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PRELIMINARY PROFILE OF ICT-BASED SMEs IN ADOPTING KNOWLEDGE MANAGEMENT

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Abstract

The focal point of this paper is to: (a) present the pilot profiles of ICT-based SMEs operating in Sabah and Labuan; (b) identify the descriptive component of the technology or business focus of

these ICT-based SMEs; and (c) to contribute type of important knowledge stream that is perceived to be significance for ICT-based SMEs' competitiveness. This preliminary study of ICT-based SMEs tried to provides a comprehensive definition of ICT-based SMEs types and size based on the number of full time employees. The findings indicates that out of overall SMEs in services, primary agriculture and ICT sectors, there are approximately 36% (23) ICT-based SMEs which are micro-enterprises, 37% (24) are small-enterprises and 27% (17) are medium-enterprises. In terms of critical important knowledge stream that is perceived to be significant for ICT SMEs' competitiveness, results show that almost all nine knowledge stream are perceived to be important. However, knowledge about own products and services are perceived to be the most important with mean value of 4.47 (standard deviation: 0.71). The second component perceived as important is retaining customer loyalty through keeping tracks with knowledge about customers with mean value of 4.25 (0.78) as well as knowledge about latest technology (mean = 4.13, standard deviation = 0.86) as compared to 4.08 and 4.02 mean values for knowledge about their own competencies or capabilities and finding out the best vendor or supply chain, respectively.

Keywords

Knowledge Management (KM), Small Medium Enterprises (SMEs), Small Business Knowledge

1. Introduction

Information Communication Technology (ICT) based industry in Malaysia stand out as one of the most resilient economics foundation in facing the key challenges issues in driving a strong foundation of national science and technology advancement to gear the nation aspirations as an emerging knowledge-based yet high income economy. Knowledge-based economy is an economy driven by knowledge and innovations with the consideration of leverage adoptions and inventions in ICT based advancements.

In Malaysian business context, the developing concept on high impact of knowledge management practices synergy grow in popularity among Malaysian business practices both Multinational Corporations (MNCs) and SMEs since the launching of Knowledge-based Economy Master Plan in Malaysian National Budget 2000 (EPU,2002; EPU 2010). As such, SMEs being part of the most dynamic business sectors and the nation economy backbone have to

respond parallel to the economy reform, moving from production-based economy (p-economy) to knowledge-based economy (k-economy), now to high income economics reforms. For instance in 2013, 99.2% of the total business establishments in Malaysia are SMEs. This points out how SMEs are foremost contributors to the Malaysian economy, accounting for 32% of national GDP and remarkable 59% of employment and 19% of exports (OECD, 2013). Hence, the main aim is to ensure domestic SMEs remain competitive and innovative by managing their knowledge assets (Nonaka & Teece, 2001; Tan, Chong, Lin & Eze, 2009; Drucker, 1999; Davenport & Prusak, 2000; Muhammad, Abu Hassan, Jamal, & Adel, 2011). Therefore the main idea of this pilot study is to present the profiles of ICT-based SMEs, especially technopreneurs SMEs in the adaptation of knowledge management practices, especially within the accessibility of ICT-based infrastructures such as technology business focus, as well as how local SMEs ranks to what extent that all nine knowledge stream are perceived to be important within the context of geographical boundaries of Sabah and Labuan.

1.1 Evolution and Issues of Malaysian SMEs

Foss (2005) acknowledged knowledge-based views that first introduced by Nelson and Winter in 1982, who justified that knowledge-based organization has become a very influential host of disciplines in business administration especially when come to the discussion on business strategy, operation and international business field and, without doubt includes SMEs business setting. In any discussion regards to SMEs, it is a crucial to first defined the SMEs itself. Asia-Pacific Economic (APEC) definition of SMEs based on common features such as a SMEs in APEC employs less than 100 people while the micro enterprises employs less than 5 people (APEC Secretariat, 2002). Regardless of the definitions, the only mutual features understand by majority of businesses communities, SMEs by size reflect as “not large” (Hall, 2002). Another researcher, Delahaye (2005) defined a small and medium sized enterprise (SMEs) is usually defined as one that has sales of less than \$2 million annually and has fewer than 100 employees in Australian businesses context. On the other hand, in Asian Pacific Economic Corporation (APEC) countries, SMEs make up over 98% of enterprises or establishments in all but few economies and 60% of the private sectors job in APEC. Therefore, APEC described SMEs are a seedbed for larger enterprises and thus for growth and innovation and viewed SMEs can act as a crucial element to rapid change (APEC Secretariat, 2005).

