International Journal of Business and Society, Vol. 19 S4, 2018, 689-699

SMALL MEDIUM ENTERPRISES TECHNOLOGY ACCEPTANCE MODEL: A CONCEPTUAL REVIEW

Rofikoh Rokhim[♣]
Universitas Indonesia

Permata Wulandari
Universitas Indonesia

Iin Mayasari
Universitas Paramadina

ABSTRACT

This study provides a critical review of the literature on the issues of Small Medium Enterprises (SMEs) technology acceptance model. In methodology, this paper used an in-depth literature review and conducts a meta-analysis to highlight the issues related to Information Technology (IT) application in the SMEs, based on problems and solutions view using technology acceptance model. The study finds that SMEs faces several issues regarding to the IT application. *First* is the issue of low e-commerce adoption and low benefit awareness of SMEs. Second is lack of experience and sufficient training, IT language and technology problems and no sophisticated IT systems in SMEs. *Third* is the issues of low commitment on IT implementation and low manager and staff readiness. Last, is the issue of high cost. Several solutions have been offered to answer the IT application in SMEs challenges. The paper adds to the literature on SMEs by enabling researchers and practitioners to understand the issues in IT application in SMEs and contributes towards enriching the knowledge in the IT in SMEs area.

Keywords: Critical review; SMEs; IT; Technology acceptance model

1. INTRODUCTION

SMEs play a vital role in economic growth especially in developing countries. They faced direct competition from domestic and also foreign counterparts so they need to employ several competitive strategies and tools (Abebe, 2014). In expanding their business, the role of Information Technology (IT) impacts on business function and performance and also influence the whole business strategy. IT application offers competitive advantage through product or service differentiation. Besides that, the use of internet created changes in business process and facilitated the relationship between SMEs market parties (Caniëls, Lenaerts, & Gelderman, 2015). Internet also enhances business performance (Celuch, Bourdeau, Saxby, & Ehlen, 2013). Additionally, the benefit of IT will lower the production and labor cost. Moreover, it also add product values and company's competitive advantage (Nguyen, 2009).

[♣] Corresponding author: Department of Management, Faculty of Economics and Business, Universitas Indonesia. Kampus UI Depok 16424, Indonesia. Tel: +62-21 7272425. Email: rofikoh.rokhim@ui.ac.id

In practice, IT application creates opportunity for SMEs to improve their competitiveness and also increase SMEs productivity and business competitiveness. IT adoption will increase productivity through efficiency of internal business operation (Al-Fahim, Wan Jusoh, & Abideen, 2016; Moghavvemi, Hakimian, & Feissal, 2012). The speed of IT adoption is affected by external organizations, such as: external pressure from trading partners and also internal organizations, namely: readiness, strategy and managers' perceptions (Al-Bakri & Katsioloudes, 2015).

The use of IT spans across range of application that increase the cost of technology. This indicates that IT is important for business to continue although there is a risk of human resources and getting expected returns (Abulrub, Yin, & Williams, 2012). The growth of SMEs determinants depends on IT implementation (Marnewick, 2014).

Contrasting, SMEs face several limitations in adopting new technology, such as: expensive initiative risk, complex procedure, technical expatriate and customer services. In other ways, the use of social media, which is booming now, has changed the nature and shape of business around the world. It is a challenge for SMEs to adopt new technology and adopt new skill (Dahnil, Marzuki, Langgat, & Fabeil, 2014; Selamat, Jaffar, & Kadir, 2013). SMEs need to adopt e-commerce to pursue global strategy (Abebe, 2014).

There are several causes of unsuccessful IT implementation in SMEs and slow adoption rate. First is many SMEs (managerial and staff) does not have clear explanation on how to adopt information technology. Second, there are several misconceptions in IT adoption. Last, human resources in SMEs usually lack of business and IT strategy, limited IT skill and access to capital resources, cost of electronic systems management and maintenance, problems related to IT security and regulation uncertainty which lead to minimum capabilities (Nguyen, 2009; Sugiharto, 2010). In practice, SMEs e-commerce adoption is slower than larger companies even though it is stated that SMEs is a tool to reduce poverty (Rahayu & Day, 2015).

