

The Impact of ICT and Networking on the Business Performance of One Tambon One Product Enterprises in Greater Bangkok and Metropolitan Areas

Mya Tun (a) Amiritha Pillai^{*}

Abstract

This study attempts to explore and examine OTOP entrepreneurs' business performance through relationships with ICT adoption and entrepreneurial networks in greater Bangkok and metropolitan areas. Survey data were collected from a sample of 339 OTOP entrepreneurs and in-depth interviews of government officials, and key informants of OTOP entrepreneurs were conducted.

The results from the empirical findings are: work experience, number of employees, ICT adoption and entrepreneurial networks have positive relationships with business performance. Further, business performance had an impact from work experience, number of employees, ICT adoption, and entrepreneurial networks. An increase in the work experience of the entrepreneur, an increase in the number of employees, an increase in the adoption and application of ICT, and an increase in entrepreneurial networkings were seen to increase business performance.

The government should provide financial support, quality training and management, and create a conducive environment so that OTOP entrepreneurs can realize their full potential and maximize their contribution to the country's economic development. OTOP entrepreneurs should utilize ICT and networks to strengthen their business performance. The government should have a choice of policies that will enable OTOP entrepreneurs to survive and to grow. The justification for such policies is that OTOP enterprises are major sources of job creation, innovation, and competitiveness. It is the government's responsibility to support and promote entrepreneurs to enhance economic development. All involved in the OTOP Project for economic development should have integrated awareness and a holistic view to overcome challenges.

Keywords: OTOP, Entrepreneur, Business Performance, ICT Adoption and Entrepreneurial Networks

^{*} Ph.D. Graduate (International Program) Graduate School of Public Administration
National Institute of Development Administration (NIDA).
118 Serithai Road, Klong-Chan, Bangkok, Bangkok 10240 THAILAND

ผลกระทบของการใช้เทคโนโลยีสารสนเทศและการสื่อสาร และระบบเครือข่ายวิสาหกิจที่มีต่อผลการดำเนินงานของวิสาหกิจในโครงการ หนึ่งตำบลหนึ่งผลิตภัณฑ์ ในกรุงเทพมหานครและปริมณฑล

เมียน ทูน (หรือ) อมฤต พิเล *

บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษาความสัมพันธ์ของผลการดำเนินงานของผู้ประกอบการวิสาหกิจในโครงการหนึ่งตำบลหนึ่งผลิตภัณฑ์กับการใช้เทคโนโลยีสารสนเทศและการสื่อสารและระบบเครือข่ายวิสาหกิจ ในเขตกรุงเทพมหานครและปริมณฑล โดยจัดเก็บข้อมูลจากผู้ประกอบการวิสาหกิจในโครงการหนึ่งตำบลหนึ่งผลิตภัณฑ์ จำนวน 339 รายและสัมภาษณ์เจ้าของกิจการและผู้ประกอบการวิสาหกิจที่เกี่ยวข้องกับโครงการฯ

ผลการวิจัยพบว่า ประสิทธิภาพการทำงาน จำนวนพนักงาน การใช้เทคโนโลยีสารสนเทศและการสื่อสาร และระบบเครือข่ายวิสาหกิจมีความสัมพันธ์กับผลการดำเนินงานซึ่งเป็นไปในทิศทางเดียว กล่าวคือ การมีประสิทธิภาพการทำงานมากขึ้น มีจำนวนพนักงานเพิ่มขึ้น การใช้เทคโนโลยีสารสนเทศและการสื่อสารเพิ่มขึ้น และการมีระบบเครือข่ายวิสาหกิจเพิ่มขึ้นทำให้ผลการดำเนินงานเพิ่มขึ้น

รัฐบาลควรให้การสนับสนุนด้านการเงิน การฝึกอบรมและการบริหารจัดการและสร้างสภาพแวดล้อมที่เหมาะสมเพื่อให้ผู้ประกอบการวิสาหกิจในโครงการหนึ่งตำบลหนึ่งผลิตภัณฑ์ได้รับรู้และเข้าใจในสมรรถนะของตน และสนับสนุนการพัฒนาระบบเศรษฐกิจของประเทศ ผู้ประกอบการวิสาหกิจควรใช้เทคโนโลยีสารสนเทศและการสื่อสารและระบบเครือข่ายวิสาหกิจเพื่อสร้างความแข็งแกร่งให้กับผลการดำเนินงาน รัฐบาลควรมีนโยบายที่ทำให้มีผู้ประกอบการวิสาหกิจในโครงการหนึ่งตำบลหนึ่งผลิตภัณฑ์มีเพิ่มขึ้นและพัฒนาต่อไป นโยบายดังกล่าวนี้เป็นประโยชน์เพราะผู้ประกอบการวิสาหกิจในโครงการหนึ่งตำบลหนึ่งผลิตภัณฑ์เป็นแหล่งสำคัญที่ทำให้มีการสร้างงาน สร้างนวัตกรรมและการแข่งขัน รัฐบาลมีหน้าที่ในการให้การสนับสนุนและส่งเสริมผู้ประกอบการวิสาหกิจเพื่อส่งเสริมและพัฒนาเศรษฐกิจ ผู้มีส่วนเกี่ยวข้องในโครงการหนึ่งตำบลหนึ่งผลิตภัณฑ์จะต้องร่วมกันบูรณาการความรู้และความสามารถเพื่อให้โครงการประสบความสำเร็จ