As for Malaysia, Small and Medium Industries Development Corporation (SMIDEC) revised its previously adopted common definition illustrate synergy impact of Malaysian SMEs in domestic economics reform. The new definition effective 1st January 2014 was based on the annual sales turnover or number of full-time employees as shown into two major categories based on sectors and subsectors namely:

1.1.1: Small and medium enterprises in the manufacturing, manufacturing related services and agro-based industries are enterprises with full-time employees not exceeding 200 (previously is less than 150 workers) OR with annual sales turnover not exceeding RM50 million (previously is less than RM25 million) and;

1.1.2: Small and medium enterprises in the services, primary agriculture and Information & Communication Technology (ICT) sectors are enterprises with full-time employees not exceeding 75 (previously is less than 50 workers) OR with annual sales turnover not exceeding RM20 million (previously is less than RM5 million). (SMIDEC, 2009; SMIDEC, 2013).

Malaysian SMEs accounted for 93.8 per cent of companies in the manufacturing sector contributed 27.3% of total manufacturing output, 25.8% to value-added production, owned 27.6% of fixed assets, and employed 38.9% of the country's workforce. In addition, value added products from SMEs are expected to be worth RM120 billion or 50% of total production in the manufacturing sector by 2020 (SMIDEC 2002). Consequently, potentially provides a vital role in bringing Malaysian business synergy to achieved knowledge-based economy (Moha Asri, 2002). Nevertheless, SMEs in Malaysia reported to be lack of financing, low productivity, lack of managerial capabilities, poor access to management and technology, and heavy regulatory burdens (Moha Asri, 2002; Saleh & Ndubisi, 2006). These particular challenges and issues have been highlighted as well by the APEC survey (1994), the SMI Development Plan 2001–2005 (SMIDEC, 2002). Therefore, the evolution in redefining the SMEs indeed provides a significant value-added growth of SMEs in all sectors of the economy which were higher than the overall sectoral economics performance. Latest SMIDEC report shows that SMEs contribution to overall Gross Domestic Product (GDP) increased significantly to 35.9% in 2014 compares to only 32.2% in 2010 (SMIDEC, 2015).

2. SMEs and Knowledge Management Practices

Knowledge management and execution of ICT infrastructures always link together when discussed on the successful adaptation of knowledge management practices. Early work of Kaur (2005) found that some of the SME's owners do not feel comfortable talking about computers and e-commerce as the majority of them acknowledged that they are not IT-savvy enough but they did know the IT roles in helping them to smoothed their business. Thus, Love, Irani, Standing & Burn (2005) provides insight on how the adoption of IT by smaller SMEs indicates that smaller SMEs given less attention to organizational restructuring as there are limited reflection on the way work is carried out after the adoption of IT. However, the findings relates the adoption on time basis has reflectively provides effectiveness in firms operations whereby 94% of the 130 SMEs in the studied sample indicated that some benefits were delivered through adoption of IT in their operations processes.

According to Le & Koh (2002) in Malaysian macroeconomic level, the development of ICT-based business models and technology such as e-commerce market segments need to focus more on participation of government sector for prudent public policies especially in addressing legal and economic issues. Nevertheless at the microeconomic level, it depends on the ability of individual firms to capitalize on the potentials for greater interconnectivity and interactivity among market participants. Thus, the adoption of e-businesses as one of the knowledge management indicator may also vary among industries marked by the quality and efficiencies transactions procedures, steady information flows, smooth distribution channels, and competence supplier and customer base. Therefore, Most previous studies on SMEs merely focus on the adoption of ICT by SMEs in Malaysia.