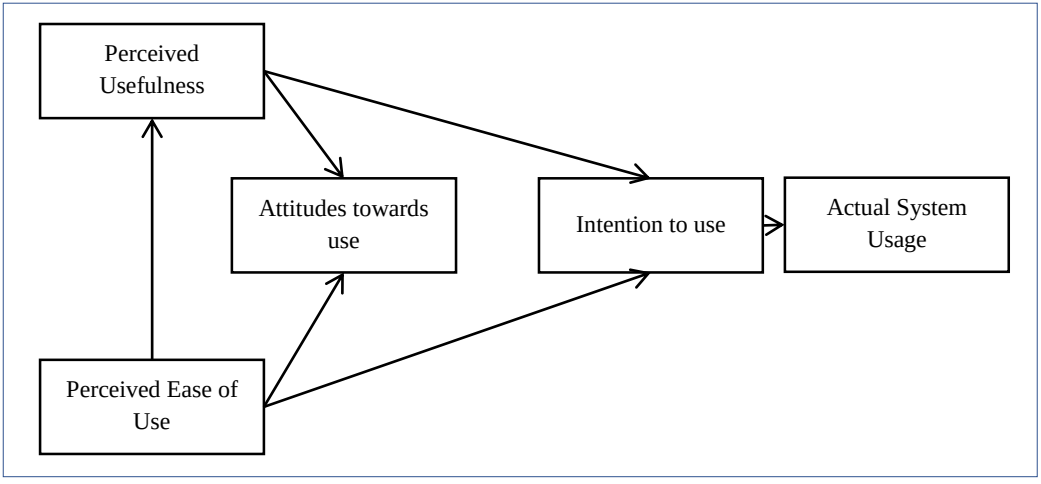
Several models have been constructed to explain IT usage and adoption. Technology acceptance model (TAM) is the famous one which explained IT adoption and usage. This theory stated that managerial capabilities and perception affect the IT adoption and usage. This theory also provides insight to the role of internet usage (Caniëls et al., 2015). Analyzing the problems of IT adoption in SMEs using TAM is important to solve IT problems in SMEs (Dahnil et al., 2014).

Previous studies (Caniëls et al., 2015; Dahnil et al., 2014; Nguyen, 2009; Rahayu & Day, 2015; Sugiharto, 2010) focused on TAM application in SMEs (empirical studies). The issues of IT adoption in SMEs through conceptual review framework are not quickly addressed. This study focuses on how SMEs adoption to IT and several solutions from previous studies. This study employs critical literature review by meta analysis using 61 journal articles by integrating different theoretical perspective and put them into conceptual model. This model is needed as a solution to barriers of IT adoption.

This paper structured as follows. The next section will define technology acceptance model in SMEs. Afterwards, defining problems related to IT adoption will be elaborated further and then discussing the solutions to low IT adoption in SMEs. The last section concludes and highlights several implications to further studies.

2. TECHNOLOGY ACCEPTANCE MODEL IN SMEs

The theory of Technology acceptance model (TAM) is created by Davis based on the theory of planned behavior and reasoned action. TAM must include variables that relate to the use of new technology, human and social factors (Celuch et al., 2013). It assumed that several external variables affect perceived usefulness and perceived ease of use (Khader, 2015). The primary objective of TAM is providing fundamentals for investigating impacts of external factors on belief, attitude, and user intention (Hayes Jr., 2012). The model is shown below:



This model first analyzed human behavior related to computer use. The actual behavior is determined by behavioral intention which determined by attitudes toward use and perceived usefulness. This model has been tested for more than two decades to explain and predict behavior (Dahnil et al., 2014). The limitation of this model is that it neglects several factors which come from outside and internal of the organization.

