FROM POCKETS TO PUPILS: UNRAVELING THE IMPACT OF ETHNICITY AND INCOME OF HOUSEHOLD IN HOUSEHOLD FINANCING IN BASIC EDUCATION

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ABSTRACT

This study examines the role of ethnicity and household income on household financing of basic education in Nepal. A survey was conducted among 380 households with children persuinig basic education. Employing a descriptive and correlational research design, binary logistic regression was applied to analyze the data. The findings disclose that both ethnicity and household income significantly affect household financing of basic education. This study adds valuable insights to our comprehension of the socio-economic dynamics that impact the financing of basic education within Nepal. By shedding light on the impacts of ethnicity and household income on education financing, it deepens our thoughtful of the complex interplay between socioeconomic factors and educational access. Thus, this research contributes to a more comprehensive understanding of the socio-economic landscape of education financing in basic education in Nepal, providing a foundation for informed policymaking and targeted interventions designed at fostering greater equity and accessibility in basic education.

Key Words: *household financing, basic education, ethnicity, income level*

Introduction

Government provision of education spans various levels, including basic, secondary, higher, technical, vocational, and non-formal education (Dupriez & Dumay, 2006). Basic education, the foundational level, addresses essential needs outlined in global education goals (Dreze & Sen, 2003). This extends beyond formal structures, encompassing non-formal and informal activities to meet diverse learning needs (Aluede, 2006). Basic education, vital for fundamental knowledge acquisition, signifies the initial phase in the formal education system, serving as a gateway to higher learning opportunities.

Basic education transcends mere means; it is an intrinsic end, forming a structured foundation for various educational levels and types. Terminology debates like elementary and fundamental education are embedded in the broader concept of basic education (Dreze & Sen, 2003). Encompassing early childhood care, basic

education extends from primary to junior secondary levels, aligning with international norms (UNESCO, 2007). Originating in the 1948 UN Human Rights Declaration, the commitment to free and compulsory elementary education gained momentum through the Jomtien Declaration (1990).

Basic education stands as a global right for children, recognized by Nepal and safeguarded through international agreements like UDHR (Article 26), the Rights of the Child (1989), and others. Despite these commitments, many children worldwide, including in Nepal, face barriers to quality education due to structural disparities (UNESCO, 2010; The World Bank & DFID, 2006). These challenges impede progress toward universal primary education, echoing a broader issue prevalent in developing nations, Nepal included.

The 2015 Constitution of Nepal guarantees education as a fundamental right for all citizens, including access to compulsory and free basic education up to the secondary level (Article 31). This constitutional emphasis highlights the government's commitment to prioritize school education, particularly basic education, defined as elementary education up to grade eight under the Education Act 2028.

Basic education holds paramount importance in global educational agendas, notably emphasized by the United Nations Development Program (UNDP) through the Sustainable Development Goals (SDGs) in 2016. Aligned with SDG4, the Government of Nepal prioritizes basic education, aiming to provide inclusive, equitable, and quality basic and secondary education, ensuring relevant and effective learning outcomes, as articulated in the National Planning Commission's goals (2017, p. 28). It shows that the prioritization of basic education by the Government of Nepal reflects a commitment to advancing the objectives outlined in the Sustainable Development Goals, particularly SDG4, towards fostering inclusive and effective learning outcomes for all.

In Nepal, achieving SDG4 hinges on prioritizing access and equity in basic education. The government, committed to international and national education forums, implements projects like the School Sector Reform Plan (SSRP) and School Sector Development Plan (SSDP). These initiatives aim to enhance education's accessibility, equity, and quality, aligning with constitutional provisions and global commitments.

The Ministry of Education (MOE, 2009) executed the School Sector Reform Plan (SSRP, 2009-2015) as a pivotal strategy, emphasizing basic education accessibility, quality, and justice for 5-12-year-olds. Its successor, the School Sector Development Plan (SSDP) from 2016, focuses on elevating education quality and student learning. Prioritizing basic education aligns with the constitutional

mandate, aiming to make it compulsory and free. The Government of Nepal passed The Act Relating to Compulsory and Free Education in 2018, underscoring state responsibility for every 5-12-year-old's school enrollment and free education. The Fifteenth Plan (2019/20-2023/24) continues this commitment, affirming Nepal's dedication to universal, compulsory, and free basic education.

The Government of Nepal (GON) allocates substantial public resources to fulfil education commitments, supplemented significantly by private sector contributions, including households. Students bear various costs like uniforms and stationery, with expenses varying based on household economic status (Kushiyait, 2015). Despite free education, parents invest abundantly, constituting 48.8% of education funding in Nepal (UNESCO/IIEP-USI, 2016), underscoring the financial burden endured by families to secure basic education for their children.

