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How Health and Education Moderate the Relationship Between Economic Stability and Social Relationship Expenditures

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Social relationship expenditures Moderating effects

ABSTRACT

The present study explores the linkage between economic stability (ES) and social relationship expenditures (SRE) in India by utilizing household-level data obtained from national surveys such as the India Human Development Survey (IHDS) and the Periodic Labour Force Survey (PLFS) for the period 2010–2022. The sample consists of 8,866 observations representing diverse socio-economic backgrounds across the country. A fixed-effects estimation technique is applied to assess how variations in economic stability influence household spending on social and relational activities.

The findings demonstrate a positive and statistically significant relationship between economic stability and expenditures on social relationships. Households with stronger financial positions are more likely to invest in social interactions, including participation in family ceremonies, community gatherings, and cultural events. Conversely, financial obligations such as housing loans and other debts reduce the ability of households to allocate resources toward such activities. The moderating effects of health and education provide deeper insights into this relationship. Better health conditions enhance the impact of economic stability on social expenditures by lowering healthcare-related financial pressure and facilitating social involvement. In contrast, higher educational attainment weakens this association, as educated households tend to emphasize long-term financial security through savings and investments rather than immediate discretionary spending.

Overall, the results identify economic stability as a key driver of social relationship expenditures, while health acts as a supportive factor and education alters spending priorities. From a policy standpoint, initiatives aimed at reducing household debt burdens, expanding access to affordable healthcare through programs such as Ayushman Bharat, and strengthening financial awareness under schemes like Pradhan Mantri Jan Dhan Yojana (PMJDY) can improve households' capacity for social participation. By narrowing gaps in economic stability, health, and education, policymakers can promote both social integration and economic sustainability in India

1. INTRODUCTION

Economic stability remains a central determinant of individual well-being and social development in emerging economies such as India, where income volatility, informal employment, and uneven access to public services continue to shape everyday life. Stable economic conditions enhance households' ability to plan expenditures, absorb shocks, and participate in social and community activities beyond basic consumption (Dreze & Sen, 2013; Himanshu, 2019). In the Indian context, social relationships manifested through family gatherings, festivals, religious participation, neighbourhood networks, and community organizations are deeply embedded in social and cultural life and play a crucial role in mutual support, information sharing, and social cohesion (Desai & Banerji, 2008; Munshi, 2014). Expenditures related to these social interactions, referred to here as social relationship expenditures, represent an important yet underexplored dimension of household behaviour.

While a substantial body of Indian economic literature has examined consumption patterns, poverty dynamics, and income inequality using large-scale datasets such as the National Sample Survey (NSS) and Periodic Labour Force Survey (PLFS),

these studies primarily focus on food, housing, health, and education expenditures (Deaton & Dreze, 2009; Mehrotra & Parida, 2019). Less attention has been paid to socially oriented expenditures that facilitate interpersonal connections and community engagement. This omission is notable, as social participation in India often serves as an informal insurance mechanism, particularly in contexts where formal social security systems are limited (Rosenzweig & Stark, 1989; Munshi & Rosenzweig, 2016). Understanding how economic stability influences such expenditures is therefore critical for assessing broader welfare implications.

Health and education are two key dimensions of human capital that may condition the relationship between economic stability and social relationship expenditures in India. Health status significantly affects individuals' ability to engage in social and communal activities, especially in rural areas and among older populations, where poor health can limit mobility and participation (Bloom et al., 2011; Patel et al., 2015). Education, on the other hand, enhances social awareness, communication skills, and access to diverse social networks, thereby increasing both the opportunities and perceived returns to social engagement (Desai & Kulkarni, 2008; Krishnan & Shaorshadze, 2013). In a stratified society like India, education may also reduce social barriers related to caste, gender, and locality, shaping how economic resources are translated into social participation..

Despite the recognized importance of economic stability, health, and education in shaping social outcomes, existing Indian studies tend to examine their effects in isolation. The moderating roles of health and education in the relationship between economic stability and social relationship expenditures remain largely unexplored. This gap limits our understanding of how economic and human capital factors interact to influence social cohesion and community engagement in India. Addressing this gap, the present study investigates how health and education moderate the impact of economic stability on social relationship expenditures using micro-level data from India. By doing so, the study contributes to the literature on household behaviour, social capital formation, and inclusive development in emerging economies.

The moderating roles of health and education in the relationship between economic stability and social relationship expenditures have not been thoroughly examined, particularly from an econometric perspective. Health facilitates active social engagement by reducing physical and financial constraints, while education enhances financial literacy and the capacity to sustain social networks (Heckman & Montalto, 2018). However, prior research has largely treated these factors in isolation, neglecting their interactive effects with macroeconomic stability. For instance, improved health conditions may amplify the positive effects of economic stability on social engagement, whereas higher education levels may equip individuals with better tools to navigate economic fluctuations. Understanding these dynamics is crucial for both theoretical development and policy design (Heckman & Montalto, 2018).