In 2003, Venkatesh extended TAM by incorporating alternative belief factors, usefulness and ease of use which result Unified Theory of Acceptance and Use of Technology (UTAUT). Gender, experience, age and user characteristics give moderating effect in IT utilization. It constructs performance expectancy, effort expectancy, social influence, and facilitating conditions, with moderators of gender, age, experience, and voluntariness of use ultimately influencing technology adoption intentions. Both theories are tested to investigate technology acceptance for individual. TAM is still valid and more suitable to investigate technology adoption by business organization such as SMEs (Dahnil et al., 2014).

SMEs need to assess using this model since they are pushed to use new technology to take a part in the marketplace. IT adoption by SME managers or owners have changed its innovative ability (Sugiharto, 2010). In practice, SMEs need a tool which are easy to use and self-explained business to handle the complexity of web-based marketing applications (Omar, Mohamad, Marimuthu, & Ramayah, 2011). Web-based marketing is used in SMEs to conduct daily business and reaching

the costumers. Internet ease of use and usefulness perception are important for managing customer information (Celuch et al., 2013).

Readiness to technology is important here since the trend of profit maximization by the large company was not seen in the SMEs (Omar et al., 2011). If they are not yet participate using IT, they will shut out from their business. As a consequence, government takes a role to encourage SMEs in using this technology (Rahayu & Day, 2015). Moreover, it also found that IT used in SMEs has changed its nature of conducting business to be more productive (Al-Bakri & Katsioloudes, 2015).

3. TECHNOLOGY ADDOPTION BARIERS AND SOLUTIONS IN SMEs

There are several barriers in adopting new technology in SMEs, such as low adoption of e-commerce, low benefit awareness, lack of experience and knowledge-lack sufficient training, low commitment on IT implementation, low readiness of manager and staff, no sophisticated IT system in SMEs, and high cost of implementation. Several solutions also provided to solve the above problems.

a. Low adoption of e-commerce

Previous research shown that IT adoption by SMEs is still below the expectation (low level) (S Moghavvemi et al., 2012). The reasons are because lack of skills and IT knowledge and lack of resources (expertise and financial). The other misconception is because managers do not understand the relationship between firm and the importance of IT (Nguyen, 2009). It creates an issue that SMEs is still very far behind large companies adoption (Rahayu & Day, 2015). These issues are being concern of government to improve the level of IT adoption through issuing regulations and policies to help SMEs in adopting technology. Moreover, several theories are built, such as: Innovation diffusion theory is the tools to analyze IT innovation adoption in SMEs.

Those problems are not aligned with IT mission to create more efficient work. SMEs need to adopt IT but there are many reasons why SMEs need to adopt IT either from internal or external sources. From internal, having new competitors, extend the business, investing new business channels and the status of business take a role as factors that influenced. Next, the external environment also pushed SMEs to adopt IT. The push of technology and also market pull, the pressure from internal and external and competition and innovation pushed SMEs to adopt IT (Nguyen, 2009). Several solutions are needed to built to addressed the issue of low adoption of e-commerce.

Technology acceptance model used to expect the adoption of IT. Khader (2015) found that intention to use technology is the main factor that influenced the IT adoption in mobile learning application. In contrast, study by Hayes Jr. (2012) found that IT adoption in SMEs are relatively scarce and TAM still fails in describing the variance in computer usage. Different SMEs have different adoption patterns (Chatzoglou, Vraimaki, Diamantidis, & Sarigiannidis, 2010).

As a solution, SMEs should increase awareness of the IT benefit which has drastic effect on the technology adoption. This awareness will produce positive influence on increasing level of IT

adoption (Hung, Chang, Lin, & Hsiao, 2014). Awareness campaigns for business especially SMEs will help in increasing IT implementation (Al-Bakri & Katsioloudes, 2015).

b. Low benefit awareness

Nowadays, increasing the benefit awareness of IT is important and must do in today's globalized world (Selamat et al., 2013). Since the adoption of IT in SMEs is slow, SMEs need more awareness to increase the adoption. Unfortunately, this awareness is still low. Awareness campaign has been conducted in several SMEs. Limited awareness on internet penetration in SMEs are occurred (Al-Bakri & Katsioloudes, 2015). In many SMEs, IT is only used for basic functionalities not for activating new information system (Selamat et al., 2013).

