

Performance Comparison Derived from Human Resources between Male and Female Headed Firms in the Lao MSMEs

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Gender is one of the emerging topics in management studies. A number of previous studies on developed countries have particularly analyzed the differences between gender headed firms, and have found that male headed firms outperform female headed firms. To explain a firm's performance more generally, resource-based view (RBV) has been considered as a very important theory in the past decades. Among several types of resources, human resources are known to be one of the critical resources for business success. In line with these discussions, the present research investigates if male headed firms perform better than female headed firms in the Lao micro, small and medium sized enterprises (MSMEs). For the empirical analysis, we focused on examining the impact of the human resources on performance in both male and female headed firms, based on the concept of RBV. For this purpose, the data used in the paper came from the Enterprises Baseline Survey 2005 and 2007 conducted by Germany Agency for Technical Cooperation (GTZ). This study consisted 840 observations, wherein 493 were male headed firms and 347 were female headed firms, having 1 to 99 employees. The ordered probit models were adopted for the empirical analysis. In the first model, most human resource characteristics and business characteristics were used as independent variables and obtained the different performances between male and female headed firms. In the second and third models, the human resource characteristics of both genders were considered as determinant factors for firm performance by controlling the firm size and firm age. The interesting finding was that there is a strong impact on performance when both

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gender firms invest in human resource development after starting a business but not at the start of business. The unique contribution of this study is the accumulation of various human resource development knowledge and skills within the context of the different gender headed firms in developing countries. Lastly, this study can provide the policy implications for both policymakers and implementers to emphasize on the key components of human resources on different gender headed firms, which underline their firm success. The different gender headed firms should invest in human resource development after starting a business in order to maximize the return on investments in their human resources.

Keywords: gender, firm performance, resource-based view, human resources and MSMEs

Field of Research: Management

1. Introduction

At above 70 percent, Lao females' labor force participation is amongst the highest in the South East Asian region (GRID 2005). In this regard, the Lao government has also attempted to empower females through many means in order to achieve gender equality in society as well as to achieve national poverty reduction. In addition, the MIH and GTZ 1996 survey reported that 64 percent of firms were owned by females. An increasing number of female entrepreneurs have impact on society and economy as a whole. As a result, females enter in businesses in society as entrepreneurs, which can increase a considerable amount of role in leadership positions. Furthermore, female headed firms can create the driving labor force for the private sector that can affect the national income.

Recently, considerable efforts of researchers in management studies put great attention on gender difference issues, particularly the differences between firms run by males and females in terms of their business performances. However, the majority of previous studies related to this particular gender entrepreneur issue were conducted dominantly in developed countries. Despite the growing number of females in developing countries who enter into businesses as entrepreneurs, qualitative and quantitative in-depth studies on differences in gender performance appear to be limited. For indeed, human resources and human resources development can be understood within the social conditions in which the male and female headed firms have been established. Therefore, the initiative of this paper can be a unique contribution in investigating the issues of

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male and female entrepreneurs in developing countries. Another contribution of this study is that capabilities and competencies embedded inside different gender entrepreneurs in the different stages of business (i.e. at the start of business and after starting a business) have impact on firm performance. The results expect to provide valuable information for policymakers and firms headed by both genders particularly that the study emphasizes on both the similar and dissimilar impacts on performance in the different developmental stages for human resources. In former studies, Rosa and Hamilton (1994) point out that prominently, successful female entrepreneurs do not only mean to improve their personal lives but they also significantly affect the perception of females in the entire society. To date, female entrepreneurs have attempted to play dual roles which are the modern and traditional, in the society. Goffee and Scase (1983, p.627) suggest that “female entrepreneurs have a symbolic importance which implicitly questions popular concept of the position of women in society”.

On one hand, Goffee and Scase (1983, p.626) believe that proprietorship for females depends pretty much on the notion of capitalist systems. This means members of economically and socially deprived group can “escape” deprivation through business ownership that can provide the opportunity for self-determination through owning and controlling resources as well as through an increased flexibility of working outside the home and from their domestic lives. However, these same authors also observe that the proprietorship tends to support the capitalist institutions, which “sustain the domain of men over women” and as supporting economic deprivation of females in employment. This implies that females cannot be independent even though they establish their own businesses. They are not completely free from influence of husbands and male relatives, which can undermine their self-determination (Rosa and Hamilton 1994). This persistent behavior can decrease the psychological confidence of female entrepreneurs, and as a result, they are less likely to be successful in obtaining full legitimacy and creditability as business owners, namely, experience in dealing with banks, business support officials, customers, suppliers and clients (Rosa and Hamilton 1994). The main objectives of this paper are: (1) to investigate if female headed firms (hereafter referred to as FHF) perform worse than male headed firms (hereafter referred to as MHF) in the Lao MSMEs, (2) to examine human resources as determinant factors which impact the performance of different gender headed firms, and, (3) to investigate human resource development (HRD) in the different business development stages where the HRD can maximize return on investment in human resources for both gender headed firms.

This paper is divided into six sections. Section one is the introduction. Section two describes the conceptual framework. Section three presents the literature review and development of hypotheses. Section four describes the research methodology. Section five presents data analysis and discussion. Section six wraps up with the conclusion and implications from this study.

2. Conceptual Framework

Strategic resources such as human resources and performance are expected to be associated when competitive advantages are existent (Crook et al. 2008). Several previous researchers use the term competitive advantage to be almost synonymous with performance because competitive advantage is often used to explain the relative performance of competitors in a certain market condition (Peteraf and Barney 2003, p. 313). As competitive advantages are too difficult to measure (Ketchen et al. 2007), previous literatures have attempted to link strategic resources and performance directly (Barney and Arkan 2001). The present paper adopted this concept and examines the direct relationship between human resources and performance. The conceptual framework in Figure 1 provides a snapshot indicating the relationship between human resources and the performance of different gender headed firms. Human resources refer to any source of contribution of knowledge and skills such as from education, business development services, different types of trainings in different business development stages and working experience that are considered to be key components for human resources. The contribution of human resource development can improve capabilities and competences of different gender entrepreneurs. As a result, it is an incentive for different gender headed firms to invest in human resources in the different business development stages in order to achieve the competitive advantage and thus, contribute to better performance in comparison with their competitors.

