

An Exploratory Study of Information Technology Adoption by SMEs in Brunei Darussalam

Chin Kang Chen* and Mahani Hamdan**

SMEs constitute a high percentage of businesses in many developing countries. Information Technology (IT), which has been advancing for years, now brings new meaning for people doing business around the globe. Indeed, IT has become so common that some SMEs assert that it is no longer seen as an advantage because almost every organisation is using it. . Although the literature reveals several studies on the IT adoption among SMEs across countries, there has been very limited research conducted on SMEs population in Brunei especially in the restaurant and catering services sector The objective of this paper is to show the importance of IT adoption in Brunei SMEs. IT not only can help SMEs in organising business data information, but also preparing and managing accounts so work processes can be performed effectively and efficiently. In this paper, Accounting Information System (AIS) or any software used by Brunei SMEs is explored. The paper looks at how SMEs have used IT in the restaurant and catering sector, and investigates factors that contribute to the development and hindrance of IT adoption. Initial interviews were conducted with eight owner-managers of SMEs to elicit their perspectives on the adoption of IT. A short survey was also prepared and conducted with 163 SMEs to find out software packages they have been using. Findings revealed that around 65% of firms used basic software package (Excel) to help with their accounting needs. Although there is growing interest and increasing practical experience in the use of IT, cost remains a major factor for the lack of technological sophistication. The study suggested local SMEs to see IT as a key part of business success, and to reap greater benefits from the IT adoption. A strong support system from relevant government and private agencies and training are fundamental for effective understanding and application.

1. Introduction

Information Technology (IT) continues to advance as time progresses and it has become more useful to the general populace and also businesses worldwide. Regardless of the size of businesses, there will often be some form of IT usage. IT has become something that most people cannot live without and People generally use computers, laptops, notebooks, tablets or smartphones, example, to work or to access Internet.

IT can be seen in all forms of business uses, from normal word processing, to large data warehouse that houses lots of information for the business. IT in accounting include both software and hardware parts. In large corporations, Account Information Systems (AIS) could be built in house. The company's IT experts or off the shelf the company's requirements, and even integrate the AIS as part of a suite in the software packages may impose or allow slight modifications to their AIS in order to meet company's Enterprise Resource System (ERP).

*Chin Kang Chen, School of Business and Economics, Universiti Brunei Darussalam, Brunei. Email: chinkang.chen@ubd.edu.bn

**Dr. Mahani Hamdan, School of Business and Economics, Universiti Brunei Darussalam, Brunei. Email: mahani.hamdan@ubd.edu.bn

Chen & Hamdan

AIS and ERP systems are quite common in large corporations (Huang & Palvia 2001), but for smaller businesses like SMEs, this might not be a feasible choice as the cost and time needed to implement these systems can be too expensive. As a result, Microsoft Excel or off the shelf software become the most preferred software for Bruneian SMEs' accounting needs as shown in the study. Some of these businesses might not even use any software but the basic paper and pen way of calculation.

There is a lot of people adopting or shunning away from using IT for accounting purposes. Some of the issues that cause people to stay away from using IT or accounting software are mainly attributable to TIME factors which comprised of training, infrastructure, money and employees. In the literature, not all SMEs embrace the use of accounting software even though there are a lot of added advantages to the companies (Chuang, Nakatani & Zhou 2009).

Tan et al. (2009) research shows that many of the SMEs surveyed have not adopted ICT in their business which could be due to lack of security, lack of education and technical skills. In another research done by Tan et al. (2010), the research reveals that's the SMEs would adopt internet based ICT regardless of years of business start-up and internet experience.

The objectives of the study are to investigate the level of IT adoption among SMEs and find out the reasons for their lack of or limited use of IT. The study is conducted in Brunei due to several reasons listed below.