Awareness of IT benefit has impact in the decision-making that concerned with IT adoption, such as: higher productivity, better relationship and lower trading cost (Hung et al., 2014). SMEs faced awareness barriers to learn IT in order to help business in gaining competitive advantage. Many SMEs believe that e-commerce is not applicable to SMEs products and services (Marasini, Ions, & Ahmad, 2008). Raising users awareness will promote IT adoption in SMEs (Chatzoglou et al., 2010).

Based on technology acceptance model, awareness of IT has significant influence to the intention to accept and degree of implementation. When implementing IT, the personnel should evaluate the effectiveness of it (Hung et al., 2014). Awareness of IT benefit will lead to the adoption of IT innovation (Moghavvemi, Salleh, Zhao, & Hakimian, 2011).

c. Lack of experience and knowledge-Lack of sufficient training

Experience with IT will make people to become easier to accept the technology. If SMEs has negative experience with new technology, they will not be interested to adopt and use the new technology (Moghavvemi et al., 2011). In the case of Indonesia, it is found that IT experience influenced Indonesian SMEs in adopting e-commerce (Rahayu & Day, 2015). Unfortunately, many SMEs are still lacking of knowledge and experience in using ICT (Hung et al., 2014). Several barriers to SMEs will occurred when it is related with language and common technology problem such as spamming (Dahnil et al., 2014).

In Technology acceptance model, experience conduct as moderating effects in the IT acceptance of SMEs (Moghavvemi & Salleh, 2010). Other research supported that experience has a moderating effect on the propensity to act toward behavior intention and the perceived desirability (Moghavvemi et al., 2011). Top managers with higher IT experience especially in SMEs will support new IT implementation (Vladimirov, 2015).

Creating IT based on local context will increase ICT usage in the future. IT implementation which depends on local business condition is important for SMEs sustainability (Al-Bakri & Katsioloudes, 2015). It also reduce the gap of lack of experience and knowledge (Selamat et al., 2013). Local culture adoption is important to construct the success of IT community based instead of national one (Gengatharen, 2008).

d. Low commitment on IT implementation

Management commitment is the enthusiasm, involvement, encouragement and motivation from the management towards the acceptance of IT innovations (Ifinedo, 2011). Management commitment will contribute positively to IT implementation. The acceptance of IT will higher if management commitment and support higher. Unfortunately, IT management commitment in SMEs was low (Ifinedo, 2011). SMEs consider IT implementation as expensive commitment (Abulrub et al., 2012).

Commitment is measured by senior executive (management) commitment in technological acceptance model. It is defined by senior executives' willingness and expertise in providing leadership, sufficient support and resources to organization. As measured by technological acceptance model, senior executive' commitment have positive effect on the internet adoption decision-making (Hung et al., 2014). It also defines the characteristics of reject or adopt the innovation (Moghavvemi et al., 2012). In TAM, commitment is needed to encourage technology acceptance (Ifinedo, 2011).

Management commitment on IT implementation has impact to decision-making of internet adoption especially in SMEs (Hung et al., 2014; Newby, Nguyen & Waring, 2014). The support from top executive is crucial for IT adoption in the organization (Ifinedo, 2011). Hung et al. (2014) stated that the commitment from senior executive has a positive influence in the implementation of a corporate website by SMEs. It is important for SMEs to increase management commitment in order to solve low IT acceptance.

e. Low readiness of manager and staff

Technology readiness is the propensity to use new technology in order to achieve organization goals (Khader, 2015). In the context of organizational, this term refers to the level of IT equipment and human resources such as IT expertise and training in the new technology (Vladimirov, 2015). IT adoption in SMEs depends on ICT readiness. However, this readiness shows very low level in SMEs practice. Rahayu & Day (2015) found that technology readiness is the critical factor in e-business adoption particularly in developing countries. Individual readiness measured by four dimensions such as: optimism, innovativeness, discomfort and insecurity (Mangundjaya, Utoyo, & Wulandari, 2015).

