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ORIGINAL SCIENTIFIC PAPER

Gender as a Moderator for Firm Resources, Networks and Operation Factors on Firm Performance in Lao MSMES, Laos

Inmyxai Sengaloun[1], Ministry of Finance, Vientiane, Lao PDR
Takahashi Yoshi, Hiroshima University, Hiroshima city, Japan
Nham Phong Tuan University of Economics and Business-VNU, Hanoi, Vietnam

A B S T R A C T

The objective of the present research is to examine the gender of entrepreneurs as a moderator for the relationships between firm resources, networks and operation factors affecting firm performance in Lao micro, small, and medium sized enterprises (MSMEs). The sample consisted of 1,534 observations. The ordered probit model is adopted because the dependent variable is ordinal numbers. The findings show that the gender of entrepreneurs moderates the relationship between some firm resources (notably, human resources and tangible resources) and firm performance, indicating that even if male and female entrepreneurs have the same levels of these resources, male entrepreneurs outperform female entrepreneurs due to differences in decisions in implementing strategic choices. Furthermore, the gender of entrepreneurs moderates networks (network participation and ICT adoption) on firm performance, meaning that even if male and female entrepreneurs have similar network and ICT availability, male entrepreneurs perform better than female ones. Lastly, gender of entrepreneurs moderates businesses premises on firm performance. In other words, even if male and female entrepreneurs choose the same types of premises for businesses, such as outside premises, male entrepreneurs perform better than female ones. This research provides policy implications for academics, policymakers and

[1] Vientiane, Lao PDR; E-mail: sengaloun777@yahoo.com

implementers, to the effect that gender of entrepreneurs is a key factor in deciding the destiny of firms, in terms of better or worse performance.

KEY WORDS: *gender, networks, RBV, Feminist theories, firm performance*

Introduction

In Lao People's Democratic Republic (Lao PDR) there is a greater female population than males (NSC, 2007). Moreover, female participation in the work force, at above 70 percent, is similar to Cambodia and is the highest in the region after Vietnam (GRID, 2005).In Lao PDR, society has traditionally and explicitly segregated the duties between females and males. At the family level, males are the heads of the families and work outside to get financial support for their families while females are cast in domestic roles, doing housework and taking care of family members. In the workplace, females have seldom received leading positions, a fact that continues today.

In Laos, female entrepreneurs play significant roles in small and medium sized enterprises (MSMEs). For the entire economy, 29 percent of all businesses with more than five employees are owned or headed by females (Lao Department of Statistics, 2009). In the case of MSMEs, about 64 percent of Lao businesses are owned/headed by females (MIH and GTZ, 1996).

This research adopts three theories, with feminist theory (liberal feminist theory and social feminist theory) as the base theory but also, as sub-theories, the resource-based view (RBV) and the network theory. The research encompasses the controversies between liberal feminist theory and social feminist theory in terms of moderation of gender, the former suggesting that there is no moderation while the latter considers the presence of moderation influences. This research hypothesizes in a way that is consistent with social feminist theory, because significant impacts of social and cultural structures seem to be present in the case of Lao MSMEs. Specifically, the performance of male and female entrepreneurs is expected to be different since their gender is expected to involve different social and cultural features. However, to date, hardly any empirical research has been undertaken in terms of gender of entrepreneurs as moderator for the relationship between firm performance and its antecedents such as firm resources, networks and operation factors in the case of least developed countries, particularly for Lao MSMEs.

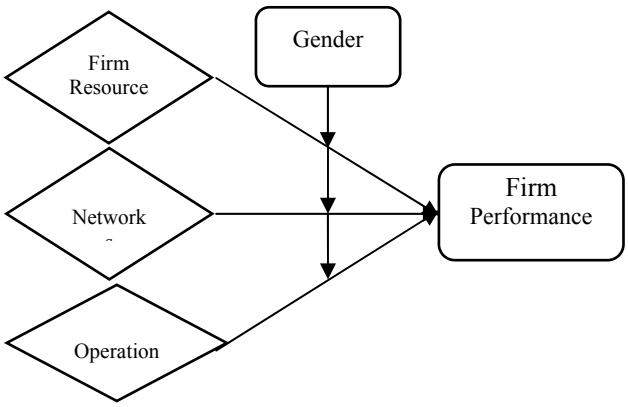
The objective of this research is therefore to examine gender of entrepreneurs as moderator the relationships between firm resources, networks and operation factors on firm performance in the Lao MSMEs. It provides an understanding of the pre-requisites for Lao male and female entrepreneurs to succeed in their businesses, which is of critical importance in the competitive business environment.

Conceptual Framework

The overall conceptual framework is based on social feminist theory, with RBV and network theory as sub-theories. The specific RBV model is drawn from Grant (2002), the network model is drawn from network theory, and the operation model is drawn from feminist theories. As illustrated in Figure 1, this research aims to link these three theories by examining gender of entrepreneurs as moderator between firm performance and its antecedents (firm resources, networks and operation factors).