Access to education in developing countries is hindered by significant financial barriers. High educational expenses to parents, exacerbated during economic downturns, and insufficient public investment contribute to this challenge (Lewin, 2009). Inefficient fiscal management further strains government funds, increasing the burden on households (Penrose, 1998). Efficient utilization of public education funds could alleviate this financial burden on parents and enhance overall access to education.

The Nepal Government commits to allocating 15 to 20% of the federal budget and 4 to 6% of GDP to the education sector (Kushiyait, 2015). In FY 2023/24, the Ministry of Finance allocates an educational budget equal to 4.3% of GDP, aligning with commitments. However, the education budget's 10.64% share of the total budget falls short, potentially contributing to the substantial household burden for education expenses.

Basic education secures a substantial 49.9% of total public education financing, underscoring its significant funding priority (MOEST, 2020). Contrarily, households shoulder a considerable burden, contributing 48.8% to total education spending (UNESCO/IIEP-USI, 2016). Despite substantial government investment, this highlights the significant financial responsibility borne by households. Huy (2012) identifies key determinants of household education spending, emphasizing the positive correlation between income levels and educational financing, as well as the influence of the household head's education and profession, reflecting the role of resources and human capital.

Donkoh and Amikuzuno (2011), Okojie (2002), Rizk and Owusu-Afriyie (2014), and Choudhury (2019) highlight cast/ethnicity, family income, student gender, school type, and household head's education as crucial determinants of education finance. This study investigates household financing on basic education in Nepali,

exploring the impact of household cast/ethnicity, and income level of households on their children's basic education.

The Constitution of Nepal (2015) mandates free and compulsory basic education for children aged 5-12, yet the provision primarily applies to public schools, with private schools funded entirely by households. Despite substantial government spending, parents of private school students bear the entire cost of basic education, encompassing items like stationery, meals, uniforms, excursions, and sports materials. Household financing for basic education varies concerning income, ethnicity, student gender, and school type. While existing studies have examined family costs based on secondary data, this research aims to investigate actual per-child household financing, considering socio-economic factors such as household income and ethnicity.

Ethnicity and Household Financing in Education

Ethnicity, defined by shared national, cultural, regional, ancestry, and language characteristics, significantly influences household financing on education (Gillborn, 2003; Corrigan, 2007). Wilson et al. (2006) emphasize disparities in educational expenses based on ethnicity, geographical location, and other factors, with ethnicity remaining a key determinant. Comparable trends are observed in the USA, where African American and Hispanic families exhibit lower likelihoods and allocations for education compared to white families (Omori, 2010). African American parents, however, invest in education for their children's progress despite societal disparities, highlighting the ethnic variability in household education spending (Freelon, 2014).

Likewise, in Nepal, caste profoundly affects children's school participation, with high-caste (Brahmin/Chhetri) households being more likely to enrol their children in school (Jamison & Lockheed, 1987). The caste/ethnicity of households significantly determines children's school participation, subsequently impacting household education spending (Ashby, 1985). The global empirical review suggests that caste/ethnicity is a decisive factor restricting household financing on children's education, establishing its prominence as a major determinant worldwide.

Similarly, household income emerges as a pivotal determinant of educational financing, influencing both male and female education costs, with a more pronounced impact on females (Sarkar, 2017). Educational costs rise with increasing family income levels (Choudhury, 2019), and a substantial proportion of households finance private classes, indicating income's profound role (Andreou, 2012). Income elasticity in urban areas surpasses rural areas, suggesting higher urban education financing (Ebaidalla, 2017). Studies underscore that higher

household income correlates positively and significantly with educational spending, particularly in the upper-income quintile (Maritim, 2017). This positive relationship extends globally, as evidenced by research in India, the USA, and Nepal. In Nepal, the proportion of educational financing to the total household budget increases with income quintiles, emphasizing the positive connection between household income and education spending (CBS, 2011). Remittance income further augments educational financing, positively impacting Nepalese households' educational financing, and underlining the significant role of income in shaping education costs (Gupta, 2014; Thapa & Achary, 2017). Consequently, the income level of households emerges as the most influential factor affecting educational financing, showcasing its varied and vital role in shaping education financing globally and specifically in Nepal.

