

THE ROLE OF INFORMATION TECHNOLOGY IN SUPPORTING SMALL AND MEDIUM-SIZED ENTERPRISES IN THE SOUTH OF VIETNAM

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ABSTRACT

The purpose of this study is to analyse the role of information technology (IT) in supporting small and medium-sized enterprises (SMEs) in the South of Vietnam. Based on interviews with entrepreneurs in the provinces, it was found that SMEs in the South of Vietnam have started using this new technology to improve their businesses. Most of them are using email and Internet services to communicate with their business partners and friends. Internet services are also being used to search for product related information. Several positive effects from using IT were reported, such as increased sales, access to new customers and markets, and improved efficiency of operations. Lack of financial resources and lack of computer skills were reported as the major barriers for accessing IT services, while language barriers and lack of time only were mentioned by a few of the entrepreneurs. However, lack of time was also stated as a barrier to achieving the needed training, thus also having an indirect negative effect on IT adoption and use. These results indicate that providing funding schemes and access to IT training programs are of key importance for stimulating human resource development through further adoption and use of IT services among SMEs in the South of Vietnam

KEYWORDS: SMEs, IT, South of Vietnam

1. INTRODUCTION

In the globalization stage, governments world-wide recognised the importance of small businesses and their contribution to economic growth, social cohesion, employment, and regional and local development (OECD, 2018). As globalisation and technological change reduce the importance of economies of scale in many activities, the potential contribution of smaller firms is enhanced. However, many of the traditional problems facing small businesses - lack of financing, difficulties in exploiting technology, constrained managerial capabilities, low productivity, and regulatory burdens - become more acute in a globalised environment.

Information technology (IT) is playing an important role in economic and social development. Research on IT and development has found that without incorporating IT in development plans, there is little chance for countries or regions to develop (UNCTAD, 2012).

The use of IT has made it possible to accumulate and access different information and data sources. Therefore, access to IT is important for any development process. As the access to and use of IT is directly linked to social and economic development, it is therefore important to ensure that all groups of the population, including entrepreneurs, understand the significance of these technologies and use them (Hafkin and Taggart,

2001). Since entrepreneurs constitute a significant part of the workforce in most economies (United Nations, 2004), they should have access to national and world-wide information exchange forums that will enable them to share ideas, proposals, documents and information (APC, 2005).

SMEs globally have stated that access to information, especially market information, is their first priority in accelerating the growth of their businesses. The major information needs of small businesses in developing countries are for information about supply (obtaining inputs), demand (new and existing customers), finance (business management and obtaining additional finance), the environment in which they are doing business, and skills. It is assumed that IT could work well for entrepreneurs entrepreneurs, who in many developing countries account for the majority of owners of small, medium and micro enterprises, as it allows them to save time and costs while trying to reach out to existing and new customers.

However, lack of knowledge and access to business information has made entrepreneurs in small-scale businesses unable to compete with other established businesses worldwide. Among the reasons is that in developing economies, most of the entrepreneurs operate along traditional ways of organising production and marketing. Due to this pertinent feature, business information that comprises knowledge of suppliers and customers, competitors and business partners, as well as of technical and managerial aspects of business operation, and of relevant qualities of the business environment such as laws and regulations, is largely not available.

Studies have also shown that getting reliable statistics on entrepreneurs's use of IT in developing countries is difficult. A study by Hafkin and Taggart (2001) shows that in many developing countries, less than one percent of the population has Internet access. By regions, entrepreneurs constitute 22% of all Internet users in Asia, 38% in Latin America, 6% in Middle East, but there were no regional figures of Internet users by gender in Africa. Another study by UNCTAD (2002) revealed that there is very little research and documentation on the impact of IT and e-commerce on entrepreneurs in developing countries. And whatever data and statistics exist, they are often not disaggregated by gender. The gender gap in the digital divide is of increasing concern because entrepreneurs within developing countries are in the deepest part of the divide, than are the men whose poverty they share (Hafkin and Taggart, 2001). Thus, there is a great need for empirical studies on the use of IT among entrepreneurs in developing countries.

Despite the many benefits accruing from the use and application of IT in entrepreneurship growth and development, there is little deployment or access to such technologies in this country, especially in the rural areas. In Vietnam as in many developing countries, the IT industry is still in an early stage. IT users in Vietnam are mainly found in urban areas, where this technology is accessed through Internet cafés, the commercial and administrative capital, and Arusha, the tourist capital of the country. By year 2012, there were 50 licensed Internet Service providers, providing between

20,000 and 25,000 dial-up accounts in the country, with an additional number of users via companies, government LANs, and Internet cafés .

One of the emerging features of IT in Vietnam is the involvement of SMEs in this new industry. SMEs are increasingly establishing new businesses in this industry, such as Internet cafés and computer training centers, and are also using IT services to improve their businesses. Also, entrepreneurs in other industries such as the garment business use IT services to improve their products and enter new markets. Overall, it is estimated that about a third of the GDP in Vietnam originates from small and medium sized enterprises (SMEs), with micro enterprises (1-4 employees) operating in the informal sector alone consisting of more than 2.0 million businesses engaging about 5 million persons, i.e. about 20 % of the Vietnam labour force (Vietnam Ministry of Industry and Trade, 2012).