คำสำคัญ: โครงการหนึ่งตำบลหนึ่งผลิตภัณฑ์; ผู้ประกอบการวิสาหกิจ; ผลการดำเนินงาน; การใช้เทคโนโลยีสารสนเทศและการสื่อสาร; ระบบเครือข่ายวิสาหกิจ

* สำเร็จการศึกษาระดับปริญญาเอก หลักสูตรนานาชาติ คณะรัฐประศาสนศาสตร์ สถาบันบัณฑิตพัฒนบริหารศาสตร์

118 ถนนเสรีไทย แขวงคลองจั่น เขตบางกะปิ กรุงเทพฯ 10240

Introduction

Economic growth is a key issue both in economic policy making and economic research. The interest in economic growth is increasing fast in view of persistently high rates of unemployment. Little is known, however, about how entrepreneurs materialize their decisions into the kinds of actions that merge into economic growth. They play the role of economic agents that link organizations at the micro level to economic outcome at the macro level.

The role of small and medium enterprises (SMEs) has become very significant in developing countries (Julien, 1996). Nevertheless, small firms are unable to achieve their goals by themselves alone. In order to accomplish their goals, SMEs support and resource from outsiders, such as relatives and friends (Bridge, O'Neil and Cromie, 1998), other firms (Meller and Marfan, 1981); and supporting institutions (Allesch, 1993), are needed. Information and communication technology (ICT) adoption and entrepreneurial networks have benefits for the growth of SMEs. SMEs can benefit as users of ICT and entrepreneurial networks for purposes such as increased productivity, faster communications, and reaching new customers. The role of these factors in advancing the growth of national economies through enhanced efficiency and productivity, and expanded market reach, is both acknowledged and irreversible (Chyau, 2005).

The OTOP project began in 2001. The Thai government emphasized support for SMEs through the One Tambon One Product (OTOP) project in order to encourage the people to become innovative entrepreneurs and to develop the economy of the country. This has added value to the local raw materials obtained from natural resources and enhances human resource development. It is also a channel of income distribution and rural development and creates employment opportunities and generates income for the people in the community.

The Thai government announced a policy of poverty eradication and set up the One Tambon One Product Project based on Dr. Morihiko Hiramatsu's One Village One Product (OVOP) role model movement in Oita prefecture in Japan. The philosophy of this project was to help each community in Thailand to use its local wisdom to develop and manufacture useful products from locally-available raw materials with the help of modern know-how, technology, innovation, and strategic management and administration for commercial purposes. Local yet

global, self-reliance-creativity and human resource development have been the three pillars of the philosophy of the OTOP project (Community Enterprises Development Office, 2008).

One of the main factors that influences the success or failure of OTOP enterprises is technology. The continuous rise in the use of Information and Communication Technology (ICT), as well as its importance for the modern enterprise, was presented in a study conducted by the Overseas Economic Cooperation Development (OECD) (2011). According to that study, ICT leads to equitable economic growth. The OECD has called for action to encourage the use of ICT by SMEs to foster innovation, to realize gains in productivity, to reduce transaction costs, and to fight poverty. ICT plays an economic role by changing production processes within firms. More specifically, the study mentions that SMEs have gradually recognized the positive impact of ICT, such as computer terminals, the Internet, e-mail, fixed telephones, mobile telephones, and the applications that they can have for their businesses. Beneki, Papastathopoulos, & Tsagris (2010) in their research, have stated that many types of business software can improve information and knowledge management within the firm, leading to more efficient business processes and better firm performance.

According to UNCTAD's E-commerce and Development Report 2003, through the application of ICT, firms will become more competitive, new markets will be accessed, and new employment opportunities will be created. These will generate wealth and sustainable economic growth. Similarly, Reynolds, Bygrave, Autio, Cox and Hay (2002) have stated that entrepreneurship generates income, reduces unemployment, and sustains economic growth and development.

In order to do so, information and communication technology adoption is a prerequisite for SMEs and in this way they can improve their activities and processes to develop their business performance. SMEs could employ information and communication technology in both the design and production processes, and marketing and administration processes. ICT adoption by SMEs in Thailand, however, is still very low.

Small entrepreneurs develop and utilize their entrepreneurial networks at different entrepreneurial stages. Small firms have limited resources and they do not expand in isolation (Mazzonis, 1989). Entrepreneurial networks are a real source of such resources as information, money, and moral supports provided by the actors of the networks. Entrepreneurs require information, capital, skills, and labor to start their business activities. While they hold some of these resources themselves, they often complement their resources by accessing their entrepreneurial networks contacts (Aldrich & Zimmer, 1986).

The foundation for broadening small and medium enterprise networking has been to assist SMEs in overcoming the challenges of the new economy by nurturing their collective efficiency. Firms or enterprises should be treated as parts of a larger system and according to their value addition to the business environment through joint action and cooperative work, with strategies such as cluster development and SME networking needing to be recognized.

Basnyat (2009) has agreed that the intention of networking and cooperation has been to promote transfer of knowledge and to stimulate, encourage, and facilitate the process of enterprise team building in order to achieve a better and more effective business environment. The strategies involved in such undertakings include: trust building and understanding of key issues of networks and clusters, involvement of support market strategies, and credit assistance through financial institutions.

