The Perception of ICT Adoption in Small Medium Enterprise: A SWOT Analysis

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Abstract: In today's challenging and competitive environment, information and communication technology (ICT) is important to be adopted in conducting business activities especially in the Small and Medium Enterprise (SME). The integration of ICT in SME's activities helps business owners to increase productivity and at the same time able to manage the business in a proper manner. In this paper, we present findings on the awareness of the importance of ICT adoption amongst ICT literate graduates in Malaysia. The survey was designed using the analysis of SWOT (Strength, Weakness, Opportunity and Threat). Finding suggests that SME owners believe that the adoption of ICT helps to boost company's business performance especially in managing daily operations and to sustain the business. Although they are aware of the importance of ICT for their business, the limited knowledge and low capital for ICT infrastructure are amongst the reasons to make adoption in ICT difficult.

Keywords: ICT Literate Graduates, B40 Community, Small-Medium Enterprise, Information and Communications Technology (ICT), SWOT (Strength, Weakness, Opportunity and Threat) analysis, Business Performance and Sustainability

Paper type: Research paper

1. Introduction

There are many issues and challenges encountered by the owners of Small and Medium Enterprises (SME) in Malaysia to fully adopt ICT in their business operations. Indeed, the awareness of the importance of ICT and the advantages of adopting them for business purposes will make significance changes to the business owners to take leap action to adopt ICT in their business operation. Ongori and Migiro (2010) argue that

economic growth and innovation of a country depend on the roles of the SME activities especially in creating jobs and to increase income levels of a majority people. In addition, they assert that SME play a major role to serve the social goal of an equitable income distribution. Therefore, it is essential for SME to adopt ICT to improve their competitiveness, innovation and to manage sustainability especially in today's business setting.

According to Ion and Andreea (2008), some of the benefits of the adoption of ICT in SME include improved communication between business owners and customers. In addition, ICT improve the ability for information and data sharing between those who own business and customer. Furthermore it enhances teamwork, extends customer relations, enhances competitive advantage and develops the visibility of services. ICT in SME can be defined as a wide range of computerized information and communication technologies such as laptops, desktop computers, handheld devices, wired or wireless intranet and business software (Ashrafi and Murtaza, 2008). The examples of ICT for SME are huge especially in today's business environment where the rapid development of technologies has produced plenty of devices and software to assist business transactions.

In Malaysia, one of the initiatives in the Tenth (10th) Malaysia plan (RMK-10) which was introduced for the development of the nation (for the year 2011 to 2015) is to achieve an equitable and prosperous society regardless of the ethnicity, gender, socio-economic status and geography. Under the plan, Malaysian has shifted the focus to raise the income generation potential of bottom 40% of the population (B40 community). One of the strategies is to address the needs of special target groups with some integrated programs. Programs that focused on entrepreneurial activities have been introduced especially to those B40 people who own a business in Malaysia. Entrepreneurial activity is argued to be the catalyst to boost the income of the citizens who earned a household monthly income that less than RM3855.00.

Moreover, the Eleventh (11th) Malaysia Plan that commence from 2016-2020 has given a special attention for these B40 group to improve their economy and at the same time to ensure the capital economy continues to flourish. This is consistent with the strategy outlined by the government to uplift B40 households towards a middle-class society by initiating partnerships and to provide more business opportunities for them. Having all the support from the government is indeed important to ensure citizens that fall in this B40 group able to earn better income. Hence, they are encouraged to get involve in the entrepreneurial activities. Therefore, in order to achieve this, we argue that, ICT plays an important role to assist them to perform business activities in a proper manner especially in record keeping.

To ensure that all SME owners are well aware of the importance of adopting ICT in their business organization, this paper focuses to investigate the awareness of ICT adoption amongst B40 people that own a business. SWOT analysis strategy is used to measure this. According to Sluisman et al. (2010), SWOT analysis invites owners and management to assess the organization's internal and external environment to gain clear view of company's resources and capabilities for growth as well as to avoid from any threats from external sources.

2. Literature Review

ICT adoption is important for SME. Osterwalder (2004) argues that business organization will enjoy of the benefits from the opportunities that occur from the implementation of ICT strategy in the organization. ICT is a powerful tool for business firms especially in developing countries to introduce new services or

products that can be marketed through the so-called new medium such as in digital marketplace. Despite all of the potential drawbacks of ICT such as the issues of bureaucracy, long-delays of the business setting up, poor infrastructure or corruption, the opportunities that offered by the technology of ICT is crucial to assist any business owners to understand the concept of digital business model.