- Little is known about the adoption level of IT among Brunei SMEs
- To our knowledge, no data or report is yet available or documented on the use of IT among SMEs in Brunei
- IT can help improve SMEs performance. This helps in working towards the goal which relates to Brunei's vision 2035 on the development of SME strategy
- It is hoped the outcomes/solutions/recommendations from the study would give a new insight or perspective to relevant stakeholders and organisations to work together in achieving the goal
- Another reason why we study this is because SMEs constitute 98% of businesses in Brunei

From the study, it can be seen from the findings that around 65% of SMEs do use IT as compared to some of the other research such as Tan et al. (2009) and (Chuang, Nakatani & Zhou 2009) which shows that IT uptake is not so popular. The IT mentioned here is mostly accounting software or packages that helps in accounting or budgeting. The study done contributes to the field of knowledge with regards to the SMEs adoption of IT particularly in the restaurant and catering services sector in Brunei for accounting and or budgeting purposes.

This paper will continue with the literature review, which covers the definition of SMEs and IT in Brunei SMEs. The next part will show a brief research objective followed by the methodology used for this study. The next parts will show the results followed by the discussion of the results and finally ending with the conclusion of this paper.

2. Literature Review

2.1 Definition of SMEs

Presently, there is no universally agreed definition of SMEs. However, the most common facet used for conceptualising SMEs is the number of employees. Brunei has applied this criterion to distinguish its SMEs from large corporations. The country categorizes their business enterprises into four types: micro (having one to five employees); small (six to 50 employees); medium (51 to 100 employees); and large (having more than 100 employees) (OECD 2008). Simply put, Brunei's SMEs are entities having up to only 100 employees. SMEs include self-employed persons and family businesses engaged in craft or other activities, and partnerships or associations that regularly engaged in an economic activity (The European Commission 2003).

The importance of SMEs in Brunei can be seen through the speech of His Majesty the Sultan and Yang Di-Pertuan of Brunei Darussalam. In one of the speech at the Yayasan Sultan Haji Hassanal Bolkiah Hari Raya Aidilfitri celebration he expressed his satisfaction with the fact that one of the main focuses of the National Development Plan is to develop SMEs to realise Brunei Vision 2035. This shows that His Majesty is in full support of developing the SMEs in the country.

The Minister of Industry and Primary Resources, Pehin Orang Kaya Seri Utama Dato Seri Setia Awg Hj Yahya bin Begawan Mudim Dato Paduka Hj Bakar on 15th September 2011, also stated in his keynote address at Asia Inc Forum's Brunei Business Forum

It is the intention of His Majesty's Government through the Ministry of Industry and Primary Resources to spur the development of small and medium enterprises (SMEs) in Brunei by declaring and associating the present decade (2010-2020) as the "Decade to Spur SME Development in Brunei Darussalam"

"By declaring this, we will be engaging the various stakeholders in realising our aspirations of continued growth of our SMEs and an increase in the number and quality of SMEs penetrating regional, international or global markets,"

The Brunei Economic Development Board (BEDB) recently organised a roadshow to launch a guidebook called 'Assistance Schemes for Business Start-ups and SMEs' (Affendy 2012). "The guest of honour, Dato Paduka Awang Haji Ali bin Haji Apong, the Deputy Minister at the Prime Minister's Office and Chairman of BEDB, noted the government of His Majesty the Sultan and Yang Di-Pertuan of Brunei Darussalam through various agencies have introduced assistance schemes, both financial and non-financial, to promote innovative business start-ups, as well as to upgrade the capability and productivity of local SMEs to expand and grow domestically and internationally(Affendy 2012).

Standard Chartered Bank recently launch its strengthened SME offerings, which are aimed at meeting the changing needs of the fast-growing small and medium sized enterprises (SMEs) segment in the country, while reinforcing the bank's brand promise of being "Here for Good". It can be seen from the above that the government and the banks are offering a lot of help towards the SMEs to help them improve and grow.

2.2. IT in Brunei SMEs

SMEs in Brunei comprise 98% of businesses. There is a need for the use of IT in businesses -nowadays and there is a lot of support provided by the Brunei Government. His Majesty, the Sultan of Brunei, strongly supports the use of technology in both public and private sectors to help upgrade the level of nation's productivity.

