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Parental Informal Occupation Does Not Significantly Deter Children's School Performance: A Case Study of Peri-Urban Kathmandu, Nepal

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Abstract: This paper investigated how parents' informal work relates to their children's academic performance. We interviewed the heads of households with 83 school-aged children in peri-urban Kathmandu to obtain information on parental occupation and child schooling. We also interviewed key informants and conducted focus group discussions to investigate the relationship between working parents' job profiles and their impression of their child's school achievement. Parent characteristics, such as work status (formal or informal), educational attainment, family size, and number of children, were recorded. The primary variable of interest was the children's academic performance, measured as improved or otherwise compared to the previous year. Our analysis confirmed that parents in informal jobs spent more time with their school-going children than their counterparts in formal employment. We found that the parents in informal jobs were relatively more educated in the sample area. The existing literature concurs that parental support significantly influences children's educational outcomes. Parents in informal jobs, while spending more time with their children, expressed pessimism regarding their children's school performance and future opportunities. We also found that household wealth, past performance, school type, and the level of supporter education in the family played significant roles in shaping parental perceptions of the child's school performance. At the same time, we found the nature of the parent's job did not significantly determine the child's school performance, ceteris paribus.

Keywords: informality employment; informal economy; child education

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1. Introduction

Informal employment has long been a defining characteristic of labor force dynamics in developing and transition economies. In Nepal, the structure of the labor force is heavily influenced by informal employment, which plays a critical role in shaping economic and social outcomes. According to CBS/GoN (2019), 62.2% of total employment in Nepal is generated in the informal sector, with 59.7% of males and 66.5% of females engaged in this segment. This prevalence underscores the importance of understanding the drivers and consequences of informal employment, particularly in a context where formal job opportunities are limited. Informal employment can be analyzed through two contrasting theoretical frameworks: the segmentation and comparative advantage hypotheses (Gunther & Launov, 2012). These frameworks provide divergent perspectives on why workers engage in informal employment and how it impacts their livelihoods.

The segmentation hypothesis posits that informal employment serves as a last-resort strategy for workers in developing economies who are excluded from the formal sector due to structural barriers, such as limited job opportunities, skill mismatches, and geographic isolation (Harris & Todaro, 1970; Stiglitz, 1976). This perspective suggests that informal employment is not a voluntary choice but a necessity for marginalized groups, including unskilled workers, women, and those in remote areas. These workers are increasingly drawn to gig and platform-based jobs, which are predominantly informal and often lack the protections and benefits associated with formal employment (Friedman, 2014; McCaig & Pavcnik, 2015). The socio-economic costs of informality are significant, with reduced household capital formation being one of the most pressing issues. Limited access to quality education for younger generations is another critical consequence, as it perpetuates household-level precarity, particularly in developing countries where social security systems are either weak or nonexistent.

In contrast, the comparative advantage hypothesis views informal employment as a voluntary choice by workers, prioritizing non-wage benefits over formal sector employment. According to this perspective, workers may opt for informal jobs because they offer greater flexibility, autonomy, or utility-maximizing features that align with their personal or family needs (Maloney, 2004). For instance, informal employment may allow parents to spend more time with their children, potentially supporting their education and well-being. However, this hypothesis also acknowledges that informal work often comes with trade-offs, such as lower wages and limited access to social protections. Some studies have suggested that workers may choose informal employment because their earnings in the formal sector would not be significantly higher, making informal work a rational decision under certain circumstances (Gindling, 1991; Maloney, 1999). Despite these potential benefits, research highlights the health hazards and other risks associated with informal occupations, particularly for parents. Nevertheless, there is a scarcity of studies examining the relationship between informal employment and education-related precarity, with limited evidence supporting either side of the argument.

Other theoretical frameworks have been proposed, most notably by Dell'Anno (2022) and Haanwinckel and Soares-Mada (2021), who attempted to explain informality in the labor market through differing perspectives. Regardless of whether informal employment is a voluntary choice, a last-resort strategy, or a result of other factors, it is typically characterized by informal arrangements, such as verbal agreements or loosely binding contracts. These arrangements often result in lower wages and a lack of access to formal social protections, including health insurance, workplace safety regulations, and welfare benefits. Such systemic biases in labor market earnings exacerbate income inequalities and deprive a significant portion of the workforce of essential social benefits. This, in turn, reinforces the marginalization of vulnerable groups, particularly in developing countries like Nepal, where informal employment is widespread.

One of the most overlooked consequences of informal employment is its impact on household-level human capital development, particularly through its effects on children's educational outcomes. Limited access to quality education often results in under-skilled and under-educated labor, perpetuating cycles of poverty and inequality across generations. These implications are particularly severe in developing countries with fragile capital and insurance markets, as well as budget and resource constraints (Justino, 2007). These limitations reduce the availability of social security funding and restrict the capacity of governments to create formal job opportunities. Existing literature highlights the multifaceted costs of informal employment, including wage discrimination (Thapa-Parajuli, 2015), health risks, limited access to public services such as banking (Parajuli et al., 2021), and negative impacts on children's upbringing and education (Thapa-Parajuli et al.,

2020). These factors collectively contribute to the marginalization and precarity of Nepal's vulnerable workforce.

