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Critical success factors for e-commerce entrepreneurship: an empirical study of Thailand

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Abstract The present study focuses on the relationships between entrepreneurial characteristics (achievement orientation, risk taking propensity, locus of control, and networking), e-service business factors (reliability, responsiveness, ease of use, and self-service), governmental support, and the success of e-commerce entrepreneurs. Results confirm that the achievement orientation and locus of control of founders and business emphasis on reliability and ease of use functions of e-service quality are positively related to the success of e-commerce entrepreneurial ventures in Thailand. Founder risk taking and networking, e-service responsiveness and self-service, and governmental support are found to be non-significant.

Keywords IT new ventures · Entrepreneurs · Critical success factors · E-commerce · E-service

JEL Classifications L26

1 Introduction

Research on e-commerce and entrepreneurship indicates that both fields have significant impacts on economic growth and wealth creation (Acs et al. 2004). E-commerce is growing at an incredible pace. The accessibility of the Internet makes electronic commerce a realistic possibility for SMEs (Kathuria and Joshi 2007). As the amount of business transacted over the web grows, the value of goods, services, and information exchanged over the Internet seems to double or triple each year around the globe. The Internet is an enabling technology that allows businesses to increase the accuracy and efficiency of business transaction processing (Applegate et al. 2002). According to Turban et al. (2000), e-business is an emerging concept that describes the process of buying and selling or exchanging of products, services, and information via computer networks including the Internet. The term refers to a broader definition of e-commerce that includes servicing customers and collaborating with business partners (David and Benamati 2002). As the 2003 United Nations Conference on Trade and Development's (UNCTAD) E-commerce and Development Report shows, there is now growing agreement about the positive contribution of information communication technology (ICT) to productivity growth. Through the application of ICT, firms become more competitive, new markets are accessed, and new employment opportunities created. All of this will result in the generation of wealth and sustainable economic growth.

According to the Global Entrepreneurship Monitor (GEM), entrepreneurial activity is associated with

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economic growth (Acs et al. 2004). Countries that have experienced rapid economic growth are typically those that are successful in adopting and adapting a technology to sustain their rapid economic development. The most significant development in global competitiveness is the emergence of Asia as a dominant force (Garelli 2004). Asia, which accounted for almost 40% of world gross domestic product (GDP) in 2003, is becoming a highly attractive place for world investment. Already, more than 60% of the foreign direct investments directed to developing nations are going to Asia.

This study focuses on the relationships between IT entrepreneur characteristics, governmental support, and the success of e-commerce entrepreneurs. Factors associated with IT business founders (achievement orientation, risk taking propensity, locus of control, and networking) and factors linked to e-commerce business success (e-service quality including reliability, responsiveness, ease of use, and self-service) are investigated along with governmental support for business startups in Thailand. Success was measured in terms of growth rate, sales volume, business stability, customer acceptance, and overall satisfaction of the e-commerce entrepreneurs.

2 Critical success factors

Critical success factors (CSF) are those few things that must go well for an individual or an organization to ensure success in a business undertaking (Rockart 1979; Chung 1987). They represent the managerial or individual activities that an organization must pay particular and continuous attention to in order to achieve the level of performance essential to achieve desired goals (Hackney and Dunn 2000). The idea of critical success factors was applied to IT by Rockart (1979) as a model for information systems development and integration and as a tool to aid executives in defining their information needs. If the results in these areas are not adequate, organizational performance for the period will be less than desired (Rockart 1979). Analyzing and identifying the critical factors for new ventures is a basic key to reducing the number of start-up failures while increasing the likelihood of subsequent survival or success (Chung 1987; Lumpkin and Ireland 1988).

3 Critical success factors and e-commerce entrepreneurs

Today's products and services are radically shifting to digital form and delivered through information-based distribution channels such as the Internet, the most visible and explosive information technology tool (Hagg et al. 2000). The Internet offers an interactive function with its customers (Santos 2003) and enables electronic service (e-service) to move to the forefront of technology priorities (Damanpour 2001).

De Ruyter et al. (2000) defined e-service as an interactive, content-centered, and Internet-based customer service, driven by the customer and integrated with related organizational customer support processes and technologies with the goal of strengthening customer-service provider relationships. Surjadjaja et al. (2003) suggested that the concept of e-service is not simply a combination of the words *electronic* and *service*. In a true e-service operation, part or all of the interaction between the service provider and the customer is conducted over the Internet such as buying a ticket from the web. In a competitive business environment, the issue of quality service and service excellence are increasingly more important (Hagg et al. 2000; Rowley 2006; Liao et al. 2007). This is especially true of the information technology sector, where an ever-increasing range and number of online service suppliers have forced companies to invest in the delivery of higher levels of service quality as a competitive strategy aimed at differentiating their product offerings and consistently satisfying and keeping up with customer needs (O'Neill et al. 2003).

