Factors Affecting Employment Opportunities to Manufacturing Sector of Nepal

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Abstract

Nepalese manufacturing sector is not properly developed. However, manufacturing sector provides wide employment opportunities to people. Therefore, the main purpose of this study is to investigate the factors affecting employment opportunities in Nepalese manufacturing sector. This paper has employed two stage least square (2SLS) method using the time series macroeconomic data. The 2SLS method has been used to avoid the simultaneous equation bias. Manufacturing employment is explained variable and real foreign direct investment, manufacturing gross domestic product, NEPSE index and government expenditure in manufacturing sector are considered as explanatory variables. The 2SLS results have confirmed that foreign direct investment flows, capital market development, government expenditure and real GDP are positive and significant factors which contribute to expand the employment opportunities in manufacturing sector of Nepal. Therefore, Government of Nepal rise the expenditure in manufacturing sector as well as others infrastructure development to increase the flows of foreign capital in manufacturing sector to generate the employment opportunities. Furthermore, government of Nepal focus to develop financial markets for capital creation which leads economic growth as well as employment opportunities.

Keywords: two stages least squares, endogenous, linkage, manufacturing, foreign capital

Introduction

Employment generation is crucial and very challenging work for developing countries like Nepal. Large numbers of young people skilled as well as unskilled have migrated to foreign countries for employment due to limited employment opportunities within the country. Therefore, Nepal has tried to develop the manufacturing sector to raise production, productivity and employment opportunities within country to control the brain drain. Employment is the main channel which influences the performance of economy by changing production, export, import, investment and competition. Manufacturing is a key sector which play crucial role in generating value-added and job creation within the economy (Asgari, 2020).

The rate employment opportunities in urban area are higher than rural area in Nepal. Therefore, population distribution pattern—population density in urban area is very high to compare with rural area—and income and wealth distribution pattern is highly unbalanced. This unbalanced might be reduced with the expansion of employment opportunities in rural

areas by establishing manufacture industries. Furthermore, Nepal has suffered from the poverty and malnutrition within rural areas, therefore, sustainable employment is the best way to reduce the poverty (Islam, 2004). Employment is vital because it rise the living standard of the people and reduce the social crime. Furthermore, rise in employment opportunity in manufacturing sector help to increase the production and productivity in agriculture sector due to the transfer of unnecessary crowd labour from agriculture to manufacturing sector (Jacoby, 2007).

Nepal has tried to achieve faster growth of economy through policy reform and development of infrastructure. Among the policy reforms, one of major policy reform is to rise employment opportunity by developing manufacturing sector. The development of manufacture sector helps to absorb the disguised as well underemployed people. Furthermore, government of Nepal has encouraged attracting multinational companies to make Nepal as industrial production hub and rise employment opportunities. Therefore, this paper examines the major factors which influence the manufacturing employment within Nepal.

Review of Literature

Country's employment rate depends upon the socio-economic growth of the nation. Socio-economic growth and employment of the country is positively correlated and positive change in employment is determined by condition of growth theory (Phillips, 1958). The most popular growth theory like Harrod-Domar, Solow and New Cambridge Growth model postulated that high economic growth is prerequisite to maintain the steady employment growth and that economic growth leads to rise employment within the country (Klamer et al., 1988; Palley, 2017; Sato, 1964). Furthermore, Okun (1962) explained the relationship between unemployment and change in real GDP. This theory stated that 2% increase in real GDP leads to 1% decrease in unemployment rate. Therefore, there is inverse relationship between unemployment and GDP growth within the economy.

Bhorat (2007) examined the composition of household determinants of employment opportunities in South Africa. Correlation analysis was employed to investigate the effects of composition of household to determine the employment. This study found that those household which has more teenagers get more employment opportunities than other and there was positive and significant relationship between marital status and employment inn developed as well as developing countries. Furthermore, poor people have no money to search the job therefore, they have less opportunities to being a employed.

Dunga and Sekatane (2014) analyzed the determinants of employment in household in Bophelong township. A logistic regression analysis confirmed that age, education, gender, marital status, labour force were the major determinants of employment in the study area. Furthermore, government grant was another positive and significant determent of employment and those employment levels help to escape the poverty.

FDI served as a catalyst for employment, technology transfer, enhanced production, and increased productivity, contributing to economic growth in developing nations Mathew and Johnson (2014). FDI positively influenced productivity and income distribution, leading to job creation across various sectors in these countries. This study utilized a single-equation model, employing the ordinary least squares method to assess the connection between FDI

and employment rates in developing countries. The results revealed a positive and statistically significant relationship between FDI inflows and employment rates.