To address these gaps, this study explores the relationship between economic stability and social relationship expenditures using a fixed effects model. Specifically, it examines the impact of economic stability on social expenditures over time and investigates how health and education moderate this relationship. The study employs a fixed effects model using panel data from multiple countries over a ten-year period, controlling for unobservable factors that are constant over time but vary across regions or individuals, thereby ensuring robust estimates of causal effects. Interaction terms for health and education are included to capture their moderating effects. Key variables include macroeconomic indicators (such as GDP per capita and unemployment rates), individual health metrics, and education levels, alongside social expenditure data derived from national household surveys.

This research offers several contributions. By incorporating health and education as moderating variables, it advances the understanding of heterogeneity in responses to economic stability (Heckman & Montalto, 2018). Using fixed effects models, the study provides robust evidence on the causal relationship between economic stability and social relationship expenditures, addressing potential biases arising from unobserved heterogeneity. Furthermore, the findings offer valuable insights for policymakers in designing targeted interventions that promote social cohesion and well-being during periods of economic volatility.

The remainder of this paper is organized as follows. Section 2 reviews the literature on economic stability, social relationship expenditures, health, and education. Section 3 describes the fixed effects model and data sources. Section 4 presents the empirical results and discusses the moderating roles of health and education. Section 5 concludes with policy implications, limitations, and directions for future research.

2. LITERATURE REVIEW

Economic stability and social relationship Expenditures-Economic stability is widely recognized as a fundamental determinant of household consumption behaviour, particularly in discretionary spending categories such as social relationship expenditures. These expenditures include expenses incurred to maintain and strengthen interpersonal ties, such as spending on gifts, entertainment, social gatherings, and other activities that promote social bonding (Bhatnagar et al., 2023; Cagan, 2023). Such spending reflects not only households' economic confidence but also the value placed on social capital and relational networks (Bourdieu, 1986; Carlsson et al., 2013; Putnam, 2000; Wu et al., 2023). Classical and contemporary economic theories suggest that stable income expectations encourage discretionary consumption by reducing

uncertainty and strengthening consumer confidence (Keynes, 1936; Modigliani & Brumberg, 1954; Guiso et al., 2018). Households with stable incomes are therefore more likely to participate in leisure and social activities, enhancing both psychological well-being and social cohesion (Lee; Liu et al.; Zhang & Wu; OECD, 2020).

In contrast, economic instability often compels individuals and households to redirect resources toward essential needs such as food, housing, and healthcare, resulting in reduced spending on social relationships (Zhang & Wu, 2022). This behaviour aligns with the theory of precautionary savings, whereby households limit non-essential consumption in response to heightened uncertainty and the risk of future income shocks (Carroll, 1997; Ben-Moshe, 2023; Bruns-Smith et al., 2023; Choi & Phi, 2024; Yang et al., 2024). Irvine et al. (2023) demonstrate that macroeconomic instability, characterized by rising unemployment and inflation, disproportionately affects lower-income households and leads to substantial declines in discretionary expenditures, including those related to social engagement. These patterns underscore the sensitivity of social relationship expenditures to broader economic fluctuations and highlight the central role of financial stability in sustaining interpersonal connections. Cultural and societal norms further shape how individuals adjust their social spending in response to economic conditions. In collectivist societies, where social harmony and interdependence are strongly emphasized, maintaining social ties is often considered essential even during periods of economic hardship (Hofstede, 2001; Irvine et al., 2023). Social networks in such contexts serve as vital support systems, encouraging continued participation in social and community activities despite financial constraints. Evidence from India indicates that gift-giving and participation in social gatherings remain priorities for many households during times of economic uncertainty, reflecting deeply rooted norms of reciprocity and community solidarity (Chiu et al., 2023; Munshi & Rosenzweig, 2016). In contrast, individualistic societies display greater variability in social spending in response to changing economic conditions, as personal priorities and self-reliance tend to outweigh collective obligations (Putnam, 2000).

Health index and social relationship- Figure 1 presents boxplots illustrating the distribution of the Health Index (ranging from 1 to 5) across different groups or categories. The distribution is largely concentrated in the upper range of the index (values between 3 and 5), indicating that the majority of individuals report relatively good health. The median value for most groups is close to 4, reflecting a high central tendency. However, the interquartile range (IQR) differs across groups, suggesting variation in the dispersion of health status among categories. A small number of outliers appear at the lower end of the scale (Health Index = 1), representing individuals with markedly poor health and meriting further examination. The whiskers generally extend from 2 to 5, showing that most observations fall within this interval, although some groups display wider whiskers, indicating greater variability.

Although the overall pattern is broadly similar across groups, minor differences in medians and IQRs point to subtle disparities in health status between categories. These patterns suggest a nonlinear moderating role of health: its influence appears stronger among healthier households, while it is limited for those affected by chronic conditions. These findings underscore the importance of conducting additional analyses to identify the determinants of health status and to explore the characteristics of extreme cases in greater detail.

Health status plays a critical role in shaping consumption behaviour, including expenditures on social relationships. Individuals in good health tend to participate more actively in social life and show a greater willingness to allocate resources toward social activities (Kelly et al., 2017; Takeda et al., 2015). In contrast, poor health constrains both physical mobility and financial capacity, leading to reduced spending on social engagement (Smith, 1999). The interaction between health and economic stability is particularly important, as individuals experiencing ill health may prioritize medical and essential expenses over discretionary social spending, even during periods of economic security.