Rust and Kannan (2002) emphasize that the fundamental philosophy of e-service is focus on customers/citizens—winning and maintaining satisfied customers. There is an increased interest among researchers in understanding how e-service impacts consumers and how this knowledge can be used to design better frameworks and systems for service provision (Rust and Kannan 2002). This study suggests that dimensions of e-service are CSFs for IT new ventures.

4 Entrepreneurship, e-commerce, and Thailand

According to a recent GEM report, Thailand has the highest rate of entrepreneurship activity in Asia

(Reynolds et al. 2002). The high entrepreneurship rating reflects both a high level of firm creation and the classification of existing firms as entrepreneurial (Acs et al. 2004). The achievement of the highest rate of entrepreneurial activity by Thai's comes from the encouragement and support of the Thai government. The government has promoted the development of Thai e-commerce entrepreneurs by offering low interest loans for start-up expenses, counseling on government regulations, legal expertise, information on accounting systems, and other services needed by the new business people.

5 Hypothesis development for the study

5.1 Conceptual framework

Based on the synthesis of the existing literature in e-service, e-commerce, and entrepreneurship theories, a simple conceptual framework guiding the present study has been constructed to examine the effects of three dimensions of traits, behaviors, and support systems on the success of e-commerce entrepreneurs as illustrated in Fig. 1. The three components that constitute the conceptual framework for Thai entrepreneurial ventures' CSFs are labeled as founder factors, e-service factors, and the government. The founder factors encompass achievement orientation, risk-taking propensity, locus of control, and e-networking. E-service factors cover reliability, responsiveness, ease of use, and self-service. The overall perspective for the conceptual model is to examine the impact of those components on the success of e-commerce new ventures.

5.2 Founder entrepreneurial characteristics

Within the theoretical framework provided by McClelland (1961), Rotter (1966), and Brockhaus (1980), it is hypothesized that those factors including achievement orientation, risk-taking propensity, locus of control, and interpersonal networking will be positively related to the competitive success of entrepreneurs.

5.2.1 Achievement orientation

A recent meta-analysis indicated that achievement motivation distinguished entrepreneurs from

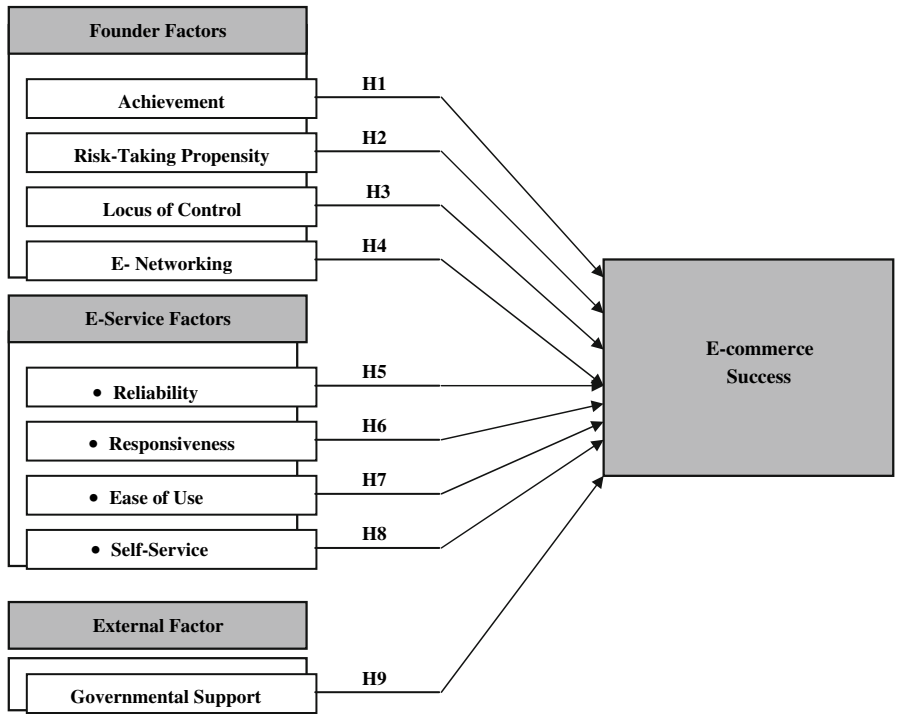

Fig. 1 Research model

non-entrepreneurs (Stewart and Roth 2001). McClelland's need for achievement has the longest history of personal characteristic measures associated with the creation of new ventures (Shaver and Scott 1991; Ibrahim and Ellis 1993). According to McClelland (1961), an individual with a high need for achievement is characterized as having a desire to take personal responsibility for decisions, a tendency to work harder at tasks requiring mental manipulation, setting goals and trying to achieve them, and a tendency to think and plan ahead. With a few exceptions (cf., Hansemark 2003; Beugelsdijk 2007), achievement has been found to be a robust characteristic of successful entrepreneurs. This research indicates that achievement orientation helps entrepreneurs overcome obstacles and compensate for other weaknesses (Kurako and Hodgetts 1995). A study of the CSFs of fast-growing ventures by Feindt et al. (2002) indicated that founders of e-commerce businesses with a high level of need for achievement are more successful than others. Thus, we present the following hypothesis:

Hypothesis 1 The success of e-commerce entrepreneurs is associated with the achievement orientation of the founding entrepreneur.

