. However, as stated by Kamal and Qureshi (2009), while the majority of research investigates these two trends, few studies focus on the intersection of these two development trends.

Two main research trends intersected recently. They are: the growing role of micro- and small enterprises (MSEs) and the advancement of information and communication technologies (ICT) (Duncombe and Heeks, 2002). The research finds that poor rural entrepreneurs rely heavily on informal, social and local information systems. The ICTs might play a supplementary role. However, little attention has been paid to the research of the relationship between ICT and the development of small businesses, especially on the individual-level (Walsham and Sahay, 2006). The paper provides information systems research literature concerned with developing countries by examining a range of research articles published from 2000 to 2006. Several key challenges are pointed in the IT for development area. Peculiarly, they emphasis the importance of promoting cross-cultural working,

In order to research the adoption of ICT in the United States and China, and examine how these relationships vary across different environments, there are some models of Information Technology Adoption and Acceptance and Information Technology for Development that this research draws upon. The Information Technology for Development combines the implementation, use and management of Information Technology infrastructures to stimulate human, social and economic development (Qureshi, 2005). The IT adoption models is applied in the research in order to investigate how the ICTs can make impact to the development of small business, also, human capital, which is another important component is added to the model.

There are several existing models illustrating Information Technology Adoption and Acceptance. Venkatesh, et al. (2003) identify these models: Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1972), Technology Acceptance Model

(TAM) (Davis,1989), the Motivational Model (Davis et al. 1992), Theory of Planned Behavior (TPB), Model of PC Utilization (MPCU), Innovation Diffusion Theory (IDT) and Social Cognitive Theory (SCT).

Davis (1989) introduces the Technology Acceptance Model (TAM), which discovers how users of information systems come to accept and use technology. Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are the key factors of the model. According to TAM, Perceived Usefulness (PU) is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance". Also, Perceived Ease of Use (PEOU) is defined as the "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989). Dai and Palvia (2009) also employed perceived usefulness and ease of use in their survey of mobile commerce users in China and the US. They found that there were significant differences between users in China and the US in the relationship between perceived usefulness and ease of use and the intention to use mobile commerce.

Due to the further study, TAM is expanded to TAM2 (Venkatesh & Davis 2000; Venkatesh 2000), Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al. 2003) , and TAM3 (Venkatesh & Bala 2008). TAM 2 extends TAM by adding the subjective norm, which exerts a significant direct effect on usage intentions over and above perceived usefulness and perceived ease of use (Venkatesh & Davis 2000). TAM3 posits that the effect of perceived ease of use on perceived usefulness will be moderated by experience; and the determinants of perceived ease of use will not have any significant effects on perceived usefulness over and above the determinants of perceived usefulness (Venkatesh & Bala 2008).

Venkatesh et al. (2003) introduce the Unified Theory of Acceptance and Use of Technology (UTAUT). The model proposes that four key constructs, which are performance expectancy, effort expectancy, social influence, and facilitating conditions are direct determinates of adoption intention and behavior (Venkatesh et al. , 2003). Gender, age, experience, and voluntariness of use are posited to mediate the impact of the four key constructs on adoption intention and behavior (Venkatesh et al. , 2003). Subsequent validation of UTAUT in a longitudinal study found it to account for 70% of the variance in usage intention (Venkatesh et. al., 2003). On the individual level, Dai and Palvia (2009) conducted a study on 190 individual mobile commerce users in China and the United States of America. Dai and Palvia (2009) also identified nine factors that affect mobile commerce adoption by consumers in China and the USA based on the TAM. The Technology Organization Environment (TOE) framework contains three aspects that explain the process of adopting and implementing a technological innovation: technological context, organizational context, and environmental context (Xu et al., 2004).

Li et al (2011) analyzed the usage of online direct sales channels among the small and medium-sized enterprises (SMEs). Survey was applied to the SMEs in the United States. They found that there are different sets of factors that can determine the SME's initial adoption and post-adoption. Al-Natour and Benbasat's (2009) indicated that more and more research attention is paid to the factors surrounding the use of IT artifacts, rather than the traditional models like TAM and TPB. Given the value of the need to understand IT adoption, we draw upon a unified model that has been widely cited in the literature. In the following part, we explain the UTAUT model.