Recently, high entrepreneurial activities have been found in Asian developing countries (Reynolds, Bygrave, Autio, Cox, and Hay, 2002). From the research perspective, a relatively small number of studies have focused on ICT adoption, entrepreneurial networks, or business performance in Thailand, and some questions remain unanswered regarding their relationships. There has been limited empirical research on the relationships between ICT adoption, entrepreneurial networks, and business performance. Also, Dixon, Thompson, and McAllister (2002) have mentioned in their study that little research has been carried out on the impact of ICT on small and medium enterprises. For this reason, the study of the impact of ICT adoption and entrepreneurial networks on the business performance of OTOP entrepreneurs in Thailand, one of the developing countries in Asia, will help to fill and narrow the gap and will contribute to knowledge in this area.

Research Objectives

This research studies the impact of ICT and networking on the business performance of One Tambon One Product enterprises in greater Bangkok and metropolitan areas. The main objectives are: 1) to find out the current level of business performance among the OTOP entrepreneurs, 2) to explore the factors affecting the business performance of OTOP entrepreneurs, and 3) to determine the most important predictors explaining the business performance of OTOP entrepreneurs.

Literature Review

Business Performance

By its nature performance measurement is a diverse subject. Otley (2007) evaluated measurement from an accounting and finance perspective and explored the different roles of measurement. Business performance can be measured according to marketing performance. Further, earnings or profits are the central performance indicators for shareholders.

Schollhamer (1982) believed that entrepreneurship is an important element in gaining competitive advantage and in achieving greater success. The relation of entrepreneurship with business performance is the main motive behind many scholars' studies on entrepreneurship. Lumpkin and Dess (1996) used, for example, sales growth, market share, profitability, overall presentation, and customer satisfaction as measures of organizational performance. Amongst the most frequently-used measures of performance are annual sales, number of employees, return on sales, growth in sales, and growth in employee numbers (Brush & Vanderwerf, 1992).

ICT adoption

The most basic ICT tool is having communication capabilities through fixed lines or mobile phones, whichever is more cost effective. SMEs may then use a personal computer (PC) or laptop computer with basic software for simple information processing needs, such as producing text or keeping track of accounting items. The Internet access enables SMEs to have advanced communication capabilities such as email, Web browsing and launching websites.

The APDIP e-Note of UNDP (Chyau, 2005) highlighted three main ways in which ICTs can benefit SMEs: 1) increase productivity in the production process; 2) increase efficiency of internal business operations; and 3) connect SMEs more easily and cheaply to external contacts, whether locally or globally.

Despite the obvious and concrete benefits that ICTs can bring to SMEs, SMEs in most developing countries have been slow to adopt ICTs. At the same time, most governments have not embedded ICTs into their SME policy. Some empirical studies, such as those of Kohli and Devaraj (2003) and Melville, Kraemer and Gurbaxani (2004), have confirmed the positive effect of information and communication technologies on firm performance in terms of productivity, profitability, market value, and market share.

ICT can also assist firms in sustaining their competitive advantage by responding immediately to external business parties, especially customers. The most important reason for ICT adoption is product quality improvement, particularly regarding customer service, timeline, and convenience (Bresnahan, Brynjolfsson and Hitt, 2002). Therefore, the benefits of ICT usage and the means of improvement can lead to a positive impact on firm performance (Arvantitis, 2005; Bresnahan et al., 2002; Brynjolfsson and Hitt, 2000).

According to the OECD (2004), information and communication technology connectivity (PCs and the Internet) is very widespread in businesses of all sizes. The principal reasons for non-adoption are lack of applicability and little incentive to change business models when returns are unclear.

Developing countries must properly utilize information and communication technologies in their socio-economic development because these tools can function as significant productive and economic forces. Unfortunately, the obstacles faced by developing countries often hinder their progress in these areas (United Nations, 2009).

Gera and Gu (2004) have suggested that ICT is playing a key role in increasing customer relationship practices through communication with clients, sales forces in the field that are supplemented by interactive websites, and call centers. Locke (2004), in his study of ICT adoption and SME growth in New Zealand, explained that increased profitability, as a proxy for growth, is most strongly correlated with ICT usage. Locke (2004) has also stated that the positive association between growth in profits and the adoption of cellular phones and the Internet within the sample of small NZ businesses is relevant to the policy issues concerning how to encourage entrepreneurship and small business growth. There is evidence from many firm-level studies, and from many OECD countries, that ICT use has a positive impact on firm performance (OECD, 2003).

Basant, Commander, Harrison, and Menezes-Filho (2006) have stated that there is now a large and growing literature on the impact of ICT and associated changes in work practices on productivity. A recent World Bank study reports the correlations between a simple measure of ICT use and a number of performance indicators, including growth in sales and employment and re-investment, suggesting that there is some evidence of ICT use being associated with enhanced performance. Locke (2004) has also stated that factors such as the level of ICT understanding of the owner/managers and increases in the number of employees are similarly positively correlated.

