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Informality and Children's School Performance in Nepal

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Abstract

The study confirms that education is the prime determinant of whether an individual worker ends up in informal jobs that are underpaid than their formal counterparts. Educated workers are paid higher wages, mostly among wealthy quintiles with more extended work experience. Most of the females are in informal employment and are getting paid less than males. Parental work significantly relates to children's academic achievement, as the offspring of formally employed parents tend to excel. Parents' level of education shapes children's school performance through motivation, monitoring, and positive behavior. Informality might push individuals into further vulnerable situations via fewer earnings, more workload, and no access to social security. We found that the parents working in informal jobs who are already paid less than their formal counterparts are less confident about the future school performance of their kids. Thus, informality could have been a vicious circle of vulnerability that less-educated parents are underpaid and less optimistic in household human capital formation through child education. It underscores the urgency of policy interventions, including facilitating the transition from informality to formality and reducing the gender wage gap.

Keywords: Informality, Wage disparity, Child education, Children

1. Introduction

Informality[1] raises global concerns for policymakers and businesses due to its impact on productivity, growth, workers' rights, and sustainable enterprises. It negatively influences fiscal revenues, decent working conditions, and social stratification. Informal employment is associated with wage disparity and serves as a source of precarity. It often serves as a survival option for those excluded from formal employment opportunities (Bernabé, 2002; Fields, 1975; Mazumdar, 1976; Perry et al., 2007), leading to far-reaching implications across economic, social, and environmental domains (Blau & Scott, 2003; Fields, 1975; ILO, 2018).

The informal sector employs a substantial workforce in developing economies, available as cheaper-wage temporary jobs without social protection. Such precarity undermines informality's role in poverty reduction. Approximately 60% (two billion) of the global employed population works informally due to limited formal opportunities. Informal work is more predominant (63%) among men than women (58.1%) (ILO, 2018). However, in Nepal, the lion's share of females (90%) work in the informal sector compared to males (81.1%) (CBS/GoN, 2019). Such female-dominant and low-paid jobs are crucial for livelihood options; however, they might lead to low capital formation and human development at the household level.

Reduction in informality and promotion of decent work, innovation, and formal entrepreneurship is a thematic target well described in the Sustainable Development Goals (SDGs) list. Nepal's policy framework aligns with these goals, incorporating them into their 15th periodic plan (2019/20-2023/24) to address poverty through education, skills, and

1 Informality in this paper means those workers (i) who have not benefitted from social security contributions by the employer and who are not entitled to paid annual leave and paid sick leave, (ii) those family members contributing to the family business and (iii) the employers and own account workers engaged in the production of goods for informal/formal or household (Details in Annex D).

productive work. As a sustainable development catalyst, education secures jobs and enhances earnings (Psacharopoulos & Woodhall, 1993). Moreover, parental employment significantly influences children's education and achievements (Vellymalay, 2012), shaping their attitudes and aptitudes for effective learning.

The rise of informality has implications for wage inequality (Thapa-Parajuli, 2014) and children's educational outcomes. Children of informal sector workers may experience compromised educational performance compared to those from the formal sector. The intricate link between informal employment, wage disparities, and the influence of parental employment on children's learning is challenging yet pivotal for policy formulation. This understudied area prompts questions about how parental employment affects children's educational achievements, potentially creating new marginalization.

In this study, informality and informal employment are used interchangeably. We examine wage disparities between formal and informal employment in Badikhel and explore the factors affecting them, shedding light on informal earnings. We also investigate the relationship between parental employment and children's schooling, emphasizing the roles of parents. The findings from our research provide valuable insights for policymakers and stakeholders to shape relevant policies. After this introduction, we delve into the relevant literature. The third section outlines our research methodology, while the fourth presents descriptive and empirical analyses. Our conclusions are presented in section five, and references and raw materials are appended at the end of the paper.

2. Informality: Causes and consequences

Informality encompasses behaviors, activities, or employment arrangements that deviate from strict rules and formal procedures, often characterized by the absence of official practices. Various legal and social security-based definitions exist in labor market studies. Herrera-Idárraga et al. (2015) define formal workers as those contributing to health and old-age insurance following ILO standards. Informal jobs need more regulation and official oversight, with a focus on the job nature rather than the employing firm.Bargain and Kwenda (2011) adopt a social security view, defining informality based on factors like registration, taxation, labor regulations, and social security coverage. For instance, unregistered social security contributions classify workers as informal in countries like Mexico and Brazil.

The 17th ICLS defines informal employment as work outside labor laws, lacking taxation, social protection, and employment benefits. In 2003, the ICLS expanded this concept to encompass various workers across sectors. Informal employment encompasses formal or informal sector employees, employers, own-account workers, and those producing for household use. The literature reveals two perspectives: the exclusion (subsistence economy) and the exit (micro-entrepreneur choice) hypotheses. India's NCEUS distinguishes the informal sector (enterprises) from informal employment (workers), with the informal economy encompassing both. In this regards, Ulyssea (2020)characterizes informal activity as low-income, low-productivity work.

Informality can buffer against unemployment; it might limit access to benefits and formalization. Weak institutions, taxation, and technological change contribute to the prevalence of informality. Climate change (Timsina, 2019), technological change, such as capital-skill complementarily, contributes to wage disparities. Trade openness might expand informal labor markets due to layoffs driven by competition. Education plays a significant role(Thapa-Parajuli, 2011), with human capital theory emphasizing its importance in skill development and future income. The connection between wage inequality and informality is intricate and context-specific, with research spanning definitions, causes, consequences, and interactions. Informal sector employment is influenced by economic, social, and institutional factors, shaping labor markets, wage inequality, and economic development (Bacchetta & Bustamante, 2009; Thapa-Parajuli, 2014; Ulyssea, 2020).

Empirical studies highlight wage disparities between formal and informal sectors. Gender-specific factors affected wage gaps in Australia (Mahuteau et al., 2017), structural factors in China (Jong-Wha & Wie, 2017) and composition and structural factors both in India (Deshpande et al., 2018). The informality and precarity has to do with education in Colombia (Herrera-Idárraga et al., 2015) and similar is the case in Turkey inked regional wage disparities in Colombia to informality and education. In Turkey, (Tansel & Kan, 2012) highlighting education and occupation's role in earnings, and such occupation based income or wage disparities has sectoral dimension in Egypt (Tansel et al., 2020). And, the wage partiality in informal employment relative to their formal counterpart is evident in Korean (Cho & Cho, 2011) as well as in Brazil, Mexico, and South Africa(Bargain & Kwenda, 2011). These studies unveil diverse determinants to wage disparities, among them education, gender, occupation, and region are detrimental ones and common around the globe. Understanding these dynamics informs policies addressing wage inequality and promoting inclusive growth.