This study aims to empirically investigate the relationship between parents' informal employment and their children's educational outcomes. Specifically, we examine how children's educational performance varies depending on whether their parents are employed in the informal or formal sectors. We focus on the implications of informality on parental care and responsibilities, exploring how these factors affect child well-being. Even when wages and working hours are comparable, individuals in informal employment may face deficits in their ability to provide parental support, which can negatively impact their children's educational performance and access to healthcare. Through a primary data analysis, we explore whether parents in informal employment allocate less time to their children and how this affects their school performance. Additionally, we investigate whether reduced parental involvement has a broader impact on children's educational outcomes and how parents perceive the influence of their occupation on their children's performance.

2. Informal Employment and Consequences

Informal employment, a significant component of the job market in developing economies, encompassing an extremely wide spectrum of activities, is characterized by its exclusion from national labor legislation and the income tax system. Informal employment spans several economic sectors, includes underground, illegal, and household activities, and presents complex challenges and opportunities for policymakers and researchers alike. The International Labour Organization (ILO) provides a comprehensive definition of informal employment, capturing the essence of informality in the modern globalized economy Figure 1. The Fifteenth International Conference of Labour Statisticians (15th ICLS), adopted in 1993, details criteria for identifying enterprises operating within the informal sector, chiefly emphasizing ownership structure, production intent, enterprise size, and non-agricultural activities. Social scientists, in the 1970s, began developing frameworks for the 'informal economy', initially to describe the phenomena of the working poor in underdeveloped and developing countries (Gerry, 1987). Since then, 'informality' has been extended to include a bevy of economic activities in both rich and poor economies.

Literature abounds focusing on the economic ramifications of informal employment on wage differentials, gender disparities, and inequality. The impact of informality on children's educational attainment, however, presents a significant gap in our understanding and, thus, warrants further research. Historically, there have been strong arguments, especially from Reformists, Marxists, and Populist economists, that wage bills should be based on the worker's productivity. However, in the increasingly globalized and complex labor market, wage bills depend on the structural factors that determine work, workplace, and other outcomes of the labor market, and Palmer (2008) underscored the complexities of applying the productivity concept to the informal economy. Responses from policymakers towards informality have often prioritized formalization efforts, neglecting the broader socio-economic characteristics of informal work and workers. Among those neglected characteristics are the direct and indirect costs to family members, such as the children's educational dimension of informal workers, with sporadic literature.

School education is of significant importance from yet another perspective. According to the human capital formation approach, Heckman et al. (2006) mentioned how school education provides the second highest returns after early childhood investment. Additionally, investing in school-level education yields higher returns compared to professional development later in life. If household investment in education is inadequate, whether due to parental occupational choices, voluntary or forced, subsequent efforts to repair this gap are often minimal or ineffective. This can perpetuate disadvantages for future

generations, potentially reinforcing cycles of informality. However, research on the impact of such deficiencies in human capital investment remains limited.

Sector of the economic unit for which the work is carried out	Independent workers (employers, own-account workers)			Dependent workers					
	Owner-operators of corporations	Independent workers in household market enterprises		Dependent contractors*		Employees		Contributing family workers	
	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal**
Formal sector				1*	*	2		3	
Informal sector		4		5		6		7	
Household own-use and community sector						8			

Note: Cells shaded in dark blue refer to jobs, which, by definition, do not exist in economic units located in the specific sector. Cells shaded light blue refer to formal jobs. Informal employment consists of informal jobs in cells 1–8.

*The sector of dependent contractors does not reflect the sector of the economic unit on which they depend but their formal status in relation to the legal administrative framework of the country.

**The existence of formal jobs among contributing family workers carrying out work for an economic unit in the formal sector depends on the national context.

Figure 1. ILO definition of informality.

Traditionally identified as a temporary phenomenon, informal employment was expected to disappear over the course of a country's development (Harris & Todaro, 1970). However, the persistence of informality in both developed and developing countries has led researchers to view informality through different lenses. Informal employment can create positive welfare in society, but these positive contributions are often only highlighted at the individual and family level, rather than at the community level (Williams & Round, 2007). Informal employment could be pivotal in fostering economic growth and social cohesion. Bahl and Sharma (2021, 2024) examined how informality could address education and employment mismatches, education–occupation mismatch (EOM), and workers' wages in a developing country like India. Their findings revealed that informality significantly influences wage determination, and in a similar vein, Setyanti (2020) identified socioeconomic factors influencing informal employment in Indonesia, revealing correlations with educational attainment, rural residency, gender, age, and household characteristics. The study, as expected, showed that the educational level of individuals corresponds to a lower likelihood of informal employment. However, for lower-educated parents who are likely to work informal and lower-paid jobs, their children might bear the costs of informality in the long term.