Gender of entrepreneurs moderates the relationship between firm resources, networks and operation factors and firm performance, meaning that the different approaches and strategies adopted by different genders in using and implementing: firm resources, networks and operation factors can result in different firm performance. Thus, even if male and female entrepreneurs have or hold the same levels of firm resources, networks and operation factors, they are expected to perform differently. This is in line with the social feminist theory in the next section.

Figure 1: Gender as Moderator between Firm resources, Networks and Operation Factors on Firm Performance



Literature Review and Development of Hypotheses

There are several key terminologies that are needed to be defined for this paper. MSMEs in the Lao PDR are defined according to Prime Ministerial Decree No.42 (2004) that defines a micro firm as consisting of 1 to 2 employees; a small firm as 3 to 19 employees, a medium firm as 20 to 99 employees and a large firm as 100 employees or more. Gender refers to the differences between females and males within the same household and between cultures, which are socially and culturally constructed and change over time (Moser, 1993). In this context, gender refers to the sex of entrepreneurs. The term "female-headed and male-headed firms" refer to owners/managers of MSMEs and/or entrepreneurs. Male-headed firms hereafter are referred to as MHFs and female headed firms hereafter referred to as FHFs.

Since this research is based on social feminist theory, it is necessary to review overall feminist theories (Black, 1989), namely liberal feminism and social feminism. Liberal feminism is based on the assumption that females are equally capable as males (Fischer *et al.,* 1993). The observed differences in the achievements of males and females are explained by the proposition that females have less frequently realized their full capabilities only because they were deprived of essential opportunities such as education. In contrast to liberal feminism, under social feminism (SF) males and females are not considered essentially the same. SF has somewhat more diverse theoretical origins, ranging from social learning theory to psychoanalysis (Fischer *et al.,* 1993). It holds that there are differences between males' and females' experiences from the earliest moments of life, and these result in fundamentally different ways of seeing the world.

The foundations of this paper are based on liberal feminism and social feminism, with a focus on social feminism, as applied to MSME practices. In this regard, liberal feminism is concerned with different levels of control over resource endowments, while social feminism is not only involved with different levels of resource endowments but is also concerned with different motivation in terms of using these endowments in order to achieve better performance (Fischer et al., 1993). In particular, applying the two theories is significant for the case of comparative study on firm performance and its antecedents. Because "liberal feminism" is based on the assumption that if male and female entrepreneurs have the same levels of firm endowments, they expect to achieve similar firm performance, whereas "social feminism" makes the argument that even if male and female entrepreneurs control

similar or same levels of endowments, they will not achieve similar firm performance. This is based on the notion that decisions and strategies, in terms of implementation of these endowments, are influenced by culture, by socialization and the environment within which these entrepreneurs have grown up, and so these differences between MHF and FHF may be reflected in differences in firm performance. This research puts emphasis on social feminist theory, because significant impacts of social and cultural structures can be observed in Lao society and its MSMEs.

Gender as Moderator between Firm Resources and Firm Performance

Different strategic choices in using the firm's resources (human, intangible and tangible resources) can lead to different performance by male headed firms (henceforth, MHFs) and female headed firms (henceforth, FHFs). Even if males and females have the same types of firm resources, Kantor (2002) reports that many females are reluctant to transform their economic resources into empowerment outcomes within family because of the threat of social isolation if their husbands should leave them. Thus, attitudes of females can result in difference in firm performance. In other words, decisions about utilization of firm resources are influenced by the gender of the entrepreneur. Hence, gender is adopted as moderator on the relationship between firm resources and firm performance. Generally speaking, better utilization of capabilities and competencies of human resources (HR), which accumulate from factors such as education, work experience and training, can lead to better performance. However whether FHFs utilize firm resources as effectively as MHFs has been a controversial issue. The liberal feminist theory proposes that if males and females have equal access to available resources such as education, work experiences and other resources, females are expected to behave in a similar way as males do (Unger and Crawford, 1992), and eventually utilization of accumulated knowledge and skills from education and work experience by MHFs and FHFs may result in similar outcomes. However, despite having the same level of HR, Lao female entrepreneurs may not be effective as male entrepreneurs, in terms of utilization of their HR, due to different strategic choices that they make and, based on the social and cultural structures in Laos, the social feminist theory seems to be more applicable.

