Factors Influencing the Income of Urban Informal Workers: Evidence from Nepal

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Abstract

Due to lack of formal job and flexible nature of informal work, large number of workers are attracted into the informal sector in developing countries. The paper examines the case of urban Nepal to study the impact of informal sector in the incomes and livelihood of such workers. This paper is based on cross-sectional data that was collected in 2020 in all six metropolitan cities of Nepal. The fixed income determination multiple regression model focuses on how the income of informal workers have been affected by various choice variables. Mostly, people of prime working age and early working age are involved in this sector. The empirical results show that the average annual earnings of the respondents was very close to national minimum wage. Most of the selected explanatory variables were significant with positive sign associated with higher level of annual income.

Key Words: informal economy, informal workers, income, urban Nepal

JEL Classification: E26, J46, D31, P25

1. INTRODUCTION

The work activities that generate income and expenditures outside the scope of state regulation is generally called informal economy (Jensen et al., 2019). The urban labour market is highly informal due to inflation, low wages and increasing requirements (Hart, 1973). Informal economy includes a wide range of jobs and economic activities without social protection (Bonnet et al., 2019). Informal workers are those workers who do not have to get work assurances or social protection through job. They are found both in the informal sector and within the formal sector. Tucker and Anantharaman (2020) have argued that informal workers create economic, social and environmental value for urban area.

In developing countries, informal employment gets to be a last resort for the group of marginalized population as a survival strategy (Unni & Rani, 2003). Around 55 percent of non-agriculture workforce is informal in many countries. However, the actual size

of informal workers varies depending on the regions (Routh & Borghiis, 2016). The reality of informal employment as shown by Chen et al. (2012) have revealed that more than half of the non-agriculture workers were engaged in informal sector in most developing regions and was as high as 82 percent in South Asia compared to 11 percent in Eastern Europe and Central Asia. About two billion workers earned their living globally in the informal sector (ILO, 2018; Bonnet et al., 2019). A major part of active workforce works is in the informal sector in Nepal (Adhikari, 2018). About 85 percent workforce was engaged in informal sector compare to only 15 percent formal employment in Nepal (CBS, 2019).

Informal works are highly differentiated and heterogeneous in nature (Andrae et al., 2013). Florez Nieto (2002) classified them from unpaid worker to any number of unregulated salaried works. Informal work contributes essentially to the contemporary urban dynamics. Literature shows that informal workers involved in the maintenance and production of infrastructure networks is the main factors for urban sustainability. Thus, informal workers are key actors in urban sustainability (Guibrunet, 2017).

The previous research conducted in many countries have generally focused on utilization of informal workers and factors affecting workers income (Gonenc & Tanrivermis, 2007). However, the earnings of informal workers were on average influenced by many determinants such as age, education, working conditions (Brown & Roever, 2017). These studies showed that age, education, experience and occupation are included to reflect the wages and which affect the probability of being employed in informal sector (Folawewo, 2006).

This article aims to address the question of how urban informal workers create income as a means of their support. Urban informal economy create employment and reasonable income for the poor household (Sharma & Adhikari, 2020). In Nepal, the informal workers are major workforce component in urban areas. The objectives of the study are to examine economic impact on their livelihood. This paper has tried to show the importance of informal workers on their livelihood and determine the important variables that affect earning functions. The issue of urban informal employment exists as an important consideration for labour market policy. The issue is useful for all stakeholders, particularly central and local government, urban labour market experts and labour organizations.

The first section of the paper outlines main objective of the study. The second section reviews the different literature related to urban informal employment and their working pattern. The third section deals with research methodology. The fourth section presents data analysis of informal workers in urban regions. The paper concludes with

some thoughts on what this implies for the informal workers and related urban socio-economic determinants.

