

Factors Determining the Performance of Non-agricultural Enterprises in Nepal

Ajay Thapa*

School of Development and Social Engineering, Pokhara University, Nepal

Abstract

The non-agricultural economic activities play a vital role in the growth of the economy of a country. Nepal has been experiencing an increasing rate of non-agricultural economic activities meanwhile decreasing agriculture activities over the period after economic liberalization in 1990s. This study using the data enumerated from 2,583 households in the Nepal Living Standards Survey III has provided empirical evidence from Nepal in reference to the factors determining the performance of non-agricultural enterprises. In addition to descriptive, t-test and correlation analysis, a multiple regression model was run to identify the key factors determining the performance of non-agricultural enterprise in Nepal. Among several factors included in this study, registration status of the enterprises with government agency, enterprise age and number of hired workers were identified as the key factors determining the performance of non-agricultural enterprises in Nepal.

Keywords: Non-Agricultural Enterprise; Enterprise Performance; Nepal

JEL Classification: D22; J14; L25; L26

1. Introduction

Non-agricultural economic enterprises refer to all the income-generating activities that are not agricultural. Non-agricultural economic activities may include manufacturing, business, trade, service incorporating self-employment, micro, small or medium-sized enterprises and traders (Davis & Pearce, 2001).

The Nepalese economy is gradually transforming from agriculture to non-agricultural economy. Of the total households sampled in the Nepal Living Standards Survey, over one-third of households (35%) were identified as having some kind of non-agricultural activities. Among the non-agricultural activities, trade constitutes the highest percentage (36%) followed by manufacturing (35%), services (17%) and other type of industries (12%) respectively. Between 1995/96 and 2010/11, the proportion of trade enterprises has fallen from 52 percent to 36 percent, meanwhile manufacturing and service have risen from 30 percent to 35 percent and 14 percent to 17 percent respectively (Central Bureau of Statistics, 2011).

* Corresponding author.

Email address: azaythapa@gmail.com.

The share of non-agricultural income, employment, wage in the total household economic activities is increasing over the period meanwhile the share of income from agricultural activities is declining. Between 1995/96 and 2010/11, the share of non-agricultural income in all household income has increased from 22 percent to 37 percent, self-employment risen from eight percent to 13 percent, wage risen from 10 percent to 13 percent; whereas, during the same period the share of agricultural income in all household income has decreased from 61 percent to 28 percent, self-employment declined from 71 percent to 61 percent and wage declined from 12 percent to three percent (Central Bureau of Statistics, 2011)..

The aforementioned level and trend of non-agricultural enterprises and their share in income, employment and wage indicate an increasing impact of such enterprises in the national economy in comparison to agriculture-based enterprises. There might be several factors stimulating such growth of non-agricultural enterprises. There are several theories and approaches in entrepreneurship studies scholars have used such as the resource-based view of the firm, entrepreneurial trait theory, role theory, population ecology theory, network theory, behavioral theory, location theory that directly or indirectly explain determinants of enterprise performance. There are also several empirical studies conducted across the world assessing the performance of enterprises and the factors determining their performance. Among many theories, a few relevant theories in relation to the available secondary data are reviewed for the purpose of this study.

Resource-based view of the firm views entrepreneurship as “a process of identifying and acquiring resources to exploit opportunities” (Bergmann-Lichtenstein & Brush, 2001 quoted in Segal, Borgia, & Schoenfeld, 2010:2). According to this view, “valuable, rare, imperfectly imitable and non-substitutable resource combinations serve as a source of competitive advantage for firms” (Barney, 1991 cited in Thapa, 2015:582). Referring to Becker (1964), Williamson (1975) and Tomer (1987), Barney (1991:101) has pointed out three types of resources:

(1) Physical capital resources include the physical technology used in a firm, a firm’s plant and equipment, its geographic location, and its access to raw materials, (2) Human capital resources include training, education, experience, judgment, intelligence, relationships and insight of individual managers and workers in a firm, (3) Organizational capital resources include a firm’s formal reporting structure, its formal and informal planning, controlling and coordinating systems, as well as informal relations among groups within a firm and between a firm and those in its environment (Barney, 1991:101).