Furthermore, the psychological implications of health status for social expenditures are significant. Better health is associated with higher levels of emotional well-being, which in turn increases motivation to invest in and maintain social relationships (Longabaugh et al., 1993). Nevertheless, much of the existing literature has concentrated on the direct effects of health on spending behaviour and has paid limited attention to its moderating role in the relationship between economic stability and social expenditures. Addressing this gap would allow for a more nuanced understanding of how health conditions shape consumption decisions under different economic circumstances

1.2 Education as a Moderator- The pie chart in Figure 2 illustrates the distribution of educational attainment among the sampled households. The chart is divided into six categories0, 6, 9, 12, 15, and 16 representing years of schooling or levels of educational achievement. The category corresponding to 15 years of education constitutes the largest share, indicating that a substantial proportion of individuals in the sample have reached this level of attainment. Other prominent categories include 12 and 9 years of education, which together account for a considerable portion of the sample. In contrast, the smaller segments representing 0 and 6 years of education suggest that relatively few individuals possess low or no formal schooling. Overall, the distribution reflects a pronounced shift toward higher levels of educational attainment, with most respondents achieving medium to advanced levels of education. Interestingly, households with higher educational attainment exhibit lower levels of social relationship expenditures (SRE), suggesting a potential trade-off between social connectivity and asset accumulation (Zhang & Xiong, 2020). Further investigation may reveal the socioeconomic and demographic factors underlying this pattern.

Higher levels of education are often associated with increased social engagement and greater discretionary spending (Buhl

& Acosta, 2016). Educated individuals tend to be more conscious of the long-term advantages of maintaining strong social networks, including improved mental well-being and enhanced career prospects. In addition, education contributes to higher financial literacy, enabling individuals to manage economic fluctuations more effectively and allocate resources more efficiently toward social expenditures (Hastings et al., 2013; Zhang & Xiong, 2020).

Despite these observations, the moderating role of education in the relationship between economic stability and social expenditures has received limited attention in existing research. It is plausible that individuals with higher educational attainment are better positioned to sustain social spending during periods of economic instability because of their superior ability to cope with financial stress and their access to more diversified income sources (Baldacci et al., 2008). This moderating influence warrants further empirical examination to clarify how education shapes the interaction between economic stability and social relationship expenditures.

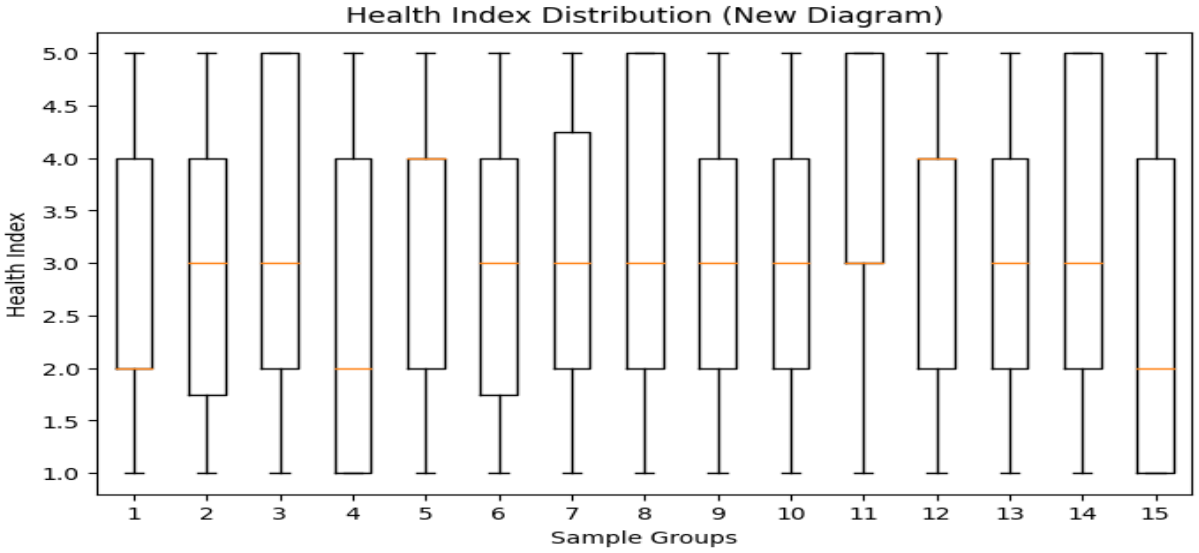

Figure 1- Distribution of the health index.

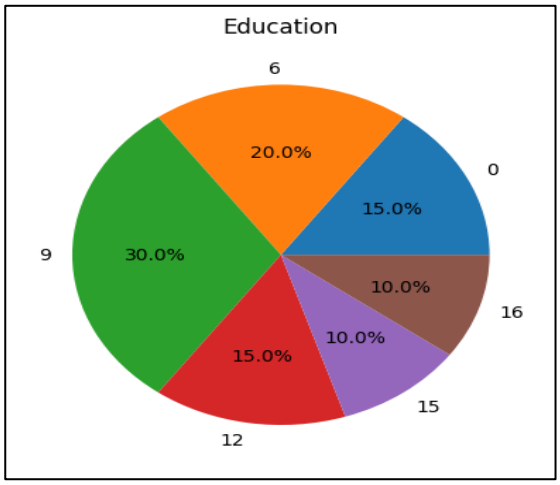

Fig. 2. Distribution of education levels within sampled households.