RESEARCH MODEL

The model developed for this research uses variables from the UTAUT model (Venkatesh). Performance expectancy is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance (Venkatesh et al. , 2003). Davis (1989) and Davis et al (1989) provide the definition of Perceived Usefulness, which is "The degree to which a person believes that using a particular system would enhance his or her job performance". According to the TAM, the perceived usefulness refers to "the degree to which a person believes that using a particular system will enhance his/her job performance" (Davis 1989, pp320). The perceived ease of use is referred as the "the degree of freedom usage of the system and the technology for the users" (Davis 1989, pp320).The perceived cost is defined as the "value of money that has been used to get the service". Dai and Palvia (2009) also employed perceived usefulness and ease of use in their survey of mobile commerce users in China and the US. All variables are explained in the following sections.

Job-Fit: The job-fit in this research is defined as "How the capabilities of a system enhance an individual's job performance" (Thompson et al. 1991). There are two fit perceptions for the job seeker's, which are PO fit and PJ fit (Carless, 2005). The Personal Organization fit is defined as 'the compatibility between people and organizations that occurs when (a) at least one entity provides what the other needs, or (b) they share similar fundamental characteristics, or (c) both' (Kristof, 1996, pp.4-5) . The personal job fit is conceptualized as the match between individual knowledge, skills, and abilities and demands of the job or the needs of an individual and what is provided by the job. (O'Reilly, et al, 1991). Chang et al (2010) investigate 303 research and development (R&D) engineers from 30 high-technology firms in Taiwan. The results show that perceived D–A fit, P–O fit, and perceived training investment interact jointly to predict knowledge workers' turnover intentions.

Perceived Ease of Use is referred as the "the degree of freedom usage of the system and the technology for the users" (Davis 1989, pp320). Oh et al (2009) explore the adoption of e-trade innovations by small-medium sized enterprises (SMEs) operating in South Korea. The survey is conducted in 164 SMEs to develop a useful refined model of innovation acceptance and continuity. This is akin to Calisir and Calisir (2004), who examined the influence of usability characteristics, perceived usefulness, and perceived ease of use on end-user satisfaction with enterprise resource planning (ERP) systems and found that end-user satisfaction related to perceived usefulness. They also noted that perceived ease of use exerted an indirect effect on end-user satisfaction via perceived usefulness. This indicates that end-users tend to rate ERP systems as less useful if they find them difficult to use. Internationally, Sung (2006) examined important success factors in e-commerce and whether the factors were different in Korea, Japan and U.S.A. Three factors; ease of use, variety of goods/service and customer orientation were important success factors of e-commerce usage across the three countries.

Social Influence is referred as "the person's perception that most people who are important to him think he should not perform the behavior in question" (Azjen, 1991; Fishbein and Azjen 1975). Chay (1992) examined the relationship between social support and personality factors as moderators of stress arising from demands in the small business entrepreneurs and employees. Hsu and Lin (2008) investigate the usage of blog by researching the roles of technology acceptance, social influence and knowledge sharing motivation. Theoretically, individuals' perceptions of norms consist of two influences: informational and normative (Deutsch and Gerard, 1995). The first occurs if a user perceives information as enhancing his or her knowledge; the second occurs when a person conforms to the expectations of others in order to obtain a reward or avoid punishment.

Facilitating Conditions are referred as "Objective factors in the environment that observers agree make an act easy to do, including the provision of computer support" (Thompson et al. 1991). Venkatesh et al (2008) research the predicting different conceptualizations of system use by research the competing roles of behavioral intention, facilitating conditions, and behavioral expectation. They propose the relationship between facilitating conditions and system use to be fully mediated by behavioral expectation. Also, they argue that facilitating conditions are expected to be more important for women than they are for men.