Deakins and Freel (2003:289) have also proposed two hypotheses presenting the effects of education on enterprise success:

(1) Education provides a foundation from which the entrepreneur can undertake the personal and professional development necessary for successful entrepreneurship and that education will endow the entrepreneur with greater confidence in dealing with bankers, customers and suppliers. (2) Business ownership is not an intellectual activity, and the educated entrepreneur will quickly become wearied with the many tedious tasks, which form the remit of

most owner-managers.

Several empirical studies have reported positive association between education, age, and experience, and firm or enterprise performance (Burke, FitzRoy & Nolan, 2001; Burke, FitzRoy & Nolan, 2002; Davidsson, 1989, Robinsson & Sexton, 1994 cited in Delmar, 1996; Box, Watts & Hisrich, 1994; Mengistae, 1998 cited in Deakins & Freel, 2003; Okurut, 2008; Segal *et al.*, 2010).

Financial capital is also one of the key resources that tend to influence the performance of an enterprise. Access to financial capital or credit and its impact on enterprise performance has been paid a greater attention by scholars since 1980s. In relation to financial capital and its association with enterprise performance, Praag *et al.* (2005:36) stated, "Financial capital constraints might prevent entrepreneurs from creating buffers against random shocks, thereby affecting the timing of investments negatively. Moreover, capital constraints might debar entrepreneurs from the pursuit of more capital-intensive strategies." Several empirical studies have observed a significant effect of financial capital or credit on enterprise performance (Dunn & Arbuckle, 2001; Praag *et al.*, 2005; Musso & Schiavo, 2008; Boermans & Willebrands, 2012).

Location theories such as Johann Heinrich von Thunen's theory of agriculture location (1826), and Alfred Weber's theory of industrial location (1909) are some of the popular theories in economics and geography, and an essential part of economic geography that explain the effects of geographic location on economic activity. These theories examine the types of economic activities, their locations and the reasons why such economic activities are located in those locations. Weber's theory of industrial location examines location from three angles (triangle): "optimum location for the production of a good based on the fixed locations of the market and two raw materials sources, which geographically form a triangle." Due to the cost of transportation and labor, the production sites i.e. firm or enterprises tend to locate near to the raw materials, market and cheap labor location (The Editors of Encyclopaedia Britannica, 2014). Gilbert (2002) in an empirical study conducted in the United States based on the data from US Census Bureau (1999) observed a significant difference in the performance of the firms that operate in different geographic clusters. Masakure, Henson and Cranfield (2009) found a significant effect of enterprise characteristics like enterprise location and enterprise sector on enterprise performance. Furthermore, Rijkers *et al.* (2010) in a study conducted in Ethiopia also observed a greater performance of urban enterprises compared to rural counterparts.

Entrepreneurship tends to be distinct by the gender of the entrepreneurs (Burke *et al.*, 2008). Gender differences also have an effect on the enterprise performance. Several empirical studies have pointed out the better performance of male owned or managed enterprise in comparison to female counterparts (Rosa *et al.*, 1996; Liedholm, 2002; Okurut, 2008; Kim & Zhan, 2011). Some studies have reported complex association between gender and enterprise performance (Rosa *et al.*, 1996) and some others did not observe significant relationship between the gender of entrepreneur and enterprise performance (Henrekson & Rietz, 1996; Stam, *et al.*, 2008).

Age of the enterprise also tends to affect the performance in many ways. Scholars have pointed out contrasting opinions. Scholars like Loderer and Waelchli (2009), Stinchcombe (1964, cited in Majumdar 1997) opined that older enterprises enjoy superior performance compared to younger ones whereas other scholars like Deakins and Freel (2003) have argued faster growth of younger enterprises than older counterparts.

The literature on related theories and findings of empirical studies signifies that the factors such as gender and education of entrepreneur, enterprise age, number of workers, access to financial capital or credit and location of the enterprise seem to have significant effects on the performance of non-agricultural enterprises.

However, despite the fact of increasing non-agricultural enterprises and their share in the total household income, employment and wage, there are a very few studies carried out examining the factors determining the performance of such enterprises in Nepal. Hence, this study aims to identify the factors determining the performance of non-agricultural enterprises in Nepal.

2. Data Source and Methods

Using secondary data from the Nepal Living Standards Survey III (NLSS III) 2010/2011, this paper has examined the demographics of non-agricultural enterprises, and identified the factors determining the performance of these enterprises in Nepal.