While several studies have established that educational attainment affects the likelihood of an individual working in the informal sector, Kolm and Larsen (2016) investigated the relationship between informal employment and educational attainment and concluded

that increased employment opportunities for less-educated individuals may lead to decreased educational attainment. Thus, despite its contribution to livelihood strategies, informal employment presents several challenges, including curtailment of further educational attainment, limited social protection, heightened vulnerability, and restricted access to formal safety nets and employment protections. As informality represents a multifaceted phenomenon with significant economic, social, and policy implications, addressing it requires holistic approaches that acknowledge the diverse global contexts and complex challenges informal workers face. This work attempts to provide much-needed nuanced insights into the dynamics of informality and to address the gaps existing in the literature.

3. Parental Employment and Child Education

The nature of parental employment determines their wages as well as the time they can allocate to their children's educational support at home. Higher-educated parents have been observed to spend more time with their children, regardless of the nature of their employment (Gunther & Launov, 2012). When parental employment requires extended hours, children may spend more time helping with household chores, potentially leading to a decline in academic work and subsequently academic performance. Undereducated parents in informal employment, which by nature demands more working hours in developing countries like Nepal, face more hurdles, as they might not be able to help with their kids' academic work due to their own poor or lower academic exposure.

Mothers play a disproportionately large role in children's education and academic performance (Caputi et al., 2016). Thus, the nature of mothers' employment is a significant factor in the educational performance of children. Das (2015) emphasized the lopsided impact of informality on women workers, and recommended remedial regulatory and fiscal measures to control the extreme precarity faced by women in informal employment.

Children's education is also shaped by other members of the family in addition to the parents. It has been shown that the socioeconomic characteristics of grandparents, aunts, uncles, cousins, and siblings play a crucial role in children's educational success (Jæger, 2012). This role is more pronounced in the extended family, where resources from extended family members can compensate for the lack of resources, both monetary and non-monetary, of the parents.

The education of children is largely the function of a state's perceptions towards it. Traditionally, education is treated as a public good, but it has gradually been seen as a merit good as well, where it depends not only on the government but more on parental or family contributions. Maurin (2002) investigated the influence of parental poverty on children's school performance. The study examined the grandparents' past socioeconomic status and the parents' education level and found that a 10% increase in parental income corresponded to an approximately 6.5% decrease in the probability of children being held back in elementary school. Thus, there exists a significant statistical link between parental income and child academic performance. Furthermore, the paper estimated the impact of parental income, being three times greater than the impact of child gender. However, the paper did not distinguish between formally and informally gained parental income, and the severity might differ in scale or mechanism depending on the nature of parental employment.

Parental income and education, which are intrinsically linked with the nature of employment, influence children's educational attainment and cognitive ability and development. Glick and Sahn (2009) found that the cognitive ability among 14–17 year-olds in Senegal was strongly determined by their years of schooling, while parental education and household wealth played a nominal role. The paper also found that familial background significantly affected the years of schooling, and thus the cognitive ability of the

children was shaped, indirectly and in a modest way, by the education and income of the parents. Rungo et al. (2015) also showed how family socioeconomic status and education are robust determinants of a child's educational attainment, but the paper did not establish the relationship between informality and a child's academic performance. Paxson and Schady (2007), similarly, found strong associations between household wealth and parental education with higher school scores, but they too did not consider the connection between informality and a child's performance.

In a South Asian context, the literature is mostly concentrated on the prevalence of informal employment and aspects associated with school-going children joining the informally dominated labor market. Chudgar and Shafiq (2010) broadly summarized the socio-economic dimensions of the family and its consequences on child education in South Asia. While there is a paucity of research on the context of Nepal, Thapa-Parajuli et al. (2020) investigated how child education is shaped by parental occupation in the peri-urban areas of Kathmandu valley. While their sample site was peri-urban, the level of informality was more related to substantial agricultural work, so the informality in that setup was likely driven by compulsion rather than choice, resulting in parental informality adversely affecting education in that context. Other studies in Bangladesh (Quattri & Watkins, 2019), India(Ghosh & Steinberg, 2022; Vikram et al., 2018), Pakistan (Kishwar & Alam, 2021), and Sri Lanka (Sarma & Parinduri, 2016) focused more on the child labor aspects of informality. In all these cases, informality promoted child labor, leading to children leaving school and entering informal labor markets. This hard adaptation ultimately deters household capital formation and even undermines investments, as Heckman (Heckman et al., 2006) argued.

In summary, empirical papers have well-established the connection between education and informal employment; informal employment and wages; as well as familial income, parental education, and child's education. However, there is a dearth of empirical analysis addressing the relationship between parental employment characteristics (informality or formality) and their children's educational outcomes, highlighting a notable gap in the existing literature.

4. Sampling, Data, and Estimation Strategy

We administered a pretested structured questionnaire to collect comprehensive data on family socio-economic status, parental employment, household head information, and children's educational performance, among other variables, as shown in Table 1. Our study focused on the peri-urban area of Manohara in the Madhyapur Thimi municipality of Kathmandu Valley, Nepal. This location was purposively selected based on prior field observations indicating the presence of both formal and informal employment among residents.