Attitude toward using technology is referred as "An individual's positive or negative feelings about performing and using technology" (Davis et al. 1989; Fishbein and Ajzen 1975). Ha and Stoel (2009) integrate e-shopping quality, enjoyment, and trust into a technology acceptance model to understand consumer acceptance of e-shopping. 289 Surveys were conducted among college students. The results indicated that ease of use and enjoyment, and knowledge sharing (altruism and reputation) was positively related to attitude toward blogging, and accounted for 78% of the variance. Also, they find out that attitude toward blogging significantly influenced a blog participant's intention to continue to use blogs.

Self-Efficacy in this research is referred as "Judgment of one's ability to use a technology, e.g., computer, telephone, to accomplish a particular job or task" (Bandura, 1986 and Compeau and Higgins, 1995). Schwarzer et al (1997) compare the German, Spanish, and Chinese versions of general self-efficacy scale. Surveys were conducted among 430 German, 959 Costa Rican, and 293 Chinese university students.

Anxiety in our research is referred as "Evoking anxious or emotional reactions when it comes to performing using the ICT" (Bandura, 1986 and Compeau and Higgins, 1995). Beaudry and Pinsonneault (2010) find out anxiety was negatively related to IT use, both directly and indirectly through psychological distancing. Anxiety was also indirectly positively related to IT use through seeking social support, which countered the original negative effect of anxiety.

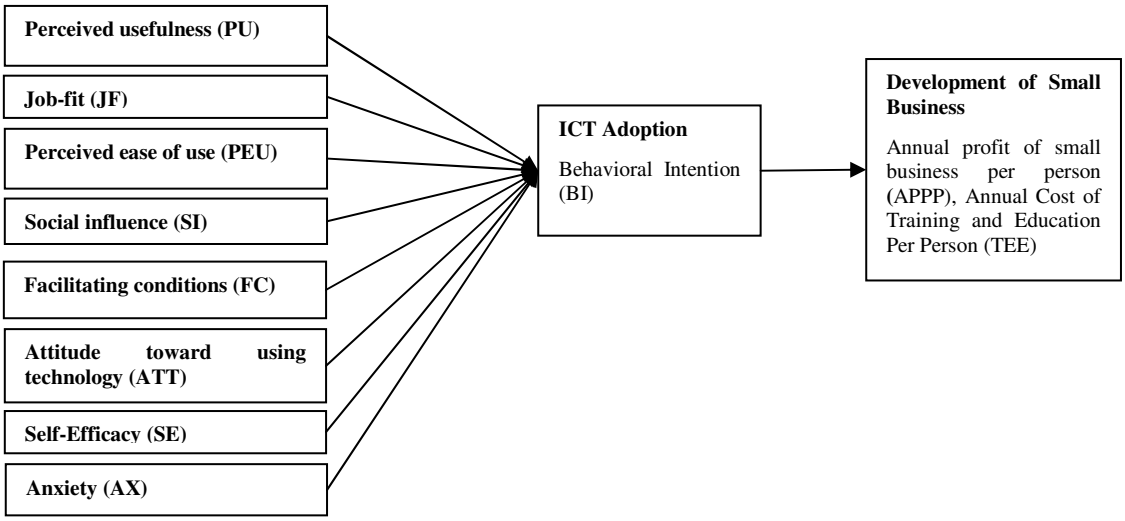
Behavioral intention to use the ICT was measured using a three-item scale adapted from Davis et al. (1989). It is an indication of an individual's readiness to perform a given behavior. It is assumed to be an immediate antecedent of behavior. (Ajzen, 2002)

Development of Small Business is measured through Annual Profit Per Person, and the Annual Cost of Training and Education Per Person. The concept of Development has its roots in the economics of the firm. Development is defined as "the interruption of the business cycle" according to Schumpeter (1932) and is often used to describe growth in organizations and the regions in which they reside. The outcomes from the adoption of Information and Communications Technology on Development can be assessed in a number of ways. The measures of economic development most often used are in terms of: Increase in income, job creation and clientele (Qureshi et al 2009).

