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Barriers to Adopting E-commerce for SMEs in Developing Cities: An Exploratory Study in Hyderabad

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ABSTRACT

Research indicates that e-commerce offers a promising way for organizations to meet challenges of an ever-changing environment. However, the few available studies related to SMEs in developing Cities reveal that they lag behind and are skeptical about adopting the technologies irrespective of their effectiveness. Literature reveals some significant reasons which are contributing towards this reluctance. Various factors which are identified as causes for the reticence are broadly classified as Internal and External Barriers. The Internal Barriers can be resolved by the organizations themselves within the organization, But the External Barriers need to be addressed either by government or by collaboration of SMEs. This paper presents a model for barriers of adoption of E-commerce, which are collected from the available literature and the results of the exploratory pilot study and subsequent survey conducted. In addition to the barriers facing by the SMEs, this research will identify the relevant support required by SMEs in a developing city.

Keyword: E-commerce, SMEs, adoption, developing Cities, factors, barriers, model.

1. INTRODUCTION

The emergence of the Internet has allowed Small- and Medium-sized Enterprises (SMEs) to compete with global competitors both in domestic and international markets. The well-known fact is that e-commerce and Internet technologies can benefit an organization in a lot of ways. Developing cities have the potential to achieve rapid and sustainable economic and social development by building an economy based upon an ICT enabled and networked SME sector capable of applying affordable yet effective ICT solutions (UNDP, 2004). Information and Communication Technologies (ICT) play a prominent role in the field of commerce and trade nowadays. While the developed world forges ahead with e-transformation of

businesses, the developing world struggles to keep pace with emerging technologies. In a challenging global society, effective use of ICT is critical for the success of businesses especially SMEs. In the handbook by Heeks and Duncombe they have discussed the opportunities provided by ICT for SMEs in developing cities. SMEs, vital to the economy in any country, are very often recognized as an economy growth engine (Brouthers et al, 1998). They often occupy strategic positions in the economy, whereas large companies lack their flexibility. The SME sector plays a significant role in its contribution to the national economy in terms of the wealth created and the number of people employed (Rashid et.al, 2001). With the development of ICT and the shift to a knowledge-based economy e-transformation and the introduction of ICT is becoming an increasingly important tool for SMEs both to reinvigorate corporate management and promote growth of the national economy (UNDP, 2004).

Despite advances in IT and the acceptance by large organizations of such technologies, the same level of adoption is not evident among SMEs. This also suggests that SMEs face significant and unique challenges in adopting E-commerce. This low level of adoption, particularly impedes SMEs in developing Cities.

Literature reveals that many studies have been carried out in developed Cities to investigate the factors inhibiting adoption of E-commerce. These studies have looked at organizational perspectives, owner/manager perspectives and environmental perspectives.. Among the few research studies carried out in developing Cities are studies that investigate the facilitators/inhibitors affecting adoption. Predominantly these studies investigate the technological, organizational, physical and socio-economical environmental factors that hinder the adoption of ICT and e-commerce. The differences between developed and developing Cities (such as available infrastructure, social and cultural issues) does not support generalizing the findings for developed Cities to developing Cities. SMEs in developing Cities are faced with barriers that are specific to them, some more pronounced than would be in the case for SMEs in developed Cities. To understand the lack of, or slow uptake of E-commerce technologies, it is appropriate to look into the environment in which they operate. Due to the many constraints inherent to developing Cities they are faced with many barriers within the organization and also outside the organization. To gain a better understanding and assist them in overcoming the barriers it is imperative to examine these barriers in depth.

SMEs are hindered in adopting the technologies, due to the impediments that arise as a result of the many barriers within the organization that is the *Internal Barriers*. They are also inhibited by another set of impediments that arise due to infrastructure (technological, economic), political, legal, social and cultural barriers that exist in the country that is the *External Barriers*. For an SME to successfully adopt the technologies these two sets of barriers need to be addressed as SMEs are affected by both. The internal barriers that arise within the organization may be resolved within the organization, but they may have to work within the constraints of the external barriers, which are beyond their control and therefore may require government intervention. Hence, it is vital to understand the barriers that inhibit SMEs in developing Cities, how they could overcome these barriers if they are to take advantage of the benefits from E-commerce.

Even though there is now an interesting and growing number of studies addressing e-commerce adoption within the specific context of SMEs, little research has been conducted in developing Cities, especially Hyderabad, in relation to E-commerce adoption. Thus this paper seeks to fill this gap to help understand the factors that hinder the adoption of E-commerce by SMEs in developing Cities, and to explore how best they can be overcome. Hyderabad was chosen as the test bed as it is a developing country struggling with its economy, but on its way to an e-society.