Informality can emerge when formal firms or the public sector fail to expand proportionally to the labor market supply. While a significant informal economy implies lower productivity, higher corruption, and less stability and protection, it is also recognized as crucial for expanding economic participation. While the expansion of the informal economy can positively affect poverty, it can also have adverse impacts. Likewise, wage differentials are widespread across labor markets. Education plays a pivotal role in wage differentials, while other factors such as technology, school quality, and employer motives also contribute. Parental employment similarly exerts an influence on children's educational performance. Scholars have employed diverse methodologies in their studies. This research investigates determinants of wage differentials, the relationship between education and wage disparities, and the impact of parental employment on children's educational performance. Detailed methodology to address these research objectives is presented in the following chapter.

3. Research Methodology

The study site, Badikhel which is situated in Godawari Municipality, Lalitpur District, Bagmati Province, is characterized by its diverse caste groups involved in various informal economic activities such as agriculture, bamboo crafting, fishing, construction, and carpentry. Some individuals are also engaged in formal employment, including government services, permanent school teaching, and security forces. We chose this location purposefully to investigate the causes and outcomes of wage disparities across various occupations within Badikhel's ethnically and occupationally diverse setting.

Given our awareness of the Pahari and non-Pahari ethnic strata and the presence of urban and peri-urban clusters, we conducted random selections from wards 1, 3, and 4. From the total population of 3,576 individuals residing in 791 households according to the 2011 Census, we randomly selected 76 households. Within these households, we conducted interviews with 126 wage earners. Further details are provided in Annex B.

Our questionnaire consists of nine sections with 73 specific questions, mostly borrowed from the Nepal Labor Force Survey of 2017/18, designed to collect information on household particulars, children's education, housing, employment details, working hours, income, and more. We incorporate some open-ended questions also. The researcher conducted In-person face-to-face interviews with wage earners from the selected households. Respondents, encompassing both males and females, were categorized into formal and informal salaried groups following the classification by Mahuteau et al. (2017), with self-employed and unpaid family workers excluded from the study.

Nine occupational categories from NLFS were adapted for wage earners, with six categories used due to sample size limitations. Respondents' work activities, whether formal or informal, were recorded. Informal employment was defined as per the Nepal Labor Force Survey (NLFS) report criteria, encompassing self-employed businesses, private unregistered companies with under ten employees, family members in family businesses, and workers without paid leave or social security contributions.

Education levels were grouped into five categories from the original nine, considering the education structure in Nepal. Literature suggests wages depend on variables such as education, experience, skills, age, gender, and employment characteristics. This study hypothesized that hourly wage depends on independent variables like informal employment and years of schooling alongside control variables such as age, gender, and wealth quintile.

The study estimates the Mincer model, originally stemming from the human capital theory to elucidate the wage gap between formal and informal employment, asMincer (1958, 1962) posited; and adapted by scholars such as Tansel and Kan (2012), Thapa-Parajuli (2014) and Bhattarai and Wisniewski (2017). In this study, the Mincer earnings model examines whether informal job workers earn more or less than their formal job counterparts, and this helps to understand the degree and distance of wage disparity.

We model hourly wage in Nepali currency as the dependent variable. Although various functional specifications of the dependent variable have been tried in the literature, the logarithmic form proved to be the most successful one, both in terms of satisfying the assumption of heteroscedasticity assumption and maximizing the explanatory power of the regression as, Dougherty and Jimenez (1991) argues, and we follow them here. The model assumes that three main determinants of individual wages are education, work experience, and its square. We estimate the Mincer regression equation expressed as:

$$In\_wage = \beta_0 + \beta_1 inf\_1 + \beta_2 age + \beta_3 male\_1 + \beta_4 s\_year + \beta_5 wealth + \epsilon_{it} \quad \text{---------- --------- (1)}$$

The dependent variable, wage, is measured in logarithmic level. The variable inf_1 takes the value '1' for individuals in informal employment and '0' otherwise, while age represents the number of years. Male_1 is a gender dummy variable, taking '1' for males and '0' for females. Both years of schooling and wealth quintile are continuous variables.

4. Results and Findings

Determinants of informal employment

Education appears to be a primary determinant of participation in informal employment in Badikhel. Formal degrees are linked to a lower likelihood of being engaged in informal jobs (*Figure1 in Annex A*). Among the sampled parents, around 56.3% work in formal employment, while the remaining 43.7% are in informal jobs. A significant majority (75.8%) of parents with educational levels below primary engage in informal employment, which is notably higher compared to those with lower secondary (59.4%) and higher secondary (35.7%) education. Among undergraduate degree holders, a mere 4.5% are involved in informal jobs, and the percentage further diminishes among post-graduate degree holders. Hence, the level of education appears to be a significant factor influencing the choice between formal and informal employment in Badikhel.

In *Figure 3 in Annex A*, most workers are in formal employment, with males displaying a higher tendency for informal work (51.2%), while females have a lower rate (27.5%). Notably, Badikhel's females are less inclined towards informal employment, which is intriguing. The chi-squared test in Annex A's *Table 1* shows gender's statistical significance ($p<0.1$) concerning informality. *Figure 4* highlights varying formal employment across wards; Ward No. 1 has the lowest informal employment (24.5%), whereas Ward No. 4 has the highest (75%), potentially due to its Pahari population.

In Badikhel, limited opportunities for young workers to start formal employment led to initial engagement in informal work, as evident from the data. This trend aligns with many countries where the younger demographic is more inclined towards informality, while older individuals tend to transition into formal employment. The data underscores that the likelihood of formal work increases with age, reflecting the typical characteristic of informal employment—higher age groups tend to opt for formal jobs with benefits like paid leave, social security, and insurance (*Table 1 in Annex A*).

Ethnicity emerges as another determinant of informal employment in Badikhel. Dalits, followed by Janajati and Pahari, are more inclined towards informal work, potentially due to relevant skills or qualifications. Administrative hurdles may also steer them away from formal employment. Most of them opt for informal jobs as a survival strategy.Marital status also shapes informal employment. Statistics reveal that unmarried individuals lean more towards informality, while married individuals are less likely to choose informal work, possibly to allocate time for family and rituals.