Early study by Kuan (2005) displayed from the period of the domestics economics transformations, many organizations regardless of sizes and ownership weighted heavily on the value of knowledge and treated knowledge in much like other tangible resources as well as considering the position of knowledge management infrastructures as an enabler of productivity improvement. The work of Suhaiza, Ong & Shahnnon (2006) relates the adoption of ICT in SMEs for effective knowledge management found that SMEs with favorable attitude toward ICT adoption will be more attainable to gain effective and positive advantages of knowledge management practices as well as encourage the participation of knowledge workers in SMEs

businesses. Likewise, a study by Tan et al., (2009) on the innovative characteristics, benefits, and barriers influencing internet-based information and communications technology (ICT) adoption among the small and medium enterprises (SMEs) found that many of the SMEs surveyed have not adopted ICT in their businesses. The findings merely based on the overall collective responses on the timeframe of adoption and business cultural evidence from lack of technical skills, such as unable to grab opportunity to adopt e-commerce business models and costly yet timely training, besides unable to articulate exactly reason and specific need for ICT adoption along with cost constraints (Morgan, Colebourne & Thomas, 2006). Thus, reinforced Delahaye (2005) studied on factors contributed to the moderate adoption of knowledge management practices among Australian SMEs, the organizational culture and structural barriers. Despite all common issues that linked to global SMEs businesses segment identified as lack of access to loans, limited adoption of technology, lack of human resources, lack of access to loans, competition from MNCs and globalisation. Therefore, Delahaye (2005) relates there were a positive and well verse of organisational culture which refer to the formation of knowledge creation and creative processes through self organising groups for development of new ideas from informal discussions, a series of telephone calls and meetings outside the workplace.

Recent study done by Salina & Wan Fadzilah (2010) positively have been disputing on how knowledge management practices affect firms performance amongst 289 SMEs within Multimedia Super Corridor in the Klang Valley of Malaysia, found that the integration of knowledge management processes and social capital can be integrated to enhance firm performance. Conversely, the findings indicated mild variations of 39% on how knowledge management processes explained SMEs performance where knowledge acquisition is the main contributor to SMEs performance. Therefore knowledge management practices support how acquisition of new knowledge enables a firm to update its collection of knowledge and to compete better in the market (Salina & Wan Fadzilah, 2010).

Furthermore, Muhammad et al., (2011) suggested that SMEs should invest in its intellectual capital as its main strategy to overcome the survival as 50% of Malaysian SMEs regardless of size and industry likely to face fierce struggle and vulnerable survival prior to first five years of its establishment due to various issues. Another insight into a brief local study on level of Labuan SMEs technology capability done by Mohd Zulkifli, Goh, Tamrin & Nasrul

(2012) indicated that approximately 93% of the 29 companies surveyed have some form of internet connections in the office whereby a proportion 34% of the companies do have company website. The study indeed found that Labuan SMEs major challenges is to retains its full time staffs as well as throughput on highly consuming training cost. Thus, parallel to current researcher such as Zaim., et al, (2015) from Turkey's textile SMEs knowledge transfer project seen knowledge management appears as the main SMEs strategy that helps to create new business processes to boast small business performance.

3. Methodology and Pilot Sample

3.1 Population

The population of this study initially is based on the nation-wide Census of Establishments and Entreprises 2005, there were approximately 24,794 SMEs in Sabah and Labuan. There proportion of the SMEs based on sector and size can be described as the following tables.

Table 1: *Number of SMEs by Sector and Size in Sabah and Labuan, 2003 and 2011*

| Sector | Micro | Small | Medium | SMEs 2003 | SMEs 2011 |
|-------------------|---------------|--------------|---------------|------------------|------------------|
| Manufacturing | 694 | 743 | 103 | 1,540 | 1,491 |
| Services | 17,190 | 3,860 | 714 | 21,764 | 39,373 |
| Agriculture | 1,031 | 298 | 161 | 1,490 | 817 |
| Total SMEs | 18,915 | 4,901 | 978 | 24,794 | 41,681 |

Source: Census of Establishments and Enterprises, 2005 and SME Census in Economic Census 2011. Department of Statistics Malaysia.

Table 1 shows the number of SMEs by sector and size in Sabah and Labuan, 2003 based on the census there are overall 24,794 SMEs establishments in Sabah and Labuan in 2003. The focus of this study is an ICT SMEs which categorized into services sector, whereby services sector comprise of 87.78% (21,764) of the total SMEs in Sabah and Labuan with majority 79% (17,190) of the services sector in Sabah and Labuan are micro-SMEs.

3.2 Data Collection Method and Proposed Sample

The fundamental aspects of this pilot study were based on a primary data access via a survey. Business research method textbooks gurus such as Greener (2008), Baruch & Holton (2008) reviewed survey as the most adopted research instruments tools in quantitative based studies in the field of behavioral sciences, business and management studies. Survey via questionnaires can provide insight into individual perceptions and attitudes as well as organizational policies and practices. Sekaran & Bougie (2010) for instance, viewed survey as a useful and powerful method in finding answers to quantitative research objectives. A combination of several types of questions was proposed to carry out the survey. Most questions were designed through structured Likert-scale and dichotomous scale type of measurements to collect the data. Moreover, Saunders, Lewis & Thornhill (2009) stated survey using questionnaires tend to be used for descriptive or explanatory research whereby descriptive elements of the variables dimensions will enable researchers to identify and describe the variability in different settings or phenomena.