Thai OTOP is also characterized by the positive use of information and communication technology for sales strategies. The Thai government has promoted endeavors to develop and use websites for administrative and economic activities since early 2000. Thaitop.com has been developed and it is quite popular among OTOP entrepreneurs and customers (Systech Co., Ltd., 2009). At present, the Community Development Department (CDD) helps entrepreneurs to obtain knowledge on how to create websites and use ICT. The websites are in Thai, Chinese, Japanese, and English and are linked to exporters. There is cooperation between the CDD and other government and private enterprises, such as TOT, CAT, Thai Post, Krung Thai Bank, and True Corporation, to create MOUs to develop e-commerce (in-depth interview of CDD government official, 2011).

Entrepreneurial networks

Networking and the “know-who” that goes along with it are the very essence of entrepreneurial activity and small business management and are fundamentally related to the survival and growth of business. It is critical to the firm’s transactions costs and the development of its credibility with its “community” (Carney, 1998).

Powell (1990) has stated that networks can be defined as reciprocal patterns of communication and change. Dean, Holmes, & Smith (1997) have also explained that networks refer to “the coming together” of a group of enterprises or people to use their combined talents and resources in order to achieve results which would not have been possible if they operated individually.

Social network theory is a social science concept that discusses the connections and relationships in a social structure (Kadushin, 2004). The term “network” is generally used for the structure of ties among the actors in a social system (Nohria and Eccles, 1992). These actors could be roles, individual persons, organizations, kinship, authority, economic exchange, information exchange, or anything else that forms the basis of a relationship.

Premaratne (2002) has defined networks as personal relationships between an entrepreneur and his/her external actors. Networking is important for developing entrepreneurship, as it enables entrepreneurs to develop relationships with the outside world. These relationships in turn help entrepreneurs to achieve their goals. Taylor, Jones, & Boles (2004) have claimed that networks have the potential to facilitate collective action for mutual benefit. Networking is then a social construction that exists only as a result of the individual’s understanding and use of the network. Entrepreneurial networks are composed of three types:

social networks, supporting networks, and inter-firm networks (Premaratne, 2002). Braun (2010) has explained that when favourable network conditions are present, participation in an SME virtual cluster is likely to produce economically-beneficial outcomes. Network theory suggests that the ability of entrepreneurs to gain access to resources not under their control in a cost effective way through networking can impact the success of a business venture (Zhao and Aram, 1995). Benefits are embedded within networks and therefore can influence firm performance. Buttler, Brown, and Chamornmarn (2003) have stated that entrepreneurs value the information they receive from their networks.

In a network, the flows between objects and actors and exchanges, which might contain advice, information, friendship, career or emotional support, motivation, and cooperation, can lead to very important ties (Kadushin, 2004).

Oliver's (1990) business networking model includes necessity, asymmetry, reciprocity, efficiency, stability, and legitimacy as the motives behind building business networking which has been successfully tested in different organizational settings. This indicates that the driving factors in building business networking originate from the motives or relative advantages of it. A positive relationship in a business network would then eventually lead to business success for SMEs. Cooper (2002) acknowledged that the potential benefits derived from networks include better information and added credibility and exchange relationships.

Conceptual Framework and Hypotheses

Conceptual Framework

Based on the literature review, a conceptual framework was constructed, as shown in Figure 1. Business performance is the dependent variable and 1) work experience, 2) number of employees, 3) information and communication technology adoption, and 4) entrepreneurial networks are the independent variables. Information and communication technology adoption was constructed with ICT knowledge, ICT usage and ICT benefit, and entrepreneurial networks was constructed with social networks, supporting networks, and inter-firm networks. Business performance was constructed with sales growth, market expansion, and profit.