Occupation plays a key role in determining formal or informal participation. Two trends are evident. Firstly, workers in elementary occupations show a stronger association with informality due to skills alignment. Secondly, occupational categories 1 (Legislators, Senior Officials, and Managers) and 2 (Professionals and Armed Forces) predominantly lean towards formal employment, possibly due to the need for high skills and education.

In summary, the data presents insights into the influence of age, ethnicity, marital status, and occupation on informal employment in Badikhel.

Wage Differential

We interviewed 126 working individuals who earned an average of NPR 93 per hour and NPR 5079 per week. While some respondents earned as little as NPR 21, others earned as high as NPR 250, reflecting a broad range. Similarly, the minimum weekly wage was NPR 233, with a maximum of NPR 14,000, resulting in a higher standard deviation. For more detailed information, refer to *Table 2 in Annex A*.

Table 1: Wage differential (In NPR)

Worker's characteristics		Formal	Informal
Education			
	Primary and below	100.38	96.32
	Lower Secondary	69.92	66.74
	Higher Secondary	96.50	82.40
	Bachelor's Degree	110.62	114.00
	Master's and above	121.00	N/A
Gender			
	Male	113.83	90.66
	Female	80.07	56.82

Age Groups			
	15 - 24	85.17	73.50
	25 - 34	102.03	68.86
	35 - 44	85.83	92.07
	45 - 54	114.73	102.30
	56 & above	130.00	108.50
Ethnicity			
	Brahmin/Chhetri/Thakuri	102.31	83.33
	Janajati / Aadibasi	146.00	46.50
	Pahari	79.13	93.37
	Dalit	83.00	67.83
Marital status			
	Unmarried	103.94	78.53
	Married	98.81	85.90
Occupation			
	Senior officials & managers	130.72	N/A
	Professionals & armed forces	103.83	N/A
	Technicians & associate professionals	92.58	101.00
	Sales, service, & clerical	66.58	56.17
	Craft, machine & trade-related workers	89.00	76.71
	Elementary Occupations	56.00	91.41

Source: Authors' own elaboration; N/A stands for 'Not Available'

Table 1 summarizes the wage differentials in formal and informal employment categorized by education, gender, age groups, ethnicity, marital status, and occupation. The data reveals that male workers, individuals with higher education levels, those in the oldest age group, and those of Aadibasi-Janajati ethnicity exhibit higher average wages in formal employment in Badikhel. Marital status demonstrates that singles dominate formal employment, while married individuals are more prevalent in informal work. Occupation-wise, category 1 (Legislators, Senior Officials, and Managers) holds the highest average wage, followed by Category 2 (Professionals and Armed Forces), with no correlation to informal employment. Formal workers generally earn more on average than informal workers. Significant differences in average hourly wages across educational levels are evident. Workers with primary education and below in Badikhel outearn those with lower and higher secondary education, possibly due to their higher inclination towards informal employment and longer working hours, often tied to seasonal peaks. Conversely, returns on investments in lower and higher secondary education show significance in both formal and informal sectors. Among workers with bachelor's degrees, informal workers earn more than formal workers at the same education level. Higher educational degrees correlate with higher hourly wages, especially for those with master's degrees and above, who receive the highest wages and notably lack involvement in informal employment. Regarding age groups, wage differentials for young and pre-retirement workers are lower than those in the twenty-five to thirty-four and oldest age groups. Intriguingly, informal workers aged thirty-five to forty-four earn more than their formal counterparts in the same age range. *Figure 1 in Annex A* plots the frequency distribution of hourly wages in wards 1, 3, and 4. Asymmetric wage distribution indicates fewer individuals commanding higher wages across all wards.

Table 2: Wage difference by informality and gender (t-test)

	Formal	**Informal**	**Difference**	**t-value**
Hourly wage	100.04 (n=71)	83.89 (n=55)	16.15* (8.425)	1.9
Weekly wage	5442.47 (n=71)	4610.89 (n=55)	831.58* (441.466)	1.9
	Male	Female		
Hourly wage	101.977 (n=86)	73.67 (n=40)	28.30*** (8.747)	3.25
Weekly wage	5669.01 (n=86)	3812.00 (n=40)	1857.01*** (446.942)	4.15
	Formal	Informal		
Hourly wage - male	113.83 (n=42)	90.65 (n=44)	23.17** (10.26)	2.25
Hourly wage - female	80.06 (n=29)	56.81 (n=11)	23.25* (13.24)	1.75

**** p<0.01, ** p<0.05, * p<0.1: n is observation and SE is Standard Error in parenthesis*
Source: Authors' calculation

Table 2 summarizes the significance ($p<0.1$) of wage associations with informality, indicating that formal workers tend to earn higher wages than their informal counterparts. In the subsequent analysis stage, hourly and weekly wages are significantly ($p<0.01$) different among males and females, underscoring a gender pay gap in Badikhel. Male workers generally earn more than their female counterparts. The Mann-Whitney U Test also supports this gender-based wage discrepancy (*Figure 2 in Annex A*), where the hourly wage is statistically significant ($p<0.01$) with gender.

Moving to the third analysis stage, hourly and weekly wages within the same gender-both for males and females-are significant ($p<0.05$ and $p<0.1$, respectively) when one is in informal employment. This fact reveals that wage disparities persist for both genders in informal jobs. Interestingly, the average wage differential among females is higher than that among males. Among males, formal workers tend to earn more than informal workers, and the same trend holds among females. Thus, changes in wages between genders and variations within genders, particularly in the context of informality, contribute significantly to the growing wage inequality in Badikhel.

Table 3: Wage difference by occupation and gender

Occupation	Difference	Hourly wage (NPR)	
		Male	Female
Legislators, Senior Officials, and Managers	22 (15.9%)	138	116
Professionals and armed forces	23 (20.9%)	110	87
Technicians and associate professionals	23 (22.1%)	104	81
Sales, service, and clerical	29 (38.1%)	76	47
Craft, Machine Operators & related trade workers	54 (58.6%)	92	38
Elementary occupations	20 (21.2%)	94	74

Source: Authors' calculation

Table 3 highlights considerable variation in the average hourly gender pay gap across major occupational categories. Among the presented categories, the average hourly wage for males consistently exceeded that of females. Notably, the six broader occupational groups' most substantial hourly pay gap appeared in Craft, Machine Operators, and related trade workers. Data reveals 59% higher hourly earnings for employed males in this category than their female counterparts. Conversely, the hourly gender pay gap was relatively modest in Legislators, Senior Officials, and Managers, where both male and female hourly wages were the highest. The data indicates that an employed male in the Legislators, Senior Officials, and Managers category earns about 16% more per hour than an employed female. This could signify the presence of job discrimination, potentially leading to reduced expected earnings and discouraging female participation in the labor force. There is a significantly high level of wage discrimination in all occupations.