The Nepal Living Standard Survey III (NLSS III) 2010/11 is one of the major national level surveys carried out by the Central Bureau of Statistics (CBS). The NLSS III has adopted Living Standards Measurement Survey (LSMS) methodology developed and promoted by the World Bank (WB). The NLSS-I was carried out in 1995/96 by CBS in Nepal and the NLSS-II in 2003/04.

Among the total samples (7,020) surveyed in NLSS-III, 2,583 households were enumerated with the data regarding non-agricultural enterprises in Nepal, which constitutes the total sample size for this study. The data related to non-agricultural activities enumerated in NLSS-III were scrutinized as per the requirements of the study.

For the purpose of inferential analysis, the basic assumptions of inferential statistics were examined. The original quantitative data violating the basic assumptions were treated as required. The outliers were replaced with the mean value. Likewise, the data on net revenue which is the dependent variable in this study were originally enumerated in Nepalese rupees (NRs), the data on months since operating, the numbers of workers hired during a month when the enterprise is operating and the distance to closest facility measured in hours were found violating the assumption of normality; so, these variables were transformed into log or sqrt.

The data have been analyzed using different techniques in this study. The distributions of categorical variables were examined using frequency and percentage tables. The descriptive statistics were produced to examine the distribution of quantitative variables. Pearson correlation coefficients were produced to examine the bivariate association between quantitative variables including the measure of

enterprise performance. Independent samples t-test were run to examine variance in enterprise performance by selected categorical variable. Finally, the following multiple regression model was run to examine the effect of independent variables on enterprise performance.

$$\begin{aligned} \text{LNREV} = & \beta_0 + \beta_1 X_{\text{GEN}} + \beta_2 X_{\text{EDU}} + \beta_3 X_{\text{REG}} + \beta_4 X_{\text{LNAGE}} \\ & + \beta_5 X_{\text{LOC}} + \beta_6 X_{\text{FCP}} + \beta_7 X_{\text{LNWR}} + \beta_8 X_{\text{DST}} + \varepsilon_t \end{aligned} \quad (i)$$

Where,

LNREV	LNREV refers to the logarithm of net revenue of non-agricultural enterprises.
β_0	β_0 is a statistical symbol representing the intercept or constant. β in other cases represents the regression beta weight or coefficient for each respective independent variable.
GEN	GEN refers to the gender of entrepreneur categorized as Male versus Female. It is represented via a dummy variable.
EDU	EDU refers to the highest level of education completed by the entrepreneur. The level of education ranges from nursery to master level. The level-less training has been filtered out from this variable.
REG	REG refers to the registration of the enterprises. The variable is categorized as Registered with Government agency versus Not registered. It is represented via a dummy variable.
LNAGE	LNAGE is a log variable referring to the age of the enterprise. The variable has been measured in terms of months of the enterprise since operating.
LOC	LOC refers to the location of the enterprise. The variable has been categorized as fixed location versus changing locations of the enterprise.
FCP	FCP refers to financial capital or access to credit of the entrepreneur. The variable has been categorized as the entrepreneur had capital or credit problems versus did not have such problems.
LNWR	LNWR is a log variable referring to the number of workers hired during a month in the enterprise.
DST	DST refers to the distance from enterprise to the closest facility. This variable has been measured in terms of meters. Facility includes schools, health facilities, transportation, market, banks, cooperatives, drinking waters, police station, internet, library, and so on.
ε_t :	ε_t refers to a random error term that represents the influence of other variables not included in the model.

3. Results and Discussion

3.1 Demographic Profile of Non-agricultural Entrepreneurs and Enterprises

The demographic profile of non-agricultural entrepreneurs and enterprises in this study includes frequency and percentage distribution of the categorical variables related to socio-demographic characteristics of the entrepreneur such as the gender, education, and birthplace. There is also information regarding the enterprise such as place of the enterprise operated, ownership of the enterprise, registration status and workers hired in the enterprise (table 1).