Higher levels of education often associated with greater social engagement and higher discretionary spending (Buhl & Acosta, 2016). Educated individuals are generally more aware of the long-term benefits of maintaining strong social networks, such as improved mental health and career advancement opportunities. Moreover, education enhances financial literacy, enabling individuals to better navigate economic fluctuations and allocate resources more effectively to social expenditures (Hastings et al., 2013; ZHang & Xiong, 2020).

The moderating role of education in the context of economic stability and social expenditures has received limited attention in the literature. It is plausible that individuals with higher educational attainment are better equipped to maintain social spending during economic instability due to their ability to manage financial stress and access diverse income sources (Baldacci et al., 2008). This moderating effect deserves further exploration

to elucidate how education shapes the dynamic interplay between economic stability and social relationship expenditures.

Research gap and theoretical framework-Despite the substantial body of literature examining social relationship expenditures, important empirical gaps remain. First, there is limited evidence on the micro-level transmission mechanisms through which macroeconomic conditions such as GDP growth and unemployment rates affect household-level social expenditures. Most existing studies rely on aggregate consumption data and therefore fail to identify the behavioral channels operating at the household level. This raises concerns about aggregation bias and limits causal interpretation. Second, relatively little attention has been paid to the joint and interactive effects of health and education on consumption behavior under varying macroeconomic regimes. In particular, the moderating roles of these human capital variables have not been systematically modeled using interaction terms within a rigorous econometric framework. Furthermore, cross-cultural heterogeneity has been largely overlooked, restricting the external validity and generalizability of prior findings.

To address these shortcomings, and guided by data availability and research objectives, this study develops an integrated theoretical and empirical framework that jointly models economic stability, health, and education. The framework posits that economic stability exerts a statistically significant effect on social relationship expenditures, while health and education condition this effect through moderating (interaction) mechanisms. Specifically, the study hypothesizes that:

H1: Economic stability positively affects social relationship expenditures.

H2: Health index significantly moderates the relationship between economic stability and social relationship expenditures.

H3: Education moderates the relationship between economic stability and social relationship expenditures.

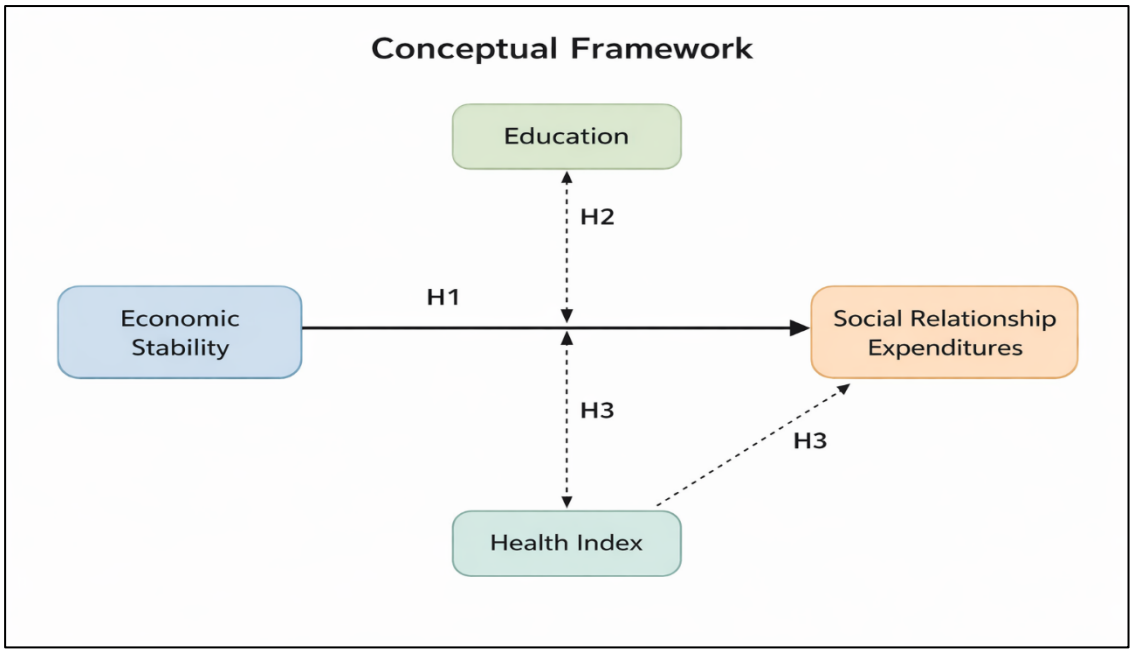

Figure 2-Framework of study

H1 is based on the theory of economic stability, which suggests that economic stability can enhance household financial confidence, thereby promoting discretionary spending. H2 is based on the health capital theory, which suggests that individuals in good health are more likely to participate in social activities and allocate resources. H3 is based on the human capital theory, which suggests that education can improve individuals' financial literacy and long-term planning capabilities.