Table 4: Mincer model of wage determination

	Hourly wage in log scale		
VARIABLES	**(1)**	**(2)**	**(3)**
Years of Schooling	0.0208*		
	(0.0114)		
Wealth Quintile		0.0816**	
Informal Employment		(0.0327)	-0.287***
			(0.0886)
Age			0.00993**
			(0.00397)
Dummy (Male1)			0.407***
			(0.0941)
Constant	4.177***	4.151***	3.896***
	(0.131)	(0.110)	(0.164)
Observations	126	126	126
R-squared	0.026	0.048	0.205

*Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1*

Table 4 summarizes the regression results we estimate for equation (1) specified in the methodology section. In Specification (1), years of schooling stand as a positive and significant factor ($p<0.1$) in hourly wage determination, holding other variables constant. This indicates that a higher level of education leads to higher earning potential, highlighting the significant returns on educational investment in Badikhel. With each additional year of schooling, hourly wages experience a 0.02% increase.

In Specification (2), the wealth quintile coefficient is positive, and a statistically significant impact ($p<0.05$) on hourly wage becomes apparent, while other variables remain constant. The outcome underscores that individuals in higher wealth quintiles earn significantly more per hour than their lower quintiles counterparts. This finding suggests a growing income gap, potentially driven by privileged access to higher education among the wealthier, who are more likely to secure formal employment due to enhanced education opportunities.

Specification (3) further highlights informal employment as a significant wage determinant in Badikhel. Age and gender also emerge as statistically significant wage influencers. Informal workers earn notably less than their formal counterparts, marked by a negative significance (approximately 0.28% less). It reveals informal workers' disadvantages, lacking benefits like paid leave and social security contributions. The coefficient of informal employment in Specification (3) reveals that an hourly wage increase of 0.28% reduces the likelihood of informal employment, suggesting that individuals tend to transition to formal employment as their wages rise.

Age's influence on wages follows the expected pattern: older workers command higher wages. The coefficient shows that a worker earns 0.009% more each year of age. Gender, a key factor, reflects Nepal's societal norms, as male workers earn significantly more than females (0.40% higher). Overall, regression outcomes mirror the descriptive analysis and traditional theories, indicating that formal workers, older individuals, and males are paid notably more than their counterparts. Despite the modest explanatory power (ranging from 3% to 21%, given the small sample size), all coefficients retain significance, emphasizing the robustness of the findings.

Informality and perceived school performance

This section delves into the correlation between parental employment and children's school performance, investigating how parental employment impacts educational outcomes. Table 5 presents notable percentages signifying children's academic performance to their parents' formal or informal employment status. When parents are engaged in formal employment, children's performance excels, averaging 60% for "good" and 40% for "average." Parents in formal employment generally hold optimistic views about their children's forthcoming academic achievements. In contrast, children of informally employed parents achieve lower scores at 59.26% (good) and 37.04% (average). This difference suggests the influence of parental employment on educational performance. Importantly, 3.70% of parents in informal employment anticipate their children performing poorly in the upcoming year, underscoring the parental role in shaping educational outcomes. Notably, many high-performing children have parents engaged in formal employment.

Table 5: Perception about children's education (%)

Items	Formal	Informal
Good	60.00	59.26
Average	40.00	37.04
Bad	0.00	3.70

Source: Authors' calculation

An evident pattern emerges in Table 2 of Annex A that increased parental schooling positively correlates with improved children's educational performance. For instance, children of parents with 12 years of schooling exhibit good (75%) and average (25%) performance. Parents with 15 years of schooling score well (28.57%) and average (71.43%). Educated parents could afford better school education and could have supported their children's studies at home. Highly educated parents contribute by assisting with homework and cultivating an ideal home learning environment. These findings align with (Eccles, 2005); Mata et al. (2018); and Hernandez et al. (2016), affirming the influential role of parental education on students' academic achievements.

Table 6: Parental education, children's effort and performance (t-test)

	Formal	Informal	dif	t value
Mother's years of schooling	11.75 (n=20)	6.71 (n=28)	5.03*** (1.226)	4.1
Father's years of schooling	13.05 (n=20)	8.607 (n=28)	4.44*** (.919)	4.8
Children's net time effort	94.5 (n=20)	72.14 (n=28)	22.35* (11.99)	1.85

*** $p<0.01$, ** $p<0.05$, * $p<0.1$: n is observation and SE is Standard Error in parenthesis

Source: Authors' calculation

Table 6 presents compelling statistical evidence indicating the significant influence ($p<0.01$) of parents' educational attainment on their choice of working in either the formal or informal sectors. Additionally, the data highlights that children exhibit a noteworthy increase in their net time effort ($p<0.1$) when their parents are engaged in the formal

sector. This implies that children of formally employed parents allocate more time to their studies than those with parents in the informal sector. Consequently, the findings highlight the considerable impact of informality on children's educational performance.

Figure 1 illustrates the correlation between informality, wages, and children's school performance in Badikhel. In the provided graph, a significant proportion of informally employed parents earn lower wages than their formally employed counterparts. Consequently, these parents' express concerns about their children's future academic performance. This apprehension might arise due to their limited income, which necessitates substantial efforts for family sustenance, potentially impacting their children's ability to provide quality education. As a result, access to essential primary school supplies like pencils, erasers, sharpeners, notebooks, and even learning tools such as the internet might be limited or nonexistent.