Intangible resources are kinds of assets that are legally possessed by the firm such as intellectual property right, contracts, confidential data,

brand, trademark, relationships with customers, the reputation of the firm's products and services for quality and reliability, and the reputation of the firm with suppliers (Peteraf, 1993, Grant, 2002). Due to limitations of data relating to intangible resources, 'reputation' can be used as proxy, through investments in marketing and advertising (Inmyxai and Takahashi, 2009; Inmyxai and Takahashi, 2010). More specifically, despite using the same amount of firm resources in building the reputation of goods and services through investments in advertising and marketing, the performance of male and female entrepreneurs is expected to differ. One of the explanations is that decisions in selecting target customers and consumers may differ since male and female entrepreneurs perceive the world differently and therefore their targets in advertising and marketing strategies may differ.

The significance of tangible resources (physical technology and business finance) to firm performance is exemplified by three out of five previous studies concluding that there are positive relationships between the sophistication of technology and the speed of the firm's growth (Storey, 1994). Furthermore, Steiner and Solem (1988) also found that the use of new technology or improved technology has a strong connection with business success. It can be argued that even if male and female headed firms have similar tangible resources, decisions regarding utilization of the resources can result in different performance according to gender that is different performance between MHFs and FHFs. Also, finance-related success factors in small-scale business include the amount the initial investment and ongoing access to finance (Yusuf, 1995), and having an appropriate financing strategy is crucial for the achievement of business success (Storey, 1985). Therefore, finance activities were positively associated with performance (Hitt and Ireland, 1985). Differences in effectiveness of using tangible resources can be expected because of gender.

Thus, based on the rationale in the foregoing literature, different strategic choices in using the firm resources (human, intangible and tangible resources) can lead to different performance by MHFs and FHFs even if they have the same level of resource endowments. This means that gender of entrepreneurs moderates the relationship between firm resources and firm performance. Hence,

H1. Gender of entrepreneurs moderates the relationship between firm resources and firm performance.

Gender as Moderator between Networks and Firm Performance

Strategic choices relating to networks utilization and implementation can be expected to lead to different performance by MHFs and FHFs, despite having similar levels of network availability. There are three indicators of 'networks' in this study: (1) membership in business association (as soft-infrastructure); (2) information communication technology (ICT) adoption (as hard infrastructure); and (3) utilization of business development services (BDS) (as knowledge and information flow through networks). These three components contribute to firm performance, but the extent of the contribution varies in the different ways of implementing of strategic choices by MHFs and FHFs.

Soft-infrastructure decisions are important in improving firm performance, with gender differences being apparent. For instance, networks have been one of the decisive factors in the survival of firms established by females (Blanco *et al.,* 1996; Brodsky, 1993; Shim and Eastlick, 1998). This is because the members of networks can benefit from support systems, mentors and advisors. In this regard, business associates and friends, and participation in trade associations and women's groups, are important networks, which have positive relationships with firm performance (Hisrich and Brush, 1987). Networks also play a significant role in boosting the sales and supply functions, through personal contacts with customers and suppliers, thus, contributing to superior business performance.

Furthermore, networks formed through membership of business organizations are expected to lead to links with key external parties. Such associations can provide an opportunity for MSME-members to obtain information, to share experiences, to participate in training and to have access to markets. This can create good networking with key business partners, suppliers, government and development agencies. Kodithuwakku and Rosa (2002, p.431) agree that successful entrepreneurs have the ability to extract value from their social networks and contacts, thus being creative in finding ways to mobilize scare resources and market access. However, even if male and female entrepreneurs having similar memberships of business organizations, it is not necessarily true that male and female entrepreneurs have similar performance. Diverse gender behavior on the part of entrepreneurs in using either formal or informal networks is expected to lead to different performance. Even if business networks are available, female entrepreneurs facing business problems or difficulties, are more

likely to seek assistance first from family and then from close friends. And, only after discussions within these private networks will female entrepreneurs seek help from knowledgeable business sources (Blanco *et al.,* 1996). In contrast, male entrepreneurs tend to seek advice from business development services right away. In short, different ways of using either formal or informal networks can contribute to differences in performance between male and female headed firms.

Another aspect of networks is through utilization of ICT, as hard infrastructure is very important to improve firm performance. This is because ICT can support business activities to achieve their goals and create improvements in both productivity and business operations. It is evidenced by firms where ICT adoption has substantially changed the communication, sales and information methods (Lapierre and Denier, 2005; Wang *et al.,* 2006), therefore enabling firms to achieve improved competitive advantage. Despite male and female entrepreneurs holding the same ICT capacity, their performance can be different. One of the reasons could be that genders use different ICT strategies. Female entrepreneurs seem to be stereotyped as conservative and risk averse, whereas male entrepreneurs are seen as risk-takers (Meier and Masters, 1988).