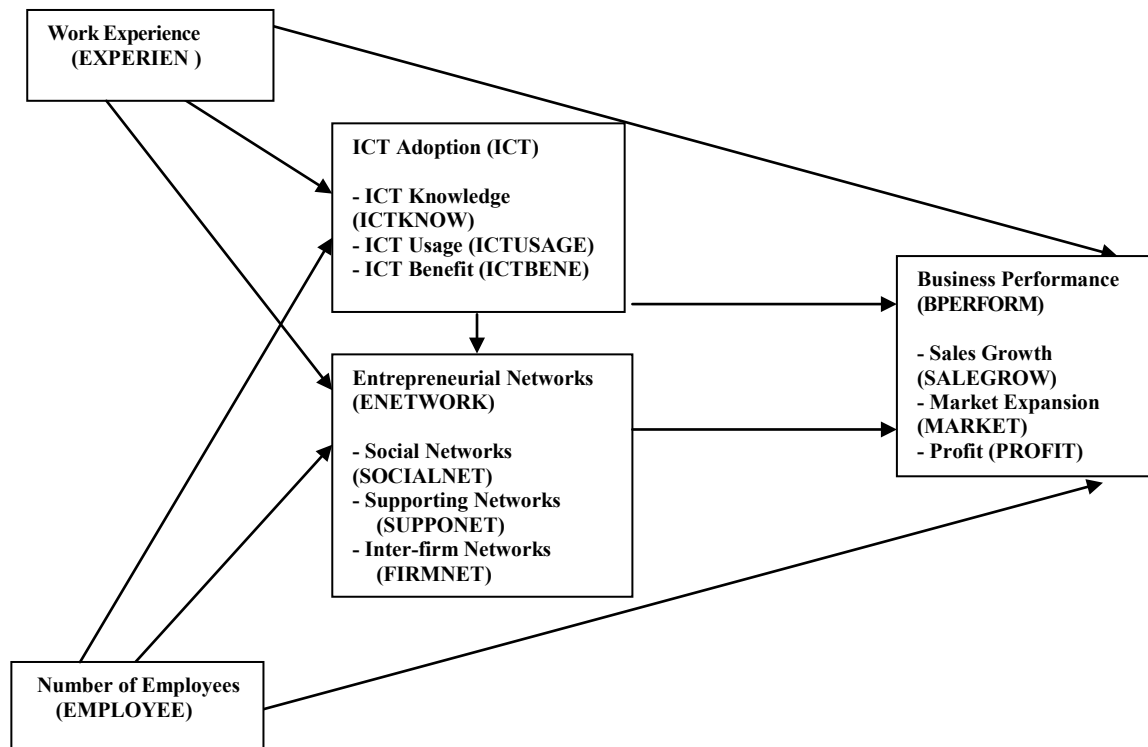


Figure 1: Relationships between Work Experience, Number of Employees, ICT Adoption, Entrepreneurial Networks, and Business Performance

According to the conceptual framework, the relationships among the dependent variable, business performance, and the independent variables, work experience, number of employees, ICT adoption, and entrepreneurial networks, can be explained. As shown in Figure 1, business performance is influenced by ICT adoption, entrepreneurial networks, number of employees, and work experience. Entrepreneurial networks is influenced by ICT adoption, number of employees, and work experience. ICT adoption is influenced by number of employees and work experience.

From the conceptual framework, three structural equations are proposed as follows:

1. Business performance is more likely to be related to ICT adoption, entrepreneurial networks, number of employees, and work experience. This relationship is expressed in the following equation:

$$BPERFORM = f(ICT, ENETWORK, EMPLOYEE, EXPERIEN) \dots\dots\dots(1)$$

2. Entrepreneurial networks is more likely to be related to ICT, number of employees, and work experience. This relationship is expressed in the following equation:

$$ENETWORK = f(ICT, EMPLOYEE, EXPERIEN) \dots\dots\dots(2)$$

3. ICT is more likely to be related to number of employees and work experience. This relationship is expressed in the following equation:

$$ICT = f(EMPLOYEE, EXPERIEN) \dots\dots\dots(3)$$

where:	BPERFORM	=	Business performance
	ENETWORK	=	Entrepreneurial networks
	ICT	=	Information and Communication Technology Adoption
	EMPLOYEE	=	Number of Employees
	EXPERIEN	=	Work Experience

Hypotheses

Hypothesis 1: work experience, number of employees, entrepreneurial networks, and ICT adoption are likely to be positively related to the OTOP entrepreneur's business performance.

Hypothesis 2: work experience, number of employees, and ICT adoption are likely to be positively related to entrepreneurial networks.

Hypothesis 3: work experience and number of employees are likely to be positively related to ICT adoption.

Methodology

Methods Used

This research is a survey research. The quantitative method was used as the main approach and the qualitative approach by using in-depth interviews was adopted for explanation of the research results. The quantitative and qualitative methods were used for this study as the study needed to investigate the relationship of variables chosen for analysis.

Population and Sampling Procedure

Quantitative Method: The unit of analysis in this study is the individual OTOP product champion. The target population of this study is the 3–5 star OTOP product champion (OPC) entrepreneurs in Bangkok Metropolis and in 5 Bangkok urban provinces which are 1) Nakhonpathom, 2) Samutprakarn, 3) Nonthaburi, 4) Patumthani, and 5) Samutsakhon. A stratified sampling method was employed in order to obtain equal representation of all entrepreneurs. Survey data were collected through questionnaires from a sample of 339 OTOP entrepreneurs.

Qualitative Method: The qualitative method was conducted through in-depth interviews. The in-depth interviews were conducted with 10 knowledgeable and experienced government officials that were involved in the OTOP project and 10 entrepreneurs that were key informants and had received a 3–5 star status to generate valuable data and information.

Data Collection: For the quantitative method, questionnaires were used as a basis for the survey approach in order to obtain data on personal characteristics, business characteristics, information and communication technology adoption and application, entrepreneurial networks and networkings, and business performance from respondents. The qualitative research was conducted through in-depth interviews of government officials that were related to and responsible for the OTOP project and OTOP entrepreneurs.

Research Findings

Of the 339 respondents, the majority were female (64.0 %) and the majority of the respondents were between 40–49 years of age (36.6 %). The range of ages was from 15 to 73 years, of which the average age was 43 years. They had work experience of less than 10 years, with an average work experience of 16 years. Fifty-seven point two percent of the respondents were bachelor and higher than bachelor degree graduates, with the remaining 42.8% undergraduates.

Multiple regression analysis was used to determine which independent variables had the highest effect on business performance. The analysis fulfilled research objective number three. Table 1 shows the multiple regressions between the dependent variable (business

performance) and the four independent variables, (work experience, number of employees, ICT adoption, and entrepreneurial networks).

The relationships between the dependent variable and the independent variables in 3 different patterns were expressed as follows: 1) Diagram, 2) Equations, and 3) Table to show the Direct, Indirect and Total Effect.