We obtained the voter list from the ward office to identify 249 households with school-going children. We conducted interviews with every fifth household head, totaling 50 households. Within these households, we gathered information on 83 school-going children, including details about their parents' employment status. Our findings revealed that 37.5% of parents were engaged in formal employment, while 62.5% were involved in informal employment. Additionally, we conducted two focus group discussions—one with parents and another with students. We also interviewed key informants, including local schoolteachers, local political leaders, and some college students.

Table 1. Nature of the variables.

Variables	Definition
Child School Performance	Household heads were asked whether their child performed batter, remained the same, or improved their school performance relative to last year and this year. We label this as "degraded" and coded it as 1 if the score decreased, and "zero" if unchanged or improved.
Informality	Based on the ILO definition, Figure 1, informality was defined by seven indicators; the prevalence of at least one is informal. The indicators are pay tax or not (1.Mother and 2. Father), firm size of the parents (3), no union membership (4. Father and 5.Mother), pension (6), and social security (7).
Informal N3	This variable excludes firm size as a determinant, unlike Informal, where larger firms are formal and smaller ones informal.
Informal jobs N3	This variable is the same as Informal jobs but excludes the third determinant, as explained above, which is size of the firm.
Father notax	This variable indicates whether the father pays any direct tax related to his occupation. If no tax is paid, the occupation is considered informal, otherwise formal.
Mother notax	Similarly to Father notax, this variable indicates whether the mother works and pays tax. If no tax is paid, the occupation is considered informal.
Small firmsize	This determinant is considered the third determinant of informality, where a small firm is informal, and formal otherwise.
Father nounion	This variable indicates whether the father is part of a labor union. If the father is part of any form of organized labor union, this is considered formal, otherwise informal.
Mother nounion	Similarly to Father nounion, this variable checks whether the mother is formally a member of any labor union organization.
No pension	This variable indicates whether the father or mother will receive any pension facility after being terminated from their job. If a pension is received, the employment is considered formal, otherwise informal.
No social security	This variable records whether any social security facility covers the parents. If covered, the employment is formal, otherwise informal.
Past performance	Parents were asked about their child's school performance in the previous year (Improved and remained the same are '1' and '0' otherwise).
School type	Child's school type is coded as 1 for private and 0 for public.
Wealth index	Wealth index is based on household durables using PCA scores.
Mother Edu	This variable records the mother's years of schooling.
Supporter edu	This variable records the years of schooling of family members who assist with studying at home.

We conducted a descriptive analysis and employed mean tests (*t*-tests) to compare education-related metrics, such as the net time effort by children, between formal and informal employment groups. Additionally, we estimated a logistic regression to capture parental perceptions, coding parents who believed their children's performance would improve as one, and those who did not as zero. The theoretical foundation for the model is delineated in Figure 2. Focus group discussions and key informant interviews were transcribed, and the qualitative data were used to complement the quantitative findings.

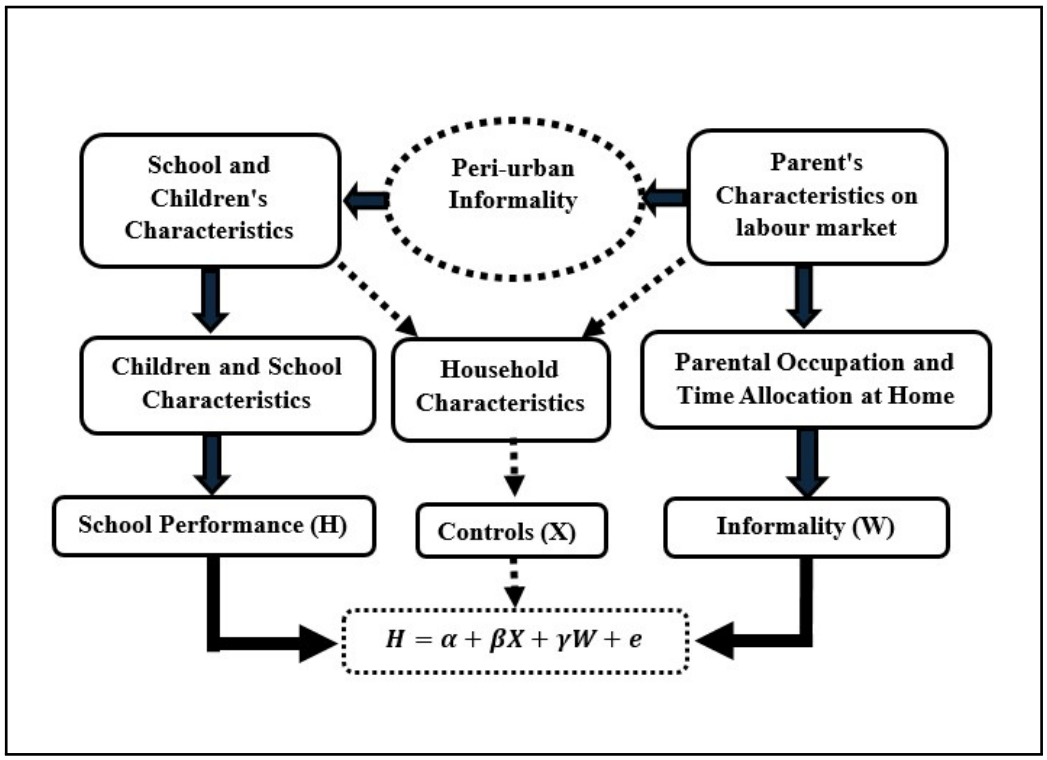


Figure 2. Theoretical framework and estimation strategy.