Lastly, different ways of using knowledge and information from business development services (BDS) can contribute to differences in performance. Generally, BDS can be sources of valuable knowledge, information and skills, gained from professional advisors such as lawyers, bankers, accountants and technical specialists with the aim of improving business performance, particularly for MSMEs. Although male and female entrepreneurs may obtain similar BDS, their application of this knowledge and information can be different, which is part of the reason why female entrepreneurs tend to underperform male entrepreneurs. This is because female entrepreneurs are traditionally risk-averse in nature so that they are unlikely to (or have less opportunity to) utilize the full potential of knowledge and information from BDS even if they have the same opportunities as male entrepreneurs. Therefore, gender of entrepreneurs is used as moderator for the relationship between networks and firm performance. Thus, the following hypothesis can be derived:

H2. Gender of entrepreneurs moderates the relationship between networks and firm performance.

Gender as Moderator between Operation Factors and Firm Performance

Operation factors include selection of the firm's premises, putting time and effort into running the business, and taking strategic approaches to cope with the presence of competitors. In general, it is expected that these operation factors affect performance of MSMEs. But, female entrepreneurs face different conditions from male entrepreneurs and so, even if there are the same types of operation factors, different performance by MHFs and FHFs can result. Hence, gender of entrepreneurs is adopted as moderator between operation factors and firm performance.

Decisions regarding selection of business can lead to differences in firm performance. For example, when both male and female entrepreneurs choose between a home-based business and outside premises, their firm performance can differ (Fasci and Valdez, 1998; Loscocco *et al.,* 1991). Fasci and Valdez (1998) found that adopting a home-based business has a negative impact on performance, meaning that outside premises can provide the positive influence on firm performance. However, for females, Collins-Dodd *et al.* (2004) assert that home-based businesses are more productive, as it can allow them to allocate time for business as well as time for domestic roles such as childcare responsibilities, thus providing flexibility in relation to work time and work place (Fasci and Valdez, 1998). As an indicator of the importance of gender-related decisions regarding selection of the business premises, even if male and female entrepreneurs select the same type of premises (either home-based businesses or external), their performance can be different.

Different gender approaches in time-allocation for business can contribute to different performance. For example, the number of hours worked by individual owners/managers has been observed to impact on performance (Fasci and Valdez, 1998). The number of hours (full-time/part-time) spent on the business, on a weekly basis, as a measure of inputs to the business, contributed positively and significantly to earnings. In this connection, the question can be raised that, despite the number of hours spent on business by male and female entrepreneurs being the same, male entrepreneurs expect to perform better than female entrepreneurs due to different social condition and different working styles.

Firm performance can also be affected by the competitive environment. Singh *et al.* (2001) state that the presence of competitors in the

same industry helps firms to perform better than firms without competition. The presence of competitiveness can be perceived as threats and opportunities for firms, related to their external environment. However, the impact of competition can differ between genders. When competitiveness exists, male entrepreneurs are more self-assertive and like to achieve mastery than females (Eagly and Wood, 1991). Males may see competition as an opportunity for things such as growth and sustain performance better than female counterparts. Besides, there are other 'hidden' effects related to the traditional genders' social and family roles. Females face domestic demands such as remaining the primary parent, emotional nurturer and housekeeper, which influence their entrepreneurial ventures' growth prospects (Lee-Gosselin and Grise, 1990, p.431). In contrast, the primary family responsibility of males is to be a good provider, which is compatible with their role as head of a growing firm (Unger and Crawford, 1992). Therefore, the different, traditional gender-roles of entrepreneurs can lead to the expectation that there will be different performance between MHFs and FHFs.

As discussed above, even if males and females implement similar operation factors, their performance may be different. Therefore, gender of entrepreneurs is adopted as moderator of the relationship between operation factors and firm performance. Thus, the following hypothesis can be derived:

H3. Gender of entrepreneurs moderates the relationship between operation factors and firm performance.

Firm Performance

Financial performance in this research is a subjective measure, assessed on annual sales turnover as reported in the questionnaire. This method has been used in previous literature (Rosa *et al.,* 1996; Du Rietz and Henrekson, 2000; Anna *et al.,* 1999). Such subjective performance measures have been widely used in strategy-related research and in organizational research (Dess and Robinson, 1984; Spanos and Lioukas, 2001; Powell, 1992; Powell and Dent-Micallef, 1997).

Control Variables

Control variables are used in this study, to justify factors other than the theoretical variables that can explain the variance in the dependent

variable. In this regard, firm size, firm age and industry sectors are adopted as control variables.

Research Methodology

Sample and Data Collection

This research uses unbalanced panel data that was collected in 2005, 2007 and 2009 by the Enterprises Baseline Survey (EBS) from the German Agency for Technical Cooperation (GTZ). The GTZ conducts the EBS every two years. The sample selected only enterprises that were formally registered. The questionnaires sought responses from entrepreneurs in MSMEs with between 1 and 99 employees. The survey in 2005 included 370 MSMEs that covered four Lao provinces namely, Vientiane capital, Champasack, Luang Prabang, and Luang Namtha. The first three provinces are economically dynamic provinces and the fourth is a rural province. For the 2007 survey, the sample size was 470 Lao MSMEs that covered five Lao provinces, with Savanakhet being added to the four 2005 provinces. For the 2009 survey, the sample size was 694 Lao MSMEs that covered the same five provinces as the 207 survey. The total sample therefore consisted of 1,534 observations of firms, 896 of which were male headed firms and 638 were female headed firms.