Technology readiness is being constructed using TAM dimension of perceived of usefulness and perceived ease of usefulness (Larasati & Santosa, 2017). Information technology readiness has significant and positive effect with perceived ease of use but insignificant with perceived usefulness in the case of internet banking adoption in SMEs (Al-Fahim et al., 2016). Based on TAM theory, supporting industry e-readiness will create positive influence to IT acceptance (Hung et al., 2014).

The solution to low readiness of manager and staff in SMEs is increasing degree of innovativeness through management commitment (Larasati & Santosa, 2017). Innovativeness that described the tendency of a person in using new technology will influence perceived of usefulness and perceived of use. In the SMEs, perceived of usefulness of people who have experience with technology will

increase user intention to use. To increase level of innovativeness, management must commit to invest in order to increase level of manager and staff readiness.

f. No sophisticated IT system in SMEs

In practice, SMEs avoid sophisticated software and application system because of slow respect to technology adoption which create difficulties in taking advantage of technology benefits (Pham & Nguyen, 2011). This problem creates internal control mechanism and reporting tools becomes less sophisticated (De Maeseneire & Claeys, 2012). Especially for women, Dowla (2006) stated that giving woman ownership to sophisticated information technology tools is invaluable for the self-esteem of these women. In fact, it is believed that poor women cannot own and use technology. The above condition reveals that SMEs face certain problems in formulating innovation strategies given their limitation in technological competencies (Moghavvemi et al., 2012). According to TAM, larger SMEs have sophisticated technology system. Unfortunately, this condition is rarely found in smaller SMEs (Oni & Papazafeiropoulou, 2014).

End-user training should be conducted in SMEs to get more complete understanding of the factors that influence information technology acceptance (Chatzoglou et al., 2010). Lack of sufficient training will result on lower IT acceptance. This training increased perceptions of ease of use in order to achieve higher acceptance rates (Wulandari & Kassim, 2016). SMEs as users successful IT adoption in small business is IT training (Hayes Jr., 2012). However, IT training must be efficient because of the staff overloading and lack of time. They need extra time to learn during the work which will impact the quality of services (Vladimirov, 2015). Moreover, SMEs need to allocate budget allocation to conduct formal training or hiring IT experts to solve their problems (Omar et al., 2011).

g. High cost of IT implementation

SMEs faced high cost that associated with technology implementation (Hayes Jr., 2012). Those implementation will increase SMEs operating cost and had impact SMEs profit margin (Oncioiu, 2013). Because of that many SMEs still using manual operation strategy rather than IT based strategy. This strategy is cheaper but takes time to conduct. In the globalization era, it is still questionable that many SMEs still neglect the importance of IT because it is too expensive. Nowadays, many SMEs fear of being left behind the competitors (Omar et al., 2011).