In this model the arrows are bidirectional because the growth of and development of the businesses can bring about greater IT adoption and lead to more technology being purchased and an improvement in the organization and its environment. The

process of Creative Destruction by Tripsas (1997) and Schumpeter (1942) suggests that entrepreneurs drive capitalism with innovation. These innovations, when implemented challenge the status quo and upset the equilibrium. Warschauer (2004), states that the greatest gains to development are not from the adoption of ICT in itself, but from the innovative ways in which technology has been adopted. According to Schumpeter (1942) it is the innovations that enable businesses to survive businesses cycles that would otherwise destroy them. He suggests that innovation is the implementation of a new change that affects and alters a market. Innovations are not just inventions, but can be new processes or new markets. Schumpeter suggests that the Entrepreneur is the agent of innovation whose adoption of the innovations will enable the business to survive and potentially grow.

Figure 1, The Research Model



METHODOLOGY

The quantitative phase of the current research focuses on empirically testing our research model from newly gathered data in 2012. The research is approved by the Institutional Review Board under the exemption category 2. There are 118 in total of small businesses in Zhejiang Province and Sichuan Province involved in the survey. The small businesses are selected randomly from the database. The survey was translated from English to Chinese and then translated to English again to make sure the meaning of each question does not change during translation. There are three parts of the survey. Section A: Basic Information provides the basic information of small business. Section B: Survey questions, provides opportunity for small business owners to answer the 7- point scale survey. Section C: Open questions provide additional information from small business about their adoption of ICT. In Section C, each small business will provide the Annual Profit Per Person (APPP), and the Annual Cost on Training and Education Per Person (TEE).

Table 1: The Characteristics of Small Business

	Zhejiang	***Sichuan***
Number of Small Business (Non-Startup)	53 (45%)	37 (31%)
Number of Startup	20 (17%)	8 (7%)
Average Number of Employees	5.51	5.71
Average Spent on Training and Education Per Employee (USD) (TEE)	166.14	170.76
Average Profit Per Employee (USD) (APPP)	16636.68	15970.91

The subject of the survey is the assessment of the small business owners' adoption of ICT, human capital, and the development of small businesses. ICT in this research is defined as Appropriate Technology. According to Schumacher (1989) Appropriate Technology is defined as the "The acquisition of technology appropriate for the small businesses' economic environment".

Statistical Data Analysis Methods

Once collected, factor analysis was conducted to examine how the responses on a number of measured variables influence each other by examining the patterns of correlations between the variables. Factor analysis enables variations between variables to be arrived at (Hair et al, 2010).

In the model there are more than five factors, Principal Component Analysis (PCA) is conducted in the first step of the research. Given that a large number of measures were used in the data collection survey, this research uses a form of Principal Component Analysis (PCA) to arrive at a relatively small number of components that account for the most explained variability. The reason we conduct the PCA is because we have obtained measures on a number of observed variables and we wish to develop a smaller number of artificial variables (Cattell, 1966, Hatcher and Stepanski, 1994). Factor analysis, including both principal component analysis and common factor analysis, is a statistical approach that can be used to analyze interrelationships among a large numbers of original variables into a smaller set to the structure of the variables considered, factor analysis becomes an objective basis for creating summated scales (Hair et al, 2010). PCA is conducted as follows: Data reduction was performed by conducting factor analysis to arrive at communalities (Smith, 2002).

Then Eigenvalues are applied in the Principal components analysis PCA is performed on the covariance matrix or the correlation matrix (in which each variable is scaled to have its sample variance equal to one). For the covariance or correlation matrix, the eigenvectors correspond to principal components and the eigenvalues to the variance explained by the principal components. (Golub et al, 2000)

Perform rotation using Varimax with Kaiser Normalization is applied. (Hair et al, 2010). Kaiser Normalization is a process by which each row of the initial factor loading matrix is normalized by dividing by the square root of hi, the row's commonality. This normalization has the effect of making the sum of squares for each row sum to 1.0. This transformation does not affect the varimax solution (Factor Analysis, 2012).

Finally, construct validity is carried out to enable the operationalization or measurement between constructs. The concern on the construct validity is that instrument items selected for a given construct are a reasonable operationalization of the construct (Cronbach and Meehl, 1955).