This study targeted on Sabah and Labuan's SMEs in the Information Technology and Telecommunications (ICT) industry as the main respondents because we believe that this particular business segments able to reflect the applicability adoptions of knowledge management activities. This is due to the fact that the ICT-based SMEs frequently improving its capacity in chasing latest ICT product development and perform instantaneous inventory control to rationalized firm's survival in the market. Therefore the overall population consists of all 213 ICT SMEs derived from the Small and Medium Industries Development Corporation (SMIDEC) database located in Kota Kinabalu. The pilot sample of the study was selected from a total of 185 ICT-based SMEs in Sabah and Labuan whereby only 63 out of total 100 pilot respondents responded to the questionnaires. These companies are not only listed as Small and Medium Industries Development Corporation (SMIDEC) but also as ICT SMEs that are registered under Technopreneur Development Division (TeDD). TeDD is an agency under the supervision of the Ministry of Science, Technology and Innovation with Multimedia Development Corporation (MDeC) launched by the government in November 2001 acting as the implementing agency (SMIDEC,2009).

4. Results and Discussions

Table 2 below shows the respondents' business locations. 78% (49) of the companies are located in Kota Kinabalu and 22% (14) are located in Labuan. Approximately 36.5% (23) ICT-based SMEs are micro-enterprises and small-enterprises while 27% (17) are medium-enterprises. On the hand, the demographic profile of the respondents indicates about 40% (25) of the respondents are from the marketing and sales department, 16% (10) of the respondents representing their own companies and 16% (10) from the customer services department, while 17% (11) from the technical department, only 6% (4) from the operations department and 5% (3) from the training department.

Table 2: Respondents Profile

| Business locations | Numbers | Percentage |
|--|----------------|-------------------|
| Kota Kinabalu (KK) | 49 | 78% |
| Labuan | 14 | 22% |
| Total | 63 | 100% |
| ICT-based SMEs by size | | |
| Micro-enterprises | 23 | 36.5% |
| Small-enterprises | 23 | 36.5% |
| Medium-enterprises | 17 | 27% |
| Total | 63 | 100% |
| Respondent profiles across department | | |
| Marketing/sales department | 25 | 40% |
| Technical department | 11 | 17% |
| Customer service department | 10 | 16% |
| Managing director | 10 | 16% |
| Operations department | 4 | 6% |
| Training department | 3 | 5% |
| Total | 63 | 100% |

Another segment of the study is to identify the ICT-based SME's business focus or technology focus based on its business strategy and daily operations. Table 3 shows the ICT SMEs' technology and business focus by location. It indicates that most of the respondents are resellers and resellers of value-added (VARs) computers and ICT appliances. Thus, the outcome complied with current development in ICT based technology industry when majority of the ICT based SMEs focus more on value-added services and product created opportunity to more wide market demand. However from Table 3, the reseller market in Sabah and Labuan indeed indicates moving forward into mixture of product to services-oriented business focus when ask about initial solutions to captures current market trend and demand as well as dynamics changing of global ICT technology. Thus, this business focus on value-added resellers helps ICT-based SMEs in supplying loops of technology fluctuate evolutions.

Table 3: *Profile of ICT-based SMEs technology or business focuses by locations.*

| Technology/Business Focus | Products and Services | Number by Location |
|---|---|------------------------------------|
| Resellers/Value added resellers | Computer software and hardware, computers accessories | KK (28) Tawau (4) Labuan (3) |
| Software development | Domain ERP,CRM Enterprises Application Integration | KK (3) Sandakan (1) |
| System integration/incubation | Businesses application software and computer networking, programming | Labuan (1) KK (6) |
| Telecommunication networking | Consultancy, system networking | KK (3) |
| Computer system security | Provider of security services, management system and networking services | KK (2) |
| Data centre/support centre | Web hosting, web design | KK (4) |
| E-content development/Internet based businesses | Development online mapping facility, Multimedia graphic design, web content | KK (4) |