The research findings from Hyderabad will prove to be useful for other developing Cities of a similar nature.

This paper will outline a review of current research into e-commerce technology adoption in developing Cities and how previous research has attempted to categorized the numerous barriers to adoption. Then it presents the framework established in this research. A description of the research methodology used to carry out the empirical study is given next. This is followed by a discussion of preliminary issues arising from the survey. The paper then discusses the study's conclusions, limitations and future areas of research.

2. THEORETICAL FRAMEWORK

This section discusses the SMEs in Hyderabad, barriers to E-commerce adoption in SMEs in general, and the barriers to adoption in developing Cities.

2.1. SMEs in Hyderabad

SMEs are extremely important to the economy of any country whether developed or developing. They play a critical role in economic development, and Sri Lanka is no exception.

Different Cities use different parameters to define SMEs. Some use the number of persons employed, amount of capital invested, amount of turnover or nature of the business. In Hyderabad there is no clear definition of an SME as government agencies use various different criteria to define SMEs. The main criteria used are the number of employees, the size of fixed investment, and the nature of the business and the sector. In Hyderabad, The National Development Bank (NDB), the Export Development Board (EDB), and Industrial Development Board (IDB) use value of fixed assets as the criterion for definition, the Federation of Indian Chambers of Commerce and Industry (FICCI) use the number of employees as the criteria. The World Bank defines enterprise size in Hyderabad based on the number of employees: those with less than 49 employees are considered small, those with 50-99 employees are medium-sized, and those with more than 100 employees are considered large. For this study we consider the following criteria to define the SMEs in Hyderabad.

Table 1
Definition of Terms: SMEs

Micro Enterprises	<i>Within SMEs Category, micro enterprises are enterprises with fewer than 10 employees</i>
Small Enterprises	Small enterprises have between 10 and 49 employees
Medium-sized Enterprises	Medium sized enterprises have fewer than 250 employees

SMEs in Hyderabad perform a strategic role by accounting for a very high percentage of the total number of business establishments. The 2014 mission statement of the International Labor Organization (ILO) reported that 75% of Hyderabad's labor force was employed in the SME sector (including the agricultural sector). A more recent World Bank survey on Hyderabad records approximately one million people working in the manufacturing sector while the Survey of Industries finds around 400,000 working in establishments employing 25 or more workers. These numbers suggest that SMEs contribute substantially to employment and income generation.

While the domestic market is the main outlet for SMEs in Hyderabad, they make a significant contribution towards exports. Even though the direct exports from this sector may not be that large, but SMEs play an important role as indirect exports. There are large number of SMEs that manufacture export products and services, with larger entrepreneurs coordinating such Arrangements and handling the direct exports. Electronics, construction material, and pharma products are examples of such arrangements involving SMEs which are sub-contracted by large-scale exporters.

It is an ambition of the Hyderabad to enjoy a leading position on the electronic highway. This ambition is implemented in the 'e-Hyderabad' program, which should provide Hyderabad SMEs 'a ramp to the digital highway' and stimulate e-commerce and e-business.

2.2. Barriers to E-commerce Adoption in SMEs

This section outlines recent literature on the barriers for adopting E-commerce by SMEs. Research investigating the barriers that affect adoption of E-commerce by SMEs have identified different factors which can be grouped into different categories. Different authors identified the factors relating to three major categories: owner/manager characteristics, firm characteristics, and costs and return on investment.

The owner/managers play an important role in decision making in SMEs. Hence it can be concluded that a number of factors that affect the adoption of e-commerce relate to owner/manager characteristics. Iacovou et al. found that the owner's lack of awareness of the technology and perceived benefits is a major barrier to a take up of e-commerce. The lack of knowledge on how to use the technology and the low computer literacy are other contributory factors for not adopting e-commerce. SME management are concerned about ROI, and are reluctant to make substantial investments.

The other factors related to the characteristics of the organization, which affect adoption of e-commerce. Iacovou et al. are found that the current level of technology usage within the organization affects the process of adoption of E-commerce. In another study by the OECD it was identified that: lack of awareness; uncertainty about the benefits of electronic commerce; concerns about lack of human resources and skills; set-up costs and pricing issues; and, concerns about security as the most significant barriers to e-commerce for SMEs in OECD Cities. Low use of e-commerce by customers and suppliers, concerns about security, concerns about legal and liability aspects, high costs of development and computer and networking technologies for e-commerce, limited knowledge of e-commerce models and methodologies, and unconvincing benefits to the company are among some factors found in another study. SMEs definitely have limited resources (financial, time, personnel). This "resource poverty" has an effect on the adoption of e-commerce, as they cannot afford to experiment with technologies and make expensive mistakes.

