

SMALL AND MEDIUM SCALE ENTERPRISES AND THEIR ROLE IN EMPLOYMENT GENERATION IN NEPAL

Mukti Bahadur Khatri¹

ABSTRACT

SMEs have historically played an important role in contributing to employment generation of many countries around the world. Naturally all businesses start as small businesses or even start out of small businesses initiated by individuals. It is imperative to give high priority to Nepalese labor, skill and raw material based domestic investments to promote national level industries for achieving employment. This study has used regression analysis to investigate relative changes in the position of the Nepalese small and medium scale enterprises (SME's) to the employment between the time period 2046 and 2073 based on secondary data. It has examine the dynamic relationship among the SMEs and employment in Nepal and found to be significant and positive relationship in between SMEs and employment of Nepal. It implies that number of employment was seemed to be mostly influenced by number of SMEs. However it was and still is contributing significant role in employment generation in Nepal.

Keywords: Small and Medium Scale Enterprises, Employment, Dynamic Relationship, Regression, Cointegration.

INTRODUCTION

Industry is regarded as the secondary sector of the Nepalese economy and its development started rather late in Nepal. It in progressed with the establishment of Industrial Council in 1936 A.D. The Gharelu Ilam Prachar Adda was established in 1940. After that industries were gradually established. Raghupati Jute Mill was established in 1946, which is regarded as the first modern industry in Nepal. The process of planned

1 Mr. Khatri is a Lecturer, Economics Department, Trichandra Multiple Campus, Kathmandu, TU.

industrialization started with the launching of the First Five Year Plan in 1956 A.D. gradually, a number of small, medium and large-scale industries were established in the public along with private sectors. But, the overall state of industrialization is still in its infant stage. The industry which is regarded as the secondary sector of economy contributes below 10 percent (i.e. only 6.1 percent) of the Gross Domestic Product (GDP) and provides employment to only about 2 percent of the total labour force (Kanel et al. 2016).

STATEMENT OF PROBLEM/RESEARCH QUESTIONS

There have been the many empirical researches that examine the influence of small and medium scale enterprises (SMEs) on the employment in global context. But in Nepalese context there have been a few empirical researches that examine the influence of small and medium scale enterprises (SMEs) on the employment. Bringing employment in domestic production is imperative for Nepal's economic prosperity. Neither import substitution nor export promotion is possible in absence of domestic employment growth and trade deficit cannot be reduced either.

Development of Industry sector is very much necessary to reorient the economy towards the path of prosperity, which shrank as a result of devastating earthquake and border obstructions. It is imperative to give high priority to Nepalese labor, skill and raw material based domestic investments to promote national level industries for achieving national employment generation as per the spirit of the Constitution of Nepal. Likewise, knowledge skill, technology and capital in possession of non-resident Nepalese can be utilized in national development efforts thereby making the economy prosperous (MoF 2016).

So, public, private, and cooperative sectors need to be mobilized through SMEs to achieve industrial employment. That's why this study explores the roles of the SMEs in employment generation broadly. The present study specifically seeks to answer the following questions.

Whether or not there exists relationship between the employment and SMEs?

OBJECTIVES OF THE STUDY

The overall objective of the study is to consider the implications of SMEs in Nepalese economy. The specific objective of the study is to identify

the potentiality of SME in the economy in respect of the contribution to Employment generation.

REVIEW OF LITERATURE

Theoretical review

Ayyagari et al. (2011) describe in the working paper "Small vs. Young Firms across the World Contribution to Employment, Job Creation & Growth" of World Bank, based on a unique cross-country database to examine the contribution of the small and medium enterprises sector to total employment, job creation, and growth in 99 countries.

As a study of Ramanathan et al. (2011) on "Technology Transfer & Small & Medium Enterprises in Developing Countries" explore small and medium enterprise (SME) sector is recognized for its contribution to employment, innovation and economic dynamism, and is considered as an engine of growth and an essential part of a healthy economy.

Kongolo (2010) examines on the topic "Job Creation versus Job Shedding & the Role of SMEs in Economic Development" SMEs have historically played an important role in contributing to economic development of many countries around the world.

Ayandidu & Houghton (2017) for developing countries, Aceleanu et al. (2014) in Romania, Katua (2014) for selected countries, Page & Soderbom (2012) in Africa, Zaied (2012) in Egypt, Ayanda & Laraba (2011) in Nigeria, Burhanuddin (2009) in Malaysia, OECD (2004) & OECD (2000) are also found significant and direct relationship in between SMEs and employment in their study.