Theoretical Stance

The human capital theory posits that individuals' knowledge and skills are crucial contributors to economic growth (Poteliene & Tamasauskiene, 2014). Adam Smith emphasized the economic value of education, linking personal abilities, knowledge, and skills to economic activities (1776). Human capital, formed through education, encompasses knowledge, good health, and skills, essential for a productive workforce (Schultz, 1961). Moreover, basic education serves as the foundation for skill development, contributing to human capital formation and income generation (Wojcicki & Krzesinski, 2019). Becker's labour market model extends the theory, suggesting that parents invest in their children's education based on anticipated net benefits, where future earnings outweigh educational costs (Becker & Tomes, 1986). Household decisions on educational investments are influenced by socioeconomic factors like ethnicity, gender, income, and school type (Granovetter, 1985). This underscores that household financing on basic education aligns with human capital formation, shaped by diverse factors.

The rational choice theory posits that individual and collective social behaviours result from individuals making decisions based on personal preferences and rational assessments of costs and benefits (Scott, 2000; Coleman & Fararo, 1992). Each person conducts their cost-benefit analysis, leading to varied rational decisions influenced by factors like ethnicity, income, and gender (Hechter & Kanazawa, 1997). The theory asserts that households allocate resources wisely to meet their specific needs, with rational choices reflecting diverse socioeconomic traits, such as ethnicity and income levels (Redmond, 2000; Marshall, 2009). These factors contribute to variations in per-child household financing.

Existing literature emphasizes the need to scrutinize household financing on basic education to understand parental investment, particularly in the context of Nepal where basic education is declared free and compulsory. However, comprehensive

studies assessing the actual per-child household financing, considering various socioeconomic features and grade levels, are lacking. Previous research has explored determinants like income, education of household head, ethnicity, gender, school type, and location influencing education financing, but there is a research gap in understanding per-student household financing on basic education concerning ethnicity and income levels of households in Nepal. This study aims to address this gap.

Methodology

This research employed a quantitative approach, utilizing a correlational and descriptive design (Kerlinger, 2008). Following a survey method and Yamane's formula for sample size determination, the study aimed to predict household financing on basic education, emphasizing the income and ethnicity of households. Reliability and validity were ensured for the structured questionnaire, allowing for accurate data collection and analysis (Ngulube, 2015).

Ratuwamai Municipality in Morang district served as the research area due to its diverse socio-economic structure. Economic disparities influenced spending, prompting an exploration of socio-economic factors. The municipality boasts a diverse population, with 56.32% being Madhesi and 43.68% Pahadi. Within Madhesi communities, distinctions like Brahmin, Kshetri, and Dalit exist. Employing a survey method, the quantitative study gathered data through a closed-ended questionnaire to analyze the results (Ratuwa Mai Nagarplika, 2023).

The study focused on Ratuwa Mai Municipality in Morang district, where 7,478 households with children pursuing basic education constituted the target population out of the municipality's total 12,482 households (Ratuwa Mai Nagarpalika, 2022). As determined by Yamane's formula, the sample size was 380 households. Utilizing two stages of cluster sampling, the entire population was divided into ten clusters based on ward numbers. One ward was randomly selected in the first stage, followed by the creation of clusters from public and private schools in the second stage. From each cluster, two private and two public schools were selected via simple random sampling. The final analyzed sample comprised 380 households, collected through visits to sampled schools and households, excluding outliers.

A structured questionnaire served as the primary tool for data collection in this survey-based study, aligning with the research design (Majumdar, 2005). UNESCO's guidebook on measuring household financing on education (2018) formed the basis for constructing the questionnaire, adapted to the Nepalese context through a field study incorporating diaries and intensive literature reviews. The initial draft underwent refinement through feedback from the three education finance experts.

Further enhancement involved a focus group discussion with ten parents, ensuring content validity. Piloting, conducted with 10% of the sample size (380 households), yielded valuable insights, leading to the final questionnaire. Data collection involved visits to selected households, and the collected data underwent analysis using SPSS for numerical calculations, summarization, comparison, and generalization of household financing on basic education. I employed binary logistic regression to explore the impact of cast/ethnicity and income of household on household financing in basic education

Findings

For binary logistic regression, the dependent variable (household financing on basic education) was dichotomous. So, at first, the researcher fitted a logistic regression model to see the association between caste/ethnicity and family income regarding household financing on basic education. In the second stage, the association between all the available independent variables to a single dependent variable: Household financing on basic education was examined.