2.3. Barriers to e-commerce adoption in Developing Cities

It is revealed that less attention with SME e-commerce research has been paid to developing Cities with different economic, political, and cultural circumstances. Identifying the differences is an initial step to understanding the process of technology adoption. This is particularly important if governments believe that electronic commerce can foster economic development.

SME studies of electronic commerce issues in developed Cities. indicate that issues faced by SMEs in developed Cities can be totally different from those experienced by SMEs in developing Cities. Organizations adopting E-commerce in developing Cities face a number of challenges that are specific to

them and are more pronounced than would be the case in developed Cities. Some of these are the lack of telecommunications infrastructure, lack of qualified staff to develop and support e-commerce sites, lack of skills among consumers needed in order to use the Internet, lack of reliable mechanism for the delivery of goods and services, low bank loans penetration, computer and Internet penetration.

The Internet and e-commerce issues of SMEs in Samoa are consistent with the studies conducted in other developing Cities.

In a study of Hyderabad SME capability to adopt e-commerce conducted by the Hyderabad Business Development Centre in 2012 identified the key factors inhibiting the adoption of e-commerce by SMEs as lack of awareness about the benefits of E-commerce practices, the unpreparedness on the part of the SMEs management to adopt e-commerce practices as a business concept, lack of exposure to IT infrastructure, language barriers and lack of staff with IT capabilities, digital marketing was not seen as practical as there was limited use of Internet banking and web portals, as well as inadequate telecommunications infrastructure.

The above literature review of SME barriers for e-commerce adoption reveal that there are many significant factors, which affect the adoption of e-commerce technologies. These factors are grouped to develop a conceptual framework. This paper applies the below framework for this purpose. The barriers for SMEs in adopting E-commerce are broadly categorized into Internal and External Barriers.

Internal Barriers: A SME organization has control and ability over to change the internal factors within the organization. For example, lack of time or resources, and lack of awareness on the part of the management. Internal Barriers could be further categorized as *Individual* (owner/manager), *Organizational* barriers and *cost and return on investment*.

External Barriers: These are the barriers that cannot be resolved within the SME and they have no control over these, and organizations are compelled work within the constraints, for example inadequate IT or telecommunication infrastructure. Some of these could be addressed by the SMEs by working together, and they can get together irrespective of the industry sector to form some clusters to share expenses, resources and facilities, Alternatively, SMEs from the same industry sector can work together to address certain other external barriers where governmental intervention may be required.

3. RESEARCH METHODOLOGY

This research is investigating the barriers to adoption of E-commerce in SMEs in Hyderabad. The purpose of this study is to come up with a set of potential determinates that affect the adoption and set of potential supporting activities to overcome the barriers.

The goal of this study is to:

1. Extend the understanding and find empirical evidence of the barriers faced by the SMEs in adopting the technologies.
2. Determine the significance of the potential barriers which impacts the adoption.
3. Determine the significance of the supporting activities which will help overcome the barriers.

3.1. Research Approach

Given the lack of empirical research in this area especially in Hyderabad, an exploratory investigation was considered the most suitable approach. Hyderabad, a developing country, on its way to an e-society, is the chosen test bed. This research initially looks at SMEs in Hyderabad District, the capital and the springboard for all advanced technologies in Hyderabad. It also has the highest density of companies using ICT. A methodology suitable for Hyderabad could prove to be useful with other developing Cities. One criterion for organizations to be a part of the project is the size of the enterprise regarding the number of employees. So we considered the SMEs with 10 to 250 employees. Another criteria when the enterprises were selected was that they should not be completely immature regarding the use of E-commerce. It was also important that the organization had adopted at least one of the following areas of ICT: phone, fax, at least basic office packages (Word, Excel etc), Internet searching and browsing, e-mail, or a Web site.

The study was conducted in two stages: Preliminary Pilot Study, and then a questionnaire and interviews with SME intermediary organizations. The preliminary pilot interviews with 17 SMEs in the Hyderabad district. This provided direction to what barriers are imperative to the SMEs. The questionnaire of 45 SMEs and 6 interviews with intermediary organizations were conducted in May 2017.