(1) Diagram

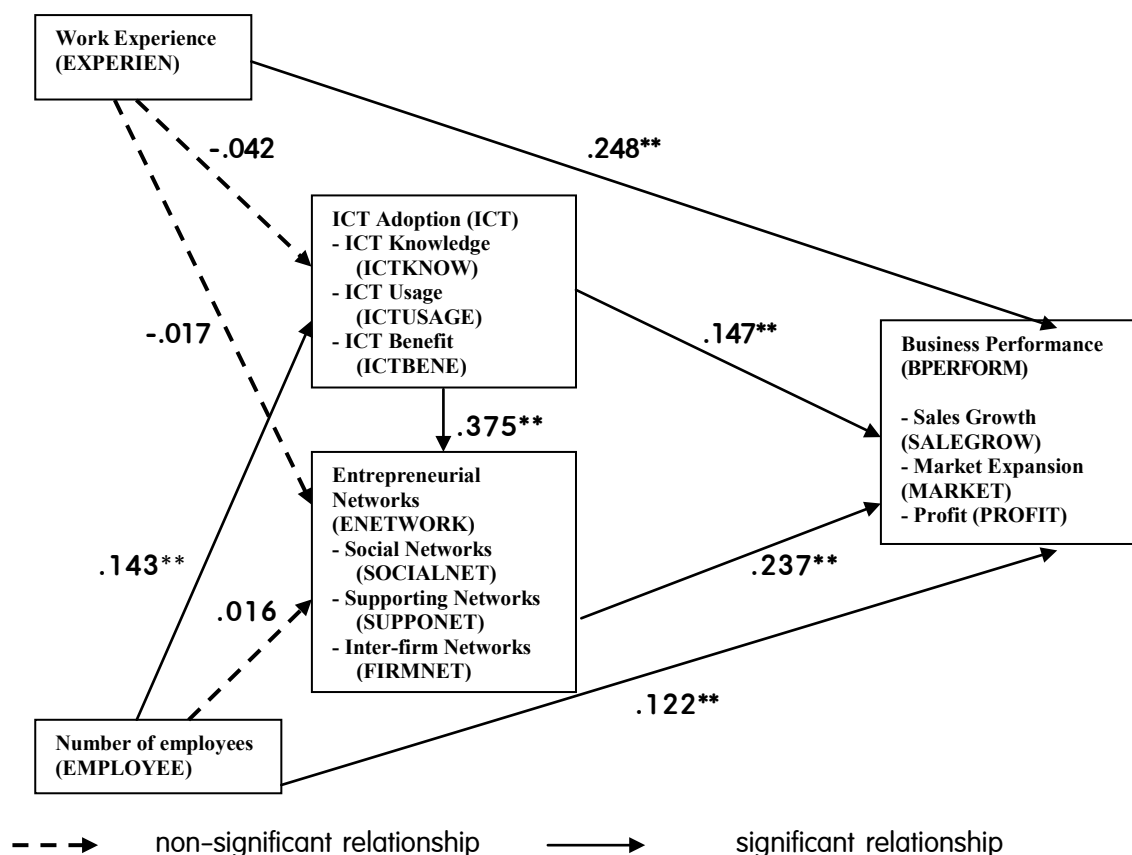


Figure 2: Relationships between Work Experience, Number of Employees, ICT Adoption, Entrepreneurial Networks, and Business Performance

(2) Equations: There were three equations, with the regression analysis results explaining the relationships between the variables as shown.

Equation 1: $BPERFORM = .248 * EXPERIEN + .237 * ENETWORK + .147 * ICT + .122 * EMPLOYEEE$

Table 1: Regression Analysis Results for Business Performance

Independent Variable	Coefficient	Std. Error	Beta	T-values	Sig
Work Experience	.020	.004	.248	5.005	.000
Entrepreneurial Networks	.256	.058	.237	4.431	.000
ICT Adoption	.147	.054	.147	2.716	.007
Number of Employees	.007	.003	.122	2.443	.015
$R^2 = .181$	$F = 18.403$		$p = .000$		

As shown in Table 1, in applying multiple regression analysis, there were four variables that revealed a significant correlation at the level of p-value less than .05 with business performance. These variables were work experience, entrepreneurial networks, ICT adoption, and number of employees.

In terms of the individual relationships between the independent variables and business performance – work experience (Beta = .248, $t = 5.005$, $p = .000$), entrepreneurial networks (Beta = .237, $t = 4.431$, $p = .000$), ICT adoption (Beta = .147, $t = 2.716$, $p = .007$), and number of employees (Beta = .122, $t = 2.443$, $p = .015$) – each significantly predicted business performance. The most important predictor variables were work experience (Beta = .248), entrepreneurial networks (Beta = .237), ICT adoption (Beta = .147) and number of employees (Beta = .122). All of the independent variables had a positive relationship with and impact on business performance. Together these four variables contributed 18.10 percent in share variability to the dependent variable. In other words, the four variables had an explanatory power of 18.10 percent of business performance.