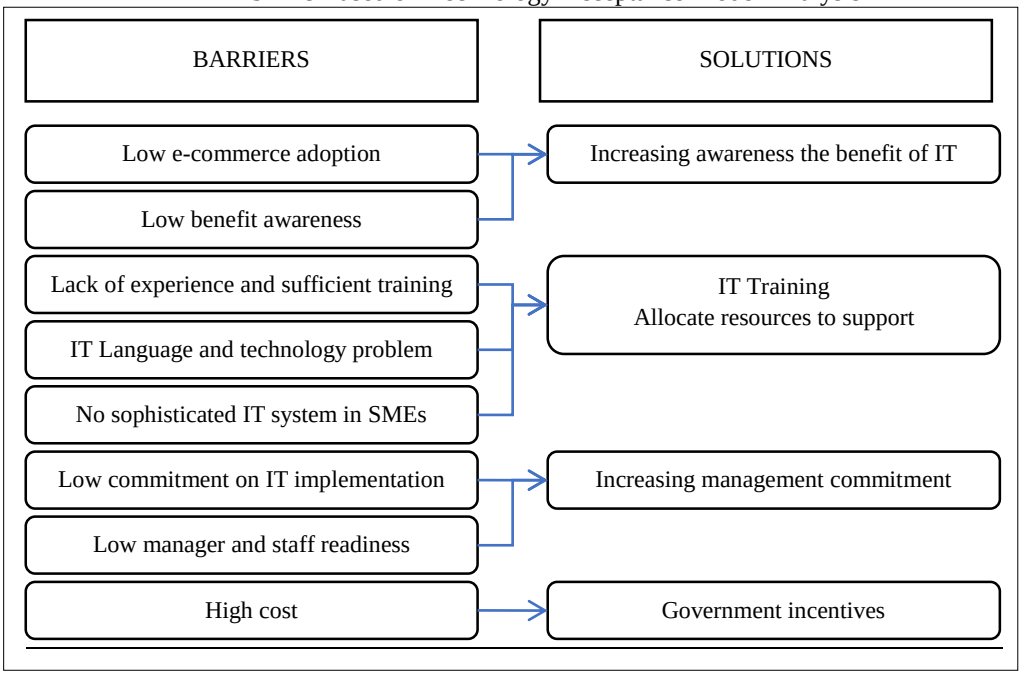
Regulatory agency (in this case is Government) should create incentive to IT implementation. Active intervention policies through technological and financial support has lowered the barrier to IT adoption among SMEs. The Government is suggested to provide telecommunication infrastructure and institutional support (Ahmad & Muhammad Arif, 2015; Omar et al., 2011). Government incentive is important to stimulate technological innovation and SMEs e-commerce adoption (Al-Fahim et al., 2016). It also reduce corporate burdens on technological resources (Hung et al., 2014).

As a summary, several solutions have been created to answer barriers in IT adopting new technology in SMEs. In order to solve, low e-commerce adoption and low benefit awareness, SMEs managers and staff need to increase awareness of IT benefit. In the case of lack of experience and sufficient training, IT language and technology problem and no sophisticated IT system in SMEs,

IT training is needed and also providing allocate resources to support IT system. After IT training, SMEs managers and staff can create IT based on local culture adaptation. SMEs also faced the problems of low commitment on IT implementation and low readiness of manager and staff. It can be solved through increasing management commitment. Last, government must give incentives to solve high cost faced by SMEs.

4. CONCLUSION AND THE WAY FORWARD

Figure1: An Innovative Model as a Solution to Adoption of New Technology Issues in SMEs Based on Technology Acceptance Model Analysis



From the review of the literature, Small Micro Enterprises (SMEs) poses several challenges. *First*, low e-commerce adoption and benefit awareness of IT application. Hence, several literatures suggest that SMEs must implement several programs to increase awareness of IT benefit. *Second*, SMEs also face challenge in internal system such as lack of experience and sufficient training, IT language and technology problem and no sophisticated IT system in SMEs. Thus, SMEs must provide IT training and allocate resources to support. Creating IT based on local culture adaptation is also a solution.

Third, low commitment on IT implementation and low manager and staff readiness also conducts as a big road block for SMEs to access IT. SMEs can enforce management commitment to IT implementation as solution. Last, government incentive related to IT implementation is important. It can reduce IT cost and improve the viability of institution. It also conducts as additional fund to

provide IT services for the SMEs. These solutions will support the success of SMEs to give adopt new technology.