We interviewed 125 SMEs in the provinces of the South of Vietnam, focusing on their use (or non-use) of IT services for supporting their business, and perceived barriers in the adoption and utilisation of IT services. We found that most of these SMEs were using IT services for improving their business, such as searching for information on the Internet and communicating with business partners through email. This was stated to result in positive effects such as increased sales, access to new customers and markets, and improved efficiency of operations. Lack of financial resources and lack of computer skills were reported as major barriers for accessing IT services.

2. LITERATURE REVIEW

2.1 Entrepreneurship Concept

Entrepreneurship, as originally conceived by Schumpeter (1934), is crucial to economic development. Fula-Lai Yu (1997) argued that, in order to explain economic development in a country, it requires a dynamic theory, which centres on some human agency, i.e. theory of entrepreneurship.

Throughout the theoretical history of entrepreneurship, scholars from multiple disciplines in the social sciences have struggled with a diverse set of interpretations and definitions to conceptualise this concept of entrepreneurship. But, presently there is no single definition of entrepreneurship that is accepted by all economists or that is applicable in every economy.

According to Schumpeter (1934), an entrepreneur is an economic agent who performs the service of innovating, of introducing changes that radically change the framework of the economic system. Entrepreneurs are people who innovate; this includes the introduction of a new product, introduction of new method of production, the opening of new market, the utilization of some new source of supply for raw material or intermediate good and the carrying out the new organisation of any industry (Schumpeter, 1934). Schumpeter regarded an entrepreneur as the prime mover in economic development, and his/her function is to innovate by doing new things or things that are already being done, in new combinations. He continued saying that an

entrepreneur is a person who wants to educate consumers and teach them to want new or different things.

Greve and Salaff (2003) came with definition, which says, "An entrepreneur is the one who owns, launches, manages, and assumes the risks of an economic venture".

Basing on the definition of entrepreneurship by Schumpeter, very few new businesses have the potential to initiate Schumpeterian theory of creation-destruction, especially in developing countries. The majority of new businesses enter existing markets. Bygrave (1996) came with a broader definition of entrepreneurship than Schumpeter's; this definition includes everyone who starts a new business. He defined an entrepreneur as the person, who perceives an opportunity and creates an organization to pursue it, and entrepreneurship as the process, which involves all functions, activities, and actions associated with perceiving opportunities and creating organisations to pursue them (1996:2).

2.2 Entrepreneurship and Economic Development

Over the last decade, the importance of the entrepreneur as the driver of economic growth has received increasing attention. Several governments throughout the world have launched various initiatives designed to promote entrepreneurship and economic growth (Reynolds et al. 1999). The importance of the entrepreneurship in economic development has also been realized by the key international aid organizations. The World Bank, the United States Agency for International Development (USAID) and the International Monetary Fund (IMF) have all commissioned studies and undertaken initiatives to understand and promote entrepreneurship (Boettke & Coyne, 2009). In 2012, the OECD (Organisation for Economic Co-operation and Development) launched a program known as, *Fostering Entrepreneurship*, in order to better understand the role of entrepreneurs in the economic development at large.

According to Leibenstein (1995) there are two simultaneous steps in the process of economic development: economic growth and market transformation. In order for a country to increase its per capita income, it must have a "shift from less productive to more productive techniques per worker". This shift is the process of market transformation, and it can be manifested in the creation of new goods, new skills, and new markets. Entrepreneurship is the driving force behind both growth and transformation. Without entrepreneurs, there would be no new innovation or creative imitation in the marketplace; hence, the transformation to new production methods and goods in the country would not take place. As entrepreneurs transform the market, not only they provide new goods and services to the domestic market, but they also provide a new source of employment to the economy (Praag, 1995). Therefore, entrepreneurship is a necessary ingredient in the process of economic development; it both serves as the catalyst for market transformation and provides new opportunities for economic growth, employment, and increased per capita income.

Kirzner (1973) recognized also the role of entrepreneurship in economic development. He said that without entrepreneurship, that is, without alertness to the new possibility, the long-term benefits in a country might remain untapped. He continues saying that, alertness to profit opportunities by entrepreneurs is the central principle of entrepreneurship. Entrepreneurs by responding profit opportunities; they transform opportunities into wealth, which benefit the whole society.

There is evidence that fast-growing regions usually have high rates of enterprise start-up. According to Reynolds, et al (1994), they found that high business birth rates precede increased regional growth.