In the case of India, Kirti and Prasad (2016) asserted that foreign capital inflows emerged as a pivotal solution to bridge the gap between excess demand and supply for capital. Inward FDI played a crucial role in industrial development and the generation of employment opportunities in India. The primary aim of this research was to scrutinize the impact of FDI on employment generation capacity and GDP growth in India. The study employed correlation and regression analysis to explore the relationship between employment and GDP growth. The findings indicated a positive and statistically significant correlation between inward FDI inflows and both employment generation and GDP growth in India.Top of Form

Many scholars argued the technology change is major factors which generate the employment opportunities. While there was extensive discourse on how technology influence the future in terms of industrial growth and productivity (Dalenogare et al., 2017), more recently, both scholars and practitioners have increasingly focused on the human implications of digital transformation, particularly its impact on employment. Scholars emphasize that occupations involving routine tasks face a heightened risk of being replaced by computers (Frey & Osborne, 2017). Additionally, it is suggested that up to half of existing jobs could be automated within the next decade (Kolade & Owoseni, 2017), ushering in a new era marked by evolving employment profiles, skills instability, and a pressing need for workforce re-skilling and up-skilling (World Economic Forum, 2017).

Tripathi (2018) investigated the employment situation of different class of cities in urban area of India covering 52 cities by using national sample survey data of employment and unemployment 2011-12. This study identified the city wise determinants of employment rate. The regression result shows that education, size of city, output growth rate and training were the major determinants of employment in Indian cities.

In the analysis of the socio-economic determinants of employment in Pakistan, Adeem et al. (2019) employed time series data of 1972- 2016. Autoregressive distributed lagged model was used to investigate the short run and long run determinants of employment. Per capita GDP and government expenditure were the positive and significant determinants of employment in both short and long run. Furthermore, gross fixed capital formation, foreign direct investment and secondary school enrolment were also found positive and significant impact on employment generation in Pakistan.

Asgari (2020) examined the factors which determine the employment in manufacturing sector of Iran by employing time series data from 1965—2015. The study employed the generalize panel data approach and generalized least squares method to identify the major determinants of employment in Iranian manufacturing sector. This study found that wage, output and capital are major determinants of employment in the long run. Furthermore, coordination of monetary, fiscal, foreign exchange and trade policy and attraction of foreign direct investment were the major factors affecting to rise the employment opportunities. This study concluded that employment demand in Iran is the function of wage, production level and capital stock within the economy.

In the exploration of the factors affecting on employment condition of China, Qiwang and Xiaorui (2020) employed the various growth theories. This study employed the structural equation and regression model to examine the factors influenced the micro and macro level of employment rate in Northeast China. Employment of economics, management, engineers, and science graduates was affected by micro and macro factors and former had both direct and indirect impact on employment. The employment distribution of science and technology was highly correlated with regional gross domestic product of the country.

Hossain, et al. (2020) examined the relationship between empowering leadership, competency development, employment and career success on Chinese hotel industry by employing survey data from 560 employees working in 45 hotels. The structural equation models showed that competency development and empowering leadership is significantly related and employee relationship enhances employee career success.

The existing various literature show the relationship between various factors and employment opportunities. This paper has tried to explore the major factors affecting employment opportunities to Nepalese manufacturing sector based on the various growth theories (Domar, 1946; Harrod, 1939; Solow, 1956) and empirical research.

Data and Method

Data and information were gathered from secondary sources to identify the major determinants of employment in manufacturing sector. The secondary information was collected from various institutions such as the Planning Commission, Nepal Rastra Bank (NRB), Central Bureau of Statistics (CBS), World Bank's World Development Indicators, and various other organizations contribute to comprehensive research efforts. The CBS provided the data about number employed people in manufacturing sector which has taken as proxy for employment in manufacturing sector. Furthermore, explanatory variables foreign direct investment and NEPSE index have taken from NRB and manufacturing GDP and government expenditure in manufacturing sector have collected from CBS from 1995/96 to 2019/2020. Employment is a real value therefore; all explanatory variables have converted into real term by using the formula of real $= \frac{nominal}{GDP\ deflator} X$ 100. The employment is a function of manufacturing GDP and other variables Harrod – Domar (1946) and Solow (1956),

i.e., MEM $= f$ (MRGDP, RGEM, FDI, NEPSE)　　　　　　　　　　　　　(1)

Equation (1) can be written in econometric model as follows

$\ln MEM = \alpha + \beta_1 \ln RFDI + \beta_2 \ln RMGDP\ (-1) + \beta_3 \ln RGEM + \beta_4 \ln NEPSE + \mu$　　　　(2)

MEM represents manufacturing employment, RFDI is real foreign direct investment flows, RMGDP indicates real manufacturing GDP, RGEM stands for real government expenditure in manufacturing sector.