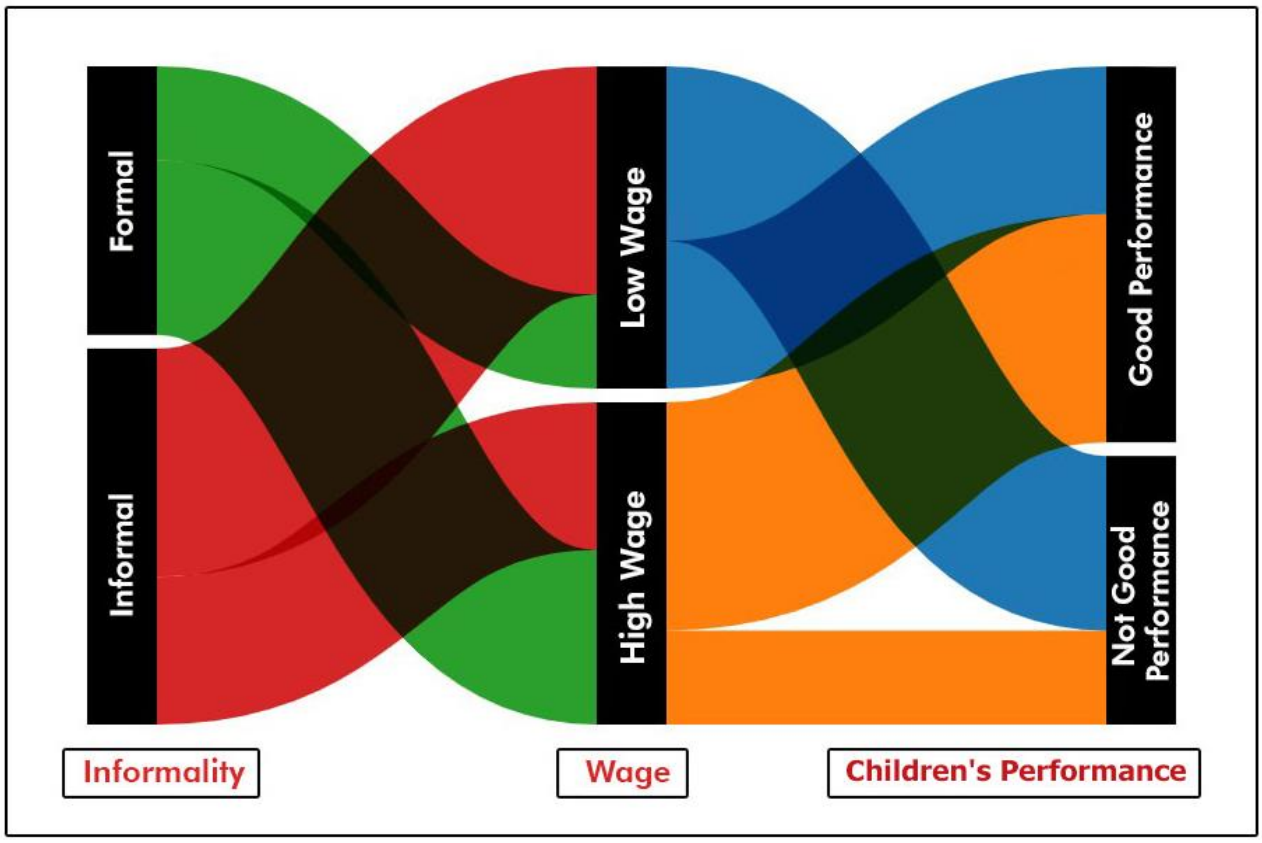

Figure 1: Informality, wage and children's performance
Source: Authors' elaboration

Furthermore, informally employed parents often have lower levels of education, which could hinder their capacity to actively support their children's schooling. They might also need help to allocate time for their children's education. Consequently, these circumstances may lead to diminished awareness among children regarding the significance of investing time and effort into their studies. Interestingly, minority of informally employed parents earns higher wages and are optimistic about their children's future academic achievements.

Most formally employed parents enjoy higher wages and have an optimistic outlook regarding their children's future school performance. This perspective might stem from their advanced education and skillset. As educated and skilled parents, they recognize the importance of nurturing their children's education and allocate ample time to providing support. Another contributing factor could be their elevated income, affording them the means to secure a quality education for their children. Consequently, their children likely have access to essential learning resources and tools, contributing to a well-rounded education. These children are also more inclined to dedicate ample time and effort to their studies. However, a small subset of formally employed parents experience lower wages, leading them to hold skeptical views about their children's future school performance.

Concerning the relationship between informality, wages, and children's school performance, the study delved into the impact of parents' education on their children's academic outcomes through open-ended questions. Parents, especially in Ward No. 4, acknowledged their relatively lower education levels, and some expressed that this limitation hindered their active involvement in their children's education. Reflecting on parental education, one respondent shared their perspective:

> *"I am extremely eager to support my children's education, but my poor educational background constraints my ability to help them. I cannot adequately assist them with their homework and monitor their educational advancement. It hurts myself and my kids also."* (*Source: Field Survey, 2020)*

We explore whether parents' employment affects their children's educational performance. Most parents in informal employment admit they have little or no time to get involved in their children's educational activities. Relating to parents' employment, one parent had these to say.

> *"I wish to support my children in their educational activities, but my work schedule does not allow me to do so. I work from early mornings to late evenings, even on weekends. I hardly have any time for rest. If I had a 10-5 office job, I could have dedicated some morning and evening hours to assisting my kids. Sadly, it is not. Neither my kids nor I are happy. It hurts instead."* (*Source: Field data 2020*)

However, neither of the parents maintained that they usually manage time to monitor their children's education even though they spend much of their time at work.

5. Conclusion and Possible Extension

We investigated socio-economic determinants of informality in Badikhel, where approximately 43.7% of total employment is in informal. Age, gender, education, ethnicity, and marital status are key determining factors whether one picks informal employment. Youth aged 15-24 constitute the highest informality rate, around 70 percent of total employment, with informality declining post-24 years. A master's degree and higher is predominantly associated with formal employment, while a bachelor's degree holder corresponds to roughly 4.5 percent informality compared to those with lower education levels. Notably, males are more inclined toward informal employment, while unmarried individuals and those from Pahari, Dalit, and Janajati communities are more engaged in the informal sector.

A wage disparity between formal and informal employment prevails in Badikhel, substantiated using the Mincer earnings model. Informal workers notably earn significantly less than their formal counterparts. Schooling duration significantly affects wages; heightened schooling years correspond to elevated earnings, especially among the highly educated. Wealth quintile and age also exert positive, substantial influences on wages. Conversely, worker experience and marital status exhibit no discernible impact. Crucially, a gender wage gap is discernible, with females disproportionately affected. Male workers outearn their female counterparts, and the gender-based wage gap among females surpasses that among males.