ANALYSIS

In this section, the analysis from the survey of 118 businesses is carried out. Data is gathered from different small businesses in two provinces in China, 118 small businesses are conducted. We use the seven point scale survey, and nine factors are identified according to the survey. The development of small business is measured through the mean value of Annual Profit Per Person (APPP), and Annual Cost on Training and Education Per Person (TEE). The value for these variables is higher compared to the other variables because the other variables are measured in a 1-7 scale while the APPP and TEE is measured directly through the annual profit per person in USD. As we can see, the mean of BI, ATT, PU, FC, AX, PEU, and JF are all higher than 4. While in the survey, the lower the score, the less unlikely small business is willing to use the ICT. All Descriptive Statistics of the Sample are described in Table 2.

Table 2: Descriptive Statistics of the Constructs

Variable	*Mean*	*Std. Deviation*	*Coefficient of Variation*
BI	4.44	1.159	26.10%
TEE	167.90	184.572	109.93%
APPP	16382.79	16806.694	102.59%
ATT	4.4047	1.09920	24.96%
PU	5.115254	1.1765244	23.00%
FC	4.3136	1.03682	24.04%
AX	4.316384	1.0911432	25.28%
PEU	4.450847	1.1217162	25.20%
JF	4.3771	1.04990	23.99%

Principal Components Analysis (PCA) is applied to derive a relatively small number of components that can account for the variability found in a relatively large number of measures. Factor analysis searches for such joint variations in response to unobserved latent variables. Factor analysis was conducted to find out which of the answers to the questions in the survey were Perceived usefulness (PU), Job-fit (JF) ,Perceived ease of use (PEU), Social influence (SI), Facilitating conditions (FC), Attitude toward using technology (ATT), Self-Efficacy (SE), and Anxiety (AX). Perceived usefulness (PU), Perceived ease of use (PEU), Facilitating conditions (FC), Attitude toward using technology (ATT), Job-Fit (JF), and Anxiety (AX) are identified as the most important factors in the model. Summarily, this analysis confirms the validity analysis of the UTAUT model by showing strong correlation for most items belonging to the same construct.

Then, correlation among constructs was examined to ensure that the constructs represent the factors arrived at. The factor loading for scale items based on the VARIMAX rotation are analyzed. Perceived usefulness (PU) (0.811), Facilitating conditions (FC) (0.7474), Perceived ease of use (PEU) (0.6818), Attitude toward using technology (ATT) (0.7), Job-Fit (JF) (0.68425), and Anxiety (AX) (0.738) are identified as key factors that affect the adoption of ICT. As there was no facrtir loading for SI and SE, they were excluded from the analysis. Most of the remaining items represented good convergent and discriminant properties. Thirty items are divided into six constructs. Overall, the constructs developed by Venkatesh et al. (2003) fared well in this replication, even though they were based on different samples and context settings. This is vital because it indicates the general applicability of these constructs for different types of research questions. Summarily, this analysis confirms the validity analysis of the UTAUT model by showing strong correlation for most items belonging to the same construct. These are illustrated in the following table 3:

Table 3: Cumulative Initial Eigenvalues

	Perceived Usefulness	Facilitating Conditions	Perceived Ease of use	Attitude toward using technology	Job-Fit	Anxiety
E.Value	16.553	1.785	1.058	.055	.808	.697
% of Variance	66.131	7.140	4.230	3.820	3.233	2.788
Cumulative %	66.131	73.271	77.501	81.321	84.554	87.342

We found that the UTAUT model was only partially supported by our analysis. Perceived usefulness (PU), Perceived ease of use (PEU), Social influence (SI), Facilitating conditions (FC), Attitude toward using technology (ATT), Self-Efficacy (SE), and Anxiety (AX) are were thought to be potentially important determinants of the behavioral intention to use the system. However, this was not the case in this research. Only two factors were supported these were: Perceived Usefulness and Facilitating.

Furthermore, following Riemenschneider et al (2003), we found the "collected" could help us understand the ICT adoption decision better comparing to the traditional TPB or TAM. Our factor analysis showed that Attitude toward using technology, Perceived Usefulness, Facilitating Conditions, Anxiety, Perceived Ease of use are related to the adoption of ICT. Also, according to initial eigenvalues, the first six components can explain the 87.342% of the whole model. The attitude toward using technology plays the most important role in the whole model. According to Table 3 the perceived usefulness could explain 66.131% the model among all the factors. In sum, the attitude toward using technology is playing the most important part between the different factors.