3. METHODOLOGY

Research design-Figure 2 presents a mixed-methods research framework designed to empirically examine the relationship between economic stability and social relationships, with health index and education level incorporated as moderating variables. The study adopts a cross-sectional research design that integrates quantitative and qualitative approaches to

enhance analytical rigor and contextual interpretation. The quantitative component employs stratified random sampling to select 500 respondents across income strata, health statuses, and educational categories. Structured survey instruments are used to operationalize key constructs, including economic stability and social relationship outcomes.

To estimate the conditional effects of economic stability, moderated regression models with interaction terms are specified to capture the moderating influence of health and education on social relationship outcomes. This econometric approach allows for the identification of heterogeneous treatment effects across population subgroups. Robustness is further strengthened by controlling for relevant socioeconomic covariates.

The qualitative component consists of in-depth interviews with 30 purposively selected participants to generate rich contextual evidence on the mechanisms through which economic stability shapes social ties. The qualitative data are analysed using thematic analysis to uncover recurrent patterns and latent constructs that complement the quantitative findings.

Data are obtained primarily from original field surveys and supplemented with secondary sources drawn from national statistical reports to ensure macro-level contextual validity. Ethical protocols, including informed consent, voluntary participation, and confidentiality of respondents' information, are rigorously maintained throughout the research process

Data selection-The empirical analysis draws on data from the India Family Panel Studies (CFPS), a nationally representative longitudinal survey that provides comprehensive information on household demographics, financial conditions, consumption expenditures, health status, and educational attainment. The sample spans the period from 2010 to 2022 and contains observations at both the household and individual levels.

To mitigate the influence of extreme values and measurement error, key continuous variables were winsorized at the 1st and 99th percentiles. In order to ensure consistency in longitudinal estimation and to reduce attrition bias, the analysis is restricted to households observed in at least five survey waves, thereby constructing a balanced panel dataset. This panel structure enables the identification of within-household variation over time and facilitates more robust estimation of causal relationships.

After applying these sample selection and data-cleaning criteria, the final analytical sample comprises 8,866 households distributed across multiple provinces in India, providing substantial cross-sectional and temporal variation for econometric analysis.

Variables and Measurement- Prior literature underscores the importance of social relationship expenditures in promoting social cohesion and strengthening interpersonal networks (Kawachi & Berkman, 2000). The principal explanatory variable, economic stability, is operationalized through an Economic Stability Index constructed as the inverse of the standard deviation of household income over a rolling five-year window. Higher index values indicate greater income predictability and reduced exposure to income volatility, thereby reflecting enhanced financial resilience (Boduroğlu & Erenay, 2007).

Two moderating variables are incorporated to examine their conditioning effects on the relationship between economic stability and social relationship expenditures. Health status is measured using a self-reported Health Index ranging from 1 (poor health) to 5 (excellent health), capturing individuals' overall physical well-being. Existing evidence suggests that health significantly influences both financial decision-making and participation in social activities (Johnston et al., 2016). Education is proxied by years of schooling and serves as an indicator of human capital accumulation. Higher educational attainment is associated with improved financial literacy, forward-looking behaviour, and enhanced capacity for long-term financial planning, which may alter households' responses to economic stability.

To mitigate omitted variable bias and isolate the partial effect of economic stability, a comprehensive set of control variables is included. Per capita expenditure and per capita income are used to capture overall household economic capacity and consumption potential, consistent with prior findings emphasizing their role in shaping discretionary spending behaviour (Chai et al., 2015). Total household assets and financial assets proxy household wealth and liquidity, respectively, both of which exert a substantial influence on consumption and savings decisions. Housing-related variables, including mortgage liabilities and gross housing assets, account for financial obligations and real asset holdings that constrain disposable income available for social expenditures (Burke & Ralston, 2003).

Household size is included to control for scale effects, as larger households may experience greater budgetary pressure, thereby limiting resources available for non-essential consumption. In addition, financial income per capita and enterprise-related income are incorporated to capture heterogeneity in income composition, which may affect spending flexibility and risk exposure. Finally, transfer income is introduced to account for external financial inflows such as government assistance, pensions, or remittances that can relax budget constraints and influence households' discretionary spending decisions.

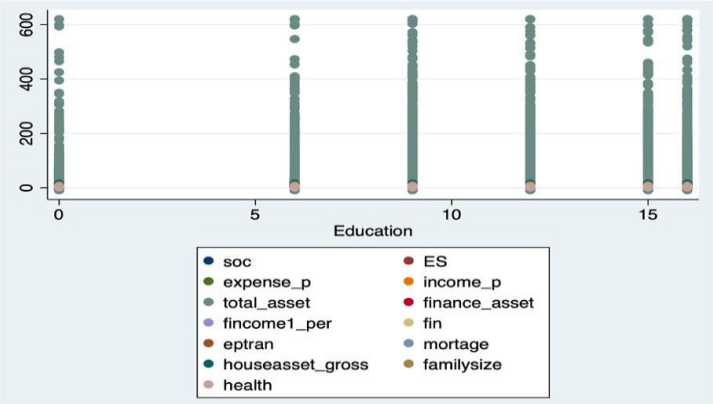

Figure 4- Distribution of various variables across different education levels

Model specification-To examine the relationship between economic stability and social relationship expenditures, a panel regression framework is employed. The model incorporates interaction terms to capture the moderating effects of health and education. The base specification is as follows:

$$SRE = \beta_0 + \beta_1 ES + \beta_3 Controls + \epsilon \quad (1)$$

$$SRE = \beta_0 + \beta_1 ES + \beta_2 Health + \beta_3 ES{*}Health + \beta_4 Controls + \epsilon \quad (2)$$

$$SRE = \beta_0 + \beta_1 ES + \beta_2 Education + \beta_3 ES{*}Education + \beta_4 Controls + \epsilon \quad (3)$$

$$SRE = \beta_0 + \beta_1 ES + \beta_2 Health + \beta_3 Education + \beta_4 ES{*}Health + \beta_5 ES{*}\ Education + \beta_6 Controls + \epsilon \quad (4)$$