5. Results and Discussion

We examined how the nature of parents' work and children's educational performance were interlinked. Based on the information from sample households, there were 83 school-going children under the age of 16, we investigated the performance disparities of those children based on the status of their parents' job. Table 2 summarizes the descriptive information of the variables used in our analysis. Among the 83 children taken as observations, 62.5% children's parents work in formal employment and the remaining 37.5% work in informal jobs.

The descriptive statistics also indicate that, on average, the children in the sample are nine and a half years old, with the majority being girls. These figures align closely with the national demographic averages. The household size in our sample appears to be somewhat larger than the national average, but not too far from it, which may be attributed to the unique demographic characteristics of peri-urban households. About a quarter of the students attend private boarding schools, which are generally considered better schools, and on average, there were about two school-going kids in each of these families.

We constructed a family wealth index, primarily based on the principal component analysis score and dependent on the presence of household durables. The wealth distribution seemed slightly skewed; the average score was negative. This makes sense because of the skewness in the wealth and durables distribution in the sampled households. About 37% of parents are in informal employment; informality being occupation-level informality, not sectoral or industry-level informality. Thus, the figure is rational, as industry or sectoral-level informality is high in Nepal, but occupation-level informality is quite low. Additionally, we observed that the income category variable was slightly positively skewed, which may be attributed to recall bias.

Table 2. Descriptive statistics.

Variables	Mean	SD	Min	Max
Gender dummy (Male 1, and 0 otherwise)	0.4861	0.5033	0	1
Age of the children	9.4306	3.4998	1	15
School dummy (Private 1, 0 otherwise	0.2639	0.4438	0	1
Family Size	4.8194	1.3250	1	9
Number of children in family	2.0417	0.8297	1	5
Household wealth index	−0.3101	1.5733	−2.12	3.64
Parental occupation dummy (Informal 1, 0 otherwise)	0.3750	0.4875	0	1
Past performance improved or remain the same is 1	0.7500	0.4361	0	1
School performance degraded is 1	0.2892	0.4501	0	1
Income category (Quintile)	2.9306	1.0790	1	5
Children's daily time spent for study at home (min)	77.2917	55.0220	0	220

We also recorded, in minutes, the total time spent by the children studying at home each day. The average time each child spendt studying at home was 77 min, with some not studying at home, while other children devoted 220 min each day to their study. We also captured the parental perception of their kids' future performance in school. We asked them what they thought about future progress, whether an improvement or degradation relative to the previous performance of their kids at school. We only recorded changes; negative changes were considered zero, and those who remained unchanged or expressed positive perceptions were coded as one. This gave us a categorical variable for parental perception of their kids' performance in academic attainment. A quarter of them believed that their children's studies would be degraded in the future.

A chi-square test of the previous performance of children from formal and informal wage-earning families was performed to examine the discrepancy between parental occupational status and the previous year's performance of the children at school. The performance variable was measured as degraded, remained the same, and improved categories for all kids. There seemed to be a significant discrepancy between parental occupation and children's educational performance, $[\chi^2(3, N = 83) = 9.40, p = 0.095]$. The Chi-square test value suggested a statistically significant level of discrepancy in kids' performance in school among informal wage-earning households and others.

Table 3 presents the statistical findings obtained after calculating the net time devoted to study by the kids in relation to the formal or informal nature of their parents' job. The children's net study time was obtained after subtracting their studying time from the minimum time parents spent supporting their children's education. Children's school performance depends on the time allocated for study at home, parental support at home, and school or institutional quality. Here, we discounted institutional factors like teacher quality and school quality, as we are more interested in parental occupation and the time they can allocate to kids at home. The following table summarizes some mean tests of the variables under consideration.

Our analysis showed that the children's study time at home varied depending on the nature of their parents' occupation. Children whose parents had formal occupations tended to allocate, on average, eight more minutes to study at home than their counterparts, who allocated only about 72 min. Parents in informal jobs allocated more time than those in formal jobs for supporting their kids' study at home, at a statistically significant level. In addition, parents in informal employment seemed to have, on average, more educational qualifications than the parents in formal employment. These facts lead us to believe that informality could be more of a choice than necessity for many workers in Nepal.

Table 3. Own effort and parental support for education (*t*-test).