5.2.2 *Risk-taking propensity*

Risk bearing is an essential characteristic of entrepreneurs (Ibrahim and Ellis 1993; Moensted 2007). According to Brockhaus (1980), risk-taking propensity is defined as the perceived probability of receiving the rewards associated with success of a proposed situation. Lee and Peterson (2000) revealed that entrepreneurs are willing to accept the uncertainty and risks associated with being self-employed, as opposed to settling for the refuge of jobs within organizations. Begley and Boyd's (1987) study of risk-taking preferences demonstrated that organizational founders exhibit a stronger risk-taking propensity, as well as a higher tolerance for ambiguity, than do non-entrepreneurial individuals. Gelderen et al. (2006) and Norton and Moore (2006) also indicated that successful entrepreneurs are willing to take risks. Many successful entrepreneurs attribute success in business to their ability to confront uncertainty (Moensted 2007) and take a calculated risk (Ibrahim and Ellis 1993). We propose the following hypothesis:

Hypothesis 2 The success of e-commerce entrepreneurs is associated with the risk-taking propensity of the founding entrepreneur.

5.2.3 *Locus of control*

How entrepreneurs perceive their relationship with their environment distinguishes them from non-entrepreneurs (Arenius and Minniti 2005). Locus of control has received much interest in entrepreneurship research and has been identified as one of the most dominant entrepreneurial characteristics (Rotter 1966; Brockhaus 1980; Poon et al. 2006). In locus of control theory, there are two types of people: (1) externals are those who believe that what happens to them is a result of fate, chance, luck, or force beyond their control; and (2) internals are those who believe that for the most part their future is under the control of their own effort. Rotter (1966) indicated that an internal locus of control affects learning by motivating and supporting an individual activity. For entrepreneurs, it means the ability and will to be self-directed in the pursuit of opportunities (Lumpkin and Dess 1996). Many studies point out that founders of new businesses have more internal locus of control than non-founders (Rotter 1966; Durand 1975; Brockhaus 1980; Begley and Boyd 1987). Thus, the following hypothesis is proposed:

Hypothesis 3 The success of e-commerce entrepreneurs is associated with the locus of control of the founding entrepreneur.

5.3 E-networking

According to Varadarajan and Yadav (2002), networks are patterned relationships between individuals and groups. Networking is the act of building a resource network and of strengthening ties within it. Thus networks are products of intentional entrepreneur action (Ireland et al. 2001). Successful entrepreneurs use creativity, social networking, and bargaining to obtain favors, deals, and action (Kase and Liu 1996). In today's networked global economy, relationships with business partners are essential to ventures' survival and growth (Evans and Volery 2001). The

ability to build and maintain a network of contacts is critical to the modern entrepreneur's success (Ibrahim and Ellis 1993; Fariselli et al. 1999). In addition, the importance of electronic networking (e-networking) or virtual networking has become firmly established. Through the use of the Internet, e-commerce entrepreneurs can receive the latest information faster with low cost (Evans and Volery 2001). This can expose them to new realms of information and contacts and allow them to exploit new opportunities more quickly (Companys and McMullen 2007). Internet networking has definite advantages over other types of networking (Knouse and Webb 2001). Moreover, network maintenance is cheaper and easier than face-to-face or even telephone interactions. The relative ease of access and low-maintenance requirements can provide stronger ties as well as more extensive contacts between the e-commerce ventures and their customers and business partners (Knouse and Webb 2001). The following hypothesis is developed:

Hypothesis 4 The success of e-commerce entrepreneurs is associated with the e-networking of the founding entrepreneur.