These models allow for an assessment of both the direct impact of economic stability on social relationship expenditures and the extent to which this effect varies with health and education levels. While the main coefficient on economic stability reflects its baseline influence on social spending, the interaction terms capture how differences in health and education modify this relationship.

Model selection between fixed-effects and random-effects estimators is guided by the Hausman test, ensuring that unobserved heterogeneity is appropriately addressed. To improve the reliability of the estimates, robust standard errors are employed to account for potential heteroskedasticity and serial correlation. Additional robustness checks are conducted by re-estimating the models on a restricted subsample, confirming that the results are not driven by extreme observations or particular segments of the data.

Overall, this modelling framework provides a detailed examination of how economic stability, health, and education jointly influence social relationship expenditures, offering a nuanced understanding of household social spending behaviour.

Table 1

Descriptive statistics of selected sample data in this work.

Variable	Observation	Mean	Std. Dev.	Min	Max
SRE	8866	5.36	3.804	0	10.309
ES	8866	3.878	2.369	.989	7.479
expense p	8866	2.933	3.13	.186	18.373
income p	8866	2.471	2.923	.009	18
total asset	8866	57.551	97.155	–8.528	620
finance asset	8866	7.456	4.797	0	13.911
fincome1 per	8866	9.655	1.149	5.991	12.208

fin	8866	5.597	5.293	0	13.816
entrant	8866	7.325	3.015	0	11.798
mortgage	8866	1.08	3.11	0	11.339
house asset gross	8866	9.452	5.402	0	15.538
familywise	8866	3.428	1.721	1	9
health	8866	3.084	1.215	1	5
education	8866	8.471	4.862	0	16

4. RESULT AND ANALYSIS

Descriptive statistics- **(Error! Reference source not found.)** The descriptive statistics show marked differences among the main variables, indicating considerable diversity in households' economic and social conditions. Expenditure on social relationships, which serves as the dependent variable, varies widely across households. This suggests that some households are able to devote substantial resources to maintaining social ties, whereas others allocate much less due to financial limitations or the need to prioritize basic necessities. Consequently, spending on social relationships appears to be strongly influenced by households' economic situations.

Economic stability, captured through the Economic Stability (ES) index, also differs significantly among households, reflecting varying degrees of financial security and income consistency. These differences point to possible structural inequalities and unequal abilities to cope with income fluctuations, which may in turn affect patterns of social expenditure.

Similarly, control variables such as household income, asset ownership, and financial resources display considerable variation, emphasizing disparities in economic capacity. Households with higher income and greater asset holdings are likely to have more discretion in spending on non-essential items, including social relationship-related expenses, while financially constrained households may face limitations in this regard.

Correlation analysis-The scatter plot illustrates the distribution of multiple variables across different levels of education. Education levels, displayed on the x-axis and ranging from 0 to 16, are plotted against the values of variables such as household expenditure, total assets, financial assets, and family size on the y-axis. Different colours are used to distinguish variables including household social relationship expenditure (SRE), economic stability (ES), household income, and health status.

The figure reveals noticeable clustering at certain education levels, particularly at 0, 9, 12, and 15, which may correspond to key stages of educational attainment. Variables such as household expenditure, total assets, and health show substantial variation across education categories. In general, higher levels of education tend to be associated with greater values for certain indicators, especially financial assets and income.

The concentration of observations at specific education levels underscores clear differences in socioeconomic characteristics linked to educational attainment. These patterns suggest that households with different education levels experience varying degrees of economic well-being and access to resources. Further investigation of the relationships between education and these variables would help to develop a more comprehensive understanding of their associations.

Hausman test-Table 2 results confirm that the fixed-effects model is more appropriate for this study. The significant chi-square test value and a p- value of 0 indicate a rejection of the null hypothesis. This outcome suggests that individual-specific effects in the data are correlated with the explanatory variables, making the random-effects model unsuitable. These results highlight the importance of accounting for unobserved, time-invariant characteristics of households, such as cultural or regional influences, in the analysis. By employing the fixed-effects model, the study can control for these factors and provide more accurate estimates of the relationship between economic stability and social relationship expenditures. This approach enhances the reliability of the findings and ensures that the analysis captures the true dynamics of the variables

Main result-Table provides robust evidence that economic stability (ES) exerts a significant and positive influence on social relationship expenditures (SRE), underscoring the crucial role of financial security in maintaining and fostering social ties. This finding suggests that households with greater financial stability are better equipped to allocate resources toward activities that strengthen their social relationships, reflecting the importance of discretionary spending in cultivating social bonds.