Own Efforts and Parental Support	Formal (1) (n = 51)	Informal (2) (n = 32)	Difference (1) — (2)	*t*-Value (n = 83)
Study time allocated by the children at home (Minutes/Daily)	80.33 (8.82)	72.22 (9.23)	8.11 (13.46)	0.60 ($p = 0.27$)
Parental support at home for study (Minutes/Daily)	41.22 (3.26)	53.33 (6.27)	−12.11 ** (6.42)	−1.89 ($p = 0.03$)
Mother's level of education (Years of Schooling)	6.62 (0.56)	10.52 (0.74)	−3.90 *** (0.92)	−4.22 ($p = 0.00$)
Father's level of education (Years of Schooling)	6.71 (0.60)	10.56 (0.85)	−3.84 *** (1.02)	3.77 ($p = 0.00$)

*** $p < 0.01$, ** $p < 0.05$; n is the number of observations, SE in parenthesis.

The household head was asked whether their kids had performed well this year relative to their performance in previous years. The category was recorded qualitatively from A+ to C. Among the 83 children registered, the parents of about a quarter of the children thought that their children were not performing well. As the intended or dependent variable is categorical, one for perceived reduction in performance and zero otherwise, our model required the Maximum Likelihood estimation technique. Therefore, we estimated the logit regression equation with the other control variables and the prime explanatory variable; the informality. The logit regression result, summarized in Tables 4 and 5, revealed the relationship between the various independent variables and the probability of deterioration in school performance for school-going children. The odds ratio accompanying the regression tables are shown in Tables A1 and A2 in Appendix A. Overall, the coefficients of determination for all regression estimates under consideration were reasonably high, signaling an acceptable level for the explanatory power of the models. Additionally, the mean variance inflation factor (VIF) for each equation, estimated as an alternative to their linear regression counterparts, was calculated and reported.

The regression coefficients summarized in Tables 4 and 5 indicate that parental occupation in informal jobs did not show a statistically significant effect on degradation in school performance. Instead, the past performance of students consistently showed a positive and statistically significant coefficient in all models, indicating that a better past performance was associated with higher odds of improving school performance, all else being equal. The typical character of the peri-urban labor market might have influenced the educated and well informed adults to voluntarily choose informal jobs. They might have foreseen the possible flexibility, earning potential, and short run benefits of joining informal jobs, as those jobs often involve fewer bureaucratic hurdles, while formal jobs typically require political connections and longer gestation periods to secure (Tassie Wegedie, 2018). This is evident in Nepal, with its ballooning unemployment, scarce formal jobs, and large internal migration to cities, culminating in a strong demand-side pressure for jobs.

On the supply side, the availability of informal jobs further encourages this trend. Even educated individuals are opting for informal employment, as our data also suggest, highlighting that both demand- and supply-side factors drive the preference for informal jobs in peri-urban areas like Kathmandu (Alamneh et al., 2023; KC, 2020).

Table 4. Logit marginal coefficients (dependent variable—School performance degraded is 1).

Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Informal job	−0.0390							
	(0.109)							
Past performance	0.292 ***	0.287 ***	0.284 ***	0.288 ***	0.288 ***	0.283 ***	0.277 ***	0.287 ***
	(0.0666)	(0.0650)	(0.0646)	(0.0650)	(0.0649)	(0.0646)	(0.0645)	(0.0654)
School type	0.325 **	0.298 **	0.296 **	0.308 **	0.307 **	0.293 **	0.291 **	0.305 **
	(0.151)	(0.149)	(0.145)	(0.145)	(0.145)	(0.145)	(0.145)	(0.148)
Wealth index	−0.0449	−0.0490	−0.0550	−0.0481	−0.0483	−0.0545	−0.0734	−0.0480
	(0.0444)	(0.0444)	(0.0444)	(0.0439)	(0.0440)	(0.0441)	(0.0499)	(0.0439)
Mother edu	0.0337 **	0.0302 *	0.0271	0.0314 *	0.0312 *	0.0268	0.0253	0.0311 *
	(0.0170)	(0.0162)	(0.0168)	(0.0160)	(0.0160)	(0.0168)	(0.0164)	(0.0159)
Supporter edu	0.0722 **	0.0741 **	0.0765 **	0.0733 **	0.0735 **	0.0760 **	0.0845 **	0.0736 **
	(0.0348)	(0.0352)	(0.0354)	(0.0360)	(0.0349)	(0.0351)	(0.0379)	(0.0350)
Father notax (1)		−0.0383						
		(0.120)						
Mother notax (2)			−0.125					
			(0.214)					
Small firmsize (3)				0.0049				
				(0.215)				
Father nonunion (4)					−0.0032			
					(0.114)			
Mother nonunion (5)						−0.129		
						(0.217)		
No pension (6)							−0.346	
							(0.335)	
No social security (7)								−0.0084
								(0.122)
Observations	83	83	83	83	83	83	83	83
Pseudo R^2	0.375	0.375	0.378	0.374	0.374	0.379	0.390	0.374
Proxy Mean VIF	1.35	1.27	1.31	1.26	1.26	1.28	1.32	1.23

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

The coefficient for school type was significantly positive, suggesting that attending certain types of schools (likely better-rated or private schools) increased the likelihood of improved school performance. While students from relatively wealthy families were less likely to show improved school performance, the coefficients were not statistically significant, and it is safe to assume that family wealth did not significantly influence the school performance improvement. Mothers' education positively influenced children's school performance, and the educational level of family members providing educational support at home positively influenced school performance across all models, at a statistically significant level.