There also is growing evidence that, there is a significant causal relationship between entrepreneurship, economic growth and poverty reduction. By fostering the development of SMEs to help people employ themselves and others, this will offer the best hope for breaking the poverty cycle in many developing countries and disadvantaged communities. SMEs account for over 95% of enterprises and 60%-70% of employment and generate a large share of new jobs in emerging economies. The entrepreneurial activities can impact positively on local economies in different way; first is the creation of employment, for owner-managers and employees, and the consequent increases in tax revenue and incomes, with subsequent income multiplier effects for the surrounding community as small and micro enterprises are more likely to employ local people. Enterprise development will also create indirect employment effects over time as workforce skills rise with periods in self-employment. Second, entrepreneurial activities improve local provision of services, such as retail facilities. Apart from the enhanced availability of such services - the scarcity of which characterises many distressed communities - increased local services supply can help retain incomes in the locality.

2.3 Characteristics of Entrepreneurs

Although we have mentioned above that, there is no single definition of entrepreneurship that is accepted by all economists, but different scholars have posited different characteristics that they believe are common among most entrepreneurs.

Entrepreneurs have been identified with the function of uncertainty-bearing or risk takers. One school of thought on entrepreneurship suggests that the role of the entrepreneur is that of a risk-bearer in the face of uncertainty and imperfect information. It is argued that an entrepreneur will be willing to bear the risk of a new venture if he believes that there is a significant chance for profit (Burnett, 2000). It has also been recognised that entrepreneurs are good at managing in situations where risk is high; that is, when faced with a situation of high uncertainty they are able to keep their heads, to continue to communicate effectively and carry on making effective decisions (Wickham, 1998).

Another modern school of thought argued that entrepreneurs are innovators. Kirzner (1985) suggests that the process of innovation is actually that of spontaneous "undeliberate learning". Thus, the necessary characteristic of the entrepreneur is

alertness, and no intrinsic skills-other than that of recognizing opportunities-are necessary. Other economists in the innovation school claim that entrepreneurs have special skills that enable them to participate in the process of innovation. Along this line, another necessary characteristic of entrepreneurs is that they are gap-fillers (Leibenstein, 1995): They have the ability to perceive where the market fails and to develop new goods or processes that the market demands but which are not currently being supplied. Therefore, Leibenstein (1995) posits that entrepreneurs have the special ability to connect different markets and make up for market failures and deficiencies. Entrepreneurs have the ability to combine various inputs into new innovations in order to satisfy unfulfilled market demand.

Apart from that, entrepreneurship is believed to be a driving force behind organizations. Many economists today, but certainly not all, believe that entrepreneurship is by itself the fourth factor of production that coordinates the other three factors (i.e. land, labour, capital) (Arnold, 1996). That is, entrepreneurs are coordinators of resources. By creatively organizing, entrepreneurs create new commodities or improve "the plan of producing an old commodity" (Burnett, 2000).

Entrepreneurs are also identified to have internal locus of control. The concept of locus of control refers to the perceived control over events. Internal locus of control implies that, the individual believe that he or she has influence over outcomes through ability, effort or skills. In contrast, external locus of control means the individual believes that forces outside of his or her control determine outcomes. It is clear that individuals with an internal locus of control are more likely to engage in entrepreneurial activities (Beugelsdijk & Noorderhaven 2004).

Therefore, we can conclude that in general, entrepreneurs are risk-bearers, coordinators and organizers, leaders, and innovators or creative imitators. These are just some of the characteristics found in most entrepreneurs, the list is not fully comprehensive, and it gives us knowledge on why some people become entrepreneurs while others do not.

2.2 Information Technology Opportunities for Developing Countries

The potential benefits for developing countries from adoption and use of IT is highly focused and documented. By using technology to access worldwide demand, businesses in developing countries can operate on a larger, more efficient scale, and then become more competitive with firms in industrialized countries. Even small businesses can expand their activities; for example, a small business that serves a single niche market in a developing country can increase its size by using communication technologies like the Internet to identify similar niche markets in other countries (Hafkin and Taggart, 2001).

SMEs in developing countries can also use networking technologies to partner with the growing number of multinational firms that outsource many activities to third world countries. Or, alternatively, they can use communication networks to link their operations together, allowing them to function and compete as if they were much larger

entities (Alkadi et al., 2003). Equally important, developing countries' businesses, by operating globally, will have access to greater financial resources and opportunities for technology transfer (Sheats, 2000). In addition to providing owners of small businesses with possibilities for accessing information to facilitate their business, and generating and disseminating information about it. Information technology also improves business process efficiency and productivity by reducing operational costs, and decreasing material, procurement and transaction costs, thus resulting in lower prices for intermediate and finished goods (UNDP, 2001).

The range of entrepreneurs's economic activities in developing countries is very broad. It includes formal sector and informal sector employment, as well as self-employment in farming, trading, and crafts production. There are numerous possibilities for IT to improve entrepreneurs's economic activities in these areas, and in all of them increased access to information is probably the greatest benefit that IT can bring (Hafkin and Taggart, 2001). Information technology provides also a number of unique opportunities for entrepreneurs in developing countries. In farming for example, with the paucity of information resources available to rural entrepreneurs farmers, IT (the fastest and cheapest means of information exchange) has great potential to help meet the needs of rural entrepreneurs farmers and to benefit rural communities. Timely access to market information via communications networks will help these entrepreneurs make decisions about what crops to plant and where to sell their products and buy inputs (UNDP, 2001). Use of IT also can provide up-to-date information on markets to producers, thus increasing their bargaining power (Bhatnagar, 2000).