This analysis establishes the influence of parental employment on children's educational performance. The offspring of formally employed parents tend to excel academically. Parents' cumulative schooling years also shape children's performance, promoting motivation, monitoring, and positive social behavior. Moreover, informal employment positively correlates with children's invested time in education, with those from formal-working households displaying more significant commitment. The study underscores informal workers' diminished earnings relative to their formal counterparts and the advantageous educational outcomes associated with the children of formal workers.

Informality, in Badikhel, coincides with a notable wage disparity between formal and informal employment. While informal workers earn significantly less than their formal counterparts, it is important to note that informality is not exclusively associated with lower wages. Interestingly, there are even a few formally employed individuals with lower wages. Gender-based wage differences are also pronounced, particularly impacting female workers.

Our findings underscore the vulnerability of those engaged in informal employment. They facereduced compensation and grapple with increased workload and a need for social security provisions. Worryingly, many holds pessimistic views about their children's prospects, fearing that the next generation might not fare well. This pessimism could further erode household capital formation through education, exacerbating the marginalization of vulnerable households.

Informal employment significantly impacts the quality of life regarding household human capital formation. Education, healthcare, income, and training are vital in shaping human capital. Healthy, skilled, trained, and experienced individuals are assets to an economy. However, the informally employed, burdened by low wages, often struggle to afford adequate healthcare, and contribute to their children's education, potentially leading to school dropout and child labor due to financial constraints and uncertainties. Moreover, their uncertain career trajectories cast doubt on their children's prospects, causing skepticism about their educational and income growth.

Over time, parental engagement in informal employment hampers their children's accumulation of human capital, impeding their ability to achieve higher income levels and advanced education. The cycle perpetuates, limiting both individual and societal progress.

Extending the analysis beyond primary education, examining shifts in secondary and tertiary levels is crucial. Facilitating the transition from informality to formality holds the potential for addressing gender wage gaps in Badikhel. Exploring STEM exam outcomes in relation to parental occupations could yield insights into how informality influences education attainment. Further investigations might scrutinize factors impacting educational performance across different levels, including tertiary education. Expanding the study with a larger sample and employing the Oaxaca-Blinder method for thorough decomposition remains a viable avenue for analysis.

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Annexes

ANNEX A: Descriptive information on sample households

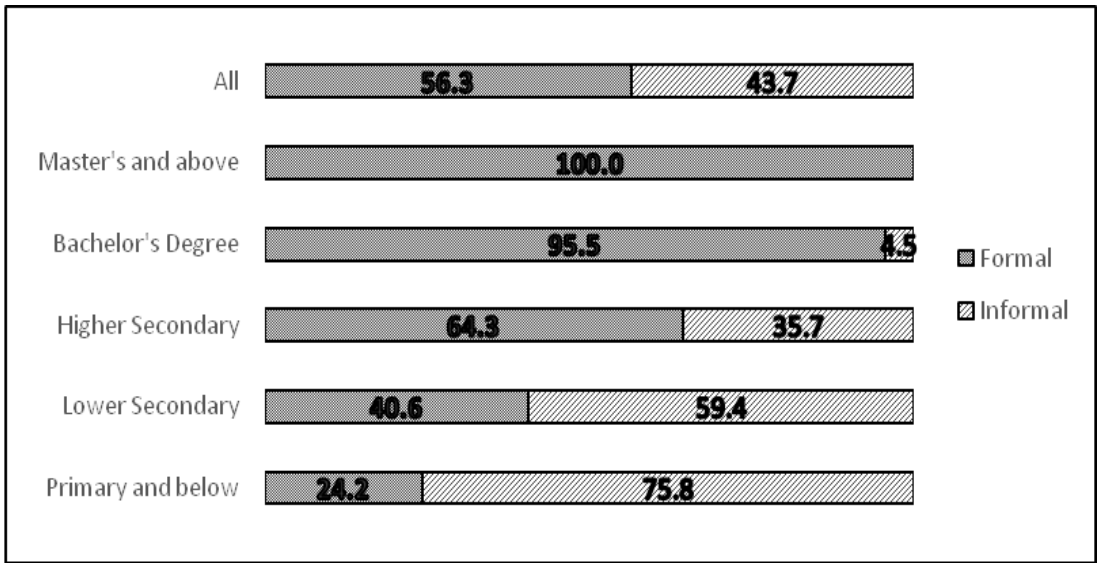

Figure 1: Level of education and informal employment in Badikhel (%)
Source: Field Survey, 2020

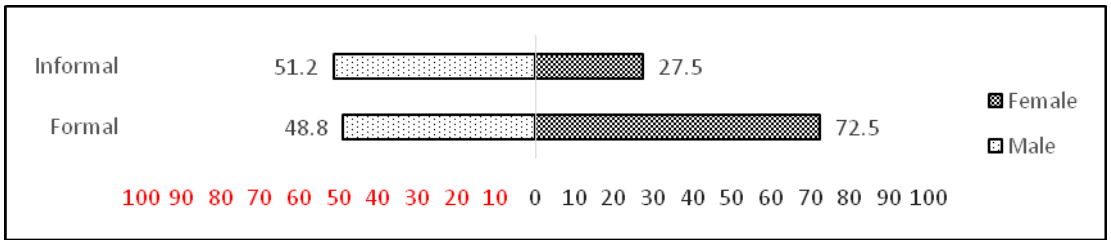

Figure 2: Labor informality and total employment by gender (%)
Source: Field Survey, 2020