3.2. Survey Instrument

Questionnaire was the main instrument of this exploratory study and was designed after going through a few similar research studies on SMEs in developed Cities. A survey instrument with questions using likert scales was developed and pilot tested to capture the information, reflections and perceptions of the SME owner/managers. Which was designed to investigate the barriers of E-commerce, as well as the support required by the organizations with the significance and influence of internal and external barriers. The survey which is divided into three sections: Section A focuses on collecting information about barriers which are internal to the organizations for not extending the use of E-commerce; Section B deals with barriers which are external to the organizations like infrastructure, political, legal & regulatory for not extending the use of E-commerce; Section C focuses on the both internal and external support required by the organizations.

The respondent SMEs were predominantly limited to liability companies, family businesses and partnerships (94.7%) and all organizations had computers, with 75.7% using a local area network, and 63.2% with a website. These companies primarily used the phone and email for communication with their customers and suppliers. Industry sectors represented included: Services (36.8%), Manufacturing (34.2%) and Wholesale Trade (10.5%). Most owner/managers were male (94.7%) and a majority were professionally qualified (52.6%).

4. SOME PRELIMINARY RESULTS

Based on the initial response to the survey, Table 2 identifies the top six internal barriers of 9 listed. Table 3 shows the external barriers, divided into Cultural, Infrastructure, Political, Social, and Legal and Regulatory Barriers. Respondents were asked to indicate their agreement with statements by circling a number of the Likert scale (1=strongly disagree to 5=strongly agree). The results shown returned a mean higher than 3.

Table 2
Internal Barriers to using or extending use of e-commerce technologies

	<i>Mean</i>	<i>n</i>	<i>%</i>
Employees lack required skills	3.37	18	60.0
e-commerce cannot give a financial gain	3.26	14	51.9
e-commerce not suited to products and services	3.07	14	50.0
e-commerce not suited to way business is conducted	3.03	13	44.8
e-commerce not suited to our customers and suppliers	3.03	12	41.4
Security concerns with payments over the Internet N = number of organizations	3.03	14	46.7

Interpretation of preliminary internal barriers. Internal barriers such as the lack of skills required and the lack of awareness of any return on investment are holding back SMEs from adopting E-commerce technologies. Also the fact that e-commerce is not suited to the way the business is conducted appears to be another inhibiting factor.

Table 3
External Barriers to using or extending use of e-commerce technologies

	<i>Mean</i>	<i>n</i>	<i>%</i>
Cultural Barriers			
• Lack of popularity for online marketing and sales	3.19	19	51.4
Infrastructure Barriers			
• Inadequate speed and quality of infrastructure	3.23	19	54.3
• Low Internet penetration in the country	3.24	20	54.1
Political Barriers			
• Unstable economic climate in the country	3.16	18	50.7
• Changing regulations with each government change	3.21	20	52.6
Social Barriers			
• No one-stop shop facility for services	3.37	21	60
• Lack of information on e-commerce	3.32	23	62.2
• Senior management in other sector lack ICT knowledge	3.06	15	44.1
Legal and Regulatory			
• Little support and policies for SMEs from government and industry associations	3.64	27	75
• Inadequate legal framework for businesses using e-commerce	3.47	21	62.8
• No simple procedures and guidelines	3.38	24	64.9
• Lack of suitable software standards	3.21	20	52.6
N = number of organizations			

Interpretation of preliminary external barriers.

A majority of the respondents agree that political barriers have a major impact on every advancement or expansion be it technology or otherwise. The SMEs are hesitant to invest, probably due to a fear of changing policies to suit changes of government has been evident.

Table 4
Internal Support required for SMEs to use or extend use of e-commerce technologies

	<i>Mean</i>	<i>n</i>	<i>%</i>
Awareness building and education in E-commerce	3.83	30	88.2
Guidance in overcoming risks associated with implementation	3.65	26	72.2
Assistance with guidelines for appropriate hardware and software	3.5	26	72.2
Advice and direction for E-commerce <i>n</i> = number of organizations	3.39	24	66.7

Table 5
External support required for SMEs to use or extend use of e-commerce technologies

	<i>Mean</i>	<i>n</i>	<i>%</i>
Improve computer and Internet diffusion in the country	3.97	34	97.1
Provide financial assistance to SMEs	3.94	34	94.4
Provide tax incentives	3.92	34	94.4
Improve national infrastructure	3.88	31	91.2
Improve low bank account and credit card penetration in the country	3.82	28	82.4
Government and industry associations to take leadership and promotion	3.71	29	82.9
Role			
Improve collaboration among SMEs	3.49	24	68.6
Enforce suitable software standards <i>n</i> = number of organizations	3.46	25	67.6

The above preliminary results indicate that if the SMEs are provided with the necessary supporting activities, it would facilitate the SMEs in adopting E-commerce technologies.