Measurement

Table 1 shows the measurements and descriptions of variables that are directly from the questionnaires developed from extant literature, as cited for most variables.

Table 1: Measurements of Variables

Variables	Measurements/descriptions
Control variables	
Firm Size	The total number of current full-time employees.
Firm age	The numbers of years the MSMEs have been established/incorporated.
Industry sectors	Three industry dummy variables by controlling manufacturing, trading and service.
Dependent Variable	
Performance	Measured by ordinal numbers from 1 to 5 corresponding to a level of annual sales turnover (as reported to the national tax

Variables	Measurements/descriptions
	office). From the lowest to the highest level these are: less than 200 Million Kip; 200-400 Million Kip; 401-700 Million Kip; 701-1,000 Million Kip; and more than 1,000 Million Kip. (As of late 2010, 1 dollar is equal to approximately 8,041 Lao Kip).
Independent Variables	
Gender	Male entrepreneur is represented by 1 while female entrepreneur is 0.
Firm Resources	Firm resources are based on the concept of RBV and Grant (2002) which classified firm resources into three categories: human, intangible and tangible resources.
Human Resource Variables	
Education of entrepreneurs	Measured by ordinal numbers from 1 to 11, corresponding to the level of education of owners/managers. From the lowest to the highest level these are: no schooling, some primary school, completed primary school, some lower secondary school, completed lower secondary school, some upper secondary school, completed upper secondary school, vocational, technical, higher (Undergraduate) and post graduate.
Training of entrepreneurs	It is whether or not any training was received since they started their business. If the respondent chose 'yes', then the next question asked to the respondent to describe the kind of management training, including: health and safety, cost calculations, business management, accounting, marketing, law and regulations, quality management, business finance and others. This variable is measured as a dummy variable.
Training of employees	This question is whether or not the employees received any training. If the respondent chose 'yes', then the next question asked was to describe the kind of management training they have had, whether it was on: customer services, accounting, record booking, operation of machinery and tools, computer, documentation and filing and others. Thus, this variable is measured as a dummy variable.
Working experience	It is measured by the age of owners/managers, after subtracting the total years spent in education. Experience of entrepreneurs has a close relationship with their education and thus working experience is defined as the number of years an individual has been able to work after completing his or her education *(Ibid)*.
Intangible resource	*Reputation is used marketing and advertising, as proxies, to*

Variables	Measurements/descriptions
variable	*build reputation.*
Reputation	The question is whether the firm had some investment in marketing and advertising for the last year or not. In this research, this variable is measured as a dummy variable.
Tangible resource variables	*Physical technology and business finance*
Physical technology	The question is measured by ordinal numbers from 1 to 5 corresponding to the level of technology in the business from the lowest through the highest level: hand tools/utensils; portable power tools and electric appliances; small fixed motorized equipment; large machinery; and motorized vehicles.
Business Finance	The question is whether the firm received loans or not. Consequently, this variable is measured as a dummy variable.
Network Variables	*Network variables include three main indicators: network participation (as soft infrastructure); ICT (as hard infrastructure) and business development services (as information and knowledge flow through the networks).*
Network participation	The question asked whether the firm is a member of any specified organization or not. This way of measuring network membership is consistent with Teoh and Chong (2007, 2008). Thus, being a member in any of the mentioned organizations is a proxy for networks. This variable is measured as a dummy variable.
Information communication technology (ICT)	The question is whether the firm uses some type of equipment for communication. If the respondent chose 'yes', the next question asked what types of equipment for communication did respondents have including, for example: telephone, fax, telephone/fax, internet, and others. In this research, ICT measurement is consistent with Erffmeyer and Johnson (2001), using aggregated types of communication.
Business development services (BDS)	This question is whether or not the owners/managers of a firm received any advice for the development of his/her business. This variable is measured as a dummy variable.
Operation Factor Variables	*Operation factors include three main indicators: premises for businesses, operation months and presence of competitiveness (used as a proxy for a degree of taking a risk for operation).*
Premises for businesses	This question is whether the place of business is home-based or in outside premises. If the business uses places outside the home as an office, it is given 1. If the business uses the home as the office, it is given 0.
Operation months	This question indicates the amount of time that the

Variables	Measurements/descriptions
Presence of competitiveness	entrepreneurs have put into the business (part-time/full-time). This question is whether or not the owner/managers have any problems with competitiveness. This variable is measured as a dummy variable. Presence of competitiveness is used as a proxy for a degree of taking a risk for operation.