Table 1. Demographic Characteristics of Non-agricultural Entrepreneurs and Enterprises

Variables	Frequency	Percent
Gender		
Male	1220	47.2
Female	1363	52.8
Total	2583	100.0
Education (highest level completed)		
Primary level	244	28.77
Secondary level	470	55.43
Higher secondary	83	9.8
Bachelor	38	4.5
Master	12	1.4
Total	847	100.0
Location of enterprise		
Home	1244	48.2
Other fixed location	869	33.6
Changing location	470	18.2
Total	2583	100.0
Ownership of enterprises		
Owned by household only	2431	94.1
Partnership	152	5.9
Total	2583	100.0
Enterprises registered with Government agency		
Yes	650	25.2
No	1933	74.8
Total	2583	100.0
Hired workers outside household		
Yes	483	18.7
No	2100	81.3
Total	2583	100.0

Source: NLSS III 2010/11

Table 1 presents that a general majority of the non-agricultural enterprises are owned by female (52.8%). A majority of the non-agricultural entrepreneur (55.43%) have completed secondary level followed by primary level (28.77%) and higher secondary level (9.8%) respectively. Quite a few of them have completed bachelor (4.5%) and master level education (1.4%). A great majority of non-agricultural enterprises (81.8%) are operated in a fixed location either at home or any other fixed location. Similarly, a significantly great majority of non-agricultural enterprises (94.1%) are owned by individual or by a household whereas only a very few of the enterprises (5.9%) share the ownership with partners. Around one-quarter of the non-

agricultural enterprises (25.2%) are registered to government agency. Less than one-fifth of the non-agricultural enterprises (18.7%) hire workers outside household. A great majority of the non-agricultural enterprises (81.3%) are providing employment to family members only (table 1).

3.2 Descriptive Statistical Analysis of Non-agricultural Enterprise

The descriptive statistics such as number, minimum, maximum, mean, standard deviation, skewness and kurtosis statistics of quantitative variables were produced to examine the distribution of the quantitative variables used in this study. The variables that were found highly violating the assumptions of normality were transformed into log or sqrt (table 2).

Table 2. Descriptive Statistics of the Quantitative Variables

Variables	N	Min	Max	Mean	SD	Skewness		Kurtosis	
						Stat	SE	Stat	SE
Enterprise age (in months)	2583	.00	840.00	118.85	123.028	1.864	.048	4.086	.096
Months operating in a year	2583	1	12	9.84	3.476	-1.311	.048	.180	.096
Number workers	483	1	60	5.80	9.610	3.612	.111	14.415	.222
Level of education	847	0	14	8.07	3.321	-.275	.084	-1.009	.168
Distance to closest facility (in hours)	1713	0	11	.37	.736	3.803	.059	28.621	.118
Net revenues (NRs.)	2582	-6411600.00	39748800.00	162247.54	1133445.682	27.352	.048	869.695	.096

Source: NLSS III 2010/11

This study observed that the enterprise age (in months) ranges from some days, which is less than a month (so seems to appear as zero months) to the maximum 840 months, which is equal to 70 years. The average non-agricultural enterprises seem to have completed around 10 years (118.85 months). The enterprises were found to operate from at least 1 month in a year to round the whole year (12 months). On average, these enterprises were found to operate over 9 months in a year. The non-agricultural enterprises were found to hire at least one worker to a maximum of 60 workers. The highest level of education among the entrepreneurs is master's degree meanwhile the least level of education completed is nursery/kg/pre-school. The average non-agricultural entrepreneur has completed eighth class. The nearest facilities from the enterprises such as agriculture center, transportation, health facilities, market, schools, community library, security/police station, post office, cooperatives, banks, telephone, and so on were found in the distance of zero hour, which means that such facilities are available nearest to the enterprises, whereas the farthest one was 11 hours. The average non-agricultural enterprises were in the distance of 0.37 hours. Net revenues of non-agricultural enterprises were enumerated in terms of Nepalese rupees. Some of the non-agricultural enterprises were found in loss. The least net revenue of the non-agricultural enterprise was found NRs.

-6,411,600.00 (equivalent to US\$ 57,343.71, exchange rate US\$1: NRs.111.81) whereas the maximum net revenue was NRs. 39,748,800.00 (equivalent to US\$ 355,503). The average net revenue of non-agricultural enterprises was NRs. 162,247.54 (equivalent to US\$ 1451.10) (table 2).

3.3 Bivariate Association Analysis between Independent and Dependent Variables

Before running the multiple regression model for multivariate analysis, bivariate association between the dependent variable and independent variables are examined. The association between binary categorical variables and enterprise performance was examined through independent samples t-test (table 3). The association between quantitative variables and enterprise performance was examined through Pearson correlation statistics (table 4).