On the other hand, Table 4 shows the types of knowledge range from technological knowledge, internal knowledge to external knowledge are perceived to be important to ICT-based SMEs in this preliminary study. Above all, knowledge about own products and services are perceived to be the most important with mean value of 4.47 (standard deviation: 0.71). Thus, it supports the nature of SMEs-based ICT ability to converse well in knowledge regards to global technological product development and latest issues in ICT industry with mean value 4.13 (standard deviation 0.86). Knowledge about customers seems to be more crucial with mean 4.25 as compared to the knowledge about its own competitiveness and capabilities with mean value of 4.08 whereby 4.02 mean values for knowledge about the best vendor or supply chain respectively. The findings indicates how SMEs in particular aware of their knowledge and expertise in certain crucial area related to their businesses despites it's random, unforeseen or informal approach in addressing knowledge management elements as compared to largerbusinesses because SMEs normally more towards managing its tacit knowledge whereby the social interaction in knowledge sharing within SMEs business segments internally were remained ambiguous in nature (Bolisani, et al., 2015.,Zieba, et al., 2016., Edvardssonand Durst, 2013).

Table 4: *Type of knowledge perceived to be important for small businesses*

| | Mean | Standard Deviation |
|--|-------------|---------------------------|
| Knowledge about latest technology | 4.13 | 0.86 |
| Knowledge on existing competitors | 3.63 | 1.02 |
| Knowledge on customers | 4.25 | 0.78 |
| Knowledge on effective process/best practices | 3.97 | 0.94 |
| Knowledge on best vendor/supply chain | 4.02 | 0.90 |
| Knowledge on current market trend | 3.92 | 0.84 |
| Knowledge on cyber law/ICT rules regulations | 3.91 | 0.94 |
| Knowledge about our own competitiveness & capabilities | 4.08 | 0.86 |
| Knowledge about our own products and services | 4.47 | 0.71 |

5. Conclusions

The result outline in this paper is based on preliminary study on knowledge management adoption amongst ICT-based SMEs operating in Sabah and Labuan. A total of 185 ICT-based SMEs in Sabah and Labuan were taken as this study's population, whereby only 63 out of total 100 pilot respondents responded to the questionnaires. The particular SMEs were target of this study because we believe that this particular business segments able to reflect the applicability adoptions of knowledge management activities. This is due to the fact that these ICT-based SMEs frequently improving its capacity in chasing latest ICT product development and perform instantaneous inventory control to rationalized firm's survival in the market.

In this pilot study, it was indicated that ICT SMEs in Sabah and Labuan have slightly shown moderate element of knowledge management practices, whereby there were interaction pattern between technologies, techniques, and people, especially with regards to nature of business social networks. It is especially true in Labuan's small ICT-based communities, where the business know-how aspects being shared amongst major business players in this small island. For example, when asked about which all nine knowledge streams perceived to be important to its own business, majority ICT-based SMEs in the study are perceived all nine knowledge streams almost equally important. However, knowledge about own products and services is perceived to be the most important. Thus, it supports the nature of SMEs-based ICT ability to converse well in knowledge regards to global technological product development and latest issues in ICT industry as compares to its knowledge on existing competitors. Another interesting finding is how respondents viewed on knowledge about customers seem to be more crucial as compared to the knowledge about its own competitiveness and capabilities, and for knowledge about the best vendor or supply chain respectively.

The initial profile of the ICT-based SMEs in this study shows that about 55% of the respondents are heavily focused on value-added resellers (VARs) business segment which provides various types of ICT-based solutions to Sabah and Labuan market. These are the ICT-based SMEs that take existing ICT products and enhance those products and services with its own value or significant advancement. For instance, some of the SMEs in the study offered additional hardware features to its loyal customers integrate services consultations in web development, tailored specific software development in Internet or applications amongst its

service providers, and consult in e-business start-up, with the intention to preserve and sustain its customer's relationship management. Therefore, shows that these VARs ICT-based SMEs have played an important role in snow balling its customers experience as well as embracing economy of scale in Sabah and Labuan ICT market.