In the first model, we test whether the MHFs perform better than FHF. Human resource characteristics and business characteristics are considered to be independent variables if significant differences by different gender headed firms are observed. In the second and third models, we test if human resources have a positive association with firm performance for MHFs and FHF, respectively. We control firm size and firm age variables. The present conceptual framework was developed from the theoretical

background and emerging literature reviews on human resources that will be discussed in the next section.

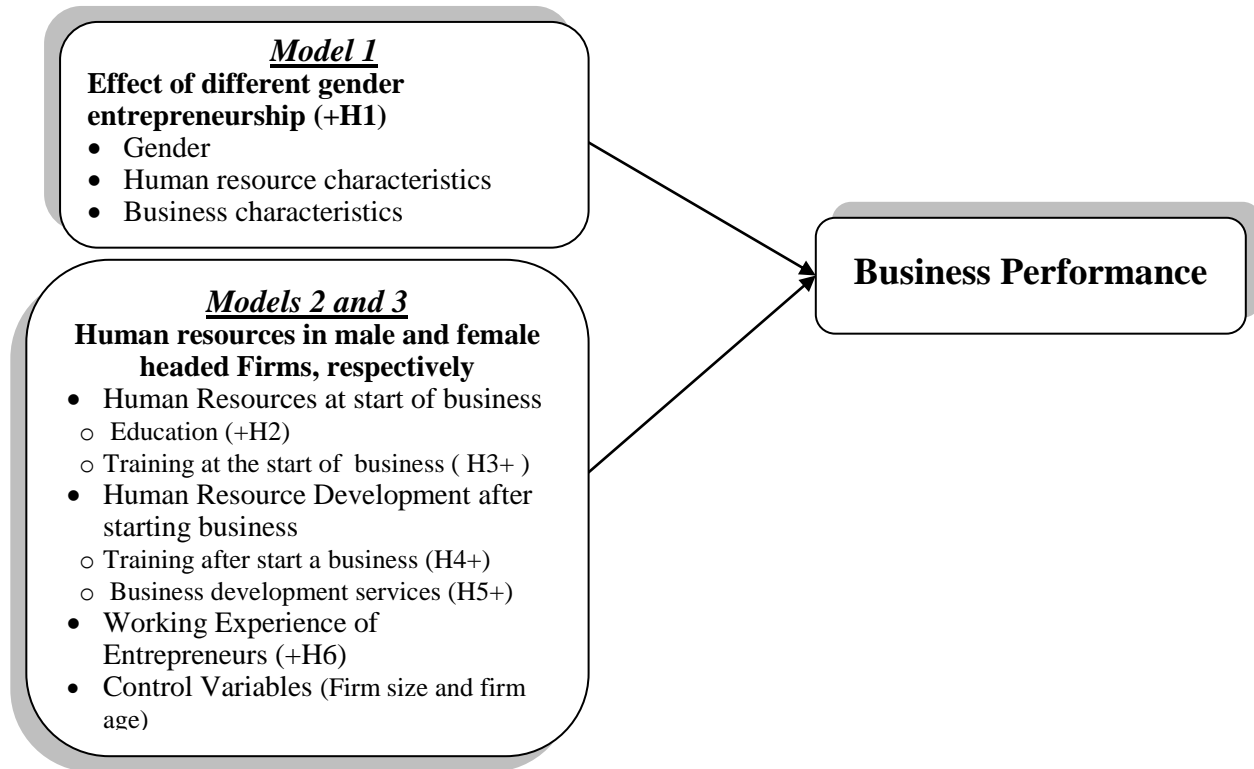


Figure 1: Conceptual Framework

3. Literature Review and Development of Hypotheses

3.1 Gender Differences and Performance

Gender differences can be underlined as the different economic performances by different gender headed firms. In addition, as the plausible determinant factors to explain the different performances, the prominent differences by gender can be observed to include: traditional and business roles; economic and social values; and the causal relationship between different opportunities to control important resources and their behavior that will be discussed below.

A number of studies have observed a different economic performance by different gender entrepreneurs. These studies measured the performance by economic indicators such as sales and profits (Watson and Robinson 2003; Fasci and Valdez 1998), which mainly found that MHFs outperform FHF. In addition, FHF tend to be smaller than MHFs when the size of the firms is measured by gross revenues, number

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of employees and profits (Fischer 1992; Fischer et al. 1993; Kalleberg and Leicht 1991). The growth of FHF's was found to be not as fast as MHF's (Cooper et al. 1994; Fischer et al. 1993). This seems to imply that FHF's are less successful in the business practices in the past when the success of organization is measured by the size and growth of the firms (Venkatramand and Ramanujam 1986). One of the underlined factors that can lead to different performance by gender is differences in traditional and business roles. Unger and Crawford (1992, p.474) point out that even though females start up their business as a new career, their domestic responsibilities are still overwhelming with their roles of being "primary parent, emotional nurturer and house keeper". As female entrepreneurs often play dual roles of care-giving and running their businesses, they are not free from their domestic responsibilities after starting their businesses (Belcourt 1991; Goffee and Scase 1983). Therefore, female entrepreneurs have encountered conflicting responsibilities between their careers and personal lives (Allen and Truman 1992; Buttner 1993; Goffee and Scase 1983; Stevenson 1990; Stoner et al. 1990). As discussed, FHF's tend to stay with having small sized businesses because increasing the size results in an increase in their responsibilities on dual roles. Goffee and Scase (1983, p.22) also support that female entrepreneurs are unwilling to expand because "business growth would create demands on their time and life-styles, which would threaten the pattern of family and conjugal relationships". In contrast, roles of males in the family are mainly good providers (Unger and Crawford 1992), which allow them to be more flexible to expand their businesses without concerning too much with domestic roles. In addition, the causal relationship between different opportunities to control important resources and behavior by different gender headed firms can affect their performance. The liberal and social feminist theory suggest that female entrepreneurs are reluctant to grow their businesses than males because they have fewer resources available such as insufficient business experience, a lack of freedom from domestic role and less value for business expansion (Cliff 1998). However, this author points out that if the measure of success does not use the size of the firms, female entrepreneurs are as likely to desire growth as male entrepreneurs. Female entrepreneurs are faced with limited resources, thus, they intentionally adopt a lower growth expectation (Lee-Gosselin and Grise 1990). Moreover, the liberal feminist theory proposes that if males and females have an equal opportunity and condition to access resources available 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 performance by different gender headed firms may result in similar outcomes.