The analysis further reveals that disposable income and financial assets contribute positively to social spending, reinforcing the notion that financial resources play a pivotal role in enabling households to invest in

social activities. Conversely, liabilities such as mortgages are shown to have a negative impact, indicating that financial obligations impose constraints on household budgets, thereby limiting their capacity to engage in social expenditures. This underscores the balancing act faced by households in managing competing financial priorities.

Notably, transfer income emerges as a critical enabler of social spending, suggesting that external financial support can alleviate financial stress and empower households to participate more actively in social interactions. This finding highlights the importance of policy interventions, such as subsidies or welfare programs, in supporting social cohesion, particularly for financially vulnerable households. For example, local governments could offer subsidies for community-based social events, like subsidizing the costs of local festivals or cultural gatherings. This directly reduces the financial burden on households, allowing them to engage more in social activities. The role of household size also offers intriguing insights. While larger households typically face more complex financial dynamics, the lack of a significant effect suggests that the impact of household size on social spending may depend on additional factors, such as the age composition of the household or cultural norms regarding familial responsibilities. Larger households might allocate more resources to social activities, such as family reunions or community festivals, strengthening social bonds when financially stable. Conversely, during economic instability, they may still maintain a certain level of social spending due to strong relational obligations

Table 2

Hausman test results.

Coef.

Chi-square test value 44.527

P-value 0

Table 3

SRE	Coef.	St. Err.	t-value	p-value	[95 % Conf	Interval]	Sig
ES	.387	.012	31.22	0	.362	.411	***
expense	.03	.011	2.72	.007	.008	.051	***
income	–.072	.014	–5.01	0	–.1	–.044	***
total asset	–.004	000	–11.90	0	–.004	–.003	***
finance asset	–.057	.008	–7.13	0	–.072	–.041	***
fincome1_per	.29	.036	8.15	0	.221	.36	***
fin	.05	.007	7.22	0	.037	.064	***
entrant	.705	.009	76.03	0	.686	.723	***
mortgage	–.049	.009	–5.52	0	–.067	–.032	***
House asset_ gross	.236	.005	43.49	0	.225	.246	***
familywise	–.01	.017	–.57	.568	–.043	.023	
Constant	–5.797	.315	–18.43	0	–6.413	–5.18	***

***p < .01, **p < .05, *p < .1.

Finally, the consistent significance of economic variables such as income per capita, total assets, and financial assets emphasizes the multifaceted relationship between financial stability and social spending. These results suggest that stable financial conditions not only enable households to prioritize discretionary spending on social relationships but also reflect broader economic circumstances that shape social behaviors. Taken together, these findings offer compelling evidence of the interplay between financial security and social behaviors, highlighting the importance of stable economic conditions in fostering social connectivity. This research contributes to the understanding of how economic stability influences household decision-making, with implications for policymakers aiming to enhance social well-being through economic and financial interventions.

The analysis of Table 4 indicates a negative relationship between higher levels of education and social relationship expenditures (SRE), suggesting that individuals with higher educational attainment allocate fewer financial resources to traditional social activities. This finding can be explained by several nuanced factors tied to education and its broader influence on financial behavior and social engagement (see Table 5).

First, education often equips individuals with advanced financial literacy and planning skills, fostering a more cautious and strategic approach to household spending. As a result, individuals with higher education may prioritize long-term investments, such as savings, retirement planning, homeownership, or their children's education, over short-term discretionary expenditures on social activities. This shift in financial priorities underscores the impact of education in cultivating a forward-looking mindset, where social spending is weighed against other pressing financial goals. Second, higher education may lead to changes in how individuals maintain and nurture their social relationships. For example, highly educated individuals are often more likely to participate in professional networks or leverage digital platforms for social interactions, both of which require minimal financial outlay compared to traditional forms of socializing, such as dining out or recreational gatherings. This shift reflects a move toward cost-effective or resource-efficient modes of social engagement that align with the time and career constraints frequently experienced by highly educated individuals.

Furthermore, the reduced emphasis on traditional social spending among the highly educated might also stem from a greater focus on career development and professional achievement. As individuals invest more time and effort in their professional lives, opportunities for traditional social activities may diminish, leading to reduced expenditures in this area. This suggests that education not only alters financial priorities but also influences time allocation, further reinforcing its role in shaping social behavior.

Additionally, cultural, and psychological factors may play a role. Higher education is often associated with increased autonomy and self-sufficiency, which could reduce the perceived necessity of spending on social activities as a means of maintaining social connections. Instead, these individuals may derive social fulfillment from intellectually stimulating environments, such as academic or professional collaborations, which do not heavily rely on financial expenditure.

These findings highlight the multifaceted impact of education on household spending patterns and social behaviors. While education fosters financial prudence and alternative forms of social engagement, it also reflects a broader shift in values and priorities that influence spending decisions. Understanding these dynamics offers valuable insights for policymakers and practitioners aiming to support diverse social engagement strategies across different educational and socioeconomic groups.

The analysis demonstrates that the health index positively moderates the relationship between economic stability and social relationship expenditures. A higher health index enhances the positive effect of economic stability on social spending. This result suggests that healthier individuals are more likely to allocate resources toward social activities when their economic conditions are stable.