Hempell et al. (2004) analyze the impact of ICT adoption in business organization on productivity and performance. Based on the data collected, they argue that the capital deepening rose when they merged the ICT usage and technological innovations for a period of time. Based on the link between ICT usage and innovation in a firm, they provide evidences to support their hypothesis that firms will get high benefit from the investment made in ICT. Moreover, Arendt (2008) asserts that there are issues related to the implementation of ICT in SME. These issues have become the reasons why SME choose not to adopt ICT in their business process and operation. The main issue that he brought up is the phenomenon of a digital divide. Hargittai (2003) defined digital divide as a gap between user who has been using the digital technologies and those who have not. Looking at this issue, firms are encourage to hire someone who has knowledge on ICT to ease the productivity and business performance. Factors that cause the digital divide include the lack of proper knowledge, education and skilled owner-managers and employees within a firm. Moreover, he found out that the low quality of human capital is the biggest barrier that leads to lack of knowledge and skills. Therefore he suggests that, it is best to overcome the problem with enhanced IT skills and widen the access to ICT to encourage firms to adopt ICT in their organization. One of the activity that can be used to reduce this issue is through continuous training. Employees should be sent for trainings on the usage of ICT and other e-commerce based programs. He added that the management should play their important roles to bridge the digital divide that exists within their firms. Therefore, he urge that an initiatives and programs should be promoted in order to bridge the gap as well as to develop the solutions. Two best things that both owner-managers and employees need to address are the know-how and knowwhy action.

The ICT adoption and its assimilation are the critical element to improve and enhance the competitiveness in SME (Ongori and Migiro, 2010). It is crucial to examine the barriers that stop business owners from adopting ICT. This can be done through understanding the driving forces, challenges, benefits and strategies on ICT for the organization. Furthermore, by understanding all of the said factors will help to increase confident amongst SME owners to adopt ICT in SME. ICT adoption will also help SME owners to extend their business into international markets through the access that ICT provides to them. Indeed, the impact of an effective usage of ICT will lead an SME to achieve greater competitiveness and sustainability. Not only that, it increase the productivity process, efficiency of internal business operations and easily connect SMEs to local or global contacts. Besides knowing the positive impacts on the adoption of ICT in SME, they still faced challenges which are human resources, lack of financial type of business and trust issues towards ICT as tools. In addition, they found that managers are lack of legal framework and have inadequate infrastructure that discourage them to adopt ICT.

SME plays an important role for social uplifting, economic development and political stability. However, there are a lot of challenges for SME to be able to survive. Saleh and Ndubisi (2006) identify the challenges that SME had to face in reality. One of the challenges identified are related to ICT which are low level of technological capabilities and ICT penetration. They found out that the programs and

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incentives by the government are insufficient to overcome the challenges faced by the SMEs. They note that the lack of access to the technology and the ICT may affect the efficiency and productivity of a firm. They urge the government to provide more consultancy and expert service centers for SME to ensure they had access and with lower cost fees.

Several strategy and programs are available to help SME owners to adopt ICT in their business. Hakimin and Rafi (2010) suggest that government's initiatives through its agencies are working hard towards achieving high income economy in the next ten years' time. Government Business Support Service (GBSS) was initiated to provide Malaysian SMEs with innovation, creativity and value-added activities in order to contribute and support the New Economic Model. They added, the challenges that most SMEs faced in conjunction to follow the country aimed are the innovation and creative skills. Therefore, this paper will concentrate on the suggestions to SME to adopt ICT as a tool to be competitive in their business organization.

According to Moorthy *et al.* (2012), SMEs are important as they are the one who contribute to the development of a country's economy. Their study somehow discovered that performance of SMEs are significant with the application of ICT and marketing information. Therefore, ICT was found to be a tool to enhance overall performance of SME in Malaysia. The adoption had assisted in their information storage and in terms of communication with important stakeholders.