2. LITERATURE SURVEY

Florez Nieto (2002) has shown the evidence of function of the urban informal sector in employment and factors affecting earnings. The author identified three sub-sectors within informal sector: salaried workers, entrepreneurs and subsistence workers. Each sub-sector's prevailing economic conditions were different on the basis of its determinants. Basically, income of the salaried workers were based on skill and training, education, age and years of experience of the informal workers. Other studies have also shown that informal sector plays crucial role in employment generation. The earnings of the participation in informal sector activities seem to get influenced to the largest extent by the level of education (Dhakal, 2008). The income and assets has been significantly increased for those who are involved in informal work compared to their pre-informal work days. However, the average education in this sector is no higher than primary school level (Reddy et al., 2001). The informal workers were facing problems continuously due to factors like political and economic uncertainty in Nepal (ILO, 2004). On the other side of informal workers, the study emphasized how the value produced by informal workers subsidize urban economy and ecologies against cultural capitalism that probably reduces job scarcity, income inequality and deficiency (Tucker and Anantharaman, 2020). In contrast, informal activities were significant in labour market and had grown considerably. Both in formal and informal sector, the income inequality appears constant over period. The informal sector was found to exert a widening influence on earnings inequality that linked to an increased share of employees working informally (Krstic and Sanfey, 2011). From the review of the existing literature, it is observed that the previous studies have examined a number of dimensions of urban informal workers. However, there exists knowledge gap in the issue of socio-economic behavioral factors which directly influence informal workers' income.

3. RESEARCH METHODOLOGY

Research Design

A research design is a plan of complete scheme or program of the research that includes an outline of what the investigation will do (Cooper & Schindle, 2014). Accordingly, in this study, all six metropolitan cities of Nepal (Kathmandu, Lalitpur, Bharatpur, Pokhara, Birganj and Biratnagar) were chosen for the study. This study is based on primary data which collected through structured questionnaire from various groups of respondents (construction workers, garage workers and shop demonstrators). Here, both the qualitative as well as quantitative methods have been applied as a tool of analysis.

Size of Sample and Sampling Technique

In this study, the population comprises of all those who are self-employed and employed in informal sector in urban Nepal. The size of sample can be derived by using following formula in unknown population $n = Z^2pq/d^2$ (Sakhawlkar, 2020). Where, n is sample size required in undetermined size of population for study, z is standard tabulated value for 5% level of significance, p is proportion of targeted population, in case of unknown population the value of p is taken as 0.5, $q = 1-p$ and d is degree of accuracy usually set at 0.05 level. On the basis of given formula and 10 % non-response error, the required sample is 423. However, the paper aims to analysis only activities related to informal workers. Out of 423 respondents only 179 respondents have been taken as a sample of informal workers so, the sample size is 179 respondents for selected areas.

The research adopted purposive and random sampling method to select the sample in proposed study area. The study was undertaken over a period of six months from July to December, 2020.

The required data was collected through professional enumerators supervised by the author himself. The survey data firstly were first entered into CSPro data entry software and then exported to STATA 14 version to analyze and compute the results. All data were managed, cleaned and verified by author himself.

Econometric Model

The study sets income determination multiple regression model focusing on how the income of informal workers have been affected by changing various choice variables. The income function with different choice variables is explained as:

$$Y = \beta_0 + \beta_1 AGE + \beta_2 SY + \beta_3 HH\text{-size} + \beta_4 EXP + \beta_5 WD + \beta_6 WM + e_n$$

Where, Y = Income, AGE = age of the respondents, SY = Years of school, HH-size = Household size, EXP = Years of experience, WD = Working days in a month and WM = Working months of a year.

Informal workers income is a predicted variable and age, yeas of experience, years of school, household size, working days in a month and working months of a year are determinants variables. The dependent variable income represents the annual income of informal workers. The desired choice variables of the model causes the change in the annual income of the informal workers in urban Nepal.

4. RESULTS AND DISCUSSION

## 4.1 Socio-Demographic Analysis of the Respondents

Age of the workers can be a determining factors for work performance in informal sector. From chart below, more than fifty percent of the informal workers were from prime working age group (25-54). Around 41 percent respondents were from early working age group (15-24). A negligible percentage of workers involved were children, mature working age and elderly age. Evidence shows that lack of formal job in Nepal, massively people of prime working age and early working age are involved in this sector.