NEPALESE CONTEXT

Nepalese cottage, small and medium scale industries

Accordingly the process of planned industrialization started with the launching of the First Five Year Plan in 1956 A.D. gradually, a number of industries such as cigarette, sugar, cotton, cement, bricks, and paper industries were established in the public sector. But, the overall state of industrialization is still in its infant stage. The industry which is regarded as the secondary sector of economy contributes below 10 percent (i.e. only 6.1 percent) of the Gross Domestic Product (GDP) and provides employment to

only about 2 percent of the total labour force. Upto F.Y. 2015/16, industrial sector has provided employment to 28, 59,186 persons. The total number of industries registered upto F.Y. 2015/16 is 3, 55,394 (MoI 2017).

The industries of Nepal are classified into four board groups based on capital investment. They are 1) Traditional cottage industries 2) Small scale industries 3) Medium scale industries and 4) Large scale industries (MoI 2067).

Similarly, the Industrial Policy 1992 A.D. of Nepal Government has classified labour-intensive industries, industries related to country's tradition, art, culture, and traditional cottage industries. Handlooms, clothes, carpets, curio goods (curios products like statue), hand-made papers and paper products, metal products, wooden and bamboo product industry are some of the examples of cottage industries of Nepal (MoI 1992). However, according to Nepal Industrial Policy 2067, an industry which uses upto 10 KW electricity for production is called a cottage industry (MoI 2067).

Small-scale industries, on the other hand, belong to the group of industries which have capital investment up to Rs 5 crores (MoI 2067) and are operated with the help of outside labour varying in the most cases from 10 to 25 heads. The Industrial Policy 1992 has considered an industry as a small industry if it has installed machinery and tools worth more than Rs. 200,000 and has fixed capital not exceeding Rs. 10 million. Woodcarving, dyeing, printing, cloth weaving, carpet knitting, oil processing are some of the examples of small-scale industries in Nepal. Similarly, medium scale industries which have capital investment between Rs. 5 crores to 15 crores (MoI 2067).

Nepal government also improved company act 2063, implemented foreign investment policy 2071, industrial business act 2073, special economic zone act 2073 and national intellectual property policy 2073. Similarly department of industry provides different facilities to promote SMEs in Nepal.

Table 1: Summary sheet of industry registered - scale wise
(From the beginning to 2073-03-32)

Scale of industry	No. of industry	In Percent	Total capital (Rs. in million)	In percent	No. of employment	In percent
Large	856	0.24	9,81,326.79	65.93	1,26,974	4.44
Medium	1,482	0.42	1,23,922.52	8.32	1,40,873	4.93
Small	4,186	1.17	64,159.81	4.31	2,53,966	8.88
Cottage	3,48,870	98.17	3,19,330	21.44	23,37,373	81.75
Total	3,55,394	100	14,88,739.12	100	28,59,186	100

Source: Department of Industry, Ministry of Industry, Government of Nepal, 2017.

Table 1 show that cottage industries cover almost 98.17 % out of total industries in low investment i. e. 21.44% and provide mass employment 81.75% in comparison to others. Similarly, cottage, small and medium scale industries cover almost 99.76% out of total industries in low investment i. e. 34.07% and provide mass employment i.e. 95.56% in comparison to large scale industries. Therefore to generate employment opportunities within a domestic economy Nepal government should promote and developed SMEs.

METHODOLOGY

The theoretical approach to studying the relationship between the SMEs and employment provided by the development theory, and followed by the World Bank model (Ayyagari et al. 2011) which is used to describe the relationship of SMEs and economic development. So, this research is ex - post facto in nature.

A secondary method of data collection is used during the study, where employment as a dependent variable and data collection method is focused on an extensive literature review covering, among others, relevant national-level studies and reports along with websites of relevant organizations. In addition, working papers, conference proceedings, newspapers and other sources of information were explored. The research process carried out by the OLS regression model regarding with index of SMEs of Nepal and the macroeconomic variables (employment) for the study. It compromises of yearly data of all variables from 2046 B.S obtained from department of industry, Ministry of Industry.

ANALYSIS AND DISCUSSION

Growth path of employment and industries

Below Figure 1 show that total employment increases as increased in total industries (i.e. cottage, small and medium scale industries). Similarly there is direct relationship between total employments and total industries in Nepalese economy. Therefore it also implies that Nepal government should promote these industries to provide employment opportunities.