However, despite the promising opportunities offered by IT for generating new business, empirical evidence shows how the expected potential from IT may be difficult to realize, resulting in limited impact. For example, a study of the garment and horticulture sectors in developing countries, showed that very little business with new firms was being generated by using Internet-based, business-to-business (B2B) e-commerce (Humphrey et al., 2003). Instead, the main effect of e-commerce was to enhance the relationships between existing partners, and reducing communication costs through email. Among the factors limiting the use of Internet services were inadequate and costly domestic telecommunication infrastructures and slow connection speeds.

2.3 Factors necessary for SMEs access to information technology

Information technology holds the promise of enabling unlimited access to information irrespective of a person's social situation. The following factors have been found to affect entrepreneurs's access to IT: education, language, financial resources, cost, location, culture, and skills (Hafkin and Taggart, 2001; UNCTAD, 2002).

The most important factor in order for everyone to access IT is basic education in how to read and write, e.g. in order to read and compose simple messages on the computer, and navigate the Internet. Since most of the entrepreneurs in developing countries are illiterate, they are more likely than men to lack basic computer skills, which would

enable them to take advantage of the new global communication opportunities. In order to use more sophisticated IT applications, entrepreneurs need computer knowledge on specific computer programmes. Therefore, gaining sufficient skills for application of IT is one of the important determinants of entrepreneurs's chances for equal participation in IT (Hafkin and Taggart, 2001).

Another important factor for accessing IT is language. This is important because the most used language in computer programmes is English. Not all countries have managed to translate the computer language into different local languages. Therefore, the use of English language tends to exclude access to the majority of the world's population who speak other languages. This factor significantly impacts entrepreneurs and other marginalized groups who do not have formal schooling that would allow them to learn international languages. Hafkin and Taggart (2001) argue that the Internet's present English language dominance demonstrates the heavy flow of information from the U.S. and Western Europe to developing countries, and makes an exchange of information between the non-elites in the two spheres very difficult.

In order to use IT, one needs to have either one's own personal computer or access to an Internet café. Private, home-based use of computers and Internet is currently available only to educated people in developing countries. In this respect, small business entrepreneurs need sufficient capital in order to deploy IT benefits for supporting their businesses. However, the truth of the matter is that, for most entrepreneurs, the source of the necessary financial capital is the micro credit schemes or special institutions in developing countries that lend specifically to entrepreneurs who have no collateral, and who work mostly in the informal sector (UNCTAD, 2002). Therefore, one needs to have enough capital to buy a personal computer or to buy services from an Internet café.

The geographic location of public Internet centers is another important factor that affects SMEs' access to IT in developing countries.

3. RESEARCH METHODOLOGY

In the recent researches, there is yet limited research on the adoption and use of IT among SMEs in developing countries. Thus, our study was of an exploratory nature (Yin, 1994). We chose a qualitative approach for being able to collect contextual data related to the phenomenon in focus (Strauss and Corbin, 1990). During 2019, semi-structured interviews were conducted with 30 SMEs in the city of Can Tho (15 interviews); and Soc Trang province (15 interviews). These SMEs were selected through snowball sampling (Miles and Huberman, 1994), as it was not possible to get the list of all SMEs through the municipality council office. The interviews lasted about 30 minutes each, and were conducted at the respondents' place of business, allowing the interviewees to express themselves freely regarding their use (or non-use) of IT services, and its impact on their businesses. A semi-structured interview guide was used, consisting of several open-ended questions covering the following areas:

personal particulars of entrepreneurs entrepreneurs, background before starting the business, initial capital, performance of the business in terms of sales revenue and profits, use of IT services, the effects of using IT in their businesses, and obstacles encountered in business and in accessing IT services. Other secondary sources were also used, like Vietnam ICT policy documents.

The interviews were transcribed and categorized into a set of factors related to the adoption and use of IT services among the SMEs entrepreneurs, and the effects from this on their businesses.

4. RESULTS AND DISCUSSION

In this section we present and discuss the results from our study. These are organized under four areas: the profile of the SMEs interviewed, characteristics of their businesses, their use of IT services, and perceived barriers to accessing IT services.

4.1 Characteristics of Entrepreneurs

Table 1 presents profile data of the SMEs. The age of the SMEs ranged from 23 to 55 years, with median of 40 years. Most of the SMEs owners interviewed were married. Fifty-six percent of the respondents had been previously employed before starting their own businesses. This can be related to the educational level of SMEs, as the majority (68 %) had above college level, i.e. they had specific professional and/or academic skills acquired in colleges or universities.