REFERENCES

Abebe, M. (2014). Electronic commerce adoption, entrepreneurial orientation and small- and medium-sized enterprise (SME) performance. *Journal of Small Business and Enterprise Development*, *21*(1), 100–116. doi:10.1108/JSBED-10-2013-0145

Abulrub, A. H. G., Yin, Y., & Williams, M. A. (2012). Acceptance and management of innovation in SMEs: Immersive 3D visualisation. *Procedia - Social and Behavioral Sciences*, *41*, 304–314. doi:10.1016/j.sbspro.2012.04.035

Ahmad, S. Z., & Muhammad Arif, A. (2015). Strengthening access to finance for women-owned SMEs in developing countries. *Equality, Diversity and Inclusion: An International Journal*, *34*(7), 634–639. doi:10.1108/EDI-01-2015-0006

Al-Bakri, A. A., & Katsioloudes, M. I. (2015). The factors affecting e-commerce adoption by Jordanian SMEs. *Management Research Review*, *38*(7), 726–749. doi:10.1108/MRR-12-2013-0291

Al-Fahim, N. H., Wan Jusoh, W. J., & Abideen, A. (2016). An examination factors influencing the intention to adopt internet banking among SMES in Yemen: Using an extension of the technology acceptance model (TAM). *Journal of Internet Banking and Commerce*, *21*(Special Is).

Caniëls, M. C. J., Lenaerts, H. K. L., & Gelderman, C. J. (2015). Explaining the internet usage of SMEs. *Internet Research*, *25*(3), 358–377. doi:10.1108/IntR-12-2013-0266

Celuch, K., Bourdeau, B., Saxby, C., & Ehlen, C. (2013). SME internet use: the moderating role of normative influence. *Journal of Small Business Strategy*, *1770*(813), 1–33. doi:10.1111/j.1748-5827.2011.01219.x

Chatzoglou, P. D., Vraimaki, E., Diamantidis, A., & Sarigiannidis, L. (2010). Computer acceptance in Greek SMEs. *Journal of Small Business and Enterprise Development*, *17*(1), 78–101. doi:10.1108/14626001011019143

Dahnil, M. I., Marzuki, K. M., Langgat, J., & Fabeil, N. F. (2014). Factors influencing smes adoption of social media marketing. *Procedia - Social and Behavioral Sciences*, *148*, 119–126. doi:10.1016/j.sbspro.2014.07.025

De Maeseneire, W., & Claeys, T. (2012). SMEs, foreign direct investment and financial constraints: The case of Belgium. *International Business Review*, *21*(3), 408–424. doi:10.1016/j.ibusrev.2011.03.004

Dowla, A. (2006). In credit we trust: building social capital by grameen bank in bangladesh. *The Journal of Socio-Economics*, *35*(1), 102–122. doi:10.1016/j.socec.2005.12.006

Gengatharen, D. E. (2008). Interpreting the success and failure of regional internet community portals in promoting e-commerce adoption by SMEs. *Journal of Systems and Information Technology*, *10*(1), 56–71. doi:10.1108/13287260810876894

Hayes Jr., T. P. (2012). Predicting information technology adoption in small businesses: An extension of the technology acceptance model. *Academy of Information & Management Sciences Journal*, *15*(1), 37–46. Retrieved from http://ezp.waldenulibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=99465076&scope=site

Hung, W. H., Chang, L. M., Lin, C. P., & Hsiao, C. H. (2014). E-readiness of website acceptance

and implementation in SMEs. *Computers in Human Behavior*, *40*, 44–55. doi:10.1016/j.chb.2014.07.046

Ifinedo, P. (2011). Internet/e-business technologies acceptance in Canada's SMEs: an exploratory investigation. *Internet Research*, *21*(3), 255–281. doi:10.1108/10662241111139309

Khader, A. A. M. (2015). A hybrid proposed framework based on Quality Factors (QF) and Technology Acceptance Model (TAM) for mobile learning process : Higher education students in jordanian universities. *International Journal of Information, Business and Management*, *7*(3), 200–213. Retrieved from http://search.proquest.com/docview/1687611314?accountid=14872

Larasati, N., & Santosa, P. I. (2017). Technology readiness and technology acceptance model in new technology implementation process in low technology SMEs. *International Journal of Innovation, Management and Technology*, *8*(2), 113–118. doi:10.18178/ijimt.2017.8.2.713