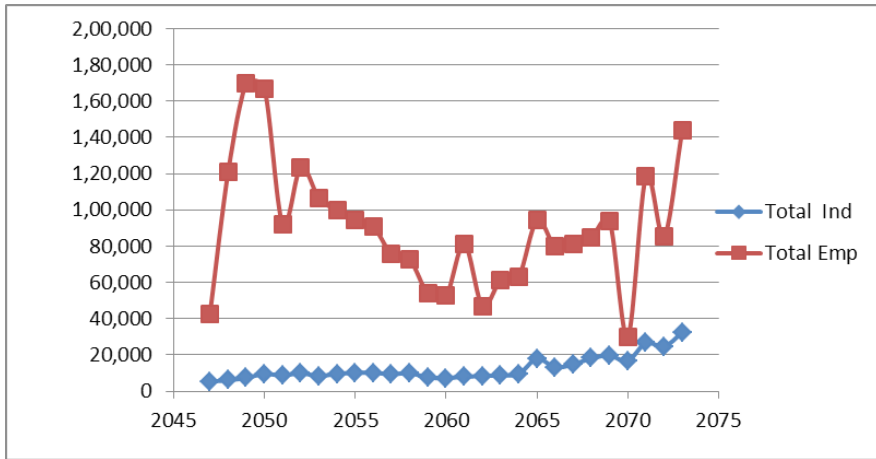


Figure 1: Growth paths of employment and industry

Source: Department of Industry, Ministry of Industry, Government of Nepal, 2017.

Summary statistics

Table 2 represents summary report of Mean, Standard Deviation, Maximum, Minimum, Skewness, and Kurtosis, which explain synopsis about the distribution, variability, and central tendency of a variable.

Table 2: Summary statistics

Variables	No. of Obs.	Mean	Min.	Max.	Std. Dev.	Skew	E x . Kurt	C.V.
Industry	26	13821	5338	47465	9362.43	2.08	4.32	0.68
Employment	26	102710	29971	449697	76030.50	3.53	13.78	0.74

Note: This table displays the summary statistics of concerned variables for the sample period 2046 to 2073. The concerned variables denote first difference of log values of Industry & Employment.

For the Employment the mean is 102710 and the standard deviation is 76030.50. The largest and lowest value for this is 449697 and 29971. The

variable shows positive Skewness indicating the higher probability of very large positive employment generation. Similarly the kurtosis shows that it is platykurtic (fat or short tailed) with lower than normal kurtosis (that is $K > 3$), which means that there is a higher probability than usual for extreme values (very good or very bad employment creation) to occur.

Cointegration

A linear combination of log of industry and employment time series can be stationary despite being individually non-stationary. The cointegration of two (or more) time series suggests that there is a long-run equilibrium relationship between them. So it was employed to examine the dynamic relationship between industry & employment. The following steps were followed in this regard:

Augmented dickey-fuller test

Let us observe the ADF test of level and first difference of industry and employment (time series) in Table 4. According to ADF results of first difference, absolute calculated value of ‘T’ is more than absolute value of T at 1%, 5% and 10%. So, the null Hypothesis is rejected at 1%, 5% and 10%. It implies that there is no unit root problem (i.e. stationary). On the contrary ADF results of level shows a unit root problems (Gujrati 2003). They are given detail as follows.

Table 4: Augmented dickey-fuller test

Variables	For level			For first difference		
	Estimated value	Test statistic: tau	P-value	Estimated value	Test statistic: tau	P-value
Industry	-0.78	-5.01	0.00	0.08	1.72	0.98
Employment	-0.45	-2.19	0.21	-0.04	-0.52	0.49

Note: This table displays ADF test for the unit roots for the sample period 2046 to 2073 & Significant at the 5- percent level.

Johansen test for coingration

This study is used as a model to examine a long term relationship between industry and employment. For this purpose cointegration analysis is the ideal tool. We use the Johansen (1991) procedure since it has been shown to have good finite model. The Johansen (1991) procedure is based

on Augmented Dickey-Fuller (ADF) tests. For this first determine the order of integration of the variables, making use of Augmented Dickey-Fuller tests in above.

Table 5: Johansen test for cointegration

Rank	Eigenvalue	Trace test	P-value	Lmax test	P-value
0	0.85	52.77	0.00	52.77	0.00
1	0.00	0.01	0.92	0.01	0.92

Notes: This table displays the time series cointegration tests using the Johansen's method for the sample period Mid-July 1994 to Mid-July 2011 Significant at the 5-percent level.