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Another notable factor is that different economic and social values by different gender headed firms can lead to a difference in their performance. For example, MHFs tend to emphasize economic values and quantitative, clear measures of achievement and success by their status and wealth, while FHF's seem to emphasize social values and qualitative, unclear measures of achievement and success by their personal fulfillments and strong personal relationships (Travis et al. 1988; Unger and Crawford 1992; Williams 1987). As female entrepreneurs perceive growth as 'very risky', they need to develop an 'employer-employee' relationship, which depends upon trust and mutual respect (Coffee and Scase 1983, p.70). Male entrepreneurs have encountered strong societal pressure to be competitive, masterful and dominant so that the success measure is the size of the firm, whereas the success of female entrepreneurs is more concerned about the quality of interpersonal relationships (Cliff 1998); and having balanced economic objectives (i.e., profit and growth) as well as non-economic objectives i.e., product quality, personal enjoyment and helping others (Brush 1992). Therefore, using only economic indicators for firm success may not be appropriate for FHF's since their primary objectives of entering business are not for economic gains (Stanworth and Curran 1976). To be more realistic, measurement of success for FHF's should incorporate both economic and non-economic indicators such as employee satisfaction, social contributions, goal achievement, and effectiveness (Brush 1992).

However, as discussed earlier, we can argue that the gap in values between genders derived from different conditions. From this perspective, it is still worthwhile to compare economic performance by different gender headed firms. Existent empirical literatures have utilized economic indicators to measure the business success. This can be due to data availability. For Lao FHF's, they are very young and inexperienced in the business practices, hence; in order to stay in business, the primary objective of their business is profit maximization. Even if adopting non-economic indicators has a rational reason according to literature, it is also significant to measure performance by economic indicators for Lao female headed MSMEs. Thus, this study has adopted economic performance as a measurement of success for both MHFs and FHF's. Among the firm resources, human resources are noteworthy in deciding the performance of different gender headed firms. Therefore, human resource related issues are incorporated as key explanations in the analysis. According to the literatures previously presented, FHF's tend to encounter some constraints and therefore gender difference seems to be true in many aspects. It was also previously mentioned that in Lao PDR, particularly

FHFs, seem to experience similar. For example, the study of MIH and GTZ (1996) found that FHFs have fewer assets, less revenue and receive a very small amount of loan as well as lack of: knowledge in business, laws and regulations and having low education compared to male counterparts. Thus, we hypothesize that male entrepreneurs outperform female counterparts.

Hypothesis 1: MHFs perform better than FHFs.

3.2 Human Resources and Performance

Generally speaking, human resources in the firms refer to entrepreneurs and employees with capabilities and competences that they can deploy to affect firm performance. Human resources of the firms combine both unskilled and skilled labor, clerical, administrative, financial, legal, technical and management team (Penrose 1995, p.24). This author classified entrepreneurs and employees or human resources as tangible resources for the organization. In contrast, Grant (2002) views human resources similar to intangible resources because they are more likely to generate a relatively competitive advantage than other tangible resources. Human resources involve the productive services that people provide to the firm in the forms of their knowledge, skills, expertise and decision-making capability for firms (Ibid). These are applications of 'actually accumulated stock of knowledge, skills and abilities that individuals or entrepreneurs possess, which are time-consuming to develop an identifiable expertise' (Cappelli and Singh 1992). As excellent talented entrepreneurs can transfer their knowledge to a team, they can provide strengthening organizational capabilities (Boxall 1996), since the talented entrepreneurs include leadership skills and human relations. As effective organizational activities are attained through human resources, they can represent the firm's capabilities associated with its human resources; its strategic objectives and a behavioral representing expertise (Kamoche 1996). Expertise of entrepreneurs can be seen in a behavior that is consistently advanced on the creation of skills, which become fundamental for competition (Klein et al. 1991). Within the above mentioned aspects of human resources at the start of business, we are interested in looking at gender differences in terms of education and training in starting a business, which are expected to be key components of human resources in terms of the know-how, knowledge and skills. As a result, these can improve the overall performance of different gender headed firms. These aspects will be discussed in the following section.

Education. Education of entrepreneurs is one of the key components of human resources at the beginning of business and it is often used for entrepreneurial variables in previous literature. Education of entrepreneurs is expected to influence the path to business success because it can enhance their psychological confidence, knowledge and skills. An absorptive capacity has accumulated within firms as it is a function of the level of the firm's prior related knowledge; the firms' previously accumulated knowledge facilitates the absorption of knowledge (Danneels 2008, p.525). Several previous studies observe that years of formal education of entrepreneurs before starting a business had a positive impact on firm performance (Brush and Hisrich 1991). Box et al. (1993) also confirm that there was a positive relationship between high education levels of entrepreneurs on performance for manufacturing firms in Oklahoma. One of the success factors in small businesses was the education level of entrepreneurs, which can assist firms to survive and manage in a difficult condition and can keep the business profitable (Yusuf 1995). Furthermore, Schutjens and Wever (2000) observe that entrepreneurs with a reasonably good education can handle complicated business activities. The accumulation of knowledge and prior-qualification can boost the confidence of entrepreneurs. The entrepreneurs' skills and competencies are associated with business success (Casson 1982). As discussed, education of entrepreneurs is one of the key components of human resources that accumulates the crucial know-how, knowledge and skills. Thus we expect the education of entrepreneurs to have a similar impact on performance among different gender headed firms. Therefore, it can be concluded that there is a positive relationship between the education of male and female entrepreneurs and performance.