From Equation 1 it can be explained that business performance had an impact from the number of employees, ICT adoption, work experience, and entrepreneurial networks. This implies that business performance had significant positive relationships with work experience, number of employees, ICT adoption, and entrepreneurial networks, as anticipated in hypothesis 1. This indicates that ICT adoption had an impact on business performance (Arvantitis, 2005; Locke, 2004; Gera and Gu, 2004 and OECD, 2003). Positive relationships in business networks would then eventually lead to business success for SMEs (Kadushin, 2004; Taylor, Jones, & Boles, 2004 and Oliver, 1990). This indicates that an increase in the work experience of the entrepreneur, an increase in the number of employees, an increase in the

adoption and application of ICT, and an increase in entrepreneurial networkings would increase business performance.

Equation 2: $ENETWORK = -.017 * EXPERIEN + .016 * EMPLOYEE + .375 * ICT$

Table 2: Regression Analysis Results for Entrepreneurial Networks

Independent Variable	Coefficient	Std. Error	Beta	T-values	Sig
Work Experience	-.001	.004	-.017	-.331	.741
Number of Employees	.001	.003	.016	.305	.761
ICT Adoption	.348	.047	.375	7.337	.000
$R^2 = .144$	$F = 18.721$		$p = .000$		

As shown in Table 2, in applying the multiple regression analysis, there was one variable that revealed a significant correlation at the level of p-value less than .05 with entrepreneurial networks. This variable was ICT adoption.

In terms of the relationship between entrepreneurial networks and ICT adoption (Beta = .375, $t = 7.337$, $p = .000$) – regression analysis results significantly predicted that a relationship existed between entrepreneurial networks and ICT adoption. ICT adoption contributed 14.40 percent in share variability to the entrepreneurial networks. In other words, ICT adoption had an explanatory power of 14.40 percent of entrepreneurial networks.

According to equation 2 it can be explained that entrepreneurial networks had an impact from ICT adoption, as anticipated in hypothesis 2. It can be concluded that entrepreneurs with more ICT adoption, engaged in more entrepreneurial networkings. The potential benefit that the entrepreneurs derived from networks included better information (Cooper, 2002). ICT can help entrepreneur gain networks of contacts locally or globally (Chyau, 2005). However, entrepreneurial networks had no significant relationships with number of employees or work experience.

Equation 3: $ICT = -.042 * EXPERIEN + .143 * EMPLOYEE$

Table 3: Regression Analysis Results for ICT Adoption

Independent Variable	Coefficient	Std. Error	Beta	T-values	Sig
Work Experience	-.003	.004	-.042	-.782	.435
Number of Employees	.008	.003	.143	2.646	.009
$R^2 = .023$	$F = 3.873$		$p = .022$		

As shown in Table 3, in applying the multiple regression analysis, there was one variable that revealed a significant correlation at the level of p-value less than .05 with ICT adoption. This variable was number of employees.

In terms of the relationship between ICT adoption and number of employees (Beta = .143, $t = 2.646$, $p = .009$) – regression analysis results significantly predicted a relationship between ICT adoption and number of employees. Number of employees contributed 2.30 percent in share variability to the ICT adoption. In other words, number of employees had an explanatory power of 2.30 percent of ICT adoption.

According to Equation 3, it can be explained that ICT adoption had an impact from number of employees, as anticipated in hypothesis 3. As the number of employees increases, the use of ICT increases. There is an indication that the level of ICT adoption had a positive relationship with the number of employees (Locke, 2004). ICT adoption, however, had no significant relationships with work experience.

(3) Table: Table 4 shows the Direct, Indirect, and Total Effect

Table 4 shows the Direct, Indirect, and Total Effect of the Independent Variables Acting on the Dependent Variable.

Table 4: The Direct, Indirect, and Total Effect of Work Experience, Number of Employees, ICT Adoption and Entrepreneurial Networks on Business Performance

Variables	Effect on Business Performance		
	Direct Effect	Indirect Effect	Total Effect
Work Experience	.248	–	.248
Number of Employees	.122	.034 (1)	.156
ICT Adoption	.147	.089 (2)	.236
Entrepreneurial Networks	.237	–	.237

Note: (1) Indirect effect of number of employees = $(.143 \times .147) + (.143 \times .375 \times .237) = .034$

(2) Indirect effect of ICT adoption = $(.375 \times .237) = .089$

From Table 4 it can be concluded that business performance had both direct and indirect effects from the number of employees and ICT adoption, but received only a direct effect from work experience and entrepreneurial networks. This implies that business performance had significant positive relationships with work experience, number of employees, ICT adoption and entrepreneurial networks. This also means that as the work experience of entrepreneur increases, the number of employees increases, adoption and application of ICT increases, and entrepreneurial networkings increase, there is an increase in business performance.

Conclusions and Recommendations

Conclusions

As indicated in Table 1 according to the regression results, the stronger predictor of business performance was work experience. The second predictor was entrepreneurial networks. The third predictor was ICT adoption, and the fourth predictor was number of employees. Work experience has the most important impact on business performance of the OTOP entrepreneurs. The impact of entrepreneurial networks on business performance induces sales growth, market expansion and profit.

Together these four variables contributed 18.10 percent in share variability to the dependent variable. In another words, the four variables had an explanatory power of 18.10 percent of business performance. All of the independent variables have impact on business performance, which agrees with hypothesis number 1.

The results as shown in Table 2 indicated that only entrepreneurial networks had an impact from ICT adoption, as anticipated in hypothesis 2. It can be concluded that entrepreneurs with more ICT adoption engage in more entrepreneurial networkings. However, entrepreneurial networks had no significant relationships with number of employees or work experience.