Table 1: Profile of Entrepreneurs Entrepreneurs

| Indicators | Results [N=25] |
|---------------------------------|--------------------------------------|
| Age (median) | 40 years |
| Marital status | Married: 18 (72%) Single: 7 (28%) |
| Education | |
| - High school | 3 (12%) |
| - College education | 9 (36%) |
| - University education | 8 (32%) |
| - Graduation | 5 (20%) |
| Previous work experience | |
| - Previously employed | 14 (56%) |
| - Not previously employed | 11 (44%) |

4.2 Business Characteristics

Table 2 presents an overview of characteristics of the businesses of the SMEs interviewed. A dominant and frequently mentioned characteristic of entrepreneurs owned businesses is that they are small in size, as measured by the number of employees (The enterprise law, Vietnam). This was confirmed in this study, where the majority of the SMEs (68 %) had less than 5 employees, and an average of 3

employees. The largest businesses in this interview sample was a computer company with 12 employees, and a business making batik die and sweaters with 10 employees. The number of years since startup of the business ranged from 1 to 30, with 8 years as the median. The businesses studied fall under three categories: Agriculture related businesses; IT related businesses; and other businesses (for example hair dressing salon, making dry flowers, and handicraft activities). Of these, we mainly targeted agriculture related businesses, as this is a typical SMEs in Vietnam (e.g. agri products and aquaculture products). In addition, IT related businesses represent a new industry in Vietnam, and the businesses in this category in our interview sample included Internet cafés, computer training centres, a computer company, and a business offering photocopy and secretarial services. The purpose was to study the use of IT services among SMEs within these two industries.

The study shows that the SMEs have a limited market penetration, usually confined to their local areas (88%). Only a few of the SME had managed to enter international markets (12%).

Table 2: Business Characteristics

| Indicators | Can Tho city [N=15] | Soc Trang province [N=15] | Results total |
|---|------------------------|------------------------------|------------------|
| Average number of employees | | | 8 |
| Length of time operating business (median) | | | 8 years |
| Type of business | | | |
| - Agriculture related businesses | 7 | 5 | 48% |
| - IT related businesses | 4 | 3 | 28% |
| - Other businesses | 4 | 2 | 24% |
| Markets | | | |
| - Local markets | 13 | 10 | 92% |
| - Outside the city | 6 | - | 24% |
| - International markets | 3 | - | 12% |
| Start-up capital | | | |
| - Own or family savings | 10 | 7 | 68% |
| - Bank loan | 1 | - | 4% |
| - Micro finance institutions | 1 | - | 4% |
| - Other sources | 3 | 3 | 24% |
| Business performance | | | |
| Sales per month - Average | | | 500,000,000 VND* |
| Profit per month - Average | | | 100,000,000 VND* |

*US\$ = 23,120 VND (by 2020)

4.3 Use of IT Services

Table 3 provides an overview of the overall use of IT among the SMEs interviewed, both in general and related to the start up process of their business.

Table 3: Use of IT services

| Indicators | Can Tho city [N=15] | Soc Trang province [N=15] | Results total |
|-------------------------------|---------------------|---------------------------|---------------|
| Use of any IT services | 15 | 4 | 76 % |
| Use of IT in start up process | 3 | 1 | 16 % |

An increasing number of SMEs in the South of Vietnam are taking advantage of IT services. Some of them have started IT related businesses, and some are using IT services to improve their business performance. In this study, 76% of the SMEs interviewed were using IT services. The nature of these services is reported in Table 4. The higher proportion of IT users in the Can Tho city interview sample compared to the Soc Trang province sample can be explained by the snowball sampling strategy applied for selecting entrepreneurs. In Can Tho city, the first entrepreneur interviewed was a non IT user, and thus less capable of referring to other SMEs using IT. Only 16 % report having used IT services during the start up process of their business. Among these, examples of IT use include searching for information on raw materials and equipment (e.g. computers for Internet café, and washing machines for dry cleaner). Possible causes for the low usage of IT during start up are discussed in the next section, related to barriers to accessing IT services. Table 4 summarizes characteristics related to the access and use of IT services among the SMEs currently using IT.

Table 4: Characteristics of IT use among SMEs

| Indicators | Can Tho city [N=15] | Soc Trang province [N=15] | Results total |
|---------------------------------------|---------------------|---------------------------|---------------|
| Access to IT Services | | | |
| - Own computer | 5 | 4 | 47% |
| - Internet coffee shops | 10 | - | 53% |
| Purpose of using IT services | | | |
| - Email only | 1 | - | 5% |
| - Word processing only | - | 1 | 5% |
| - Email and Internet | 7 | - | 37% |
| - Email, Internet and word processing | 7 | 3 | 53% |
| Type of information accessed | | | |
| - Business related information | 11 | 3 | 74% |
| - Other information | 4 | 1 | 26% |
| Communication with | | | |
| - Customers/suppliers/partners | 5 | 2 | 37% |
| - Friends and family | 4 | - | 21% |
| - Both | 6 | 2 | 42% |
| Effects of using IT* | | | |
| Sales increase | 11 | 2 | 68% |
| Access to new customers | 8 | - | 42% |
| More efficient operations | 9 | 2 | 58% |
| Cost reduction | 2 | - | 11% |

*This shows the responses to an open ended question on the perceived effects of using IT.

One respondent could state multiple effects.