5. DISCUSSION

The data collection was completed in May 2017 and is in the process of being analyzed statistically. One observation made by the researcher during the various visits to SMEs for data collection was that the companies are resigned to the fact that they have to live with many limitations with regard to E-commerce. However, they do admit that E-commerce could be beneficial to their organizations. Interestingly, the question from the majority of the responding organizations was ‘What more can we achieve by extending the use of E-commerce?’

It is possible to draw some conclusions from the initial findings of this research study. The barriers both internal and external predominantly point to the lack of skills and a lack of awareness. A process of education and training of the owner/manager can overcome these barriers. Education and training is viewed as being crucial to addressing the lack of readiness of SMEs in adopting and developing their electronic business capabilities

The SMEs agree that they are plagued with many barriers both internal as well as external. Whether internal or external, they all hinder the process of adoption. It is therefore, perceived that an attempt has to be made to overcome these barriers first. The SMEs seem to agree that with the internal and external activities for support the barriers could be overcome. Priority with external support activities, particularly legal and regulatory, demands direct intervention from the government for solutions. Intervention from industry is also considered necessary for the provision of external support.

As mentioned before the objective of this study was to investigate and determine the significance of the barriers faced by the SMEs in adopting technologies and to further investigate the significance of the supporting activities. Determining the barriers and understanding the support the SMEs need in order to overcome the barriers is of paramount importance to facilitate take up of E-commerce. Development of a framework (methodology) to address this requirement is crucial to facilitate adoption for SMEs and e-transform their organizations successfully.

6. CONCLUSION

The preliminary study helps draw some conclusions. Adoption of E-commerce in SMEs developing Cities is different from the developed Cities. The SMEs in developing Cities fall behind with adoption due to barriers, both internal and external, prominent and inherent in a developing country.

And other factor that emerged from this study was the level of E-commerce adoption currently practiced by participants, who were eager to go further. This observation, again confirms findings of previous research where lack of awareness has been found to be major issue. We found that most SMEs are aware the market will become more dynamic, competitive, and global, making it imperative to use ICT and e-commerce in business. With hardly any research in Hyderabad to determine SMEs' barriers for adoption of E-commerce, this study has shown that while the SMEs agree that adoption is essential in today's business, they are hindered from adoption, as they are plagued with many constraints, some of which are more specific to developing Cities like Hyderabad. Therefore, the next step is to find ways to overcome these barriers and construct a framework (methodology) that will facilitate the transformation of SMEs to adopt E-commerce.

The survey reported in this paper, attempts to provide more in-depth information about the factors/ barriers in the context of SMEs in Hyderabad. The initial focus, therefore, was to ascertain the barriers and to determine supporting activities necessary for SMEs to help facilitate technology adoption. Currently the existing literature seems to concentrate more on the facilitators and barriers on IT adoption with in SMEs. However there is lack of research on strategies for SMEs in developing Cities to overcome the barriers and successfully e-transform their organization. The next step therefore will be to develop a practical framework, efficient in use, for the SMEs to e-transform their organizations.

References

- Akkeren, J. & Cavaye, A.L.M. (1999). Factors Affecting Entry-Level Internet Technology Adoption by Small Business in Australia: An Empirical Study. Proceedings of the 10th Australasian Conference on Information Systems. Wellington, New Zealand, 1-3 December.
- Anigan, G. (1999). "Views on Electronic Commerce." International Trade Forum, Issue 2, 23–27.
- Bingi, P., A. Mir, and J. Khamalah. (2000). "The Challenges Facing Global E- Commerce." Information systems Management 17(4), 26–35.
- Chau, S.B. & Turner, P. (2001). A Four Phase Model of EC Business Transformation amongst Small to Medium Sized Enterprises. Proceedings of the 12 Conference on Information Systems. Coffs Harbour: Australia.
- Cloete, E., S. Courtney, and J. Fintz (2002). "Small Businesses' Acceptance and Adoption of E-Commerce in the Western-Cape Province of South-Africa." Electronic Journal on Information Systems in Developing Cities 10(4), 1–13, <http://www.ejisdc.org>.
- Cooray, M.N.R. (2003) Walk through Cleaner Production Assessment in SME's - A Case.