Chong (2012) asserts that SME are important in developing Malaysia's economy as 90% of companies in Malaysia are SMEs. Knowing the importance, Malaysian government established SME Corporation to provide the services to design and deliver training programs. Moreover, with the introduction of New Economic Policy in 1971, government had continuously showed the commitment towards the improvement of people's welfare and to restructure ethnic economic imbalances. (Saleh and Ndubisi 2006). According to MITI 2005, an industrial Malaysian Plan from 2001 until 2020 are commitments shown by the government to support SME's development. The plans are to formulate policies, programs and action plans for SMEs to become more competitive, innovative and resilient especially in marketing, new business opportunities and business performance. Hence, government had play their part to ensure SME are well-equipped and can contribute more to the nation.

Knott (2008) explains that managers use tools for strategic thinking, decision making and implementation. He added, these tools acts as an approaches, concepts, ideas and techniques that will influence strategic activities. SWOT is one of the tool that can be used in management terms in order for the management to react to changes that occur within the internal and external environment of a firm. Danca (2005) describes SWOT analysis as a model for the development of marketing plans. It is claimed to be simple and easy but it always being underestimate. The information exist from the environmental analysis should be separated into strength, weakness as the internal factors and opportunities and threat as the external factors of a firm. In the end, analysis from the SWOT will determine the objectives or obstacle that must be overcome. Knowing that, weakness that exist should be transformed into strengths as well as threat that should be optimize by the potential of a firm. Fine (2009) agrees that SWOT is a powerful tool to assess a business or proposition. By using SWOT analysis, business will run from a position of its own strengths that they had identified.

Digital Malaysia initiatives is a national initiatives that will propel Malaysia towards the development of the digital economy by 2020. Through this initiative, the eco-system will be established to promote the

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use of digital technology in all aspects of the economy for the global community connecting and enabling them to interact in real time, directly contributing to the Gross National Income (GNI), increasing productivity thus improve standards of living. B40 is the definition of a household with a monthly income of less than RM3855 a month. Therefore, this program aims to assist individuals from these groups to take the opportunity of the digital technology for the purpose of generating additional income. Through this initiatives, the government had proposed to raise the income level through training programs, entrepreneurial opportunities and productive microcredit in order to achieve a prosperous and equitable society. There are 6 groups under these B40 community but the focus group for this paper is towards the ICT literate graduates. The paper aims to investigate the perception of this group towards the ICT adoption in SME. ICT literate graduates are the ones who knew to operate ICT in general but being in the group of B40 isn't a choice.

3. Methodology

The aim of this paper is to investigate the perception of ICT adoption amongst SME owners in Malaysia. Our target group is to those who are identified as B40 community in Malaysia. The objective of the survey is to measure the awareness of the importance of ICT adoption in SME. Furthermore, this paper is written to recommend to all SME owners to adopt ICT for their business sustainability.

The main design for this study is through questionnaire. The questionnaire is design to gather information about the strength, weakness, opportunity and threat (SWOT) of ICT towards SME owners in Malaysia. Each element of SWOT is represented by 10 questions and participants record their feedback using 5 points-Likert scale (1= Strongly Disagree and 5=Strongly Agree). The total number of questions was 40 and the survey was done using physical questionnaire paper. The demographic questions were provided at the end of the questionnaire to gather information about the participants. A short open interview has been conducted after participants answered all questions to gather more information about their perception on ICT adoption in their company. The interview was done to understand whether that they agree that ICT is important and if it is important, then why most SME still refuse to use the technology

The total number of participants in this survey was 30. 16 of them were male and 14 were female. Their age range from 21 to 34 years old. All of them are alumni of Universiti Kuala Lumpur. Their higher education levels are mixed between diploma, degree and master. 17% of the participants are owner of a business in the field of real-estate agency and online business. The rest of the participants are involve directly to business environment but not the owner. All of them are looking forward to establish a bigger company soon.

SWOT analysis is defined to be a tool for the strategic management for a firm to determine the internal and external factors. Before conducting this survey, questions that consist of elements in SWOT (Strengths, Weakness, Opportunity, Threat) has been identified based on the literature. 10 questions from each element were designed to assist the researcher to analyze the perception of the target group. Participants were recruited through UniKL alumni database. All participants were invited through telephone call. Once they agreed to participate, one date to meet up will be scheduled. During the meeting, participants will be greeted and an informed consent sheet will be given. After discussing the features of the study, participants

are required to sign the consent form as to allow their data to be recorded. All participants are requested to answer all questions according to their perception or experienced towards the adoption of ICT in SME. After completed this SWOT section, participants were required to fill the demographic section. After all the questions were answered, participants will be asked several questions regarding their perception of ICT adoption for their own business.