To further explore the non-significant negative association between parental occupation and student performance, we regressed other measures of informality with the same set of regressors. None of these determinants were found to significantly affect child education performance, and all of them showed a negative association, except for coefficients for firm size, where parents work showed positive associations with child academic performance, albeit not at a statistically significant level. Parental occupation in the informal sector and different types of informality appear to mitigate the degradation of children's school performance. However, none of the coefficients in this group were statistically significant, so no inferences can be drawn. It can be concluded that parental occupation cannot be blamed for the poorer school performance of students, at least in peri-urban areas.

Table 5. Logit marginal coefficients (dependent variable—School performance degraded is one).

Dependent Variables	Informal (All)	Informal (No Small Form)	Informal Job (Large Form)
Informal	−0.0243		
	(0.0360)		
Past performance	0.281 ***	0.281 ***	0.290 ***
	(0.0647)	(0.0647)	(0.0662)
School type	0.281 *	0.278 *	0.317 **
	(0.151)	(0.151)	(0.151)
Wealth index	−0.0544	−0.0548	−0.0465
	(0.0449)	(0.0448)	(0.0443)
Mother edu	0.0264	0.0261	0.0326 *
	(0.0174)	(0.0174)	(0.0169)
Supporter edu	0.0777 **	0.0772 **	0.0730 **
	(0.0358)	(0.0356)	(0.0348)
Informal no3		−0.0281	
		(0.0386)	
Informal job no3			−0.0227
			(0.110)
Observations	83	83	83
Pseudo R^2	0.378	0.379	0.374
Proxy Mean VIF	1.35	1.34	1.34

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

Some of the information we collected during the field survey from key informant interviews also substantiated the findings we derived from the regression coefficients above. In this context, Prem Lama (52 years, male) revealed that "Despite my employment in the formal sector, I've found it increasingly challenging to support my child's education. The income from my formal job is inadequate for savings, prompting me to assist my wife in managing a small vegetable shop during mornings and evenings, while I work a separate job during the day. This hectic schedule leaves little time for either of us, as a couple, to provide guidance to our son. Fortunately, my father, who completed his education up to the 10th grade, steps in to offer guidance to my son, who is currently in the 5th grade. Consequently, I'm contemplating resigning from my formal job, recognizing that our potential for greater income lies in entrepreneurship rather than pursuing low-paying formal employment." This piece of information from the field indicates that formal job holders are struggling to take care of family expenses, and child education is somewhat compromised even for this group of employees.

Similarly, another finding we derived from our regression model is that the wealth of the family is negatively associated with school performance. This finding was substantiated by the experiences of one of the grandmothers we interviewed during the field survey. Ms. Kamala Siwakoti (65 years, female, and grandmother) who lives in an extended family with her grandchildren seemed a bit worried about child education. She said "Kids don't even like to study at home and are rather distracted by other facilities, mostly electronics. Every time my grandson and granddaughter are into social media, and their parents have no time for kids. I want to help, but my educational background is insufficient for me to assist them. Though living in a big house with almost all urban facilities, I am very much worried about kids' education performance." This piece of information makes some sense, as the wealth index variable regression coefficient was negative but not significant in our model.

Another of our regression results can be substantiated from the one-to-one interview we performed in the field. Rita Khatri (38 years, female) confidently claimed that her kids were doing relatively well and attending good schools, despite her working in informal jobs. She said "I reside with my two sons in the informal settlement, while their father is in

Kuwait working as a security guard. My primary occupation involves giving proper care to my sons, who are enrolled in a private school in Kathmandu. I have passed 12th grade and can help the kids when needed. I am frequently engaged in assisting them with their studies, and I am pleased to observe an enhancement in their academic performance compared to previous years. Additionally, I am employed part-time as a tailor in a nearby boutique." Her response makes sense, as mothers' involvement and education were significantly associated with improved school performance despite being in the informal sector.

Similarly, another key respondent, who preferred not to reveal his details, said "Due to the son's current grade level in the 10th standard, our educational qualifications are insufficient to provide adequate guidance. As both of us are heavily engaged in their shop, working for more than 14 h a day, we are unable to commit more time to our son's education. We feel that it is the lack of educational expertise, rather than a formal job, that prevents us from guiding our son effectively in his studies". The response of this respondent clearly implies that parents' involvement is the crucial factor, rather than the nature of the parents' occupation.

In summary, past performance, school type, the educational level of mothers, and the educational level of supporters were the significant predictors of school performance improvement. The informal or formal nature of parental occupation did not play a significant role in determining whether their school-going children performed better in peri-urban Nepal. Our findings go against beliefs that informal households will academically produce poor children. Rather, our findings indicate that the involvement and educational levels of parents and supporters, coupled with school quality and the past performance of the children, are the prime avenues through which the academic performance of the children is determined.