His Majesty the Sultan and Yang Di Pertuan of Brunei Darussalam's in his 65th birthday speech stated that

“Another important factor towards sustainable development is upgrading the productivity in the public and private sectors in the use of latest technology and investment in research and innovation.

Through research and innovation, many ideas and thinking could be developed. Hence both research and innovation should have a strong foothold and be part of our economy, in line with our small population.”

→ A new subheading here

IT has been adopted and utilized all over the world. Gartner (2013) forecasted that worldwide IT spending will increase to US\$3.8 trillion in 2013. This shows that the increase utilisation of IT is for business benefit. Table 2 below shows that the IT spending has been increasing yearly.

Table 1 Worldwide IT Spending Forecast Billions of U.S. Dollars

	2012		2013		2014	
	Spending	Growth (%)	Spending	Growth (%)	Spending	Growth (%)
Devices	665	9.0	718	7.9	758	5.7
Data Centre Systems	141	1.9	146	3.7	152	4.0
Enterprise Software	279	3.5	297	6.4	316	6.7
IT services	878	1.5	918	4.5	963	4.9
Telecom Services	1,655	-0.4	1,688	2.0	1,728	2.4
Overall IT	3,618	2.1	3,766	4.1	3,917	4.0

(Source: Gartner March 2013)

IT adoption can be seen in different sectors of business. West and Berman (2001) showed IT further the use of revitalized management practices, of which revitalized management practices are defined in their study as those that promote increased openness, mutual support, and risk taking by employees and manager. They studied how the impact of information technology on organizational effectiveness was affected by the use of revitalized management practices. They also identified management activities in the use of information technology in local government.

Roy and Sivakumar (2007) states that in the advent of technological changes and e-commerce over the course of the last decade, the role of information technology in business-to-business markets has become crucial. Fiorito, Jarley and Delaney (2000) states that "IT adoption may be one of the most important areas of union innovation in decades, and may have substantial impacts on union outcomes and possibly on the nature of unions". In healthcare, Furukawa et al. (2008) states that "Health information technology (IT) is regarded as an essential tool to improve patient safety...". All these papers signify how important IT is to the world no matter what industry it's in.

Globalization of the economy is forcing many enterprises to change in order to survive. Many manufacturing SMEs need to develop new business strategies and employ new technologies (Caldeira & Ward 2003). There is a high penetration of IT into different areas of business especially at SMEs due to the increasing ratio of performance/cost of IT of which many SMEs use IT to perform a single task, while others may use IT to carry out activities across functional boundaries (Chuang, Nakatani & Zhou 2009).

An accounting information system (AIS) is the collection and recording of data and information regarding events that have an economic impact upon organizations and the maintenance, processing and communication of information to internal and external stakeholders (Stefanou 2006). A study conducted by Amidu, Effah and Abor (2011, p. 146) showed that "Accounting systems are responsible for analysing and monitoring the financial condition of firms, preparation of documents necessary for tax purposes, providing information to support the many other organizational functions such as production, marketing, human resource management, and strategic planning" and that "without such a system it will be very difficult for SMEs to determine performance, identify customer and supplier account balances and forecast future performance of the organization". Sam, Hoshino and Tahir (2012) shared similar view in terms of decision making. It is with difficulty for SMEs to make good decision without the use of technology such as computerized accounting system. Literature has shown that SMEs needs to adopt IT and the AIS to match the fast pace globalisation economies. IT adoption should be not seen as just a necessity but rather a requirement. IT is an important tool for decision-making and a performance and planning aid to help the SMEs better understand how the business operates. IT is to be regarded not only as data storage or a way of organising data but a communication medium such as using the Internet or social media to promote the company.

Seyal and Rahman (2003) found that 60% of all private companies in Brunei now have homepages. In another research by Seyal, Rahman and Mohammad (2007) , it shows that Brunei businesses seem to be eager to utilize the internet business techniques. From this review, it is foreseeable that there is a positive outlook of IT adoption among Brunei SMEs.