The majority of the entrepreneurs interviewed access IT services through Internet coffee shops (53%), while others have their own computers at their respective businesses' premises. All except one of the entrepreneurs who had their own personal computer, also had Internet connection. The purpose of using IT services was stated as to send email, to search for information, and/or for using word processing. Fifty-three percent of the entrepreneurs using IT reported using all three of these services. The respondent who had a computer without Internet connection used this for word processing only. The majority (74%) of the entrepreneurs reported using IT services for searching business related information (product information, customers/suppliers information), while the rest were searching non-business related information such as news services. Email services were used both for communicating with customers, suppliers and business partners, and with friends and family.

The costs incurred for accessing IT services ranged from 500.000 VND to 800.000 VND per month, with the majority spending between 650.000 VND and 750.000 VND per month. Concerning the impact of using IT services, the entrepreneurs were asked to express themselves on how IT has affected their businesses. A majority of the entrepreneurs using IT services reported one or more positive effects in the form of sales increase, access to new customers, and/or more efficient operations. Access to product-related information (e.g. new product designs) through the Internet was most frequently stated as the cause for increased sales and attracting new customers through product improvement. For example, some of the entrepreneurs who were running garment related businesses described how they were able to access new designs on the Internet.

Some entrepreneurs also reported how using email services to communicate with their business partners instead of travelling to their place of business was cheaper and time saving. Our data does not allow for identifying causal relationships between IT expenditure and business performance, as the nature and extent of IT use varies between the different types of businesses. Also, several of the interviewees were unwilling to report their monthly profits. However, the qualitative data indicates that the perceived positive effects from using IT services was similar across the different types of businesses studied.

4.4 Barriers to Accessing Information Technology

One of the objectives of this study was to identify the obstacles encountered by SMEs in accessing IT. The most frequently mentioned barriers were cost, knowledge and skills of how to use a computer, language, and time. These factors have also been documented in former studies (e.g., Hafkin and Taggart, 2001; UNCTAD, 2002).

As indicated in the literature review, one major factor affecting entrepreneurs's access to IT is financial resources. This is also confirmed in this study, where 64% of the entrepreneurs interviewed mentioned this factor as one of the major obstacles. Most of these entrepreneurs do not have enough capital to exploit IT opportunities, like having

their own computer with Internet connection and promoting their business through the Internet.

The high interest rate is not only the case of banks, but also for most microfinance institutions in Vietnam. For example, loans from SEDA (Small Enterprise Development Agency) carry a 30% flat interest rate and 3% one-time commission, and loan terms are typically for six months. All loans need to be guaranteed with a 20% cash deposit before a loan can be disbursed. Repayment is done on a weekly basis. These interest rates and loan terms apply to most of the micro credit institutions in Vietnam. However, not all entrepreneurs who are running small businesses can generate quick cash flows that will enable them to repay the loan within six months or one year.

Only 12% of the interviewed entrepreneurs mentioned language as a barrier to accessing IT services.

In the literature review, lack of time was discussed among the reasons why entrepreneurs do not access IT services. A major reason for this lack of time is that entrepreneurs have so many family responsibilities. However, in this study only 16% of the entrepreneurs mentioned this factor. These entrepreneurs stated that they did not have enough time to learn how to use a computer, since they need to be trained how to execute commands on the computer, and navigate the Internet.

4.5 Hypotheses Testing

In this study, it is assumed that the use of IT by entrepreneurs is influenced by size of their businesses, their financial positions, their education level, previous experience, and their age. And it was assumed that, the use of IT has a positive effect on business performance.

For the purpose of testing relationship between these variables, Pearson correlation coefficient has been used. The results are shown in the table below:

Table 5: Correlation between the usage of IT and other variables (N = 25)

| Independent Variables | Mean | Std deviation | Coefficient (r) |
|-----------------------|------|---------------|-----------------|
| Size of Organisation | 1.28 | 0.542 | 0.342 |
| Sales revenue | 3.38 | 0.957 | 0.432 |
| Ownership of Computer | 0.36 | 0.49 | 0.784* |
| Educational Level | 2.48 | 0.77 | 0.313 |
| Age | 2.40 | 0.866 | -0.236 |
| Previous experience | 0.64 | 0.49 | 0.369 |

* Correlation is significant at the 0.01 level (2-tailed).

From the table above, correlation coefficients between independent variables and dependent variable (usage of IT) are shown. The data shows, there is a positive relationship between and usage of IT and all other variables except one variable which is age. These correlation coefficients provide directional support for the predicted relationship in the hypotheses. Positive correlation coefficients show that independent

variables exert a positive effect on dependent variable. Taking an example of sales revenue, this shows that, “the higher the sales of the business, the more likely the entrepreneur to use IT services”. With a negative relationship, it shows that the variable has a negative effect on the dependent variable. In the table above, there is a negative relationship between the ages of an entrepreneur with usage of IT services, i.e. the older the person the less likely to use IT services. Although correlation coefficients support predicted relationships, but there is no strong relationship between independent variables and dependent variable, except one variable (ownership of personal computer), which is significant.