The dependent variable, household financing on basic education was created by dividing the household into two groups such as low financing and high financing. The dependent variable was created to be dichotomous by coding '0' and '1' through financing made by households on basic education. The '0' and '1' represent the value below and above the average of total financing respectively (Ligon, 1994). In these groups, the group coded by '0' belongs to the 'low financing' group and '1' belongs to the 'high financing' group. Similarly, the categorical independent variables were also dichotomous. The ethnic groups were made dichotomous as Brahmin/Chhetri and non-Brahmin/Chhetri, Dalit and non-Dalit, and Pahadi and Madheshi. Similarly, the income level of households was also dichotomous as low income and high income (Ligon, 1994).

Logistic regression necessitates meeting several assumptions to ensure the validity of its analysis. Firstly, the dependent variable, in this case, financing of basic education, was classified into two exclusive groups: 'high' or 'low'. Secondly, the sample was sufficiently large, with over 100 cases in each group, ensuring the robustness of the coefficient estimates. Thirdly, there was no evidence of multicollinearity among predictors, as assessed by examining Variance Inflation Factors (VIF) and tolerance levels. Multicollinearity, if present, could lead to unstable coefficient estimates in the regression model. However, no such issues were detected in the analysis. These findings confirm the fulfilment of the necessary assumptions for conducting logistic regression. Table 1 shows the results of the variance factor and tolerance level of multicollinearity.

Table 1

Variance Inflation Factor and Tolerance Level of Multicollinearity

Factors determining household financing on basic education	Multicollinearity Statistics	
	Tolerance	VIF
Ethnicity (Brahmin/Chhetri and non-Brahmin/Chhetri)	.404	2.473
Ethnicity (Dalit and non-Dalit)	.679	1.472
Ethnicity (Pahadi and Madheshi)	.506	1.974
Income level of household (high and low	.850	1.176
a. Dependent Variable: Total financing made by the household on basic education		

The value of VIF greater than 10 and the value of tolerance below 0.1 indicate the existence of multicollinearity among the predictors (Bayman & Dexter, 2021). In this study, the VIF values of all four factors were below 10, and tolerance levels were above 0.1. So, this satisfied the assumption of the non-existence of multicollinearity. Therefore, I applied logistic regression analysis.

The logistic regression model with the entering method was used to predict the logit transformation to link the dependent variable (household financing on basic education) to the set of explanatory variables (Cast/Ethnicity and income level of household) (Tranmer & Elliot, 2008). The data were fitted into the following equation of logistic regression:

Logit (p) = log (P/1-P) =   + $\beta x + \varepsilon$ ………. (i)

Where   p = Likelihood of financing on basic education
Constant value
 X = Independent variables (family income and Cast/Ethnicity)
β = Coefficient of corresponding independent variables
ε = Error

This model was used to test the following hypothesis:

H1: Family income and Cast/Ethnicity significantly affect household financing on basic education.

able 2 presents the summary of the fitted logistic regression model.

Table 2

Association of Household Financing on Basic Education with Family Income and Caste/Ethnicity of Household

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	392.005a	0.298	0.398

Nagelkerke R Square in Table 2 shows that 39.8% of the variation in the dependent variable (household financing on basic education) is explained by the independent variables (family income and caste/ethnicity of household). The coefficient of

variables, their predictive power, and significance values are presented in Table 3 as follows:

Table 3
Coefficients of Logistic Regression for Household Financing on Basic Education by Family Income and Caste/Ethnicity

Variables	B	S.E.	Wald	Df	Sig.	Exp(B)
Cast/Ethnicity (X1) *Brahmin/Chhetri in reference to non-Brahmin/Chhetri*	1.226	.373	10.786	1	.001	3.409
Cast/Ethnicity (X2) *Non-Dalit in reference to Dalit*	.085	.393	.047	1	.828	1.089
Cast/Ethnicity (X3) *Pahadi in reference to Madheshi*	.690	.385	3.203	1	.073	1.993
Family Income(X4) *High income in reference to low income*	1.788	.273	42.847	1	.000	5.980
Constant	-1.39	.190	53.559	1	.000	.249

The Wald test of Table 3 was used to examine whether the odds ratio was statistically significant or not (Levin et al., 2014). The table shows that odds of the household financing on basic education in the Brahmin/Chhetri ethnic group was 3.41 times more than that of non-Brahmin/Chhetri. Moreover, this result was statistically significant (P= 0.01). Similarly, the odds of the household financing on basic education of non-Dalit public was 1.09 times more than that of Dalit. However, the result was insignificant (P= 0.83). Likewise, the odds of household financing on basic education in Pahadi public was 1.99 times more than that of Madheshi. Moreover, it was also statistically insignificant. Correspondingly, the odds of the household financing on basic education of high-income families was 5.98 times more than that of a low-income family. This result was highly significant (P= 0.00). Thus, the research hypothesis: Cast/ethnicity and income level of household are the most important factors determinants of household financing on basic education was accepted.