The literature so far is mostly based on ICT adoption for SMEs but as our study is more specifically for accounting information system for the SME's needs so there is not much literature on this topic.

3. Research Objectives

The objective of this paper is to investigate the level of accounting software usage by Brunei SMEs. The study is conducted due to two reasons. Firstly, there is very little

studies conducted and published in the literature on the usage of accounting systems or software. Another reason is the results from preliminary interviews show the limited use of accounting systems or software's by Brunei SMEs. Therefore the study is to investigate the reasons of adoption or no-adoption the systems or software. The study will also provide several recommendations to improve the usage of IT among Brunei SMEs

4. Methodology

Two methods were used in the study: semi-structured interview and survey. Semi-structured interview was employed as little is still known about the usage or adoption of technology. In this research, technology refers to the use of accounting information system or software.

The interview mostly contained open-ended questions, which were prepared by the researchers prior to the interview. In the interview, we gathered brief information about the company including the company's name, years of operation, number of employees and also interviewees' years of working experience.

We enquired about their issues or problems in financing, followed by the use of some basic financial reporting and planning (budgeting) records and procedures, and finally obtained suggestions from interviewees for improving the business performance and also what IT were implemented by SMEs in Brunei. We targeted the owners, managers or owner-managers of SMEs as subjects of the study because they are likely to have an overall view of the company. Additional rigour is given to the research findings by interviewing key officers in the accounts department of these participating firms.

The survey was developed after the interviews were completed analysed. The survey covers a range of questions that covers the SMEs basic financial reporting, planning and IT usage. This is randomly given to SMEs in the restaurant and catering services sector in Brunei.

This interview is well suited for exploratory research because it provides the richness of data since respondents can express themselves freely and researchers can gain the most information possible (Sankar & Jones 2007). The SMEs that were approach for the interview was based on a snowball sampling technique, of which 25 SMEs in the restaurant and catering sector were randomly selected and contacted from a list obtained from the Ministry of Industry and Primary Resources. Only 8 of the SMEs finally agreed and were interviewed. Creswell (1998, 2004) stated that an in depth interview with 10 or less in a case study was considered sufficient. The interviews were conducted at the convenience of the interviewees and were concluded in around an hour at most. Before the interview, the interviewees were briefed on the purpose of the study, as well as informed by the researchers that their anonymity was protected, and information given would be used strictly and solely for research purposes.

The interviews took place between January and March 2013. Out of the eight SMEs, six were categorized, as small enterprises and the remaining two were micro enterprises. These enterprises were fully managed by the owner-managers. The survey was done between May and June 2013. The survey was randomly delivered to SMEs in the

Chen & Hamdan

restaurant and catering services sector and collected back either immediately or after a few days depending on the time of the owner/manager of the SMEs.

Neither medium nor 'Ali Baba' enterprises were however present in the study. 'Ali Baba' enterprises are enterprises that not run by owners of the firms. The owners, usually Malay Bruneians, sell or rent out their business permits and licenses to foreigners, and allow the foreigners to manage the business (Rogue Economist 2008). Such practice shadows the number of true entrepreneurs in the country. Following from the interview, a survey was designed to further determine the usage or adoption of accounting software or IT. The survey was randomly distributed to SMEs in the restaurant and catering sector. The study is an exploratory study and study was not based on previous findings or models but more of understanding the current levels of IT usage in SMEs in the restaurant and catering services sector in Brunei and the reasons why it is so.