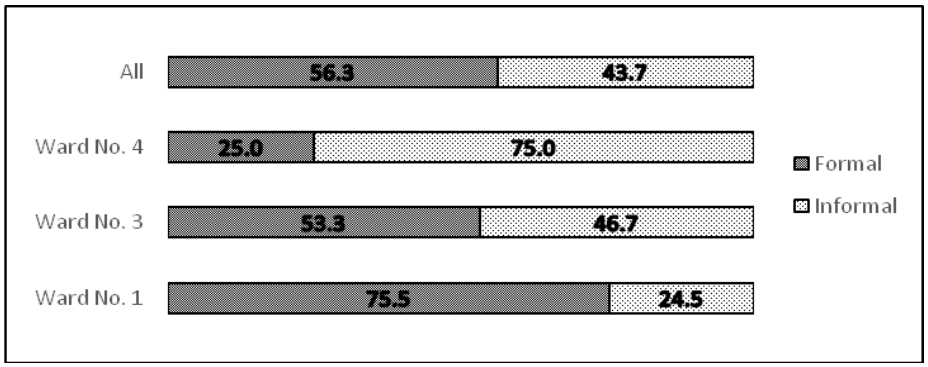

Figure 3: Labor informality and total employment (%)
Source: Field Survey, 2020

Table 1: Informality and socio-economic status

		Formal	Informal
Age Groups			
	15 - 24	6 (30.00)	14 (70.00)
	25 - 34	32 (69.57)	14 (30.43)
	35 - 44	18 (54.55)	15 (45.45)
	45 - 54	11 (52.38)	10 (47.62)
	56 and older	4 (66.67)	2 (33.33)
Ethnicity			
	Brahmin/Chhetri/Thakuri	61 (77.22)	18 (22.78)
	Janajati / Aadibasi	1 (20.00)	4 (80.00)
	Pahari	8 (22.86)	27 (77.14)
	Dalit	1 (14.29)	6 (85.71)
Marital status			
	Unmarried	17 (53.13)	15 (46.88)
	Married	54 (57.45)	40 (42.55)
Occupation			
	(a) Legislators, Senior Officials and Managers	18 (100.00)	N/A N/A
	(b) Professionals and Armed Forces	18 (100.00)	N/A N/A
	(c) Technicians and associate professionals	19 (79.17)	5 (20.83)
	(d) Sales, service and clerical	12 (66.67)	6 (33.33)
	(e) Craft, Machine Operators and related trade workers	3 (15.00)	17 (85.00)
	(f) Elementary occupations	1 (3.57)	27 (96.43)

Source: Authors' own elaboration; N/A stands for 'Not Available'

Table 2: Hourly and weekly wage (in NRs.)

	N	Min	Max	Mean	Sd
Hourly	126	21	250	92.99	47.4
Weekly	126	233	14000	5079.48	2482.58

Source: Authors' own calculation

Table 3: Tabulation of gender informality status

Gender	Formal	Informal	Total
Male	42	44	86
	48.84	51.16	100.00
	59.15	80.00	68.25
Female	29	11	40
	72.50	27.50	100.00
	40.85	20.00	31.75
Total	71	55	126
	56.35	43.65	100.00
	100.00	100.00	100.00