In conclusion, based on some of the ICT-based SMEs surveyed agreed that high set-up cost and narrowed supply chain channel as one of the factors hindering the SMEs in integrating new or latest technology advancement in the way they doing business. This finding is in accordance with previous studies done on the challenges ahead in adoption of knowledge based system or leverage ICT-based operations amongst the SMEs. For instance, Kuan (2005) early works stated that most SMEs struggle in its KM initiative essentially corresponding to imprudent financial support for technology investment and available time span in training resources. Moreover, Morgan et al., (2006) studied on 23 respondents from UK's SMEs on how the development of ICT advisers contributes to its real development indicates that most SMEs are lack of ability in utilizing ICT in e-businesses limit its explorations of new technology. The most recent local execution by Muhammad et al., (2011) suggested that Malaysian SMEs need to strengthen its intellectual capital to be able more competitive in commensurate current market demand. However, this pilot study indeed shows glimpse evidence that ICT SMEs in Kota Kinabalu are open to ICT adoption in their business practices to help them cope better with the dynamic environmental changes and complexities.

References

APEC Secretariat.(2002). Profile of SMEs and SME issues in APEC 1990-2000.

Singapore:World Scientific Publishing. ISBN981-04-7990-5.

Bank Negara Malaysia. (2006). National SME Development Council Reports. Kuala Lumpur.

Baruch, Y., &Holton, B.C. (2008).Survey response rate levels and trends in organizational research. Human Relations, 6(18),1139-1160.

<http://dx.doi.org/10.1177/0018726708094863>

- Bolisani, E., Scarso, E., & Zieba, M. (2015). How to deal with knowledge in small companies? Defining emergent KM approach. GUT FME Working Paper Series A, No. 2/2015(27). Gdansk(Poland): Gdansk University of Technology, Faculty of Management and Economics.
- Census of Establishments and Enterprises, (2005). Department of Statistics Malaysia
- Davenport, T.H. & Prusak, L. (2000). Working Knowledge: How Organizations Manage What they Know. Harvard Business School, Boston, MA, pp. 25, 41, 164, 174.<http://dx.doi.org/10.1145/347634.348775>
- Delahaye, B.L. (2005). Human Resource Development: Adult Learning and Knowledge Management. (2nd Edition). Brisbane: John Wiley & Sons, Australia.
- Department of Statistics Malaysia. (2006). Census of Establishment and Enterprises 2005 Preliminary Report-Profile of Small and Medium Enterprises. Putrajaya.
- Department of Statistics Malaysia.(2011). Economic Census 2011.Economics and Policy Planning Division.
- Drucker, P.F. (1999). Management Challenges for the 21st Century (1st ed). New York: Harper Collins. p.157.
- Economic Planning Unit.(2002). Knowledge-based Economy Master Plan. Prime Minister Department, Malaysia.
- Economic Planning Unit. (2010), Tenth Malaysia Plan (10MP) 2011-2015, The Economic Planning Unit, Prime Minister`s Department, Putrajaya. Available online: www.pmo.gov.my/dokumenattached/RMK/RMK10_Eds.pdf.

- Edvardsson, I.R. and Durst, S. (2013). Does Knowledge Management Deliver the Goods in SMEs?. *Business and Management Research*. 2 (2), Pp: 52-60.
<http://dx.doi.org/10.5430/bmr.v2n2p52>
- Foss, N.J. (2005). *Strategy, Economic Organization, And The Knowledge Economy*. Oxford University Press. ISBN 0-19-924064-7. <http://dx.doi.org/10.1093/0199240647.001.0001>
- Greener., S. (2008). *Business research method*. Ventus Publishing APS. ISBN: 978-87-7681-421-2.
- Government of Malaysia. Economic Planning Unit. (2006). *Ninth Malaysia Plan 2006-2010*. Kuala Lumpur.
- Hall, C. (2002). Profile of SMEs and SMEs Issues in East Asia; in Harvie, C. and Lee, B.C. (edt.) (2002). *The role of SMEs in national economies in East Asia*. UK: Edward Elgar Publishing. Pg 181-201. ISBN: 1-840643242
- Kaur, K. (2005). Consumer protection in e-commerce in Malaysia: an overview. *UNEAC Asia Papers*, 10.
- Kuan, Y.W. (2005). Critical success factors for implementing knowledge management in smalland medium enterprises. *Industrial Management & Data Systems*, 105(3), 261 – 279. <http://dx.doi.org/10.1108/02635570510590101>
- Le, T.T., & Koh, A. C. (2002). A Managerial Perspective on Electronic Commerce Development in Malaysia. *Electronic Commerce Research*. 2: 7–29. Kluwer Academic Publishers: Netherlands. <http://dx.doi.org/10.1023/A:1013318016239>
- Love, P.E.D., Irani, Z., Standing, C., & Burn, J.M. (2005). The enigma of evaluation: benefits, costs and risks of IT in Australian small-medium-sized enterprises. *Information & Management*, 42, 947-964. <http://dx.doi.org/10.1016/j.im.2004.10.004>