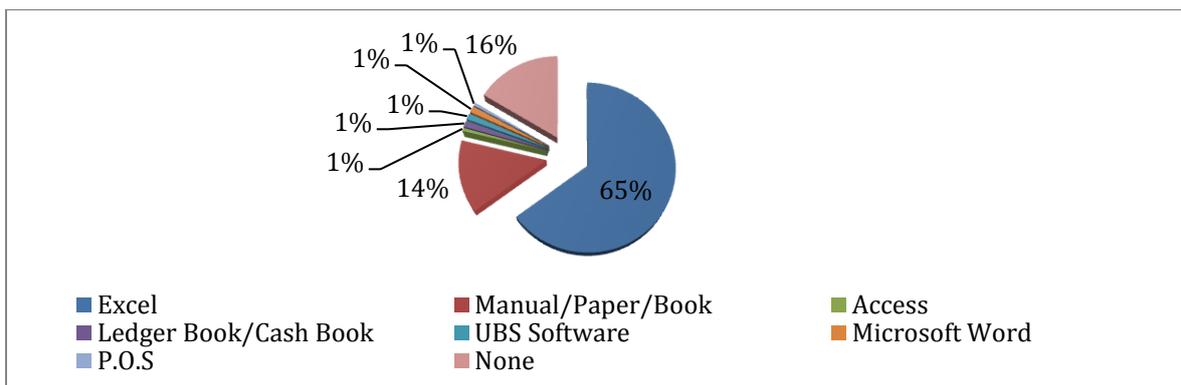
5. Results

Below is the data collected on the usage and none usage of accounting software.

Table 2 Usage of Accounting software/system

Excel	107
Manual/Paper/Book	23
Access	1
Ledger Book/Cash Book	2
UBS Software	2
Microsoft Word	2
P.O.S	1
None	27
Total	165

Figure 1 Usage of accounting software/system



From Figure 1 above, Microsoft Excel is the most commonly used software, which is 65% of the sample. Excel is a type of software that is readily available and easy to use for basic calculations and not proper accounting software or tool. This is followed by manual calculations, which accounts for 14% of the sample. Manual options such as writing in books or on paper include using ledger or cashbook. SMEs used ledgers and/or cashbook as they have better accounting background and so prefer to use this method.

Chen & Hamdan

Accounting information was recorded manually because the SMEs had limited knowledge in using PC or laptop. 16% of SMEs do not use any accounting software. The other SMEs use other software's for their accounting needs.

Around 2% of SMEs surveyed purchased proper accounting packages such as UBS. UBS is one of the more recognised small business accounting software's. Another is Point of Sales (P.O.S) system, which would usually come with functions such as inventory control and accounting. UBS and P.O.S are costly and not all SMEs can afford to purchase these software's. Around 16% of the SMEs do not do use any accounting systems or software due to their businesses being too small and they did not realise the benefits of using accounting systems or software in improving the business performance. As Excel is not accounting software, it would be about 98% of SMEs surveyed that are not using proper accounting software or systems. Most of them use what is available to them or what they know. Some are not even doing proper budgeting or income statement. Despite the Government's efforts and initiatives, some SMEs do not use proper accounting software/systems to manage their businesses. This could be attributed to a couple of reasons. There are as follows:

- No single focus point to go to. Too many different organisations in the government providing aid but it might not be relevant or appropriate for that particular type of SME.
- Misunderstanding that the process to apply for this type of aid will be too difficult. This is due to lack of clarity or transparency on the process that triggers the misunderstanding
- The ways of obtaining loan from bank might be too difficult or too troublesome for most SMEs. SME needs to provide a proper business plan and financial budgets and projections but the SME might not have the knowledge or the time to prepare it. The current training provided might not be enough to help them prepare meeting the bank's requirements

Results are new and not based on previous studies and it does shed some light on the current state of IT adoption in SMEs in the restaurant and catering services sector.

6. Discussion

IT is a requirement for businesses to grow and help them in making decisions. Based on the results of the study, we sum up the factors that contribute to the 2% usage of accounting systems or software in one model namely TIME model (see Figure 3). The model identified four factors:

Training – The Lack of training and skills. SMEs are unfamiliar with updated and sophisticated A/C software. Most individuals or SMEs use excel for basic accounting needs. This implies that as skills for usage of specialised Accounting Information Systems are needed to utilise the software. From the results of the interviews, it shows that training cost a lot of money and time but as the business is small it might not be viable due to shortage of staff and time need.