6. Conclusions and Recommendations

This paper examined the relationship between parents' informal employment and their children's academic performance in peri-urban Kathmandu. Contrary to common assumptions, our findings showed that parental employment type—formal or informal—did not significantly affect children's educational outcomes. Instead, key factors such as past academic performance, school type, maternal education, and the educational level of family members providing academic support played pivotal roles. Parents in informal employment tended to spend more time assisting their children with schoolwork than those in formal employment. Additionally, informal workers in our sample had higher average education levels, suggesting that informality in this context may be a voluntary choice, rather than an economic necessity.

Based on these findings, we recommend prioritizing access to quality education and enhancing parental involvement in children's learning over labor market formalization. Policies should focus on strengthening household educational support systems, particularly empowering mothers and other family members involved in the holistic development of children. Efforts to address disparities in school quality and provide targeted support for underperforming students could significantly improve educational outcomes. Labor market interventions should recognize the voluntary nature of informality in specific contexts and adapt policies to the workforce's unique realities.

This study focused on a specific peri-urban area, potentially limiting the generalizability of its findings. The sample size, though sufficient for the initial analysis, could be expanded in future research to encompass more diverse experiences. Reliance on self-reported data for academic performance and parental perceptions may have introduced biases. Future studies should incorporate longitudinal data, expand the geographic scope to rural and urban settings, and address methodological challenges, such as endogeneity,

through advanced techniques like instrumental variables. Additionally, examining the intersection of informality with other household well-being dimensions, such as health and nutrition, could offer a broader perspective on the impacts of informal employment on human capital development.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The dataset is available upon request.

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

Table A1. Logit odd ratios (dependent variable—School performance degraded is one).

Dependent Variables	Informal (All)	Informal (Small forms)	Informal (Job)
Informal	−1.181		
	(0.288)		
Past performance	6.892 ***	6.868 ***	7.481 ***
	(3.298)	(3.279)	(3.826)
School type	6.863 *	6.767 *	9.036 *
	(7.816)	(7.714)	(10.78)
Wealth index	0.689	0.686	0.724
	(0.214)	(0.213)	(0.225)
Mother Edu	1.199	1.196	1.254*
	(0.148)	(0.147)	(0.159)
Supporter edu	1.704 **	1.699 **	1.659 **
	(0.416)	(0.414)	(0.399)
informal_no3		−1.212	
		(0.319)	
inf_job_1_n3			−1.173
			(0.923)
Constant	3.72×10^{-6} ***	3.89×10^{-6} ***	1.35×10^{-6} ***
	(1.46×10^{-5})	(1.52×10^{-5})	(6.10×10^{-6})
Observations	83	83	83
Pseudo R^2	0.378	0.379	0.374

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

Table A2. Odd ratios of logit regressions (dependent variable—School performance improve is one).

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Informal job	−1.320							
	(1.063)							
Past performance	7.646 ***	7.094 ***	7.111 ***	7.268 ***	7.255 ***	7.077 ***	6.801 ***	7.232 ***
	(3.949)	(3.434)	(3.420)	(3.524)	(3.514)	(3.408)	(3.283)	(3.514)
School type	9.636 *	7.670 *	7.692 *	8.328 *	8.270 *	7.619 *	7.527 *	8.178 *
	(11.57)	(8.716)	(8.529)	(9.329)	(9.259)	(8.457)	(8.349)	(9.254)
Wealth index	0.731	0.715	0.684	0.718	0.717	0.686	0.601	0.719
	(0.228)	(0.219)	(0.212)	(0.220)	(0.220)	(0.212)	(0.208)	(0.220)
Mother Edu	1.265 *	1.229 *	1.205	1.241 *	1.240 *	1.204	1.192	1.239 *
	(0.163)	(0.144)	(0.146)	(0.145)	(0.145)	(0.146)	(0.141)	(0.143)
Supporter edu	1.654 **	1.659 **	1.695 **	1.656 **	1.659 **	1.692 **	1.796 **	1.660 **
	(0.399)	(0.398)	(0.412)	(0.409)	(0.398)	(0.411)	(0.469)	(0.399)
Father notax		−1.287						
		(0.971)						
Mother notax			−2.064					
			(2.225)					
Small firmsize				0.966				
				(1.460)				
Father nounion					−1.022			
					(0.799)			
Mother nounion						−2.108		
						(2.274)		
No pension							−5.404	
							(7.499)	
No social security								−1.059
								(0.866)
Constant	9.79×10^{-7}	2.63×10^{-6}	2.94×10^{-6}	2.07×10^{-6}	2.11×10^{-6}	3.08×10^{-6}	3.06×10^{-6}	2.16×10^{-6}
(All with ***)	(4.47×10^{-6})	(1.04×10^{-5})	(1.15×10^{-5})	(8.14×10^{-6})	(8.30×10^{-6})	(1.20×10^{-5})	(1.20×10^{-5})	(8.53×10^{-6})
Observations	83	83	83	83	83	83	83	83
Pseudo R^2	0.375	0.375	0.378	0.374	0.374	0.379	0.390	0.374

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

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