- MohaAsri, A. (2002). An Overview of the macroeconomic contribution of SMEs in Malaysia; in Harvie, C. and Lee, B.C. (edt.) (2002). The role of SMEs in national economies in East Asia. UK: Edward Elgar Publishing. Pg 181-201. ISBN: 1-840643242
- MohdZulkifli, M., Goh, S.L., Tamrin, A., & Nasrul, H.N.M. (2012). ICT skill among Labuan's SMEs: Issues and Challenges. *Jurnal Teknologi (Social Science)*, 59, 109-114. UTM Press.
- Morgan, A., Colebourne, D. & Thomas, B. (2006). The development of ICT advisors for SME businesses: An innovative approach. *Technovation*, 26(8), 980-987.
<http://dx.doi.org/10.1016/j.technovation.2005.09.001>
- Muhammad, K., Abu Hassan, M.I, Jamal, A.N.S., & Adel, A. (2011). Challenges faced by the small and medium enterprise (SMEs) in Malaysia: An intellectual capital perspectives. *International Journal of Current Research*, 3 (6), 398-401.
- National SME Development Council (2012). *The SME Master Plan 2012-2020: Catalysing Growth and Income*, National SME Development Council, Putrajaya.
- Nonaka, I., & Teece, D.(ed).(2001). *Managing Industrial Knowledge: Creation, Transfer and Utilization*. London: Sage Publications.
- OECD. (2013). *Structural Policy Country Notes: Malaysia in Southeast Asian Economic Outlook 2013: With perspectives on China and India*. Paris.
- Saleh, A.S., & Ndubisi, N.O. (2006). An Evaluation of SME Development in Malaysia. *International Review of Business Research Paper*, 2 (1), 1-14.
- Salina, D., & Wan Fadzilah, W.Y. (2010). Knowledge management and firm performance in SMEs: The role of social capital as a mediating variable. *Asian Academy of Management Journal*, 15(2), 135-155.

- Saunders, M., Lewis, P., & Thornhill, A., (2009). Research methods for business students. (5th ed.). Pearson Education Limited., Edinburgh, England
- Sekaran, U., & Bougie, R. (2010). Research methods for business: A skill building approach (5th ed.). West Sussex, UK: John Wiley & Sons Ltd.
- Small and Medium Industries Development Corporation (SMIDEC). (2009). SME Annual Report 2009. Toward Strategic Transformations. National SME Development Council and Malaysia National Press, Kuala Lumpur, Malaysia.
- Small and Medium Industries Development Corporation (SMIDEC). (2013). SME Annual Report 2012/2013. Embracing Change. Secretariat National SME Development Council and Malaysia National Press, Kuala Lumpur, Malaysia.
- Small and Medium Industries Development Corporation (SMIDEC). (2015). SME Annual Report 2014/2015. One Business One Community. Secretariat National SME Development Council and Malaysia National Press, Kuala Lumpur, Malaysia.
- Suhaiza, Z., Ong, H. K., & Shahnnon, S. (2006). The adoption of Information and Communications Technology (ICT) for effective knowledge management in small and medium industry in Malaysia. *Asian Journal of Information Technology*, 5(1), 28-33. ISSN: 1682-3915.
- Tan, K. S., Chong, S. C., Lin, B., & Eze, U.C. (2009). Internet-based ICT adoption: evidence from Malaysian SMEs. *Industrial Management & Data System*, 03/2009, 109 (2), 224-244. <http://dx.doi.org/10.1108/02635570910930118>
- Zaim, H., Gürcan, O. M., Tarım, M., Zaim, S., & Alpkan, L. (2015). Determining the Critical Factors of Tacit Knowledge in Service Industry in Turkey. *Procedia - Social and Behavioral Sciences*. 207., pp: 759-767. <http://dx.doi.org/10.1016/j.sbspro.2015.10.156>

Zieba, M., Bolisani, E., & Scarso, E. (2016). Emergent approach to knowledge management by small companies: multiple case-study research. *Journal of Knowledge Management*. 20 (2), pp: 292– 307. doi: <http://dx.doi.org/10.1108/JKM-07-2015-0271>