Upon completion of the survey, all the survey data collected will be transcript into excel format whereas the interview data will be transcript into word format. The survey data is then analyzed using SPSS version 24 and interview data is analyzed using heuristic evaluation. Table 1 lists all the questions used during the survey.

Table 1. SWOT Questions STRENGTHS

1. I am expert in using ICT

- 2. ICT helps me with my study
- 3. I use ICT to improve my communication skills
- 4. I use ICT to improve my interpersonal skills
- 5. Do you think the knowledge in ICT helps to improve business operation?
- 6. Can ICT be learned in short time?
- 7. Are you willing to learn new technology?
- 8. Are you determined in learning ICT?
- 9. Do you agree that ICT is something that everyone can learn?
- 10. If the implementation of ICT improves business performance, will you be able to learn from scratch?

WEAKNESSES

- 1. I am not ready to learn and adopt ICT
- 2. The implementation of ICT gives more work to the management and staff
- 3. ICT reduces the interaction within an organization
- 4. The limited knowledge on ICT will affected daily business operation
- 5. Owner or management who refuses to learn to adopt ICT will bring negative impact to the organization
- 6. Organization will waste a lot of time if they refuse to adopt ICT in their daily business operation
- 7. ICT is something that is difficult to learn
- 8. Management should invest more in terms of preparing the facilities and structure when choosing to adopt ICT
- 9. Owner or management who refuses to learn to adopt ICT will put themselves behind the competitors

10. Everyone in the organization need to be an IT savvy if management choose to adopt ICT

OPPORTUNITIES

- 1. Government supports the adoption of ICT in an organization by providing the infrastructure and incentives
- 2. ICT is widely used, hence everyone should know how to use ICT
- 3. Information about ICT are widely available
- 4. The adoption of ICT improves networking between industry players
- 5. There are a lot of programs conducted to expose entrepreneur with ICT adoption
- 6. Adoption of ICT helps to develop the economy of a country
- 7. ICT has good facilities and easy to implement
- 8. By using ICT, communication and networking is easy for an organization
- 9. ICT implementation improves business performance in an organization

10. Any information about industry can easily be obtained by using ICT as the medium.

THREATS

- 1. ICT is a current trend
- 2. It's difficult for the organization to track and follow the technology that always have changes
- 3. ICT will easily exposed the organization's information system at risk
- 4. ICT adoption are expensive to install
- 5. ICT is vulnerable and important data can easily leaked
- 6. Business should consider to adopt ICT because it follows current trend and customer's demand
- 7. While adopting ICT, organization should follow Government's rules and legality of some of the software
- 8. For not following the trend of ICT usage, a company will be lag behind the competitors
- 9. Company will face fierce competition and will not survive in long-term if choose not to adopt with ICT
- 10. Company should aware of current software being used because sometimes it can be obsolete

4. 4Results

Table 2. Mean (Standard	Deviation)	of the	SWOT	Value
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SWOT Element	Mean (SD)
Strengths	41.70 (4.829)
Weakness	33.67 (4.729)
Opportunity	41.13 (5.104)
Threat	40.10 (6.228)

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There was a statistically significant difference between SWOT elements as determined by one-way ANOVA (F (3, 27) = 14.985, p < 0.01). A Tukey post hoc test revealed that the weakness element of SWOT was statistically significantly lower compare to other 3 elements (p<0.01). The other three elements (strengths, opportunities and threats) were not significantly different between them.



Figure 1. Boxplot of Value of SWOT Analysis

Table 3. The description of SWOT analysis through the interview

SWOT Elements	Description
Strengths	ICT found to be helpful and the implementation is believed to improve communication skills, interpersonal skills and improve business operation and performance. Moreover, ICT is a tool that everyone can learn.
Weakness	It is understood that implementation of ICT bring positive impact to a firm in terms of being competitive and build network but management should invest more in providing the facilities and to overcome the issues on the limited knowledge among the employees.
Opportunity	Information can easily obtained by using ICT as a medium. Furthermore, the implementation of ICT helps to develop the economy of a country. Therefore, the role of government is to provide good infrastructure and gives more incentives to acknowledge the effort of every firms that implemented ICT in their business operation.