The results as shown in Table 3 indicated that ICT received an impact from number of employees, as anticipated in hypothesis 3. As the number of employees increases, the use of ICT increases. ICT adoption, however, had no significant relationships with work experience.

Policy Recommendations for Government

The government should have a range of policies to enable OTOP entrepreneurs to come into existence and to grow. The justification for such policies is that OTOP enterprises are major sources of job creation, innovation, and competitiveness. It is the government's responsibility to support and promote the entrepreneurs to enhance the welfare of the people. The OTOP project was initiated and designed to fulfill the objective of economic development through human resource development, job creation, income distribution, poverty eradication, and quality of life in general.

The general goal of OTOP policy should be to strengthen the existing base of small enterprises by ensuring that they can compete in the market place and that they are not victims of prejudice because of their small size relative to large firms. In order to deliver such policy the government is faced with clear choices. The first is to focus attention upon lowering the entry barriers to new OTOP enterprise formation. A second policy option is to reduce the burdens on those individuals already participating in the OTOP project. A third policy option is to use public funds to provide finance directly and indirectly, and to provide information, training, and advice to both individuals considering starting a firm and to existing established OTOPs. The government can make different choices.

It is training that can make an ordinary member of the community become an entrepreneur. At present, training programmes for entrepreneurs are designed and conducted by the Community Development Department (CDD) under the Ministry of Interior to develop OTOP entrepreneurs in all of the provinces. Trainers from the government should be professionals, with good experience in the areas of the training. The officers must update their knowledge and performance periodically. The problem of receiving the budget required to take care of the expenses involved in the training process must be approved and forwarded without delay to help the training officers. Progress evaluation needs to be considered, both for the officers and for the OTOP entrepreneurs. Favourable policies to support, help, and encourage OTOP entrepreneurs, who are the members of the communities, should be created, implemented, and evaluated so that policy implementation will have beneficial effects on economic development.

Additionally, the government should support production and promotion development, communication and information technology adoption development, entrepreneurial networks development, OTOP community development, local knowledge and wisdom development, raw material resource development, managerial accounting development, local, regional and

overseas OTOP fairs and exhibitions development. These will strengthen and enhance OTOP entrepreneurs for further economic development.

Policy Recommendations for the OTOP Project

The CDD's study of the Thai entrepreneurial environment reflected that government regulations impede the OTOP Project from expanding. It raised doubts about the government's competence and effectiveness in supporting new and growing OTOP entrepreneurs. The study singled out the lack of financial support, quality of education and training, and overall market openness as other main factors holding back Thai entrepreneurs.

It is important for OTOP entrepreneurs to comprehend these factors, as they bear substantial influence on their business performance, especially when they compete in this challenging, regional, and globalized business arena. The collection of data on the profile, experience, management skills and competency, size and sector, and individual characteristics and motives of OTOP entrepreneurs is needed in order to allow policy makers, educators, trade associations and the public identify appropriate planning of national policies and programmes.

Another important factor to be taken into consideration is the support received from the government. Policy makers should continue their efforts in nurturing more Thai entrepreneurs in order to facilitate their success. A policy that is friendly to new OTOP enterprises must be enacted. These include removing constraints, such as red-tape, and to simplify registration requirements. It is also important to encourage corporations to have business cooperation with OTOP enterprises and to support OTOP growth. Without this support, the efforts in creating quality and resilient and successful OTOP entrepreneurs in the economy will be cumbersome. Given a conducive environment and adequate support, OTOP entrepreneurs can realize their full potential and maximize their contribution to the country's economic development.

The government and various organizations must cooperate, support, and encourage the development of ICT adoption and entrepreneurial networks with goodwill for OTOP entrepreneurs to grow successfully in local, regional, and global environments. The OTOP entrepreneurs should utilize ICT and entrepreneurial networks to become competent and objective and to improve themselves to prove their capabilities in their business. In addition, the OTOP entrepreneurs need to have a good understanding of the entrepreneurial orientation through short courses, training programmes, mentoring, or even long-term

courses leading to the award of a diploma or degree. The government agencies and associations play an important role in nurturing these skills.

SMEs are the backbone of the national economy. It has been proved by the fact that SMEs survived when large companies collapsed during the economic crisis. The OTOP project was born with policies and strategies according to which its development was continuously monitored, evaluated, and updated through various policy instruments for certain levels of achievement. Good coordination could be found among the stakeholders. This coordination was embedded within leadership attributes. Coordination is the main power in program implementation of economic development.

The government role should be in favour of the OTOP Project, which was launched for the benefit of the rural community. The private sector should take their part in this development. Experts along with academics should prepare their contribution with thoughts, suggestions, and consultations; meanwhile, the government can translate such support into the form of policies, programs, and projects.

Recommendations for Future Research

Further research studies may be carried out as follows:

1. Quantitative studies are necessary to explore the business performance of OTOP entrepreneurs in the Thai context.
2. It would be also interesting for researchers to investigate and compare the findings among OTOP styles of entrepreneurship in other cultures and geographical regions.
3. Additional research may be done with other variables that influence and impact the business performance of OTOP entrepreneurs.

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