The logistic regression equation of family income and cast/ethnicity is:

Logit (P) = -1.391+ 3.409 + 1.089 + 1.993+5.980….. (ii)

Equation (ii) shows that caste/ethnicity and family income of the household have a positive predictive relation to household financing on basic education. Moreover, family income and caste/ethnicity appear to have a statistically significant positive relationship with household financing on basic education. This means family income and caste/ethnicity of the household significantly affect the household financing on basic education.

Discussion

The finding of this study revealed that the family's income level plays a decisive role in determining the per-child financing on basic education. It means the income status of the household is also regarded as a significant factor determinant of educational spending on children. Andreou (2012); Sarkar (2017); Ebaidalla (2017), and Maritim (2017) also agree that there is a difference in per-child financing on basic education across the different income statuses of the household. The level of education financing increases with income over the years. So, the household's income level is taken as a profound factor affecting the level of household financing on education. This study also found the situation of higher income with a higher level of per-child financing on education.

Bayar and Yanik-Ilhan (2016) highlight that a higher income level leads to higher education financing. However, the income elasticity of education financing is higher for poorer households than the richer ones, which means that the poor are more sensitive to income changes concerning education financing.

Shariff et al. (200); Aggarwal (2000); Tilak, (2002), and Freelon (2014) show that financing on education increases less than proportionately with the rise in income. However, there is a positive relationship between financing for education and the income level of households. Additionally, household income and wealth are positively related to educational financing across different household groups but less than proportionately to household incomes. It shows that the income elasticity of financing on education is positive and inelastic, which indicates that educational financing increases with the increase in the income level of households but less than proportionately. Additionally, higher-income households were significantly more likely to spend on children's education than lower-income households. Moreover, there is a significant difference in the per-child financing of households on basic education among various income levels of households (Omori, 2010). It means that the household's income level plays a crucial role in determining the per-child cost of basic education.

Milligan and Bohara (2007); Gupta (2014); Dhungana and Pandit (2014); Bansak et al. (2015) and Thapa and Achary (2017) explored that the educational financing of a household is meaningfully associated with the remittance income of a household in Nepal. Furthermore, the remittance income level of the family positively contributes to the household education finance in the Nepali community. It indicates that high-income people invest more in their children's education for human capital formation (Luon & Holden, 2014).

The rational choice of the household may vary according to their income level (Redmond, 2000). Therefore, the priority of wealth in their life may differ regarding

their income status compared to a low-income family. Generally, rich people are well educated and aware of the importance of education in their children's future lives than poor people. So, their rational choice may be different than lower-income families. Moreover, rich people know the long-run return of education which plays a vital role in elevating their social and economic status. So, they invest more in their children's education than other income groups (Psacharopoulos, 2006). As a result, there is a significant difference in per-child financing for basic education among the different income groups.

Similarly, household education expenditure varies significantly by ethnicity (Smeeding, 2006; Freelon, 2014; Luo & Holden, 2014). Ethnic groups prioritize differently, with some emphasizing traditional practices over education (Ginther et al., 2011). Brahmin/Chhetri households historically privileged, invest significantly in education (Von, 1957; Misra, 2019). In summary, ethnicity influences education expenditure, with historical privilege and contemporary aspirations shaping investment decisions.

Household income profoundly influences per-child financing in basic education, with higher-income families allocating more resources. While education financing increases with income, it's less than proportionate. Remittance income positively contributes to education financing in Nepal. Rational choices vary by income level and caste/ethnicity, with wealthier households prioritizing education for long-term socioeconomic benefits. This underscores the importance of income in shaping educational financing decisions, alongside cast/ethnicity's influence on expenditure priorities.

Conclusion

This study sheds light on the intricate relationship between household financing in basic education and ethnicity and income. Employing the lenses of human capital theory and rational choice theory, my findings underscore the significant impact of household income and ethnicity on educational financing decisions. The results highlight the pivotal role of households in shaping their children's educational paths, as they strategically allocate resources to foster human capital development. Furthermore, the study underscores the nuanced dynamics influenced by socioeconomic status and cultural background, which ultimately shape rational decision-making processes within households regarding the financing the basic education. Acknowledging these factors is crucial for policymakers and educators to design targeted interventions aimed at fostering equitable access to quality education, thereby promoting societal development and prosperity.

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