Hypothesis 2: Education of entrepreneurs positively affects the performance of both MHFs and FHF.

Training of Entrepreneurs at the start of Business. The other component of human resources refers to training of entrepreneurs at the start of business. Training at the beginning of business is designed for entrepreneurs to obtain specific knowledge and skills, which are necessary at the start of business. This can assist entrepreneurs to have a good mindset and be ready to operate the business. In-depth knowledge of entrepreneurs including both general and specific knowledge and skills can help them deal with issues related to unstable business environments. Training at the start of business includes business management, accounting, marketing, laws and regulations,

quality management, business finance, cost calculation, health and safety. This training can improve the know-how, knowledge and skills in operating a business; provide valuable lessons to new firms allowing them to be aware of challenges, and, to be better prepared and be less disheartened when future problems may arise. Although previous literatures have not provided any empirical observation in this dimension, we hypothesize that such training can increase the readiness and confidence of entrepreneurs. And as a result, this can have a positive impact on the performance of both gender headed firms.

Hypothesis 3: Training of entrepreneurs at the start of business positively affects the performance of both MHFs and FHF.

3.2.1 Human Resource Development and Performance

Human resource development (HRD) is an important strategy for sustainable superior performance of firms in the long-term for Lao MSMEs. For this purpose, HRD particularly refers to the trainings and obtaining business development services of the entrepreneurs after starting their businesses. These are an investment on the firms which build up the competence and capabilities of human resources that can be applied within the firms in order to improve firm performance. A successful HRD can prepare the entrepreneurs to work more complicated tasks at the firm level, gaining “organized learning over a given period of time, to provide the possibility of performance change” (Nadler 1984). In this regard, HRD emphasizes on developing the capabilities and competencies of entrepreneurs through trainings in order to sustain the know-how, knowledge and skills for the long-term needs which can increase their value in the leadership position for firms. Ultimately, outcomes of HRD improve firm performance by utilizing the know-how, knowledge and skills of entrepreneurs.

Training of Entrepreneurs after Starting a Business. Training of entrepreneurs after starting a business can have a significant influence on performance because their knowledge and skills from training particularly at the leadership positions can enhance firm performance. Training needs to be in forms of off-the-job training in order to provide sufficient knowledge and skills. These trainings build the intellectual capital, which is defined as, “the collective brainpower or shared knowledge of a workforce”, and, also defined as, “competency is time by commitment” (Schermerhorn 2010, p.6). This implies that if the firms invest in HRD through training of key persons, such as the entrepreneurs, their gained knowledge, know-how and skills from training can be shared

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to their employees. Thus, the intellectual capital can be shared within the firms that is beneficial in gaining competent entrepreneurs and employees, which can ultimately be foundations to impact firm performance. Training can provide an accumulated knowledge that has gradually become a 'strategic asset' (Winter 1987). Benefits of training have accumulated from the past, which builds 'bundles' of routines that are not easy to understand and imitate (Koch and McGrath 1996), and which can improve competitive advantage, thus superior performance. Therefore, we hypothesize that HRD such as training for male and female entrepreneurs is positively associated with their firm performance.

Hypothesis 4: HRD (training of entrepreneurs after starting a business) positively affects the performance of both MHFs and FHF.

Business Development Services. The other human resource development refers to the business development services of entrepreneurs, which can be obtained through professional advisors such as lawyers, bankers and accountants that aim to improve business performance, particularly to support MSMEs. Management know-how can also be received from professional advisors (Cooper et al. 1994). Business service providers can provide business support centers, mentoring, clusters and networks, business incubators, consultancy and advisory services, marketing assistance, information, technology development and transfer, and business linkage promotion, which can contribute to firm performance (Kennedy 2000; Tanburn et al. 2001). Business development services comprise of the operational and strategic services (Tanburn et al. 2001). Operational services are involved with day to day business operations such as information and communications, management of accounts and tax records, compliance with labor laws and other regulations. Unlike strategic services, operational services are rather simple in dealing with demands and the willingness to pay for goods and services, which firms can base on the existent market. However, strategic services can address short-term and long-term issues to improve firm performance through access to markets and to compete. Strategic services can provide a critical guidance for long-term sustainable performance for the firms because they can assist in identifying markets, designing products, establishing facilities and seeking sources of finance. Strategic advices taken by firms, can affect firm performance. For example, useful advices from accountants which are related to strategic decision have proven to be positively associated with performance (O'Neill and Duker 1986). Investment in HRD of different gender headed firms can be improved through acquiring the business development

services that can be helpful for businesses. As a result, useful business development services can be considered as being an influential factor to the performance of different gender headed firms.

Hypothesis 5: HRD (business development services) positively affects the performance of both MHFs and FHF.

3.2.2 Working Experience of Entrepreneurs and Performance

A number of studies have shown that previous experience is one of the inimitable factors that can be a source of sustainable competitive advantage and consequently a better performance for firms (Yusuf 1995), because previous experience provides both specific knowledge and skills to entrepreneurs. Moreover, one of the prerequisites for the decision to start a business is the past experience of entrepreneurs, which is expected to influence firm performance (Cooper 1981). Box et al. (1993) report that prior years of experience of entrepreneurs were significantly associated with performance in a study of 300 manufacturing firms in Tulsa (in the state of Oklahoma, in the U.S.). Previous experience inherits know-how through on-the-job training and 'learning by doing', which play a crucial role to firm performance (Bishop 1991; Castanias and Helfat 1991). The advantage of on-the-job training is that it is low cost, involves minimal extra time and can provide immediate productivity and a concurrent trial period. When the firms need basic skills, on-the-job training can be the most useful form for firms (Snell and Dean 1992). Experience accumulated from past and present work that can provide both general and specific knowledge and skills including: management, team work, sales, cooperation and industrialization. Hatch and Dyer (2004) observe that the value of experienced human resources cannot be imitated for some time, and the dynamic adjustment costs of training and using new human resources, can contribute to continual differences in performance. Working experience in management is known as one of the successful factors for firms (Schutjens and Wever 2000). Chandler and Jansen (1992) also observe that both depth and breadth of experience were positively associated to firm performance. It can therefore be concluded that entrepreneurs with a longer experience can influence the performance of different gender headed firms.