Figure 1: Workers' Age Group (in Percent)
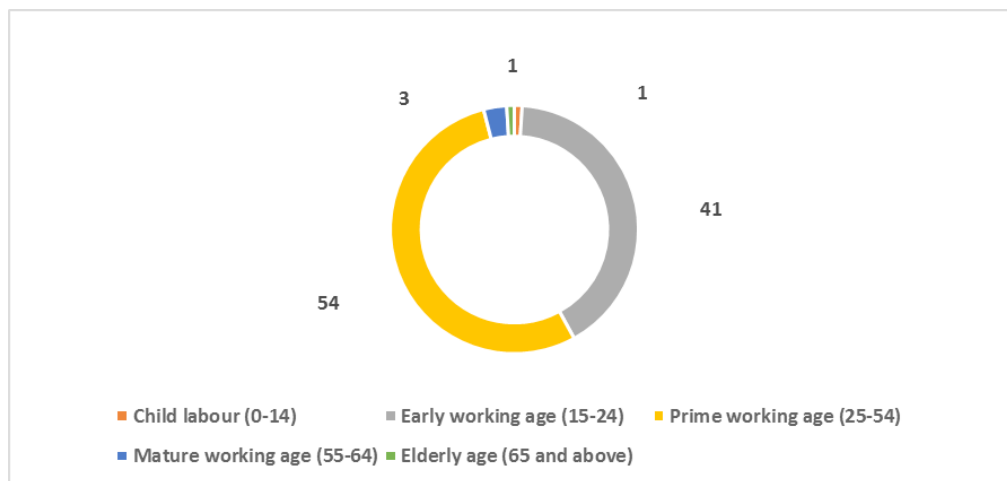
Source: Field Survey, 2020

The web chart has been used to analyze the different level of education. Education strength of informal workers is high in secondary level. There are only negligible respondents working in this area with college and university education. The intensity of primary, lower secondary and higher secondary level education of respondents are moderate. Against the results of informal sector shown by Bernal (2009); Akazili et al. (2018); Kazi et al. (1989); Agarwala (2008) only negligible (one-tenth) of the respondents were illiterate.

Figure 4.2: Intensity of Education (in Percentage)
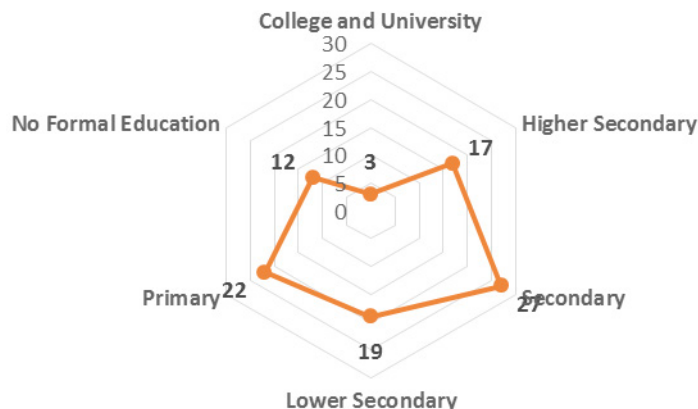
Source: Field Survey, 2020

4.2 Descriptive Analysis

The average annual earnings of the respondents was Rs. 1,73,900 with a range between Rs. 22,500 to Rs. 4,64,000. Which is quite near to national minimum wage (inflation adjusted) determined by government of Nepal. The average age of the respondents was about 31 years indicating that prime working age population were involved in an informal work. On average, the years of experience in this sector was around seven and half years with a minimum 1 year to 40 years. The average schooling years of the respondents was around 7 years. The average household size was about 5 persons with a range of 1-16 persons. An average working days in a month and working months in a year were about 27 days and 10 months respectively with minimum standard deviation indicative of a consistently distributed sample.

Table 4.1: Descriptive Statistics of variables used in the model

Description	Type of Variable	Mean	St. Dev.	Min	Max
Income	Quantitative	1,73,900	81,780	22,500	4,68,000
Age	Quantitative	31.12	12.09	12	70
Years of Experience	Quantitative	7.54	7.57	1	40
Schooling Years	Quantitative	7.23	4.01	0	16
Size of HH	Quantitative	4.87	2.28	1	16
Working Days	Quantitative	26.72	3.23	15	30
Working Months	Quantitative	9.62	1.82	4	12

Source: Author's calculation

4.3 Empirical Analysis

The empirical analysis was conducted with annual income of respondents with different quantitative and choice variables. Yearly income of the respondents is the dependent variable and age, year experience, year of education, household size, working day of the month and working month of the year are choice variables.

The correlation coefficient was used to measure the association between different variables. It is used in the context of both direction and strength of a linear relationship between two continuous variables. This paper examine the degree of association between annual income of informal workers with key determinants such as age, years of experience, numbers of schooling years, household size, numbers of working days in a month and numbers of working months in a year.

The Pearson's correlation coefficient shows that age, years of experience, education, household size, working days and working month are positively associated with annual income of the respondents. It indicates that rise in all the given variables leads to higher level of income. The correlation coefficient between income and age of the respondents is 0.43 which shows there are moderate positive correlation. The correlation coefficient of education and household size with income are very low indicating that very low degree of correlation.