Table 3. Independent Samples T-test of Net Revenue (log)

Variables		N	Mean	SD	Std. Error Mean	t	df	F
Registration status	Yes	640	5.2004	.55157	.02180	27.166***	2513	60.933***
	No	1875	4.3846	.68793	.01589			
Gender	Male	1188	4.5998	.73919	.02145	.484	2513	.725
	Female	1327	4.5854	.75211	.02065			
Financial capital problem	No	2235	4.5785	.75098	.01589	-2.598**	2513	7.142**
	Yes	280	4.7012	.69593	.04159			
Enterprise location	Changing locations	463	4.6483	.70867	.03293	1.794 ⁺	2513	4.482*
	Fixed location	2052	4.5795	.75366	.01664			

Note: ***= $p < .001$; **= $p < .01$; *= $p < .05$; ⁺= $p < .10$

The total number of observations used in bivariate analysis is 2515, which is less than the total number of observations 2583. It is for this reason that the data on net revenue, which were originally enumerated in NRs, were found violating the assumption of normality so these variables were transformed into log. The net revenues variable in the original database had 67 negative cases and one zero. The negative and zero values in the cells cannot be transformed into log. Therefore, the total number of observations included in bivariate analysis appears to be 2515 (table 3, table 4).

Table 3 shows that the non-agricultural enterprises registered with government agency tend to earn greater net revenue compared to the unregistered ones ($t=27.166$, $p < .001$). It means the registered non-agricultural enterprises perform relatively better than the unregistered counterparts. The access of entrepreneurs to financial capital or credit also seems to determine the enterprise performance. The results show that the entrepreneurs or enterprises that had financial problems or had problem in access to credit in the beginning have greater performance than those who didn't have such problems ($t=-2.598$, $p < .01$). This result appears to nullify the findings of previous studies, which have reported negative effects of financial capital constraints (Prag *et*

al., 2005). Enterprise location also seems to have an effect on the enterprise performance. The enterprise's changing locations compared to the fixed ones seem to have greater net revenues ($t=1.794$, $p<.10$). However, gender of entrepreneur or head of the household does not seem to have such significant effect on the performance of non-agricultural enterprise. The F-statistics being significant indicate that the assumption of homogeneity of variance is satisfied (table 3).

Table 4 shows a significant positive correlation between net revenue (log), and months since operating ($\chi^2=.122$, $p<.01$), distance to closest facility ($\chi^2=.053$, $p<.05$), number of workers hired during a month when enterprise is operating ($\chi^2=.221$, $p<.01$) and months operating in a year ($\chi^2=.404$, $p<.01$). Similarly, a significant positive correlation is found between months operating in a year and months since operating ($\chi^2=.345$, $p<.01$). A weak negative correlation is observed between months operating in a year and number of workers hired during a month when enterprise is operating ($\chi^2=-.088$, $p<.10$) (table 4).

Table 4. Correlation Analysis Among Quantitative Variables of the Study

Variables	Net Revenue (log)	Enterprise age (months) (log)	Distance to closest facility (hour) (sqrt)	Number of workers (log)	Level of education	Months operating in a year	
Net revenue (log)	1						
Enterprise age (months) (log)	.122**	1					
Distance (hours) to closest facility (sqrt)	.053*	-.002	1				
Number of workers (log)	.221**	.058	-.019	1			
Level of education	.022	-.020	-.053	-.014	1		
Months operating in a year	.404**	.345**	-.001	-.088+	-.015	1	
Descriptive statistics							
Number	2515	2575	1713	477	847	2583	
Minimum	1.60	.00	0	.00	0	1	
Maximum	7.60	6.73	3.32	1.78	14	12	
Mean	4.59	4.18	.31	.47	8.07	9.84	
Standard deviation	.746	1.276	.525	.457	3.321	3.476	
Skewness	Statistics	-.243	-.830	1.423	.886	-.275	-1.311
	Error	.049	.048	.059	.112	.084	.048
Kurtosis	Statistics	.254	.717	1.020	.106	-1.009	.180
	Error	.098	.096	.118	.223	.168	.096

Note: **= $p<.01$; *= $p<.05$; += $p<.10$

The correlation coefficients among the independent variables being $<.75$ indicate that the independent variables are not likely to have significant multicollinearity problem in the multiple regression model. The skewness and kurtosis statistics of the quantitative variables ensure that the quantitative variables being less than one or pretty near to one seem to satisfy the assumption of normality (table 4).