Hypothesis 6: Entrepreneurs with a longer experience has a positive impact on the performance of both MHFs and FHF.

3.3 Firm Performance

As discussed in the previous section, economic indicators are more appropriate than non-economic indicators for the objective of this study. To measure firm performance,

financial data is preferable. However, firms are often reluctant to disclose confidential financial data unless the laws require them to disclose it to the public. Public disclosure, however, is more likely required for listed companies than for MSMEs. Apart from the difficulty of obtaining reliable financial data, the data are criticized for being unreliable and subject to inconsistent accounting practices among the firms or to managerial manipulation for different reasons, which include: avoiding to pay high corporate income taxes or personal income taxes (Dess and Robinson 1984; Sapienza et al. 1988; Powell and Dent-Micallef 1997). Therefore, subjective measures have been widely acceptable in organizational research (Lawrence and Lorsch 1967; Dess 1987; Powell 1992a; Powell and Dent-Micallef 1997) and in strategy-related research (Dess and Robinson 1984; Robinson and Pearce 1988; Venkatraman and Ramanujam 1986; Spanos 2001). This study uses annual sales turnover, which has also been used by previous studies, as the performance indicator based on the questionnaires (Rosa et al. 1996; Du Rietz and Henrekson 2000; Anna et al. 2000).

3.4 Control Variables

This study controls some variables to eliminate the effects of any bias against FHF, which should solve the great difference in the relative performance of MHF and FHF (Watson and Robinson 2003). Therefore, to eliminate any bias in the findings due to the differences in firm size and the length of time that businesses have been in the industries, we control firm size and firm age (Murphy et al. 1996).

Firm size. Firm size can also be an important determinant of firm performance and survival (Mukhtar 2002). Bigger firms can enjoy economies of scale that are not available to the smaller firms (Dass 2000). These economies of scale imply that larger firms can produce a larger quantity of outputs and thus spread their fixed costs. Larger firms also benefit from improved capacity to access critical resources such as business finance (Penrose, 1995), particularly an access to low cost capital (Goerzen 2007). As a result, large firms can gain a competitive advantage and better performance. Ghemawat (1986) suggests that larger size firms gain advantages that are capable of accessing resources or customers, and/or restriction on rivals' options. On the other hand, Chandy and Tellis (2000) and Kanter (1988) suggest that larger firms are less adaptive and flexible and less able to change their resource base. As this paper uses the firm's sales as a performance indicator, we need to control the firm size in order to avoid bias in the model.

Firm age. Firm age is also an important factor because, to some extent, it can influence firm performance. Young firms tend to have lower sales and thus lower profits (Watson, 2002), while older firms tend to be larger in terms of sales turnover, number of employees and capital assets (Rosa et al. 1996). In addition, the older firms tend to establish good networks and have an established relationship with business partners, suppliers, financial institutions, communities, government and customers. Old firms also may benefit from having an established reputation in the markets. Therefore, firm age often represents the power and experience of the firm in its industry, which can be an influential factor for firm success.

4. Research Methodology

4.1 Sample and Data Collection

The present paper uses unbalanced panel data that was collected in 2005 and 2007 for the Enterprises Baseline Survey (EBS) by the German Agency for Technical Cooperation (GTZ). The enterprise sample selected only enterprises that are formally registered. It analyzed questionnaires, which sought responses from entrepreneurs. The survey in 2005 includes 370 companies that covered four Lao provinces, Vientiane capital, Champasack, Luang Prabang, and Luang Namtha, wherein the first three belong to the economically dynamic provinces and the fourth is a rural province. For the 2007 survey, the sample size is 470 Lao MSMEs that covered five Lao provinces, Vientiane capital, Champasack, Luang Prabang, Luang Namtha and Savanakheth, wherein the fifth province is a new sample. The sample consists of 840 observations wherein 493 were male headed firms and 347 were female headed firms having 1 to 99 employees.

4.2 Measurement

Performance: This is the dependent variable in this study, which is measured by ordinal numbers from 1 to 5 corresponding to a level of annual turnover or sales (as stated to the national tax 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. At the time of the survey in 2005 and 2007, one US dollar was approximately equivalent to 9,323 Lao Kip.

Gender: This refers to the sex of entrepreneurs. Male entrepreneur is represented by 1 while female entrepreneur by 0.

Education of Entrepreneurs: This is measured by ordinal numbers from 1 to 11 corresponding to the level of education of owner/managers. From the lowest to the

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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.

Business Development Services: Questions asked for this variable is whether or not the owner/managers of a firm received any advice for the development of his/her business. This variable is measured as a dummy variable.

Training of Entrepreneurs at the Start of Business: Questions asked for this variable is whether or not entrepreneurs of a firm received training at the start of business. This variable is measured as a dummy variable. If the respondent chose 'yes', then the next question indicated the kind of management training they had, particularly: health and safety, cost calculation, business management, accounting, marketing, law and regulations, quality management, business finance and others.

Training of Entrepreneurs after Starting a Business: Questions asked for this variable is whether or not any training was received since they started their business. If the respondent chose 'yes', then the next question asked was to describe the kind of management training they had, particularly: health and safety, cost calculation, business management, accounting, marketing, law and regulations, quality management, business finance and others. Therefore, this variable is measured as a dummy variable.