Source: Authors

Analysis and Discussion

Ordered Probit Regression Models

The dependent variable was measured by using ordinal measures from 1 to 5. Therefore, adoption of an ordered probit model (Long, 1997; Davidson and MacKinnon, 1993) is appropriate in the analysis to examine gender of entrepreneurs as moderator on the relationship between firm resources, networks and operation factors and firm performance for Lao MSMEs. The firm's performance or dependent variable is the ordinal numbers from 1 to 5, corresponding to a level of annual sales turnover as stated above. Based on Baron and Kenney (1986) to test moderation effects of gender of entrepreneurs, there are three main models, namely resource, network and operation models that are analyzed as follows:

Resource Models for H1

The specifications of three ordered probit regression models can be derived, a latent variable y_i^* representing firm performance being estimated as in equations [1] to [3] below:

Model 1:

$$y_i^* = \beta_0 + \beta_1 FS + \beta_2 FA + \beta_3 Man + \beta_4 Tra + \beta_5 Sev + e \quad [1]$$

Model 2:

$$y_i^* = \beta_0 + \beta_1 FS + \beta_2 FA + \beta_3 Man + \beta_4 Tra + \beta_5 Sev + \beta_6 GD + e \quad [2]$$

Model3:

$$y_i^* = \beta_0 + \beta_1 FS + \beta_2 FA + \beta_3 Man + \beta_4 Tra + \beta_5 Sev + \beta_6 GD + \beta_7 EDU * GD + \beta_8 TRNFE * GD + \beta_9 TRNE * GD + \beta_{10} WEXP * GD + \beta_{11} REP * GD + \beta_{12} PTEC * GD + \beta_{13} BF * GD + e \quad [3]$$

Herein, equations [1-3] is a latent variable (dependent variable) and independent variables refer to firm size (FS), firm age (FA), manufacturing (Man), trading (Tra), service (Sev), education (EDU), training of entrepreneurs (TRNFE), working experience (WEXP), training of employees (TRNE), reputation (REP), physical technology (PTEC), and business finance (BF).

Network Models for H2

The specifications of the three ordered probit regression models can be derived, with a latent variable y_i^* representing firm performance estimated as in equations [1] to [3] below:

Model 1:

$$y_i^* = \beta_0 + \beta_1 FS + \beta_2 FA + \beta_3 Man + \beta_4 Tra + \beta_5 Sev + \varepsilon \quad [1]$$

Model 2:

$$y_i^* = \beta_0 + \beta_1 FS + \beta_2 FA + \beta_3 Man + \beta_4 Tra + \beta_5 Sev + \beta_6 GD + \varepsilon \quad [2]$$

Model 3:

$$y_i^* = \beta_0 + \beta_1 FS + \beta_2 FA + \beta_3 Man + \beta_4 Tra + \beta_5 Sev + \beta_6 GD + \beta_7 NWP * GD + \beta_8 ICT * GD + \beta_9 BDS * GD + \varepsilon \quad [3]$$

Herein, equations [1-3] is a latent variable (dependent variable) and independent variables refer to firm size (FS), firm age (FA), manufacturing (Man), trading (Tra), service (Sev), network participation (NWP) and information communication technology (ICT) and business development services (BDS).

Operation Models for H3

The specifications of three ordered probit regression models can be derived, with a latent variable y_i^* representing firm performance being estimated as in equations [1] to [3] below:

Model 1:

$$y_i^* = \beta_0 + \beta_1 FS + \beta_2 FA + \beta_3 Man + \beta_4 Tra + \beta_5 Sev + \varepsilon \quad [1]$$

Model 2:

$$y_i^* = \beta_0 + \beta_1 FS + \beta_2 FA + \beta_3 Man + \beta_4 Tra + \beta_5 Sev + \beta_6 GD + \varepsilon \quad [2]$$

Model 3:

$$y_i^* = \beta_0 + \beta_1 FS + \beta_2 FA + \beta_3 Man + \beta_4 Tra + \beta_5 Sev + \beta_6 GD + \beta_7 PB * GD + \beta_8 OPM * GD + \beta_9 PC * GD + \varepsilon$$

[3]

Wherein, equations [1-3] is a latent variable (dependent variable) and independent variables refer to firm size (FS), firm age (FA), manufacturing (Man), trading (Tra), service (Sev), premises for businesses (PB), operation months (OPM), and presence of competitiveness (PC).

Analysis Results and Discussion

H1: the findings show that gender of entrepreneurs moderates the relationship between some firm resources (human resources and tangible resources, but not intangible resources) and firm performance, as displayed in Model 3 in Table 2.