3.4 Multiple Regression Analysis of Factors Determining Non-agricultural Enterprise Performance

A multiple regression model has been run to assess the effect of selected variables on the performance of non-agricultural enterprises. Net revenue (log) is used as the measure of enterprise performance, which is the dependent variable, and a couple of factors as identified with theoretical and or empirical association with the enterprise performance in the literature are independent variables in the multiple regression model. The independent variables in the regression models include gender, education level, registration status, enterprise age, location, access to financial capital or credit, number of workers hired during a month when the enterprise is running and distance from enterprise to the closest facility (table 5).

The independent variables or factors included in the multiple regression model appear to explain about 17.5 percent variance on net revenue i.e. a measure of non-agricultural performance in this study ($R^2=.175$, $F=2.411$, $p<.001$). F-value being statistically significant ($F=2.411$, $p<.05$) indicates that the regression model explains a significant amount of variance in the net revenue of non-agricultural enterprises (table 5). The tolerance statistics for all independent variables being $>.2$ and the Variance Inflation Factor (VIF) being <5 confirms that there is no multicollinearity problem in the multiple regression model (table 5).

Among the eight factors included in the model to explain the variance in the net revenue of non-agricultural enterprises, three of them – registration status with government agency, enterprise age measured in terms of months since operating and number of workers hired during a month when enterprise is operating, seem to determine the net revenue of non-agricultural enterprises. Among these three factors, number of workers hired during a month when enterprise is operating appears to be the strongest factor determining the performance of non-agricultural performance ($t=2.539$, $p<.05$) followed by the government registration ($t=2.279$, $p<.05$) and enterprise age measured in terms of month since began operating ($t=2.094$, $p<.05$) (table 5).

The non-agricultural enterprises that have been registered with government agency tend to have a greater performance in generating net revenue compared to the unregistered ones ($\beta=.228$, $p<.05$). There might be several other factors playing an indirect but vital role in such results among the government registered enterprises compared to unregistered counterparts. For example, the government, with the technical and financial supports from several donor agencies and national/international non-government organizations, have been initiating enterprise development programme across the country for a long period of time. Micro-Enterprise Development Program (MEDEP) and Micro-Enterprise Development Programme for Poverty Alleviation (MEDPA) are some of the examples of large-scale programmes the government of Nepal initiated since the late 1990s focusing on developing entrepreneurship among rural people living below the poverty line. The non-agricultural enterprises registered to government agency could have been the beneficiaries of such initiatives of the government and other national/international non-government organizations in getting exposures, trainings, technologies and

developing entrepreneurial capacities.

Enterprise age measured in terms of months since operating seems to have a positive association with net revenue of non-agricultural enterprises ($\beta=.203$, $p<.05$). It means that an increase of one standard deviation in the enterprise age is predicted to be associated with a +0.203 standard deviation increase in the net revenue of non-agricultural enterprises (table 5). It implies that older enterprises tend to have greater performance than the younger ones. The reason behind such positive association could be the advantage of learning by doing, experiencing and also establishing a bigger network. Moreover, enterprises do not grow alone; entrepreneurs also grow older along with the enterprises. Being older is not just being senior by age, but also gaining experiences and knowledge on scopes, strengths, weakness, opportunities, threats and challenges of owning a business. The older enterprises learn more from the experiences and also tend to have wider network of customers, suppliers, well-wishers, professionals, and have continuous improvement in the approaches, skills, capacities, and so on, so that the older enterprises could have direct or indirect competitive advantages over the younger enterprises thereby resulting in a greater performance. This finding, to some extent, could also be related to the human capital aspect of the resource-based theory. The human capital resources include "training, education, experience, judgment, intelligence, relationships and insight of individual managers and workers in a firm" (Becker, 1964; Williamson, 1974; and Tomer, 1987 quoted in Barney, 1991:101). Knowledge and skills gained by experiencing, learning, exposure and so on are the key aspects of human capital among professionals thus tend to have positive effect on enterprise performance.