Working experience. This is measured by the age of owner/managers after subtracting the total years spent in education (Robinson & Sexton, 1994). Experience of entrepreneurs has close relationship with their education and thus working experience defined as the number of years an individual has been able to work after completing his or her education (*Ibid*). Because of a limitation of the data set, a more comprehensive measure of experience cannot be specified.

Firm Age: This is the number of years since the MSMEs were established, which is taken to represent industry experience for the firm.

Firm Size: This is measured by the total number of current full-time employees. According to Prime Ministerial Decree No.42 (2004), the Lao PDR 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 having 100 employees or more.

5. Data Analysis and Discussion

5.1 Ordered Probit Model

The dependent variable was measured by using ordinal measures from 1 to 5. Therefore, an ordered probit model (Long 1997; Godfrey 1988; Davidson and

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Mackinnon 1993) was used in the analysis to investigate the impact of human resources on the performance of MHFs and FHF in Lao MSMEs in the Lao PDR. The objective of the model was to determine the probability that human resources influence on the performance of MHFs and FHF, in which the firm performance will be the ordinal numbers from 1 to 5 corresponding to a level of annual sales turnover. Let us assume that y_i depends on the value of a latent variable y_i^* , which in turn depends on a set of observables: 1= less than 200 Million Kip; 2= 200-400 Million Kip; 3= 401-700 Million Kip; 4= 701-1,000 Million Kip; 5= more than 1,000 Million Kip. Therefore, we can derive the specifics for the first model, a latent variable y_i^* can be estimated as follows:

$$y_i^* = \beta GD_i + e_i \quad [1]$$

We regress the latent variables on one independent variable (GD_i).

$$y_i^* = \beta_j GD_i + \sum_{k=1}^2 \gamma_k x_i + \sum_{m=1}^5 \phi_m z_i + e_i \quad [2]$$

In the first model specified in Equations [1] and [2], we regress the latent variables on independent and control variables. In Equation [2] independent variable is gender (GD_i). Independent variables such as business characteristics (x_i) of firm age (FA) and firm size (FS) and human resource characteristics (z_i) of education (EDU), training of entrepreneurs at the start of business (TSB), training of entrepreneurs after starting a business (TRNFE), business development services (BDS) and working experience (WEXP).

For the second and third models in Equations [3] and [4], the entire sample is divided into two groups, namely the MHFs and FHF to compare the determinant factors that influence performance of MHFs and FHF for Lao MSMEs. Ordered probit models are specified in the equation [3] and [4] below:

$$y_m^* = \sum_{i=1}^5 \beta_i x_m + \sum_{j=1}^2 \gamma_j z_m + e_m \quad [3]$$

Wherein, equation [3] is a latent variable for MHFs and x_m are the independent variables, which refer to human resource characteristics including education (EDU), training of entrepreneurs at the start of business (TSB), training of entrepreneurs after starting a business (TRNFE), business development services (BDS) and working experience (WEXP). We control firm size (FS) and firm age (FA) and thus (z_m) are control variables.

$$y_f^* = \sum_{i=1}^5 \beta_i x_f + \sum_{j=1}^2 \gamma_j z_f + e_f \quad [4]$$

Wherein, equation [4] is a latent variable for FHF's and x_f are the independent variables, which are human resource characteristics including education (EDU), training of entrepreneurs at the start of business (TSB), training of entrepreneurs after starting a business (TRNFE), business development services (BDS), and working experience (WEXP). We control firm size (FS) and firm age (FA) and thus (z_f) are control variables.

5.2 Analysis Results

As shown in Table 1, the findings show that MHFs perform better than FHF's in the Lao MSMEs at a statistically significant 1 percent level. The results of the model with additional independent variables such as the human resource and business characteristics confirm that MHFs perform better than FHF's at a statistically significant 5 percent level. To some extent, a model with additional independent variables can explain more on the latent dependent variable with Pseudo $R^2=0.17$ compared with the overall model with Pseudo $R^2=0.02$. These results are consistent with a number of previous studies (Watson and Robinson 2003; Fasci and Valdez 1998). Female entrepreneurs may encounter conflicting demands for the business and domestic roles so that they may spend less time on businesses. As female entrepreneurs play dual roles in business and domestic roles, they are not completely free from their domestic roles. Such dual roles can lead to hamper performance of FHF's, while male entrepreneurs may not engage so much in domestic roles; instead, they are good at being providers in terms of finance and other supports. Additionally, Lao FHF's may face disadvantages in terms of lack of knowledge in business and having low education compared to male counterparts.

Additional explanations displayed in Table 2 show that MHFs do not only reveal higher mean scores for most variables but also the gender gaps are found to be statistically significant in most variables. For example, MHFs tend to have human resources with higher education levels by receiving business development services, training of entrepreneurs (at the start of business and after starting a business); having longer working experience in the business practices; and having a bigger firm size, compared to the female counterparts. As illustrated in Table 2, the results are consistent with the liberal and social theory that female entrepreneurs were found to have lower education levels; shorter working experience; insufficiency in obtaining business development services; obtaining less amount of training for entrepreneurs at the start of business and after starting a business; and smaller in terms of firm size, compared with male counterparts (Cliff 1998; Unger and Crawford 1992; Lee-Grosselin and Crise 1990; MIH

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and GTZ 1996). FHF's were found to lack key components in human resources, lower levels of investment in HRD and limited resources due to its smaller size. For instance, lower education levels of female entrepreneurs may cause insufficient fundamental knowledge and skills. Furthermore, insufficiency in obtaining business development services and lower levels of investments in HRD for FHF's through trainings may cause the shortage in knowledge and skills in business. As a result they may be less competitive relative to MHF's. Also, having a shorter working experience for female entrepreneurs may not acquire the sufficient know-how, knowledge and skills. Lastly, smaller firm size of FHF's may lack the capacity to control important resources to contribute to firm performance. In contrast, firm age for both MHF's and FHF's was found to be statistically insignificant.