5.4 Factors of e-service quality

5.4.1 Reliability

Twenty years of research on service quality has shown that reliability is the most important of all service dimensions (Zeithaml 2002). Reliability refers to the ability to perform the promised service accurately and consistently including frequently updating the website and accuracy of online purchasing and billing. According to Zeithaml (2002), reliability is associated with the technical functioning of the site, particularly the extent to which it is available and functioning properly. Santos (2003) referred to reliability as the ability to perform the promised service accurately and consistently, including frequency of updating the website, prompt reply to customer inquiries, and accuracy of online purchasing and billing. Online customers need the desired information to be accessible when it is needed (Korper and Ellis 1999). For the decision-making process, the customer needs assurance that the data provided at that point in time, and upon which the decision is based, are reliable (Zeithaml et al. 2000). Information reliability requires that the information provided by a system be both accurate and current (Greenstein and Vasarhelyi 2002). Reliability can be one of the most significant measures used to assess customer perceptions of e-commerce service quality (Zeithaml et al. 2000; Voss 2003). Thus, we propose the next hypothesis:

Hypothesis 5 The success of e-commerce entrepreneurs is associated with the reliability of the new venture's e-service reliability.

5.4.2 Responsiveness

According to Korper and Ellis (1999), online customers want more than service; they want responsiveness. During or after the transaction, they want a quick response if an urgent problem arises. Responsiveness refers to the ability to deal effectively with complaints and promptness of service (Van Reil et al. 2003). According to Carlson (2000), customers expect Internet retailers to respond to their inquiries promptly. Studies on responsiveness of web-based service reveal that there is a significant positive correlation between the speed in delivery of service and user satisfaction (Hoffman and Navak 1996).

Customers may choose to contact the company with general product questions, or they may issue questions or complaints related to an online transaction. A fast, friendly response can let the customers know that the company values their opinions and online experience, and the company is working diligently to keep them happy. Thus, we suggest the following hypothesis:

Hypothesis 6 The success of e-commerce entrepreneurs is associated with the reliability of the new venture's e-service responsiveness.

5.4.3 Ease of use

Ease of use is the single most important need to fulfill for potential customers (Korper and Ellis 1999). Several researchers have found ease of use or effort to be an important factor in the evaluation of an

electronic service option (Dabholkar 1996; Lockett and Littler 1997). According to Zeithaml et al. (2000), ease of use involves simplicity in accessing, in downloading, and in navigating online. According to Greenstein and Vasarhelyi (2002), ease of use reflects the usability of the web site during customer navigation and aims to reduce customer frustration. Usability is critical because e-commerce entrepreneurs must keep their customer needs at the top of the priority list (Korper and Ellis 1999; Kaynama and Black 2000; Santos 2003). We propose the next hypothesis:

Hypothesis 7 The success of e-commerce entrepreneurs is associated with the reliability of the new venture's e-service ease of use.

5.4.4 Self-service

Laudon and Laudon (2002) emphasized that the web and other network technologies are inspiring new approaches to customer service and support. In addition, these changes have occurred mainly through the development of technology-based self-service formats, which enable consumers to perform services for themselves quickly and conveniently (Bobbit and Dabholkar 2001). Through the use of a well-designed web-based self-service, customers can find answers to their questions twenty-four hours a day and seven days a week. During off hours, customers can check the status of orders, get answers to frequently asked questions, and have access to a knowledge and information base that can help them solve problems (Carlson 2000). Web-based self-service access is credited as a key element in brand-building and customer relationship-building strategies (Selnes and Hansen 2001). Self-service technology allows the customer to do for themselves, potentially yielding a result of greater satisfaction and reduced cost (Carlson 2000). Personal service is a matter of costs – and costs have often been the driving force behind the introduction of standardized self-service systems that reduce service production costs and enable firms to gain a competitive advantage (Selnes and Hansen 2001). Our next hypothesis is:

Hypothesis 8 The success of e-commerce entrepreneurs is associated with the reliability of the new venture's e-self-service.

5.5 Government Support

According to Feindt et al. (2002), a supportive government can nurture entrepreneurial activity by giving the free market an opportunity to operate under the laws of supply and demand. Restrictive regulations, crippling tariffs, and taxes can disable any entrepreneurial effort. A GEM report provides conclusive evidence that promoting entrepreneurship and enhancing the entrepreneurship dynamic of a country should be an integral element of any government's commitment to boosting economic well being (Reynolds 2000). While some government policies appear to be designed to identify and support high-growth potential technology companies [cf., Italy, Colombo and Grilli 2006], Thailand's policies focus on influencing more Thais to start electronically based companies.

In its promotion of e-commerce ventures, the government can play two positive roles in the development of e-commerce: (1) direct promotion through applications of e-commerce principles in government administration and procurement, and in the provision of public services; and (2) facilitation of the development of e-commerce through the provision of a legal, regulatory, and infrastructural environment that encourages the development of e-commerce (Organization for Economic Co-operation and Development 1999). The government support policy is a key component for accelerating the growth of e-commerce entrepreneurs in Thailand (Gray and Sanzogni 2004). The Thai government has taken an active role in the establishment of e-commerce infrastructure. Hence, it is hypothesized that:

Hypothesis 9 The success of e-commerce entrepreneurs is associated with the government's support for e-commerce new ventures.