The two Johansen tests of Table 5 for cointegration are used to establish the rank of β ; in other words, how many cointegration vectors the system has. These are the “ λ max” test, for hypotheses on individual eigenvalues, and the “trace” test, for joint hypotheses. Suppose that the eigenvalues λ_t are sorted from largest to smallest. The null hypothesis for the “ λ max” test on the i -th eigenvalue is that $\lambda_t = 0$. The corresponding trace test, instead, considers the hypothesis $\lambda_j = 0$ for all $j \geq i$.

So, the above table shows that the trace and Lmax tests reject the null hypothesis that the smallest eigenvalue is not 0, thus it concludes that the series are in fact stationary. Similarly the trace test provided clear-cut evidence for this, with a p-value of 0.00. However, the study considered only the cointegrating vector represented by largest eigenvalue (employment).

Regression model

A linear combination of total industry (total number of cottage, small and medium scale industries) of Nepal and total employment that generates in study period time series can be stationary despite being individually non-stationary. For this purpose EG (Engle Granger) test is used to test for cointegration. The cointegration of two (or more) time series suggests that there is a long-run equilibrium relationship between them. So it was employed to examine the dynamic relationship between employment and industries. The following steps of Table 6 were followed in this regard:

Table 6: Regression analysis of employment and industry

Regression statistics			
Regression model: $\text{Employment} = 24275 + 5.67 \text{ industry} + 1.13$			
R-squared (R ²)	0.48	Adj R-squared (R ²)	0.46
T - Statistic	4.98	DW Statistics	0.60
Standard Error	1.13	Standard error of residuals	55419.40
P Value	(0.00) ***	Degrees of freedom	26
First-order autocorrelation coeff.	0.54	Akaike information criterion	693.05
Log-likelihood	-344.52	Schwarz Bayesian criterion	695.72

***Significant at the 1-percent level

Here, from Table 6 overall model is significant even in less than 1% level of significance. However, 48.83 % of total variation is explained by the model. Similarly, a change in the number of SMEs leads to change in employment level by 5.68 numbers.

The above estimated equation shows that employment has significant and positive relationship with the number of industries.

So, this finding implies that industrial policy in Nepal has positive impact on employment and the positive relationship causes increase in number of industries increases employment opportunities and thereby increasing mass employment with an economy.

DISCUSSION

In Nepal, cottage industries are covered almost 98.17 % out of total industries in small investment i. e. 21.44% and provides mass employment i. e. 81.75% in comparison to others. Similarly, cottage, small and medium scale industries are covered almost 99.76% out of total industries in low investment i. e. 34.07% and provide mass employment i.e. 95.56% in comparison to large scale industries as seen from table 1. But Nepal government is unable to flour these sectors for employment generation as their potential capacity up to now. Therefore to generate mass employment in local level Nepal government should promote and developed SMEs.

On the basis of regression analysis of 28 year’s observations, there is significant and direct relationship in between total number of SMEs and employment of Nepal. The value of the coefficient (β_1) industry is 5.67, which shows that, a change in the number of SMEs leads to change in employment level by 5.67. The results of t-statistics and p-value are also

significant, which shows that results of coefficient is to be accept with 99 % degree of confidence. R-square (R^2) = 0.48, which shows that correlation exists between dependent variable (Employment) and its explanatory variables (Number of SMEs). The value of R^2 indicates that 48% variation in dependent variable has been explained by variation in independent variables.

This study is based on only the relationship between employment and number of SMEs, and does not include other control variables. So, there is space for further study by including other control variables.

The outcome of the study benefits both the investors and the regulators of SMEs. For the investors, the study helps in predicting the SMEs from key economic analysis and thereby takes the advantage of opportunities. On the other hand, the regulators of the SMEs (for instance Department of Industry, Ministry of Industry and Finance along with Nepal Rastra Bank) are able to assess the implication of different factors on the SMEs development and thereby able to formulate correct policy relating to the SMEs. Furthermore, general investors became aware of economic fundamentals impact on the SMEs and thereby help in reducing the external activity and non-rational behavior on the SMEs. Moreover, Nepal being a founder member of the South Asian Association of Regional Cooperation (SAARC), the outcome of such study can be used to compare the economic role of SMEs in employment among the South Asian Countries.