Number of workers hired during a month when enterprise is operating also seems to have a significantly positive effect on net revenue of non-agricultural enterprises ($\beta=.249$, $p<.05$). It means that an increase of one standard deviation in the number of workers hired during a month when enterprise is operating is predicted to be associated with a +0.249 standard deviation increase in the net revenue of the non-agricultural enterprises. It reveals that the non-agricultural enterprises that hire more workers tend to have greater performance compared to those that hire fewer workers. There might be a reciprocal relationship between number of workers and net revenue of the enterprises. The increased number of workers could produce more quantities of products resulting in decreasing marginal cost of production thereby leading to greater net revenues. Another reason behind such an effect of the number of workers on net revenue could be the type of the workers themselves. These workers are hired from outside when the enterprise is operating. The non-agricultural enterprises seem to hire more number of workers in the peak business season resulting in greater performance. Furthermore, this may again indirectly support the assumptions of resource-based theory of firm as stated above, human capital includes "...the insight of individual managers and workers in a firm". The increased number of workers also offers potential for the wider insight of individual workers in a firm thereby having greater performance compared to the enterprises with fewer workers.

Table 5. Multiple Regression Statistics Assessing the Factors Determining Enterprise Performance

Factors/Determinants/Predictors	Unstandardized Coefficients		Standardized Coefficients	t	Collinearity Statistics	
	B	Std. Error	Beta		Tolerance	VIF
(Constant)	4.628	.246		18.814		
Gender (0: Female, 1: Male)	-.076	.100	-.073	-.755	.970	1.031
Highest level of education completed	-.002	.015	-.015	-.158	.975	1.026
Registered with government agency (0: No, 1: Yes)	.255	.112	.228*	2.279	.903	1.108
Enterprise Age/Months since operating (log)	.089	.043	.203*	2.094	.968	1.033
Location of the enterprise (0: Fixed location, 1: Changing locations)	.047	.129	.036	.364	.903	1.108
Financial capital or credit problem (0: Didn't have problem, 1: Had problem)	.004	.161	.002	.025	.951	1.052
Number of workers hired during a month when enterprise is operating (log)	.293	.115	.249*	2.539	.939	1.065
Distance (hours) from enterprise to nearest facility (sqrt)	-.010	.093	-.010	-.105	.937	1.067

Note: Dependent Variable: Net Revenue (log); $R^2 = .175$; $F=2.411$, $p<.05$; * $p<.05$

Some factors included in the multiple regression model such as gender, education level, location of enterprise, access to financial capital or credit, and distance from enterprise to the closest facility do not appear to have such significant effect on net revenue. The gender variable (regarding ownership of the enterprise) does not have significant association with the net revenue performance measure. Similarly, educational attainment of the entrepreneur also is not found to have significant effect on enterprise performance. In this context, it is meaningful to quote one of the hypotheses proposed by Deakins and Freel (2003:9), "Business ownership is not an intellectual activity, and the educated entrepreneur will quickly become wearied with many tedious tasks, which form the remit of most owner-managers." It indicates that educated entrepreneurs are not always successful. This finding of the study seems to support the hypothesis of Deakins and Freel (2003).

However, in the case of location of the enterprise, financial capital and distance to the closest facility, despite the fact of a significant association with the net revenue shown on the bivariate analysis (independent samples t-test and Pearson correlation), the multivariate analysis has nullified the bivariate association. There might be several reasons behind such differences in the association between bivariate and multivariate analysis. For instance, the bivariate association between net revenue and distance to the closest facility could be just a coincidence; after including this variable in the model with other variable, the stronger association of other variables with net revenue might have resulted in disappearing association between these two variables – net revenue and distance to the closest facility. The same might be the case in the context

of other variables like location and financial capital or access to credit as well.

4. Conclusions

The Nepalese economy is gradually heading towards being non-agricultural economy instead of an agriculture economy. The share of income, wage and employment in household economy from the non-agricultural sector compared to the agricultural counterparts is greater and on an increasing trend over the period. Using the data from NLSS-III 2010/11, this study has identified the key factors determining the performance of non-agricultural enterprise in Nepal. Among several factors included in the study, the registration status of the enterprises with government agency, financial capital or credit problem, enterprise location, enterprise age, number of workers seem to have a general association with the enterprise performance. Among these factors even, the registration status of the enterprises with a government agency, enterprise age and number of hired workers are identified as the key factors significantly determining the performance of non-agricultural enterprises in Nepal. The study suggests the concerned authorities of government and non-government organizations to encourage the non-agricultural enterprises, which are not yet registered to government agencies, to register with a government agency and thus get benefits of registration in their performance; initiate policies and programmes to encourage old enterprises to continue their business; and suggests non-agricultural entrepreneurs increase the number of employees to improve the performance of non-agricultural enterprises in Nepal.

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