Chen & Hamdan

Infrastructure – The lack of infrastructure of IT resources such as hardware and software needed for the implementation of the accounting system. This shows that the investment expenses is might be too high for a start up.

Money – Cost of implementation and training might be a big obstacle for the SMEs. For SMEs that are just starting business, money for expenses might be quite restricted. The money could be spent on buying actual raw materials, rental of space and equipment for manufacturing product as this are the main focus of the SMEs to earn money. Money for IT expenditure might not be factored in or it could be put to a later date as the owners might find that the expenses is too high now or that IT is not needed at this particular time.

Employees – Shortage of employees with knowledge and skills to fully support the system. When the SMEs do implement the IT related equipment, it still depends on the human resources available to utilise it. This could depend on the availability of the skilled employees. The issue of turnover or employee retention in SMEs needs to be addressed by the company on how to better solved this issue so as not to lose employees who are skilled at the work.

From these factors, it can be seen that there are inter-related to each other. Money affects the utilisation of IT. This is due to the cost of purchasing the system, training the staff and having the employee to use it. Infrastructure purchase or availability will depend on the money that is available for it. Training will depend on the money available to purchase the system, employees available for to utilise the system and the training of the employees. Employees are related to the payment they get and this might be affected by the moving to other business due to higher pay.

As can be seen during the interview, companies which are utilising certain IT related systems seems to be more established and operate in a better environment as compared to those who don't use IT for their business.

Figure 2 T.I.M.E. model



Strengths and limitations

This study is the first of its kind to be conducted in Brunei. It shows an initial investigation into a small section of SMEs in Brunei usage of accounting software or systems. This study can be further expanded to incorporate more SMEs from different sectors. Results from the study however, cannot be generalised as it is conducted only in the restaurant and catering sector

Chen & Hamdan

Some of the weaknesses are the study based heavily on survey and so is subject to validity and it was just semi-structured interview done with a small number of SMEs to validate the findings. Therefore there is a need to do further investigation into this using a bigger sample to further validate the numbers.

This study underlines the usage of accounting software or systems by SMEs in Brunei. There are other factors that could drive people to use accounting software or systems such as business expansion, accounting for profit and loss to determine whether the business's financial position, stock management and competition.

7. Conclusion

SMEs are an important segment in any country. It usually constitutes the majority of businesses in a country. With the fierce competition in the world economy, SMEs should continuously look at ways to improve. From the study done, it is hoped that it would shed some light on the adoption of Accounting Information System or accounting systems/software and how SMEs can further develop their IT adoption.

As can be seen in the study done, it shows that Brunei SMEs still needs a lot of support in terms of adopting proper IT for the business even though there is a high percentage that does use some soft of basic IT, it does not entails that it would provide proper support for them as some of it use is very basic and in terms of this it could be comparative to some of the research done that shows that adoption is low such as the studies done by Tan et al. (2009) and (Chuang, Nakatani & Zhou 2009).

It is imperative for future studies to consider studying SMEs throughout the country and in different sectors. It would be interesting for future studies to include more variables such as benefits and barriers and more types of IT applications.

Further research should be conducted on a larger sample, if possible through all sectors to further support the results obtain from this study. The study can further develop a proposed IT implementation framework for Brunei SMEs.

Finally, this study is not without limitations. Although in-depth interview was conducted with a very small scale, it is still considered sufficient as the nature of the research is exploratory rather than theory-driven (Creswell, 2004). The study was based on qualitative data whereby sample selected was mainly the micro and small enterprises located in the Brunei-Muara district, the most densely populated district in the country. No medium enterprises however were covered in the study. Therefore, findings and conclusion from the study cannot be generalized to a larger population of Brunei SMEs.