Mangundjaya, W. L. H., Utoyo, D. B., & Wulandari, P. (2015). The role of leadership and employee's condition on reaction to organizational change. *Procedia - Social and Behavioral Sciences*, *172*, 471–478. doi:10.1016/j.sbspro.2015.01.385

Marasini, R., Ions, K., & Ahmad, M. (2008). Assessment of e-business adoption in SMEs. *Journal of Manufacturing Technology Management*, *19*(5), 627–644. doi:10.1108/17410380810877294

Marnewick, C. (2014). Information and communications technology adoption amongst township micro and small business: The case of Soweto. *SA Journal of Information Management*, *16*(1), 1–13. doi:10.4102/sajim.v16i1.618

Moghavvemi, S., Hakimian, F., & Feissal, T. M. F. T. (2012). Competitive advantages through IT innovation adoption by SMEs. *Social Technologies*, *7564*(1), 24–39.

Moghavvemi, S., & Salleh, N. A. M. (2010). IT-Related innovation adoption and entrepreneurship. *Proceedings of the 5Th European Conference on Innovation and Entrepreneurship*, 728–736.

Moghavvemi, S., Salleh, N. A. M., Zhao, W., & Hakimian, F. (2011). An empirical study of IT innovation adoption among small and medium sized enterprises in Klang Valley, Malaysia. *Social Technologies*, *1*(2), 267–282.

Newby, M., H. Nguyen, T., & S. Waring, T. (2014). Understanding customer relationship management technology adoption in small and medium-sized enterprises. *Journal of Enterprise Information Management*, *27*(5), 541–560. doi:10.1108/JEIM-11-2012-0078

Nguyen, T. H. (2009). Information technology adoption in SMEs: An integrated framework. *International Journal of Entrepreneurial Behavior & Research*, *15*(2), 162–186. doi:10.1108/13552550910944566

Omar, A., Mohamad, O., Marimuthu, M., & Ramayah, T. (2011). Determining factors for the usage of web based marketing applications among small medium enterprises (SMEs) in Malaysia. *Journal of Marketing Development and Competitiveness*, *5*(2), 70–86.

Oncioiu, I. (2013). Current challenges and future trends for Romanian small and medium enterprises : An empirical study. *Advances in Management & Applied Economics*, *3*(3), 67–83.

Oni, O., & Papazafeiropoulou, A. (2014). Diverse views on IT innovation diffusion among SMEs: Influencing factors of broadband adoption. *Information Systems Frontiers*, *16*(4), 729–747. doi:10.1007/s10796-012-9384-7

Pham, L., & Nguyen, D. (2011). Determinants of e-commerce adoption in Vietnamese small and medium sized enterprises. *International Journal of Entrepreneurship*, *15*, 45–72.

Retrieved from http://www.alliedacademies.org/Publications/Papers/IJE VOL 15 2011 p 45-72.pdf

Rahayu, R., & Day, J. (2015). Determinant factors of E-commerce adoption by SMEs in developing country: Evidence from Indonesia. *Procedia - Social and Behavioral Sciences*, *195*, 142–150. doi:10.1016/j.sbspro.2015.06.423

Selamat, Z., Jaffar, N., & Kadir, H. A. (2013). Information technology adoption in Malaysian SMEs. *International Journal of Economic Perspectives International Journal of Economic Perspectives ISSN*, *7*(4), 81–93. Retrieved from http://www.econ-society.org

Sugiharto, T. (2010). Information technology and business performance : A case study on small food processing firms, *2*(March), 84–95.

Vladimirov, Z. (2015). Factors for the e-business adoption by small tourism firms and the role of shadow economic practices. *European Journal of Tourism Research*, *10*, 5–34.

Wulandari, P., & Kassim, S. (2016). Issues and challenges in financing the poor: case of Baitul Maal Wa Tamwil in Indonesia. *International Journal of Bank Marketing*, *34*(2), 216–234. doi:10.1108/IJBM-01-2015-0007