6 Methodology

6.1 Sample selection

The target population for this study consists of 1,794 e-commerce entrepreneurs who registered with the Department of Business Development (DBD), Ministry of Commerce, Thailand. The sample selection was based on the criterion that the firm had to be established for at least two years because it is not

possible to gather enough data to consider the success of firms operating in a shorter period of time. Small and new firms are notoriously fragile as they fail easily during the periods of startups (Jeffcoate et al. 2002).

6.2 Questionnaire design

In order to develop the questionnaire, initially, in-depth interviews were conducted with five e-commerce entrepreneurs from various fields of business including computers, shopping, Internet services, and travel agencies. Personal interviews were conducted with five participants in order to locate and correct weaknesses in the questionnaire instrument. The feedback and information obtained from the in-depth interviews were used to further refine the questionnaires; some variables were eliminated and some were added. As the data were collected in Thailand, experts translated the original questionnaire into Thai, which was then back-translated into English by another expert who was competent in both languages and able to check for accuracy. A pretest of the questionnaire was conducted by asking ten senior students studying a small business management course in the International Business Program at Sriprathum University to complete the English version questionnaires and another ten questionnaires in Thai version were randomly distributed to senior students taking entrepreneurship at Thammasat University. The results of the back-translation of the original English questionnaire into Thai were satisfactory as there was a consistency between the English and the Thai versions. Initially, the pretest questionnaire contained sixty-seven items for measuring the twelve concepts. Based on the feedback from the pretest with the e-commerce entrepreneurs, some questions were reworded for clarity and some items were deleted. The final survey questionnaire contained 59 items.

6.3 Data collection

First, the questionnaires, personalized cover letter, and self-addressed, postage-paid returned envelopes were sent to a census of all e-commerce entrepreneurs through postal mail service. The participants were asked to complete the self-administrated questionnaires and mail them back using the prepaid envelop provided. The respondents were given a month to respond. After a month, follow-up e-mails with the questionnaires attached were sent to the respondents. After two weeks, the second wave of e-mails was sent with the questionnaires requesting the e-commerce entrepreneurs to respond to the survey.

A total of 480 responses were obtained resulting in a 30% response rate. After excluding some questionnaires that contained missing/error values and those respondents who did not meet the criterion of owning a business that had been established for at least two years, a total of 375 responses met all the criteria (the response rate was 24%).

6.4 Sample characteristics

Table 1 presents descriptive data of the sample. Men constituted a majority of respondents (61.3%) as compared to women (38.7%). In terms of age, most

Table 1 Demographic information of respondents

Characteristic	$n = 375$	
	Frequency	Percent
Gender		
Male	230	61.3
Female	145	38.7
Age		
18–24 years	29	7.7
25–34 years	167	44.5
35–44 years	101	26.9
45–54 years	59	15.7
55–64 years	19	5.4
Education		
Secondary school	20	5.3
Diploma/Certificate	90	24.0
Bachelor's Degree	202	53.9
Master's Degree or higher	63	16.8
Number of owners		
One owner	169	45.2
Two owners	134	35.8
3–5 owners	50	13.4
6 or more owners	21	5.6
Number of employees		
No employee	17	4.7
1–4 employees	138	38.6
5–9 employees	151	42.2
10–19 employees	59	20.7
20 employees or more	10	2.8

of the respondents were in the early stages of their careers, with the largest group (44.5%) in the 25–34 age group. The respondents are well educated (53.9% holding bachelor's degree and 16.8% master's degree). The ownership shows most enterprises are owned by a single owner (45.2%) or two owners (35.8%). Almost all enterprises are small businesses, over 85% having less the 5 employees.

6.5 Measures of the variables

6.5.1 Dependent variable

The respondents were asked to indicate the success of their businesses with respect to growth rate, sales volume, business stability, customer acceptance, and overall personal satisfaction, using a five-point Likert scale (1 = very low to 5 = very high). The scores of the five variables were totaled into a new variable "Success."

6.5.2 Independent variables

Factor analysis was used to validate independent variable constructs. Principal component analysis with Varimax rotation was used in all cases. Table 2 reports the results of the factor analyses of the dependent variable, success, and the nine independent variables. A factor loading value of 0.50 and higher is regarded as good and significant, and 0.45 as fair (Hair et al. 1998). In factor analysis, all factors that achieve eigenvalues greater than one are considered as significant (Hair et al. 1998).