References

- Affendy, S 2012, 'Guidebook to help business start-ups and SMEs', *Borneo Bulletin*, 6 Nov 2012.
- Amidu, M, Effah, J & Abor, J 2011, 'E-accounting practices among small and medium enterprises in Ghana', *Journal of Management Policy and Practice*, vol. 12, no. 4, pp. 146-55.

Chen & Hamdan

- Caldeira, MM & Ward, JM 2003, 'Using resource-based theory to interpret the successful adoption and use of information systems and technology in manufacturing small and medium-sized enterprises', *European Journal of Information Systems*, vol. 12, no. 2, pp. 127-41.
- Chuang, T-T, Nakatani, K & Zhou, D 2009, 'An exploratory study of the extent of information technology adoption in SMEs: an application of upper echelon theory', *Journal of Enterprise Information Management*, vol. 22, no. 1/2, pp. 183-96.
- Creswell, J 1998, *Qualitative inquiry and research design : choosing among five traditions*, Sage Publications.
- 2004, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research (2nd Edition)*, Prentice Hall.
- Fiorito, J, Jarley, P & Delaney, JT 2000, 'The adoption of information technology by US national unions', *Relations industrielles*, vol. 55, no. 3.
- Furukawa, MF, Raghu, T, Spaulding, TJ & Vinze, A 2008, 'Adoption of health information technology for medication safety in US hospitals, 2006', *Health Affairs*, vol. 27, no. 3, pp. 865-75.
- Gartner, I 2013, *Gartner Says Worldwide IT Spending on Pace to Reach \$3.8 Trillion in 2013*, <<http://www.gartner.com/newsroom/id/2394415>>.
- Huang, Z & Palvia, P 2001, 'ERP implementation issues in advanced and developing countries', *Business Process Management Journal*, vol. 7, no. 3, pp. 276-84.
- OECD 2008, *Removing Barriers to SME Access to International Markets*.
- Rogue Economist 2008, *Melayu Mudah Lupa* 2013, <<http://rogueeconomist.blogspot.com/2008/11/melayu-mudah-lupa.html>>.
- Roy, S & Sivakumar, K 2007, 'The role of information technology adoption in the globalization of business buying behavior: a conceptual model and research propositions', *Journal of Business & Industrial Marketing*, vol. 22, no. 4, pp. 220-7.
- Sam, MFM, Hoshino, Y & Tahir, MNH 2012, 'The adoption of computerized accounting system in small medium enterprises in Melaka, Malaysia', *International Journal of Business and Management*, vol. 7, p. 12+.
- Sankar, P & Jones, NL 2007, 'Semi-structured interviews in bioethics research', *Advances in Bioethics*, vol. 11, pp. 117-36.
- Seyal, AH & Rahman, MNA 2003, 'A preliminary investigation of e-commerce adoption in small & medium enterprises in Brunei', *Journal of Global Information Technology Management*, vol. 6, no. 2, pp. 6-26.
- Seyal, AH, Rahman, MNA & Mohammad, HAYHA 2007, 'A quantitative analysis of factors contributing electronic data interchange adoption among Bruneian SMEs: A pilot study', *Business Process Management Journal*, vol. 13, no. 5, pp. 728-46.
- Stefanou, CJ 2006, 'The complexity and the research area of AIS', *Journal of Enterprise Information Management*, vol. 19, no. 1, pp. 9-12.
- Tan, KS, Chong, SC, Lin, B & Eze, UC 2009, 'Internet-based ICT adoption: evidence from Malaysian SMEs', *Industrial Management & Data Systems*, vol. 109, no. 2, pp. 224-44.
- 2010, 'Internet-based ICT adoption among SMEs: Demographic versus benefits, barriers, and adoption intention', *Journal of Enterprise Information Management*, vol. 23, no. 1, pp. 27-55.
- The European Commission 2003, 'Definition of an SME', *Official Journal of the European Union*, no. 2003/361/EC.
- West, JP & Berman, EM 2001, 'The impact of revitalized management practices on the adoption of information technology: a national survey of local governments', *Public Performance & Management Review*, pp. 233-53.