These findings are not only in line with previous studies but it also are consistent with social feminist theories that, even if male and female entrepreneurs hold the same level of human resources and tangible resources, male entrepreneurs outperform female entrepreneurs. It is most important to emphasize that different genders adopt different strategic choices in using the mentioned firm resources to achieve better performance. This is because male entrepreneurs tend to have higher levels of self-assertion a 'master', which is required to handle business competition. Another reason is that, partly, female entrepreneurs are reluctant to transform their economic resource endowment into increasing their incomes within the family because of the threat that this empowerment poses in terms of isolation from their husbands (Kantor, 2002), especially in South Asia.

For intangible resource, the hypothesis centered on male and female entrepreneurs using the same levels of firm resources in building reputation through investments in advertising and marketing. The results were found to be negatively significant for firm performance, indicating that male entrepreneurs did not outperform and even perform worse than female ones.

In conclusion, the finding confirms that gender of entrepreneurs moderates the relationship between two of the three firm resource indicators (human resources and tangible resources but not intangible resources) and firm performance. This means that MHFs are better than FHFs in terms of

utilizing/implementing human resources and intangible resources. Therefore, H1 is partly supported.

Table 2: Moderation Effect of Gender for Resource Model

	Firm Performance		
	Model 1	**Model 2**	**Model 3**
Firm size	0.045***	0.044***	0.036***
Firm age	0.006	0.004	-0.004
Manufacturing	-	-	-0.245
Trading	0.207**	0.263***	-
Service	0.043	0.036	-0.380***
Gender		0.355***	0.24***
Firm Resources			
Human Resources			
Education x Gender			0.177***
Working experience x Gender			0.023***
Training of entrepreneurs x Gender			0.387***
Training for employees x Gender			0.412***
Intangible Resource			
Reputation x Gender			-0.460***
Tangible Resources			
Physical technology x Gender			0.153***
Business finance x Gender			0.299***
Pseudo R^2	0.1222	0.1298	0.1777
LR Statistics	399.23***	424.13***	580.53***
Log likelihood	-1434.11	-1421.66	-1343.46
N	1434	1434	1434

*** Significant at 1%≤; **5%≤

H2: the results show that gender of entrepreneurs partly moderates the relationship with networks (network participation and ICT adoption) on firm performance but not BDS, as shown in Model 3 in Table 3.

Again, these findings confirm social feminist theory that, even if male and female entrepreneurs have the same/similar levels of network and ICT availability, male entrepreneurs outperform female entrepreneurs. An explanation for this is that there may be gender differences in choices relating to using networks, which may be influenced by males and females' experiences from earliest moment of life that lead them to have different views on business operation. When female entrepreneurs face business

problems or difficulties, they seek assistance first from family and then from close friends, instead of seeking immediate advice from professional advisers, whereas male entrepreneurs seek advice from BDS right away. Furthermore, even if male and female entrepreneurs hold the same capacity of ICT, male entrepreneurs perform better than female entrepreneurs. One explanation is that male and female entrepreneurs adopt different choices in using the ICT, whereby male entrepreneurs respond with more enthusiasm to challenges of achieve growth, whereas female entrepreneurs are risk averse and conservative (Meier and Masters, 1988). Regarding BDS, even if male and female entrepreneurs use the same/similar informal or formal BDS, the performance of male entrepreneurs is not different from female counterparts. One reason could be that the knowledge and information through BDS are neither relevant to male entrepreneurs nor female ones.

Table 3: Moderation Results of Network Model

	Firm Performance		
	Model 1	**Model 2**	**Model 3**
Firm size	0.045***	0.044***	0.041***
Firm age	0.006	0.004	0.003
Manufacturing	-	-	-
Trading	0.207**	0.263***	0.299***
Service	0.043	0.036	-0.010
Gender		0.355***	0.291***
Networks			
Network participation x Gender			0.338***
ICT adoption x Gender			0.388***
Business development services x Gender			-0.038
Pseudo R^2	0.1222	0.1298	0.1485
LR Statistics	399.23***	424.13***	485.22***
Log likelihood	-1434.11	-1421.66	-1391.12
N	1434	1434	1434

*** Significant at 1%≤; **5%≤

In short, the results show that gender of entrepreneurs moderates the relationship with two of the three network indicators (network participation and ICT adoption) on firm performance, but not BDS. Thus, H2 is partly supported.

H3: the findings indicate that gender of entrepreneurs partly moderates the relationship between operation factors (premises for businesses) on firm performance, but not operation months and presence of competitiveness, as displayed in Model 3 in Table 4.

The results can be interpreted that, even if male and female entrepreneurs select the same types of premises for business such as outside home-based businesses, male entrepreneurs outperform female ones, as suggested by social feminist theory. More importantly, the decisions in selecting premises between male and female entrepreneurs may reflect social, cultural, institutional and environmental surroundings that can influence decision making. As a result, the performance of male and female entrepreneurs is different.