Going back to Table 1, additional dependent variables such as human resource characteristics: education, business development service, working experience, training for entrepreneurs and firm size are statistically significant to firm performance. Generally, an accumulation of know-how, knowledge and skills from formal education and working experiences of entrepreneurs are very important influential factors to firm performance. The investments in training for entrepreneurs after starting a business prove to be important to firm performance, while training for entrepreneurs at the start of business for the firms seem to have a weak impact on performance. Perhaps the firms may obtain the training that is not appropriate with the latest need of the firms so that such training have no impact on firm performance. Obtaining useful business development services is also beneficial to firm success. The large scale firms can control critical resources compared to small scale firms, in turn, this may contribute to firm performance. In addition, unlike young firms, old firms may less likely adapt to new business environments and they may be reluctant to expand business and consequently can lead to worsen their performance.

Taking the results in Table 1, "model with additional dependent variables", and Table 2 into consideration, we can argue that "those variables" also indicate the different conditions of MHF's and FHF's in terms of the effects on firm performance. In summary, the findings show that the persistent disadvantages of FHF's in several aspects, as discussed above, could underline the reasons why they perform worse than MHF's for the Lao MSMEs. Therefore, hypothesis 1 is supported.

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Table 1: Regression Results

	Performance				
	Overall model	Model with additional independent variables			
	z	Coefficient	Std.Err.	z	P> z
Gender (GD)	5.75***	0.176	0.095	1.84	0.065*
<i>Human Resource Characteristics</i>					
Education of Entrepreneurs (EDU)		0.099	0.021	4.79	0.000***
Training of Entrepreneurs at Start of Business (TSB)		0.077	0.097	0.80	0.425
Training of Entrepreneurs After Starting a Business (TRNFE)		0.286	0.096	2.97	0.003***
Business Development Services (BDS)		0.228	0.098	2.32	0.020**
Working Experience for Entrepreneurs (WEXP)		0.015	0.004	3.36	0.001***
<i>Business Characteristics</i>					
Firm Size (FS)		0.042	0.004	11.09	0.000***
Firm Age (FA)		0.010	0.007	1.44	0.149
Pseudo R ²	0.02	0.17			
Log likelihood	-958.61	-808.12			
LR Statistic	33.47***	327.65***			
N	840	840			

*** Significant at 1%≤; **5%≤; *≤10%

Table 2: Means for Independent Samples T-Test for MHFs and FHF

	MHFs		FHF	
	Mean	Mean	Sig.	Mean Difference
Education of Entrepreneurs (EDU)	6.71	5.88	0.00***	0.83
Training of Entrepreneurs at Start of Business (TSB)	0.44	0.33	0.00***	0.11
Training of Entrepreneurs After Starting a Business (TRNFE)	0.50	0.38	0.00***	0.12
Business Development Services (BDS)	0.67	0.55	0.00***	0.12
Working Experience for Entrepreneurs (WEXP)	33.20	30.29	0.00***	2.92
Firm Size (FS)	13.72	8.41	0.00***	5.31
Firm Age (FA)	8.74	8.69	0.91	0.05
N	493	347		

*** Significant at ≤1% (2-tailed)

H2: Education of entrepreneurs positively affects firm the performance of both MHFs and FHF. The one component of human resources at the start of business which was found to be statistically significant to firm performance was education. MHFs and FHF

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confirm that the education of entrepreneurs accumulated the basic knowledge and skills that are necessary to improve performance. This finding is consistent with previous studies (for example Box et al. 1993; Brush and Hisrich 1991; Yusuf 1995). Education levels of entrepreneurs can enhance their psychological confidence. Different gender headed firms found that education influence firm performance and therefore hypothesis 2 is supported.

H3: Training of entrepreneurs at the start of business positively affects firm performance of both MHFs and FHF. The findings show that investment in human resource development through training at the start of business, which was expected to increase specific knowledge and skills as well as provide a good mindset and readiness for entrepreneurs, was surprisingly found to have no influence on performance in both MHFs and FHF. Perhaps contents of training are irrelevant with the latest need of firms particularly with a longer history. It can be concluded that hypothesis 3 is not supported.

H4: HRD (training of entrepreneurs after starting a business) positively affects firm performance of both MHFs and FHF. This finding is evident for both MHFs and FHF that have invested in their human resource development through training. Gaining new knowledge and skills impact firm performance, particularly for female entrepreneurs who have insufficient knowledge and skills from formal education (see Table 2). The training of female entrepreneurs may be appropriate with their needs to upgrade and update the knowledge and skills in the field of businesses in order to be competitive with male counterparts. Hypothesis 4 is supported for both gender headed firms.

In comparison between hypothesis 3 and hypothesis 4, the findings show that the training of entrepreneurs after starting a business (H4) has better impact on firm performance compared with the training of entrepreneurs at the start of business (H3) for different gender headed firms. This finding seems to follow the logic in business development stage, for example, after starting a business for the different gender headed firms, they may need to introduce new business strategies (know-how, knowledge and skills), which are required through specific training in order to improve the capabilities and competences of entrepreneurs in a practical way. As a result, the training of entrepreneurs after starting a business can be more effective compared to training at the start of business. In addition, firms may have a clear strategic choice in terms of HRD. Therefore, they can select appropriate training in the right time that can have immediate impact on the performance of both MHFs and FHF.

H5: HRD (business development services) positively affects the performance of both MHFs and FHF. For MHFs, obtaining useful business development services from

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professional advisors were found to be crucial to firm performance because these advices can provide very important knowledge and skills for firms. On the other hand, FHF's receiving business development services were found to have a weak firm performance. One of the plausible explanations is that FHF's may receive irrelevant advices for their businesses. As the business development services contribute only for the better performance of MHF's but not for FHF's, hypothesis 5 is partly supported.