Correlation Analysis

Based on the earlier validity analysis, PU, EC, PEU, ATT, JF, and AX were thought to be potential important determinants of the behavioral intention to use the ICT. Accord to the test of regression, Perceived ease of use (PEU) (.421(0.00)***) , and Attitude toward using technology (ATT) (.438(0.00***)) are correlated to the use of ICT. This means that when small business owners find the technology easy to use and have a positive attitude to it, they will use the technology. However, Perceived Usefulness, Job Fit, Facilitating Condition (cost) and Anxiety were not supported.

The findings from the correlation analysis of our research are different from the results of UTAUT empirical validation by Venkatesh et al. (2003). In Venkatesh et al. (2003)'s analysis, data were gathered from two organizations to validate UTAUT and to increase validity of the preliminary test on the model. It appeared that performance expectancy, effort expectancy, and social influence affect the behavioral intention, while facilitating conditions, attitude toward using technology, self-efficacy, and anxiety do not influence the behavioral intention. For our current research, Perceived usefulness (PU), Job-fit (JF) Facilitating conditions (FC) Anxiety (AX) , yields an insignificant effect on the adoption of ICT, whereas Perceived ease of

use (PEU) Attitude toward using technology (ATT) appear to be correlated with the adoption of ICT. These are the factors that affect ICT adoption by small businesses in China.

CONTRIBUTION AND IMPLICATIONS FOR FURTHER RESEARCH

The contribution of this research is that the key factors that affect ICT adoption by small businesses in China have been uncovered: Perceived ease of use (PEU) and Attitude toward using technology (ATT) are correlated with the adoption of ICT. In addition, the outcomes of ICT adoption were measured in terms of the development of small businesses in terms of Annual Profit per Person, and the Annual Cost of Training and Education per Person**.** The descriptive statistics show that the higher the ICT adoption, the greater the annual profit per person and annual cost of training and education per person. Further research will have to be conducted to understand this relationship. Further research is being conducted to understand the link between behavioral intention and development of small business. We want to study the relationship between the adoption of ICT and development of small business. For Chinese small businesses, the human capital is very important when they adopt the technology to their businesses. Human capital began its own revolution began in the 1950s and early 1960s with the research of Schultz (1961), Mincer (1958), and Becker and Chiswick (1966). The current era is placing much greater emphasis than before on the importance of knowledge and information to the development of both countries and individuals (Becker, 2011). Human Capital plays in either lowering economic costs or elevating customers' willingness to pay (Porter, 1985). The addition of the human capital factor into the model will enable multiple regression to be applied to study how human capital can influence the development of small business as well as the adoption of ICT.

CONCLUSION

This research has investigated the factors that affect the adoption of ICT by small businesses in China. It carried out an assessment of the validity of the existing factors in UTAUT models. A model was developed and the factors were tested through data collected through a survey conducted of 118 different small businesses in two provinces in China, i.e. Sichuan and Zhejiang. The analysis found that the factors that affect ICT adoption by small businesses in China are Attitude toward using technology, Perceived Usefulness, Facilitating Condition, Anxiety , Perceived Ease of use, and Job-Fit, which are different from the existing model. While Attitude toward using technology can explain the 21.874% of the whole, these factors in total can explain 66.274% among all the factors. Perceived ease of use (PEU) and Attitude toward using technology (ATT) are identified as the most important factors affecting the adoption of ICT among China's small business. We also identified outcomes of ICT adoption in terms of the annual profit per person and annual cost of training and education per person.

ACKNOWLEDGMENTS

This research is funded by 1) The office of Research and Creative Activity (ORCA) and the Office of Graduate Studies (OGS) of the University of Nebraska at Omaha, under name "Grant Support for Graduate Research and Creative Activity (GRACA)", and 2) the University of Nebraska Foundation, under the grant title "Strengthening and Elevating International Partnerships across Disciplines: India, China, Germany and Norway".

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