Examinations of the correlation coefficients reveal that there exists an inter-correlation among independent variables. There is a strong relationship between education level and previous experience ($r = 0.808$, $p = 0.001$), between the size of business and sales revenue ($r = 0.60$, $p = 0.014$), and between ownership of computer and education level ($r = 0.406$, $p = 0.05$). This inter-relationship effect can affect the combined effects on dependent variable.

The relationships between independent variables and dependent variable can also be tested by using multiple regression to find combined effects of these independent variables. But it is necessary to establish if multicollinearity would cause any problem in the model. According to Hair et al (1979), variables to qualify for multicollinearity should have correlation coefficient of 0.8 or above. Looking at the table of coefficient correlations (see appendix: table 1), there is high correlation coefficient between previous experience and education level, otherwise collinearity among the independent variables is sufficiently low. Multicollinearity effects, can also be checked by using variance inflation factors (VIF) for the independent variables. According to Tan and Teo, (2000), if VIFs for independent variables are greater than ten, then multicollinearity could unduly influence the results of regression analysis. For all independent variables in this study, the VIFs are less than four, ruling out this possibility. The individual independent variables were regressed on the dependent variable (Use of IT); the results are shown in the table below:

Table 6: Linear Multiple Regression Analysis Predicting use of IT

| Independent Variable | B | t-value | p-value |
|----------------------|--------|---------|---------|
| (Constant) | 1.974 | 2.644 | 0.027 |
| Education level | -0.479 | -1.463 | 0.177 |
| Size of the business | 0.052 | 0.128 | 0.901 |
| Monthly sales | 0.207 | 0.948 | 0.368 |
| Previous Experience | 0.513 | 1.246 | 0.244 |
| Ownership of PC | 1.569 | 4.862 | 0.001 |
| Age (in years) | -0,190 | -0.907 | 0.388 |

$R^2 = 0.818$; R^2 (adj) = 0. 696; Std error =0.533; Durbin-Watson statistic = 1.464

It is clear from the table above that the hypotheses proposed are supported, except H3 is not supported. It was expected that the relationship between educational level and usage of IT to be positive related, but the data shows that there is a negative relationship; this may be due to slightly higher proportion of entrepreneurs who had higher education, but do not using IT services. The only variable, which is significant at $p= 0.001$, is ownership of a computer. This shows that, entrepreneurs who owns computer are more likely to use computer frequently than those who have to access IT services in the internet café.

The R^2 statistic (which is the percentage of total response variation explained by the independent variables) suggests that the regression model is valid and significant at $p< 0.006$. The model has R^2 of 81.8%, and R^2 (adj) = 0. 696. The R^2 of 81.8% shows that the variation in the Use of IT services is explained by the independent variables (Education level, Size of Business, Monthly sales, previous experience and age of an entrepreneur).

Although almost all independent variables seem to be not significant, but when individual variables were regressed to dependent variable, the results were significant, except two variables (age and education). The results for simple regression analysis are summarized in the table 7

Table 7: Simple Linear Regression Analysis predicting use of IT

| Independent Variable | B | t-value | p-value |
|----------------------|--------|---------|----------|
| Education level | 0.480 | 1.583 | 0.127 |
| Size of the business | 0.744 | 1.743 | 0.095* |
| Monthly sales | 0.459 | 2.359 | 0.028** |
| Previous Experience | 0.889 | 1.904 | 0.07* |
| Ownership of PC | 1.889 | 6.056 | 0.000*** |
| Age (in years) | -0,322 | -1.167 | 0.255 |

* Significant at 10%; **Significant at 5%; *** significant at 1%

4.6 Discussion

The objective of this study was to assess the extent of the use of IT by entrepreneurs and the effects it has on their business performance. Use of IT was measured by frequency of computer use. From the study, 24% of all entrepreneurs interviewed were not using IT at all, 76% were using IT services at least once a week.

The factors used to measure the use of IT are educational level, size of business (measured by number of employees), sales revenue per month, previous experience (if was employed or not employed), and age of an entrepreneur.

As we have seen from quantitative analysis, the variables used in the model contributed to explain the variation in the dependent variable. Some variables were significant, but other variables were not. By using simple regression analysis, size of business, financial position, previous experience, and ownership of computer were significant. The

findings support the study by Lind et al (1989) who found that size of the business had a significant impact in the adoption of microcomputer. However, our findings contrast with findings of Seyal, et al (2000) who found that the size of organisation was not determining factor in the use of IT. But concerning financial position of the business (measure by monthly sales), our findings are line with Seyal, et al (2000).

In this study, ownership of computer by the owner is also found to be the most significant contributing factor in the use of IT, but in the study by Seyal, et al (2000), this was found to be significant. The findings has also confirmed the findings by Palvi et al (1994) who found that ownership of computer by the owner of organisation is related to use of IT in the organisation.

Concerning the entrepreneurs's characteristics, previous experience was found to be significant, while age and educational level were not significant, but study by Thong and Yap (1995) and Seyal et al (2000) found that owners with higher educational level had positive attitudes towards use of IT.