Threat Organization is encouraged to keep abreast of new version of technology besides following government's rules and legality of the software used. On top of that, firm has to aware of the system's risk and the high installation that will incur in their operation cost.

5. Discussion

The result from the survey support that ICT is perceived importance for the development of a firm in order to keep the sustainability. By using SWOT analysis matrix, the strategies of Strengths - Opportunities (SO), Weakness – Opportunities (WO), Strengths – Threat (ST) and Weakness – Threat (WT) explain further of the current perception.

For SO strategy, most of the respondents who are ICT literate graduates, agreed that they are experts in using ICT. This element is important for them, realizing that trend of firms nowadays which like to hire someone who knows how to use ICT. The respondents found ICT helpful and the facilities are available and easy to implement. On top of that, the respondents agreed that implementation of ICT improves communication and interpersonal skills that help them to make easy communication and build good networking within firms in the market place. They are willing to learn ICT form scratch if the firm that they joined chooses to adopt ICT besides believe that ICT is a tool that everyone can learn in order to improve business performance.

While for WO strategy, the respondents disagreed that they are not ready to learn and adopt ICT or found ICT difficult to learn. They also stressed that implementation of ICT does not gives more work to management and employees but management has to think of investing more capital to provide good facilities and infrastructure of ICT within the firm. In some way, they agreed that limited knowledge of ICT will affect business operation that will definitely bring negative impact to the performance of the firm. Hence, they should overcome their weakness with the opportunities that exist within the external factors of a firm. They have to see the advantages when they adopt ICT which they can get the ready information easily by using ICT as a medium. Moreover, it will benefit the firm through the channel of networking that is ready globally. This will result in giving good impact to the development of an economy in a country.

For ST strategy, the respondents agreed that the external factors of threat have elements that are uncontrollable within a firm. ICT is believed to be a trend and subject to many changes in terms of its version. Besides that, the information systems are vulnerable and risky. The adoption of ICT will need large investment as they are expensive to install. Nevertheless, the threat can be overcome by using the strengths that exist within the internal of a firm. It is believed that by following the newest technology, a firm can maintain its operation and improve business performance. Since ICT is the tool that everyone can learn, hence they can easily hire someone who is experts in this technology.

For WT strategy, the overcome has to be proposed to reduce the negative impact from the internal and external factors of a firm in conjunction with the adoption of ICT in their workplace. Respondents agree that ICT are helpful and they can see the positive impact towards business performance but again, the issues are in terms of limited knowledge and need high investment in providing the facilities and structure.

The weakness of a firm who refuse to adopt that current technology should be eliminated because it is afraid that the firm had placed themselves behind other competitors and they will face fierce competition in future. They also agree that a firm should have IT savvy employees to ensure its sustainability. One of the external elements that will become a threat is technology changes. Other than that, exposing the data and system at risk is also believed to be the factor on why most SME choose not to adopt ICT. Hence, the strategy of WT is to eliminate their own weakness first before looking into the external threat because that may fall under the category of the uncontrollable elements.

6. Conclusion

In this era of globalization, firms are urge to adopt ICT to be more develop and maintain its sustainability. ICT nowadays is more than a new technology. The adoption has great influence to a good productivity and gives excellent outcome to a firm especially in SME field. By using SWOT analysis, the researcher gets an overview on the perception of ICT literate graduates towards the adoption of ICT in SME. The analysis from the survey showed that Weakness marked the lowest value compared to Strengths, Opportunities and Threats. It proves that our focus group, the ICT literate graduates which is one of the groups in B40 community in Malaysia believed that ICT is important in developing business performance but there are some circumstances that a firm has to overcome. The limitations are towards the limited knowledge or insufficient skills of the employees and need large investment to provide the facilities and structure. If companies refused to adopt ICT in their operating culture, they will lag behind because people today are becoming more and more ICT based user. The limitation of this paper is that it is a preliminary study that need to analyze in-depth the holistic view of current SME usage of ICT. Moreover, the crowd of respondents should be more than this paper's number of personnel. In addition, the survey questions are limit because the questions are not validate and based on experience and readings.

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