CONCLUSION

There are various determinants driving employment. On this process has occupied the minds of economists for hundreds of years since Adam Smith up to now to solve the problems of industrial sectors and employment promotion. They were emphasized on different economic principle to generate employment. Among them specialization, the division of labor, investment in physical capital and infrastructure and recently education and training, technological progress, macroeconomic stability, good governance, firm sophistication and market efficiency among others are vital for employment and growth of SMEs. Similarly, more of them can be significant at the same time.

On the basis of 28 years observation of SMEs, they have comparatively more contributions in employment than large scale industries. The conclusion of the study is that changes in SMEs of Nepal significantly

and positively affect Nepalese employment promotion. It implies that number of employments is mostly influenced by number of SMEs of Nepal

REFERENCES

- Aceleanu, M.I., Trasca, D.L. & Serban, A.C. (2014). The role of small and medium enterprises in improving employment and in the post-crisis resumption of economic growth in Romania. *Theoretical and Applied Economics*, **21**, (1): 87-102. <http://store.ectap.ro/articole/945.pdf>.
- Ayanda, A.M. & Laraba, A.S. (2011). Small and medium scale enterprises as a survival strategy for employment generation in Nigeria. *Journal of Sustainable Development* **4**(1). www.ccsenet.org/jdsd.
- Ayandidu, A.O. & Houghton, J. (2017). The role of small and medium scale enterprise in local economic development (LED). *Journal of Business and Retail Management Research (JBRMR)* **11**(2). www.jbrmr.com.
- Ayyagari, M., Demirguc-Kunt, A. & Maksimovic, V. (2011). Small vs. young firms across the World contribution to employment, job creation & growth. *The World Bank Policy Research Working Paper 5631*. <http://econ.worldbank.org>. pdf
- Burhanuddin, M.A., Fahmi Arif, V.A. & Prabuwno, A.S. (2009). *Barriers & challenges for technology transfer in Malaysian small & medium industries*. <https://www.researchgate.net/publication/224506729>.
- Gujarati, D. (2003). *Econometrics*. Singapore: McGraw-Hill.
- Johansen, S. (1991). Estimation and hypothesis testing of cointegration vectors in Gaussian vector autoregressive models, *Econometrica*, **59**(6):1551-1580.
- Kanel, N. R., Bista, N. B. et al. (2016). *Principles of economics*. Revised Edition. Kathmandu: Buddha Publication Pvt. Ltd.
- Katua, N. T. (2014). The role of SMEs in employment creation & economic growth in selected countries. *International Journal of Education & Research* **2**(12). www.ijern.com.
- Kongolo, M. (2010). Job creation versus job shedding & the role of SMEs in economic development. *African Journal of Business Management*, **4**(11): 2288-2295. <http://www.academicjournals.org/AJBM>.
- MoF, (2016). *Economic survey, FY 2014/15*. Government of Nepal, Ministry of Finance, Kathmandu.

- MoI. (1992). *Nepal industrial policy, 1992*. Government of Nepal, Ministry of Industry, Commerce & Supplies, Kathmandu.
- MoI. (2067 B.S.). *Nepal industrial policy, 2067*. Government of Nepal, Ministry of Industry, Commerce & Supplies, Kathmandu.
- MoI. (2017). *Industrial Statistics, 2016/17*. Government of Nepal, Ministry of Industry, Commerce and Supplies, Kathmandu.
- OECD. (2000). *Small business job creation & growth facts, obstacles & best practices*. <http://google.com>.
- OECD. (2004). *Promoting entrepreneurship & innovative SMEs in a global economy: towards a more responsible & inclusive globalization*. Paper presented at 2nd OECD Conference of Ministers Responsible for Small & Medium-Sized Enterprises (SMEs) Istanbul, Turkey.
- Page, J. & Soderbom, M. (2012). Is small beautiful? Small enterprise, aid and employment in Africa. *UNU- WIDER Working Paper No. 2012/94*. ISSN 1798-7237, ISBN 978-92-9230-558-1. United Nations University, Helsinki. www.wider.unu.edu.
- Ramanathan, K., Jacobs, K. & Bandyopadhyay, M. (eds.) (2011). *Technology transfer & small & medium enterprises in developing countries*. The Centre for Science & Technology of the Non-Aligned & Other Developing Countries (NAM S & T CENTRE). Daya Publishing House, Delhi - 110 035.
- Zaied, A. N. H. (2012). Barriers to e-commerce adoption in Egyptian SMEs. *I.J. Information Engineering and Electronic Business*. doi:10.5815/ijieeb.2012.03. 02.