Pearson chi2(1) = 6.2150 Pr = 0.013
likelihood-ratio chi2(1) = 6.4075 Pr= 0.011

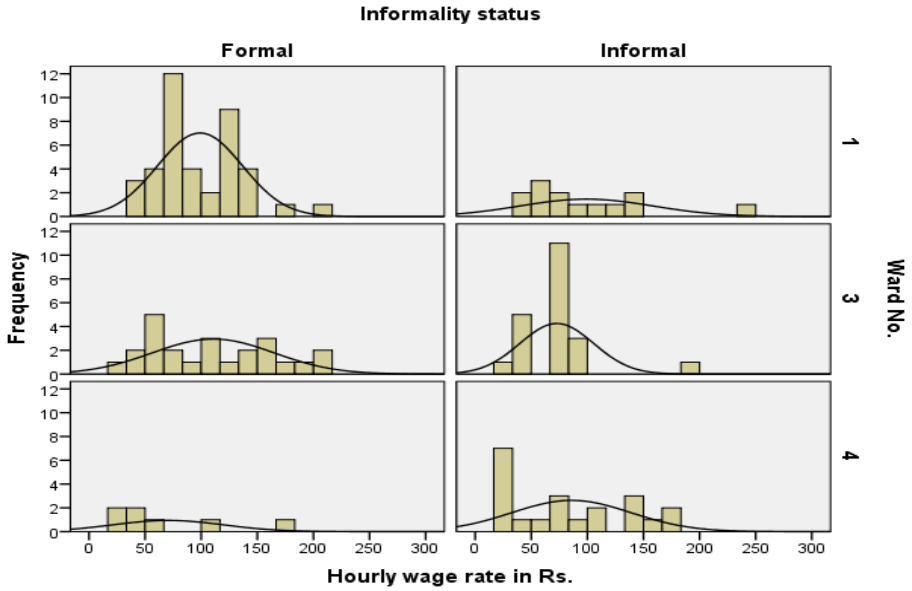

Figure 4: The frequency distribution of hourly wage by wards

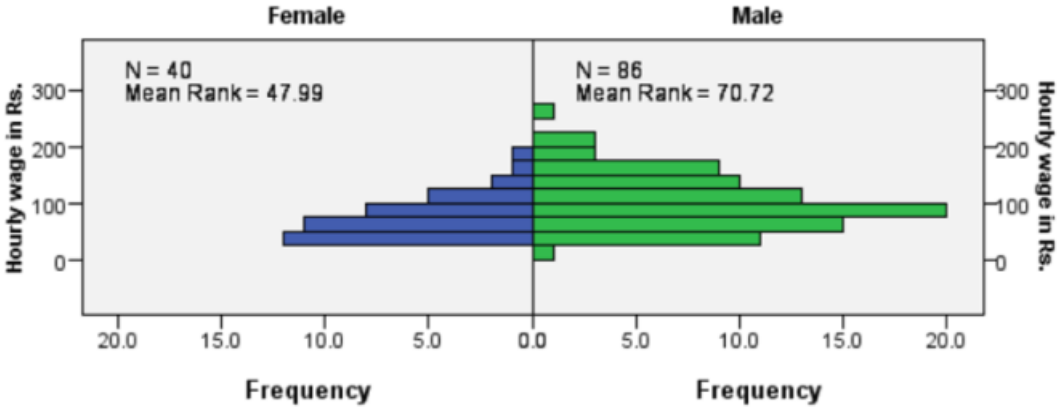

Figure 5: Mann-Whitney U Test

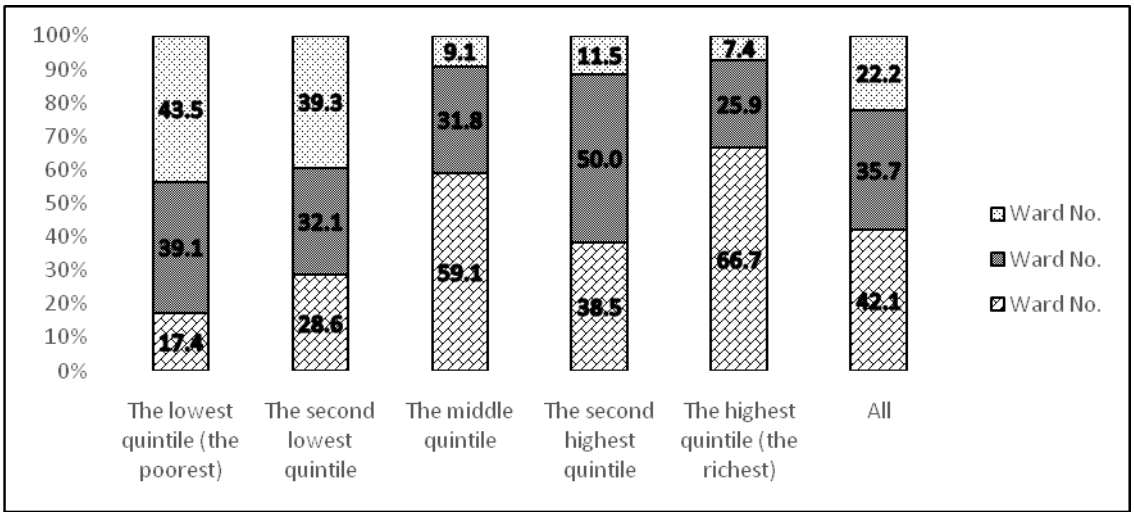

Figure 6: Wealth Quintiles

ANNEX B: Sampling procedure

The households were selected from the list using systematic random sampling with an interval of three. For Ward No. 1, we first calculated the sampling interval by dividing the total number of households (127) by one-third numbers (33%) of households (42). The sampling is 3. We then selected one household randomly, in this case 5. Household #5 was the first household. We then listed starting with household #5 and selected each 3rd household. The second selected household was 5+3, or #8, then #11, #14, #17 and continued until each ward was completed. The same process was applied for peri urban.

Annex C: Variables used to construct the wealth index

Table 4: List of variables used to construct the wealth index

SN	Type of durables	SN	Types of durables
1	House ownership status	14	Types of furniture and fixtures
2	Material of house fountain	15	Types of electric items
3	Material of house's outer wall	16	Has a gas for cooking
4	Roof material	17	Television
5	Rental income or not	18	Camera and radio
6	Source of drinking water	19	Motorcycle
7	Toilet facility	20	Bicycle
8	Sources of lighting	21	Car or four-wheeler
9	Email/Internet facility	22	Sewing machine
10	Fuel used	23	Telephone
11	Refrigerator	24	Mobile phone
12	Oven	25	Computer or laptop
13	Washing machine	26	Own land

ANNEX D: Definition of informality

The informality we mean in this paper is defined as (i) the employees who are not benefitted from social security contributions by the employer and who are not entitled to paid annual leave and paid sick leave, (ii) those family members contributing to the family business and (iii) the employers and own account workers engaged in the production of goods for informal/formal or household. The details on informality are in the following chart.

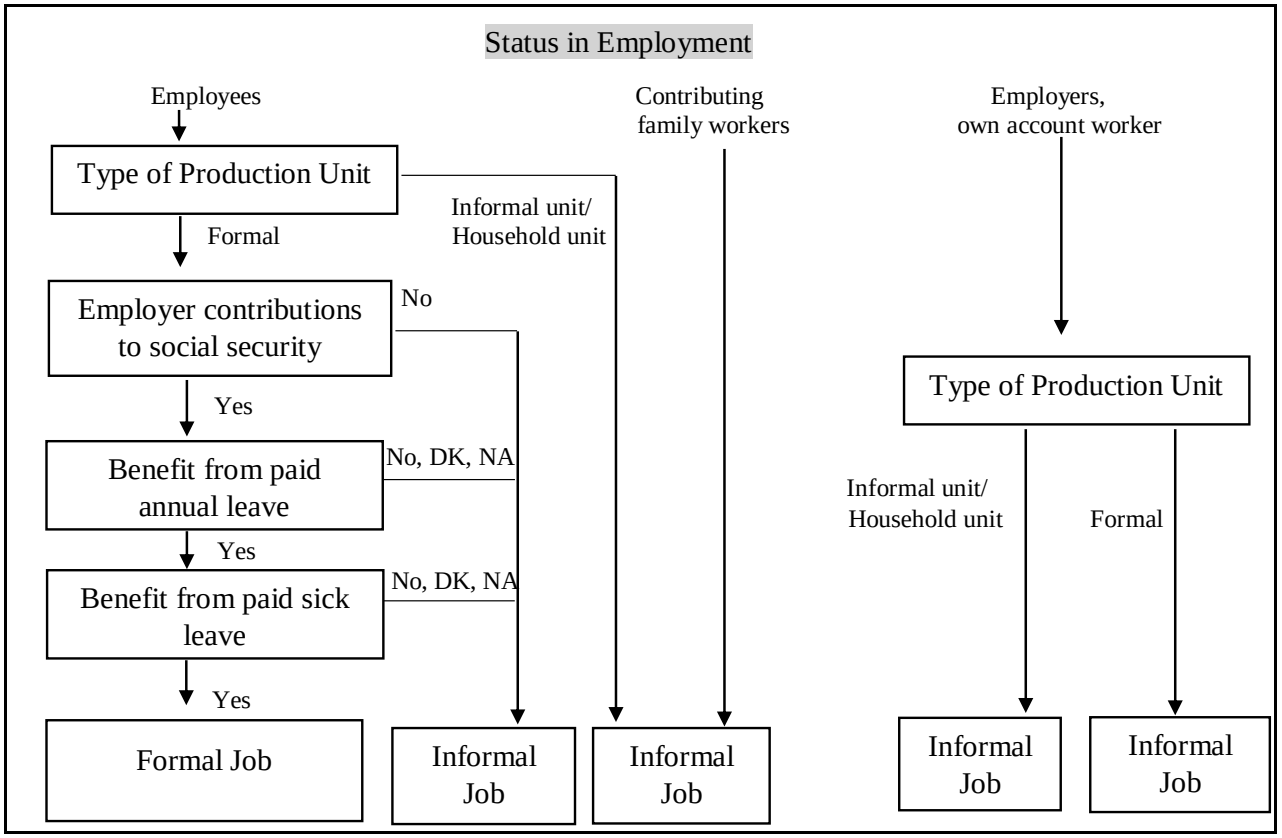

Figure 7: Informal Employment Nepal Flowchart
Source: Compiled from Nepal Labor Force Survey report (CBS/GoN, 2019) and (ILO, 2018)