H6: Working experience of entrepreneurs positively impacts the performance of both MHF's and FHF's. The results prove to be statistically significant for both MHF's and FHF's. Both confirm that working experience of entrepreneurs can accumulate the useful know-how, knowledge and skills through on-the-job training, and past and current work activities. In particular, working experience for female entrepreneurs was found to be shorter than male entrepreneurs (in Table 2). MHF's were found to have a longer working experience and they are more mature in the businesses compared with female counterparts. Therefore, hypothesis 6 received support for different gender headed firms.

Table 3: Regression Results for MHF's and FHF's

	MHF's			FHF's		
	Coefficient	Z	P> z	Coefficient	z	P> z
Education of Entrepreneurs (EDU)	0.111	4.31	0.000***	0.070	1.96	0.050**
Training of Entrepreneurs at Start of Business (TSB)	0.069	0.58	0.564	0.077	0.46	0.646
Training of Entrepreneurs after Starting a Business (TRNFE)	0.223	1.86	0.063*	0.403	2.46	0.014***
Business Development Services (BDS)	0.278	2.20	0.028**	0.128	0.80	0.425
Working Experience for Entrepreneurs (WEXP)	0.014	2.46	0.014**	0.015	2.22	0.027**
Firm Size (FS)	0.039	8.90	0.000***	0.053	6.51	0.000***
Firm Age (FA)	0.012	1.36	0.173	0.007	0.59	0.554
Pseudo R ²	0.15			0.17		
Log likelihood	-522.39			-276.87		
LR Statistic	185.44***			113.36***		
N	493			347		

*** Significant at ≤1%; **≤5%;* ≤10%

6. Findings and Conclusion

In this paper, we have analyzed the performance of both MHF's and FHF's in the Lao MSMEs, and it also examined human resources as determinant factors to have impact

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on performance of different gender headed firms. We developed six hypotheses through an empirical test from 840 observations from Lao MSMEs. The result supported hypotheses 1, 2, 4, and 6 and hypothesis 5 is partly supported. Hypothesis 3 is rejected.

The findings confirm that FHF's underperform MHF's for the Lao MSMEs (H1) due to a number of constraints faced by female entrepreneurs, who have been encountered worsen their performance. Education level of entrepreneurs, being a component of human resources, significantly influence the performance of both gender headed firms (H2). In contrast, investment in HR through training at the start of a business for entrepreneurship was found to have no influence on performance in both MHF's and FHF's (H3). For H4, HRD through training for both gender entrepreneurs is evidenced to improve their human capabilities and competencies and thus improve specific knowledge and skills of different gender entrepreneurs. In comparison between H3 and H4, the findings show that the training of entrepreneurs after starting a business had better impact on firm performance compared with the training of entrepreneurs at the start of business for the different gender headed firms. For H5, HRD through business development services found to have mixed results. For MHF's, obtaining business development advices is crucial to their performance while for FHF's obtaining such services fail to improve their performance. For H6, working experience of entrepreneurs gained important know-how, knowledge and skills, that was confirmed to be useful to improve the performance of both gender headed firms.

6.1 Policy Implication

This study can provide policy implications for both the Lao MSMEs and the Lao government. For both gender headed MSMEs, it is important to note that HRD after starting a business has a strong impact on firm performance. Hence, the HRD plan should choose the right moment that will maximize the return on their investments. For male headed MSMEs, even though they have a strong human resource and better business performance, they should maintain their strength in human resources with high levels of know-how, knowledge and skills and bigger firm size in order to be more competitive. Investments in HRD through trainings and obtaining business development services are strongly advisable for them. Consistently improving human resources for their firms are very important to increase the levels of the human resources' capabilities and competencies that can sustain and boost their firm performances. For female headed MSMEs, human resource characteristic and business characteristic aspects were found to be at relatively lower levels than MHF's. Therefore, FHF's are encouraged

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to participate in HRD through sufficient investments in off-the-job training for entrepreneurs and building-up on their work experience through different trainings such as on-the-job training, and learning by doing. These are considered to be very good components of human resources. Since the capabilities and competencies of their human resources are found to be insufficient to handle the dynamic changes in the business environment, various HRD efforts can fill up this gap for FHF.

As evidenced in this study, FHF are faced with several limitations. The government can take particular care of FHF. Different gender headed firms are perceived to have similarities and differences regarding the determinant factors of firm performance, given that the firms have unique conditions which differ from the other. Therefore, the government can provide the policies to address the issues in order to have a positive impact on both female and male headed firms. The government can provide a high standard educational system particularly at universities and colleges. They can administer vocational and relevant business trainings qualified entrepreneurs with high levels of human resources for private firms. In order to improve firm performance, they can also provide assistance to the Lao MSMEs through various types of business development services including: business support centers, mentoring, clusters and networks, business incubators, training, consultancy and advisory services, marketing assistance, information, technology development and transfer, and business linkage promotion (Kennedy 2000; Tanburn et al. 2001). Moreover, they can encourage both gender headed firms to enhance their performance. However, FHF may need more assistance from the government in order to overcome the gap between genders particularly on HRD. The government can execute trainings and provide business development services as well as provide the opportunity for females to have access to formal education.

6.2 Research Limitation and Future Research

The research has some inherent limitations. One of the limitations of the secondary data was that we could not measure the comprehensive performance indicators beyond the annual sales turnover. Therefore, future researches should include comprehensive performance indicators such as return on assets (ROA), return on sales (ROS) and sale growth. Furthermore, to minimize the bias in the models, future researches should control most aspects that have a potential to be influencing factors. The other limitation of the data was that we cannot incorporate the non-economic indicators and we can only utilize the economic performance as a measure of success. Therefore, future

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researchers are encouraged to incorporate both economic and non-economic performance indicators such as employee satisfaction, social contributions, goal achievement, and effectiveness in order to satisfy the measure of success for FHF's (Brush 1992). We were also not able to incorporate the domestic roles of male and female entrepreneurs such as marital status, number of children and age of children. Therefore, it is encouraged to conduct the field survey which can fulfill all of the limitations in the paper.

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