In order to assess the effects of IT on the business performance, profits estimates per month were used as indicator of performance. Most of entrepreneurs (52%) have said that the use of IT has affected their businesses, by managed to have efficient operations when using IT, and sales were increased. But by comparing profits of entrepreneurs entrepreneurs who were using IT services and those who were not using IT services, the results show that there is no relationship between use of IT and business performance. However, this study contrast with the findings of Lind et al (1989) and Lesjek (1995) who has concluded that small organizations are highly dependent on IT in promoting their business.

Basing on the results of this study, it is very difficult to generalize these findings, because the sample used was very small (30 cases). The use of small sample size may be the reason that, almost all variables are found to be insignificant when using multiple regression analysis. The study has examined the use of IT and its effects in the businesses, but there were no previous researches that tested these variables in the businesses. Previous literature that has been reviewed was not specific, but studied small businesses in general.

5. CONCLUSIONS AND IMPLICATIONS

The overall objective of this study was to analyse the role of IT in supporting SMEs in Vietnam. The study focused specifically on the use of IT services and its impact on business performance, and perceived barriers to using IT services. A majority of the SMEs interviewed in this study are using this new technology to improve their businesses, by searching the Internet for business-related information and/or communicating with customers, suppliers and partners through email.

The study has also shown that SMEs face several barriers to accessing IT services. The major problems mentioned in this study were lack of financial resources, and lack of computer skills. Language barriers and lack of time were only mentioned by a few of

the entrepreneurs entrepreneurs. However, lack of time was also stated as a barrier to achieving training, thus having an indirect negative effect on IT adoption and use.

To enhance entrepreneurs's capacity to become full members of the new information economy, the following aspects are relevant. The government can promote business and entrepreneurial prospects for entrepreneurs by offering financial capital and micro financing to SMEs in order for them to fully exploit the opportunities offered by IT services. SMEs can also be sponsored to attend IT-related courses to obtain specific knowledge on the use of computers. Governments or other non-governmental institutions can run specific courses, and charge affordable fees for entrepreneurs. The most important in this training is to ensure that entrepreneurs acquire the right IT skills. Entrepreneurs will also need business and entrepreneurial skills in order to apply these IT skills: if they are to use IT in managing their small businesses, they need to be trained in how to develop business plans, conduct market surveys, and search for sources of funding and market information. Improved accessibility to training for SMEs in both IT- and business-related skills thus stands out as a critical requirement for enhanced human resource development in developing countries like Vietnam.

REFERENCES

- Alkadi, I., Alkadi, A., and Totaro, M. (2003). "Effects of Information Technology on the Business World," *Human Systems Management*, 22(3), pp. 99-103.
- APC (2005). APC Entrepreneurs's Networking Support Programme. [Online]. Available: <http://www.apc.org/english/about/programs/entrepreneurs.shtml> [February 3, 2005].
- Bhatnagar, S. (2000). "Social Implications of Information and Communication Technology in Developing Countries: Lessons from Asian Success Stories," *The Electronic Journal on Information Systems in Developing Countries*, 1(4), pp. 1-9.
- Brush, C.D. (1992). "Research on entrepreneurs business owners: past trends, a new perspective, and future directions," *Entrepreneurship Theory and Practice*, 16(4), pp. 5-30.
- Buttner, E.H. (1993). "Female entrepreneurs: how far have they come?" *Business Horizons*, 36(2), pp. 59-65.
- DeMartino, R. and Barbato, R. (2002). "Differences between entrepreneurs and men MBA *entrepreneurs*: exploring family flexibility and wealth creation as career motivators," *Journal of Business Venturing*, 18(6), pp. 815-832.
- Hafkin, N. and Taggart, N. (2001). *Gender, Information Technology, and Developing Countries: An Analytic Study*. Washington, DC: USAID.
- Humphrey, J., Mansell, R., Paré, D., and Schmitz, H. (2003). *The Reality of E-commerce with Developing Countries. Globalisation and Poverty Research Programme, IDS*. [Online]. Available: <http://www.gapresearch.org/production/Report.pdf> [February 4, 2005].
- Kristiansen, S. (2001). "Promoting African Pioneers in Business: What Makes a Context Conducive to Small-Scale Entrepreneurship?" *Journal of Entrepreneurship*, 10(1), pp. 43-69.
- Miles, M.B. and Huberman, A.M. (1994). *Qualitative Data Analysis; An Expanded Sourcebook*. London: Sage.
- OECD (2018). *The Role of SMEs and Entrepreneurship*

Sheats, J. R. (2000). "Information Technology, Sustainable Development and Developing Nations," *Greener Management International (GMI): The Journal of Corporate Environmental Strategy and Practice*, 32, Winter, pp. 33-41.

Strauss, A. and Corbin, J. (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*, Sage, London.

UNCTAD (2012). *E-Commerce and Development Report*

Yin, R.K. (1994). *Case Study Research: Design and Methods*, 2nd Edition, California, Thousand Oaks, Sage.