For this study, the overall results of scale reliability analysis achieving Cronbach's alpha ranged from 0.65 to 0.85. Nunnally (1978) has suggested that a minimum alpha of 0.60 suffices for the early stages of study. The analyses indicate that the summed scales have internal consistency and are reliable. Factor analyses assessing the ten constructs in the study including achievement orientation, risk-taking propensity, locus of control, e-networking, reliability, responsiveness, ease of use, self-service, government support, and success were conducted. The factor loadings showed eigenvalues greater than one (see Table 2) and were considered practically significant for the study (Hair et al. 1998). This indicated that the sets of measures in each construct represented the concepts well and, therefore, confirmed that the measures in the study achieved construct validity (Churchill 1979).

6.6 Hypothesis testing

The correlations between the variables in the study were conducted to test the relationships of those critical factors with the success of e-commerce entrepreneurs. The relation between the entire set of variables was studied statistically by means of bivariate correlation analysis, using Pearson's correlation coefficient. As reported in Table 3, correlation analysis shows the univariate correlation between critical factors and success of e-commerce

Table 2 Summary results of reliability and validity of construct

Construct	Mean	SD	*n*	Validity		Reliability
				Number of Items	Eigen-value	Alpha's coefficient
e-commerce Success	3.55	.70	363	5	2.88	.8133
Achievement	3.59	.62	366	8	3.31	.7944
Risk taking	3.10	.61	374	5	4.16	.8394
Locus of control	3.38	.93	375	5	3.41	.7842
E-networking	3.21	.70	370	5	2.18	.6680
Reliability	3.68	.63	369	4	3.52	.8582
Responsiveness	3.93	.71	375	5	2.76	.7876
Ease of use	3.66	.66	373	3	2.49	.7545
Self-service	3.73	.56	365	4	2.17	.7339
Government	3.65	.55	364	5	2.39	.6572

Table 3 Correlation matrix of variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
Success	3.55	.70									
Achieve orientation	3.59	.62	.44**								
Risk-taking	3.10	.61	.07	.09							
Locus of control	3.38	.93	.79**	.07	.04						
E-networking	3.21	.70	.00	.26**	.13*	−.05					
Reliability	3.68	.63	.61**	.70**	.08	.44**	.18*				
Responsiveness	3.73	.71	.21**	.31**	.07	.06	.09	.34**			
Ease of use	3.66	.66	.58**	.68**	.09	.35**	.32**	.78**	.26**		
Self-service	3.72	.56	.20**	.16*	.07	.11*	.01	.22**	.17*	.10*	
Government support	3.65	.55	.01	.15*	.08	-.04	.03	.13*	.22**	.12*	.02

Note: * $p < .05$ (1-tailed)
** $p < .01$ (1-tailed)

entrepreneurs. Then, multiple regression was conducted to measure multivariate correlation between critical factors and success of e-commerce entrepreneurs. The data were assessed for multicollinearity before conducting multiple regression analysis. The correlation results indicated that a number of significant intercorrelations among the independent variables existed. As none of these intercorrelations exceeded 0.80, the likelihood of multicollinearity was relatively low as shown in Table 3. Table 4 displays the beta coefficients of the nine independent variables. As shown in Table 4, the variables in the model that associated with the success of Thai e-commerce entrepreneurs accounted for 58% of the total predicable variance. The overall results of critical factors relating to the competitive success of e-commerce entrepreneurs in Thailand, summarized in Fig. 2, suggest that both characteristics of the founder entrepreneur and of e-service are significantly associated with new venture success.

7 Results

7.1 Founder factors

The first hypothesis posits that achievement orientation is positively related to the competitive success of Thai e-commerce entrepreneurs. The results of correlation analysis reported in Table 3 and the

Table 4 Results of regression analysis

Hypothesis	B	SB B	Sig $p < .05$
Hypothesis 1: The success of Thai e-commerce entrepreneurs is associated with the founder's achievement orientation	.094	.043	Y
Hypothesis 2: The success of Thai e-commerce entrepreneurs is associated with the founder's risk-taking propensity.	.046	.052	N
Hypothesis 3: The success of Thai e-commerce entrepreneurs is associated with the founder's locus of control	.478	.059	Y
Hypothesis 4: The success of Thai e-commerce entrepreneurs with the founder's e-networking.	.019	.050	N
Hypothesis 5: The success of Thai e-commerce entrepreneurs is associated with e-service reliability.	.316	.038	Y
Hypothesis 6: The success of Thai e-commerce entrepreneurs is associated with e-service responsiveness.	−.080	.053	N
Hypothesis 7: The success of Thai e-commerce entrepreneurs is associated with e-service ease of use.	.192	.027	Y
Hypothesis 8: The success of Thai e-commerce entrepreneurs is associated with e-service self-service.	.054	.029	N
Hypothesis 9: the success of Thai e-commerce entrepreneurs is associated with government support.	.025	.016	N