However, gender of entrepreneurs does not moderate the relationship between firm performance and its antecedents (operation months and presence of competitiveness). When male and female entrepreneurs spend same/similar numbers of hours in their business, male entrepreneurs fail to perform better than female entrepreneurs. In addition, when male and female entrepreneurs are faced with the same levels of competition, the different reactions and behavior of genders in terms of degree of risk-taking to respond to the competitiveness, seems to have no significant different impact on the performance of MHFs and FHFs. That is, male and female entrepreneurs under the same/similar levels of competition do not perform differently.In summary, the finding indicates that gender of entrepreneurs only moderates one of the three operation factors (premises for businesses) but not operation months and presence of competitiveness. Therefore, H3 is partly supported.

Table 4: Moderation Effect of Gender for Operation Model

	Firm Performance		
	Model 1	**Model 2**	**Model 3**
Firm size	0.045***	0.044***	0.043***
Firm age	0.006	0.004	0.006
Manufacturing	-	-	-0.265***
Trading	0.207**	0.263***	-
Service	0.043	0.036	-0.248***
Gender		0.355***	0.344***

	Firm Performance		
	Model 1	**Model 2**	**Model 3**
Operation Factors			
Premises for businesses x Gender			0.217***
Operation months x Gender			-0.067
Presence of competitiveness x Gender			0.022
Pseudo R^2	0.1222	0.1298	0.1334
LR Statistics	399.23***	424.13***	435.9***
Log likelihood	-1434.11	-1421.66	-1415.78
N	1434	1434	1434

*** Significant at 1%≤; **5%≤

Findings and Conclusion

The objectives of this study are to examine gender of entrepreneurs as moderator the relationships between firm resources (human, intangible and tangible resources), networks and operation factors on firm performance, in the case of Lao MSMEs. Three hypotheses have been empirically tested from a sample of 1,534 observations of Lao MSMEs from different industries and economic activities. As discussed in section 5.2, the results partly supported three hypotheses. The findings are mainly consistent with social feminist theory that even if entrepreneurs hold similar firm resources and networks, they will not necessarily achieve similar performance.

For *H-1*, gender of entrepreneurs moderates the relationship between two of the three firm resource indicators (human resources and tangible resources) and firm performance but not intangible resource. The results indicate that even if male and female entrepreneurs have the same levels of human resources and tangible resources, male entrepreneurs outperform female entrepreneurs due to differences in decisions in implementing choices among them. For *H-2*, gender of entrepreneurs moderates two of three network indicators (network participation and ICT adoption) on firm performance, but not BDS. This means that even if male and female entrepreneurs have similar network and ICT availability, male entrepreneurs perform better than female ones. This is because male entrepreneurs are risk-takers take more challenging approaches in utilization of the networks and ICT. For *H-3*, gender of entrepreneurs only moderates one of the three

operation factors (premises for businesses) on firm performance, but not operation months and presence of competitiveness. In other words, even if male and female entrepreneurs choose the same types of premises for businesses such as outside-home based businesses, male entrepreneurs perform better than female ones.

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Uticaj pola preduzetnika na odnose između resursa u firmi, njihovo umrežavanje i faktore funkcionisanja firmi, koji određuju performanse mikro, malih i srednjih preduzeća (MMSP) u Laosu

A P S T R A K T

Cilj ovog istraživanja je da se ispita kako pol preduzetnika vrši uticaj na odnose između resursa u firmi, njihovo umrežavanje i faktore funkcionisanja firmi, koji određuju performanse mikro, malih i srednjih preduzeća (MMSP) u Laosu. Uzorak se sastojao od 1.534 ispitanika. Ponuđeni „probit model" je izabran zbog zavisnih promenljivih izraženih u rednim brojevima. Rezultati istraživanja pokazuju da pol preduzetnika ima veliku ulogu kod odnosa između resursa pojedinih firmi (pre svega, ljudskih resursa i materijalnih sredstava),kao i kod performansi firmi. To znači da čak i kada muški i ženski preduzetnici imaju isti nivo tih sredstava, muški preduzetnici su u prednosti zbog razlika u sprovođenju strateških odluka. Osim toga, pol preduzetnika ima uticaja na umrežavanje, što znači da čak i ako muški i ženski preduzetnici imaju sličnu mrežu i dostupnost informacionim i komunikacionim tehnologijama (ICT), muški preduzetnici ostvaruju bolje rezultate od ženskih. Na kraju ,pol preduzetnika različito utiče na poslovne performanse firmi. Ovo istraživanje pruža praktične primere za naučne radnike, kreatore politike i one koji je primenjuju, s obzirom da je pol preduzetnika

ključni faktor u odlučivanju o sudbini preduzeća, u smislu njegovih boljih ili lošijih performansi.

KLJUČNE REČI: *pol, umrežavanje, feminističke teorije, performanse firmi*

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