Table 4.2: Correlation coefficients among different Quantitative variables

Variables	Income	AGE	EXP	EDU	HH_size	WD	WM
Income	1.000						
AGE	0.4253*	1.000					
	0.000						
EXP	0.3340*	0.6717	1.000				
	0.000	0.000					
EDU	0.0182	-0.2505*	-0.2267*	1.000			
	0.809	0.001	0.002				
HH_size	0.0166	-0.1867*	-0.0580	-0.0574	1.000		
	0.826	0.0123	0.4406	0.446			
WD	0.0235	0.0365	-0.0189	0.0545	-0.0799	1.000	
	0.755	0.6276	0.802	0.469	0.2878		
WM	0.3259*	0.1520	0.0071	0.0015	-0.0150	-0.0467	1.000
	0.000	0.0418	0.9248	0.984	0.8418	0.5347	

 Standard errors in parentheses. ** $p<0.01$, * $p<0.05$.

(Note: Income: income of respondents, AGE: Age of respondents, EDU: Education, HH_size: Household size, EXP: Year of experience, WD: Working day in a month).

Source: Author's calculation

The choice variables affecting yearly income of the respondents were run with best fit by examination multicollinearity with the use of VIF (variance inflation factor). According to Gujrati, 2008, there is multicollinearity with VIF means value more than 10 or equal to 10. Further if any individual value is more than 5 then we should drop the variable. In this study, the mean value of VIF is 1.36 so there is no problem of multicollinearity which is shown in table 3

Table 4.3: VIF (Variance Inflation Factor)

Variable	VIF	1/VIF
Age	2.04	0.4907
EXP	1.88	0.5306
SY	1.09	0.9172
HH-size	1.06	0.9423
WD	1.02	0.9838
WM	1.05	0.9549
Mean VIF	1.36	

Source: Author's calculation

The coefficient of age is positive that shows increase in age of respondents brings increase in income of informal workers. The coefficient indicates that 1 year increase in age leads to NRs. 2,315 increase in income per year of the informal workers. Similarly, number of schooling years is another most important variable to bring change in income of informal workers. The positive sign of number of schooling years and significant at 1 percent level indicates that there is positive association between schooling years and annual income of respondents. The coefficient of number of schooling years indicates that increase in number of schooling years by one unit, increase the income of informal workers by about 2,849 per year.

Similarly, size of household is also significant at ten percent level with positive sign, it indicates that increase in household size leads to increase in income of respondents. It is because the increase in household member size lower the burden related to household daily activities of the respondents.

The result shows that working months has positive sign and significant at one percent level. The coefficient of working months indicates that increase in one more month in a year, increases the income of informal workers by about NRs. 12,348 per year.

The variables year of experience and working days of the respondents are not found significant indicating that these variables are not capable to explain the annual income of informal workers in urban area of Nepal.

Table 4.4: Regression Analysis for income on different explanatory variables
Dependent variable: Annual income

Variables	Description of Variables	Parameters	Coefficient
Constant		α	-85,262* (50,110)
AGE	Age of respondents	β_1	2,315*** (652.5)
EXP	Years of experience	β_4	1,515 (1,106)
SY	Number of schooling years	β_2	2,849*** (1,256)
HH_size	Household size	β_3	3,695* (2,132)
WD	Working Day in a month	β_5	6,85.4 (1,510)
WM	Working Month	B_6	12,348*** (2,798)

R-squared = 0.287, Number of obs = 179, Prob > F = 0.0000

Robust standard errors in parentheses*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Source: Author's calculation

5. CONCLUSION

The article summarizes the results of a descriptive and empirical aspects of the urban informal workers. The urban informal workers has a great impact on household sustainability in developing countries. The statistical analysis shows that the informal workers contributes significantly to household income. Urban informal work is more

diverse which includes a variety of economic activities on which most of the urban families are dependent for their livelihood. Education strength of informal workers is high in secondary level. There are only negligible respondents working in this area with college and university education. The average annual earnings of the respondents is quite near to national minimum wage determined by government of Nepal. The prime working age population is involved in an informal work in urban Nepal.

The correlation coefficient shows that all examined determinants variables are positively associated with annual income of the respondents. Concerning the determination of income of informal workers age, years of schooling and working months in a year are highly significant with positive sign. Which indicates that increase in these variables leads higher level of annual income. The paper shows the importance of informal workers to their livelihood and determine the important variables that affect earning function. The issue related to urban informal employment has important implication for labour market policy.

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