$R^2 = .58$; $AR^2 = .52$

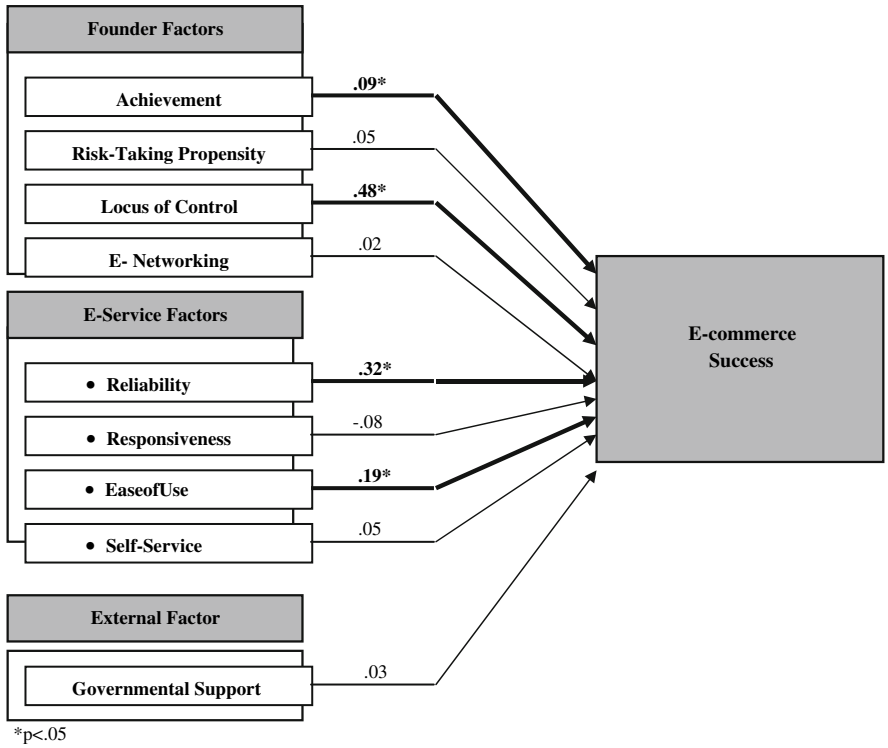

Fig. 2 Results of hypotheses testing

regression analysis reported in Table 4 show that achievement orientation is statistically significant with a correlation coefficient of 0.44 ($p < .001$) and a beta of .09 ($p < .05$). Therefore, the first hypothesis is supported, indicating that the need for achievement has a positive relationship with the competitive success of Thai e-commerce entrepreneurs. The second hypothesis states that risk-taking propensity is positively related to the competitive success of Thai e-commerce entrepreneurs. The correlation analysis indicated that there is no significant relationship between risk-taking propensity and success and thereby the second hypothesis is not supported ($r = .07, p = .27$). This result was also confirmed by regression analysis. The third hypothesis postulates that locus of control is positively related to the competitive success of Thai e-commerce entrepreneurs. The correlation and regression analysis results in Tables 3 and 4 show that the locus of control is statistically significant ($r = .79$, $p < .001$; $b = .48$, $p < .01$). The third hypothesis is supported. It also reveals that locus of control accounts for the highest weight of relative predictive importance ($\beta = .40$) on the competitive success of Thai e-commerce entrepreneurs. The fourth hypothesis states that e-networking is positively related to the success of Thai e-commerce entrepreneurs. The correlation and regression analyses results in Tables 3 and 4 show that the e-networking is not statistically significant ($r = .00$, $p = .326$; $b = .09$). The fourth hypothesis is not supported.

7.2 E-service factors

The fifth hypothesis states that reliability of e-service quality is positively related to the competitive success of Thai e-commerce entrepreneurs. The correlation and regression analyses results in Tables 3 and 4 show that the reliability is statistically significant ($r = .61$, $p < .001$; $b = .32$, $p < .05$). The fifth hypothesis is supported. The sixth hypothesis postulates that responsiveness of e-service quality is positively related to the completive success of Thai e-commerce entrepreneurs. The correlation analysis results in Table 3 show that the responsiveness is statistically significant ($r = .21$, $p < .001$). The results of the regression analysis (Table 4) demonstrate, however, that this variable is neither significant nor in the hypothesized direction, perhaps

reflecting its correlation with both reliability and ease of use. The sixth hypothesis is not supported. This finding is contrary to the findings in other studies on responsiveness. The seventh hypothesis states that ease of use is positively related to competitive success of Thai e-commerce entrepreneurs. The correlation analysis and regression results in Tables 3 and 4 show that ease of use is statistically significant ($r = .58$, $p < .001$; $b = 0.19$, $p < .05$). The seventh hypothesis is supported. The eighth hypothesis states that self-service of e-service quality is positively related to the competitive success of Thai e-commerce entrepreneurs. The correlation results in Table 3 indicate that self-service is statistically significant ($r = .20$, $p < .001$). These results are not supported by the regression analysis as reported in Table 4, again perhaps a result of intercorrelation with other e-service dimensions. The eighth hypothesis is not supported.