The model (2) *MEM* has been used as endogenous variable and $\ln RGEIM$, $\ln FDISTAR$, $\ln NEPSE$, and $\ln RGDP(-1)$ has been treated as exogenous (or predetermined) variables.

The 2SLS estimation method is employed to estimate the over-identified equation within a simultaneous equation system, offering remedies for bias arising from simultaneous equations. Estimators derived from the 2SLS approach are consistent. In the manufacturing

sector, *RMGDP* and *MEM* are identified as two endogenous variables. Equations associated with *RMGDP* and *MEM* are found to be over-identified, leading to their estimation using the 2SLS method.

Results and Discussion

Macroeconomic variables gross domestic product, capital market development, foreign direct investment, government expenditure etc. have played the crucial role to generate the employment opportunities within the country. Growth theories (Domar, 1946; Harrod, 1939; Solow, 1956) stated that economic growth of the country is the main driver of rise the employment opportunities. Similarly, rise in GDP growth within the economy rise the foreign capital flow due expansion of market size. Furthermore, the expansion of market also creates the investment environment for domestic investor within the country which is the major source of employment within the country. Hence, by employing manufacturing gross domestic product (*MGDP*), government expenditure (*GEIM*), *NEPSE* Index, and Foreign direct invest (*FDI*) as explanatory variables and manufacturing employment as explained variables, this paper has investigated the impact of these variables on employment generation through two stages least squares (2SLS) method. The result of the 2SLS has presented in Model 1

Model 1

Estimated Relation between MEM and FDI, Dependent variable is MEM.

$\ln MEM$ = -13.26 + 0.19**$\ln RFDISTAR$ + 0.19**$\ln RGEIM$ + 0.54***$\ln NEPSE$ + 0.04**$\ln RMGDP$(-1)

| t | (-2.71) | (3.98) | (2.92) | (3.60) | (4.38) |

$\bar{R}^2$ = 0.85, F = 12.48,   DW = 1.92, N = 26

Note. Authors' estimation based on 2SLS through real manufacturing GDP taken as instrumental variables using the data, *significant at 5%; ** significant at 1%.

Model I show the impact of macroeconomic variables on employment generation in manufacturing sector through two stages least squares method. The coefficient of all variables (*RFDI, RGEIM, NEPSE* and *RMGDP*) are positive and statistically significant implies that macroeconomic variables included in the model significantly affect employment generation in manufacturing sector. The coefficient of FDI flows is 0.19 implies that one percent rise in FDI flows into Nepal leads to rise the employment opportunities by 0.19 % in manufacturing sector. Similarly, coefficient of *RNEPSE, RGEIM,* and *RMGDP* are 0.54, 0.19 and 0.04 respectively indicating that 1% increase in NEPSE index, government expenditure and manufacturing GDP lead to 0.54%, 0.19% and 0.04% rise in employment in manufacturing sector respectively. Hence, capital market stabilization, government expenditure, gross domestic product and FDI flows are the major determinants of manufacturing employment within the country.

The coefficient of determination R^2 (0.85) implies that 85% of employment in Nepalese manufacturing sector is explained by foreign capital, government expenditure, capital market structure, and manufacturing gross domestic product. The value of DW-statistics (1.92) confirms that model 1 has no problem of autocorrelation. Furthermore, the value of F-statistics (12.48) indicating that overall, two stage least squares model is stable and good fit. The major determinants of employment opportunities are flows of foreign capital,

volume of GDP, amount of government expenditure and capital market which is inline with the result of previous scholars Adeem et al. (2019), Asgari (2020), and Kirti and Prasad (2016). This study result also is in favour of new classical growth model (Domar, 1946; Harrod, 1939; Solow, 1956) which states higher the growth higher the employment opportunities because there is positive and significant relationship between manufacturing GDP and employment opportunities.

Conclusion and Policy Implication

Employment is the key factor which influences the sustainable economic growth of the country. Availability of employment opportunities within the country rise the income of the people. Increase in income of the people leads to rise aggregate saving as well as aggregate demand and that positively affects the investment and production of the goods and services within the economy. Therefore, the study is focused to investigate the major determinants of employment opportunities in manufacturing sector of Nepal. This study concludes that foreign capital flows, government expenditure in manufacturing sector, NEPSE index and gross domestic product from manufacturing sector have found to be positive and significant determinants of employment opportunities in Nepalese manufacturing sector in short run as well as in long run. Therefore, the government of Nepal should make the significant efforts to attract foreign capital, to rise government expenditure and to develop capital market through policy measures to expand economic growth as well as employment opportunities.

Agenda of Future Research

The results of this study only show the major macroeconomic determinants of employment in Nepalese manufacturing sector but this study is unable to cover the relative importance of expansion of manufacturing plant, social factors, parentals, and other microeconomic factors in the employment generation will be for the future research.

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