7.3 The government

The ninth hypothesis states that government support is positively related to the competitive success of Thai e-commerce entrepreneurs. The correlation and regression analyses results in Tables 3 and 4 show that government support is not statistically significant ($r = .01$, $p = .368$; $b = .03$). The ninth hypothesis is not supported. This finding is somewhat surprising, given the intensity of the Thai government's strong support for new IT ventures.

8 Discussion

Based on the literature relating to the establishment of a successful e-commerce ventures, the factors of entrepreneurial characteristics and actions, and the technical factors of e-service quality should be considered as critical for success. Yet, very few previous studies have investigated these CSFs of new venture creation and none in the context of e-commerce in Thailand. The present study focuses on the founder characteristics, e-service factors, and governmental support in the success of new e-commerce ventures.

The results of the analyses indicate that four hypotheses formulated for this study are statistically significant. These results show that the success of Thai e-commerce entrepreneurs are associated with founders who have high achievement orientation and an internal locus of control, confirming the results of many previous studies. From the business perspective, business models that emphasize e-service reliability and ease of use are also associated with IT new venture success. The study also shows the relative contribution of the critical factors for the predication of the competitive success of Thai e-commerce entrepreneurs. The locus of control has the highest weight of relative predictive importance toward the competitive success of e-commerce entrepreneurs in Thailand followed in order by reliability, ease of use, achievement orientation, and self-service.

8.1 Implications

This study contributes to the growing body of knowledge for both entrepreneurship and e-commerce in several ways. Despite the growing interest in e-commerce and entrepreneurship as an agent to generate income, reduce unemployment, and sustain economic growth and wealth creation (Acs et al. 2004; UNCTAD 2003), there is limited research on the CSFs of e-commerce entrepreneurs. This study on CSFs of e-commerce entrepreneurs in the context of Thailand helps fill this gap.

Global empirical studies have shown that both e-commerce and entrepreneurship generate income and sustain economic growth and development (Reynolds et al. 2003; UNCTAD 2003). The findings of this study have important practical implications. The study has provided some preliminary evidence concerning CSFs for e-commerce entrepreneurs in the context of Thailand. E-commerce incubators might begin to consider the factors leading to their future success such as e-service quality dimensions including reliability and ease of use. Government agencies and practitioners can also use the findings in this study as a vehicle for improving and increasing the performance and success of e-commerce operations among the entrepreneurs and small- and medium-sized enterprises (SMEs) by providing some insight into characteristics of nascent entrepreneurs to be supported. For e-commerce entrepreneurs, these results will help them have a better understanding of

the current situation regarding key success factors which can contribute to their businesses' success.

Most of the previous research on e-commerce ventures has been done in mostly developed countries in the West, whereas recently high entrepreneurial activities are found in the Asian developing countries. The study of e-commerce entrepreneurs in developing counties such as Thailand can fulfill this gap as well. Similarly, much of the research on e-commerce ventures in Thailand has been done on the early stage of adoption or the diffusion of innovation, but the study of e-commerce operations is scarce. This study could advance knowledge of e-commerce and entrepreneurship and contribute to a better understanding of the e-commerce practices in Thailand.

8.2 Limitations and directions for future research

The indicators of business success in this study were focused on the perceptions of the owners only. Perceptual measures of the owners or founders were used for the empirical investigation into the impacts on the overall success of e-commerce ventures in Thailand. The data reflected the particular individuals' perceptions of the relations between the critical factors and the overall success. In addition to the subjective measures, financial data can complement the analysis and provide a more accurate assessment of the relationships between the critical factors and the overall success or performance. Objective performance data are very difficult to obtain, but it is a better approach to determining the success of the e-commerce entrepreneurs. This study could have provided a more comprehensive understanding about the success of e-commerce ventures if it expanded its base to include customer perceptions as well. These issues could be considered for future research.

This study contributes to the scholarly research on e-commerce and entrepreneurship. The major impact of this study will be on the development and implementation of the critical success factors for e-commerce entrepreneurs. This study will encourage researchers to follow the critical success factors leading to success of e-commerce made by this particular segment of the population. In order to see the CSFs of other segments of the economy, similar studies could be conducted in different sectors such as the financial or trading sectors. Also, comparative studies of the critical factors relating to e-commerce entrepreneurs' successes on a regional basis such as Thailand and others in Southeast Asia could be conducted to enhance the understanding of their impacts and also to increase the applicability of the findings to a wider geographical distributions of e-commerce entrepreneurs.

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