Healthier individuals often experience greater physical and mental capacity to participate in social activities, increasing their willingness to invest in social connections. Furthermore, good health reduces the financial burden of medical expenses, allowing more disposable income to be directed toward discretionary spending, including social relationship expenditures. These findings underline the role of health as an enabling factor, amplifying the impact of economic stability by freeing up resources and fostering the capacity to engage in social behaviors. As a result, households with higher health levels can better leverage their financial stability to strengthen social ties.

The regression results of Table 6 reveal that the interaction between economic stability and health is significant and positively associated with social relationship expenditures, while the interaction between economic stability and education (ESE) is not significant. The significant effect of ESH suggests that health enhances the positive impact of economic stability on social spending, as healthier individuals are more likely to engage in social activities and allocate resources toward maintaining social connections when their financial situation is stable. This finding highlights the role of physical and mental well-being in enabling households to capitalize on economic stability for discretionary expenditures. In contrast, the non-significance of ESE indicates that education does not amplify the relationship between economic stability and social expenditures. One possible reason is that higher education levels may lead individuals to prioritize long-term investments, such as savings or career development, over short-term discretionary spending on social relationships. This contrast between ESH and ESC reflects the distinct ways health and education influence household financial decisions, with health directly supporting immediate social engagement and education shaping broader financial priorities that may deprioritize social expenditures (see Table-7

The estimated regression equation is:

$$\mathbf{SRE_i = \beta_0 + \beta_1 ES_i{***} + \beta_2 fincome1\_per_i{***} + \beta_3 fin_i{***} + \beta_4 entrant{***} + \beta_5 houseassetgross_i{***} - \beta_6 familywise_i{**} - \beta_7 finance\ asset_i{*} + \varepsilon_i}$$

his equation explains **Social Relationship Expenditure (SRE_i)** as a function of economic and household characteristics.

β_0 (Intercept): Expected value of SRE when all independent variables are zero.

ES_i (Economic Stability) (*):**

Positively and highly significant. Higher economic stability increases social relationship expenditure.

fincome1_per$_i$ (Per capita family income) (*):**

Strong positive effect. Households with higher income spend more on social relationships.

fin$_i$ (Financial inclusion / financial index) (*):**

Positive and statistically significant impact on SRE.

entrant$_i$ (Earning members / entrants) (*):**

More earning members → higher social relationship expenditure.

houseassetgross$_i$ (Gross value of house assets) (*):**

Wealth in housing assets significantly raises social expenditure.

familywise$_i$ (Family size) ():

Negative effect. Larger families tend to spend less per household on social relationships (possibly due to higher essential expenses).

finance asset$_i$ (Financial assets) **(*):

Negative but weakly significant. Indicates households with more financial assets may restrain discretionary social spending.

ε_i: Error term capturing unobserved factors

Table 4

The moderating effect of education on nexus between SRE and ES.

SRE	Coef.	St.Err.	t-value	p-value	[95 % Conf	Interval]	Sig
ES	.301	.062	4.88	0	.18	.422	***
Educ	—.023	.063	—.37	.711	—.146	.1	
ESE	—.005	.006	—.79	.429	—.016	.007	*
Expense	—.025	.027	—.90	.369	—.078	.029	
Income	—.059	.036	—1.64	.101	—.13	.012	
Total asset	0	.001	—.15	.877	—.002	.002	
Finance asset	—.039	.02	—1.90	.058	—.079	.001	*
fincome1_per	.481	.098	4.89	0	.288	.674	***
fin	.045	.015	2.96	.003	.015	.075	***
entrant	.729	.026	28.25	0	.678	.779	***
mortgage	—.026	.024	—1.10	.274	—.073	.021	
House asset gross	.241	.014	17.16	0	.213	.268	***
familywise	—.164	.07	—2.35	.019	—.301	—.027	**
Constant	—6.848	1.076	—6.37	0	—8.958	—4.738	***

***p < .01, **p < .05, *p < .1.

Table 5

The moderating effect of health on nexus between SRE and ES.

SRE	Coef.	St.Err.	t-value	p-value	[95 % Conf	Interval]	Sig
ES	.017	.074	.23	.821	—.128	.162	
health	—.722	.11	—6.57	0	—.938	—.507	***
ESH	.077	.023	3.43	.001	.033	.121	***
EXPENSE_ p	—.036	.027	—1.33	.184	—.089	.017	
Income	—.062	.035	—1.77	.077	—.13	.007	*
Total asset	0	.001	.06	.954	—.002	.002	
Finance asset	—.035	.02	—1.74	.081	—.075	.004	*
fincome1_per	.466	.097	4.82	0	.276	.655	***
fin	.029	.015	1.91	.057	—.001	.059	*
Eptrant	.73	.025	28.80	0	.68	.779	***
Mortgage	—.024	.024	—1.03	.304	—.07	.022	
houseasset_gross	.21	.015	14.49	0	.182	.239	***
familywise	—.199	.068	—2.91	.004	—.333	—.065	***
Constant	—4.148	1.006	—4.12	0	—6.121	—2.174	***

***p < .01, **p < .05, *p < .1.

Table 6

Moderating effect nexus between SRE and ES.

SRE	Coef.	St.Err.	t-value	p-value	[95 % Conf	Interval]	Sig
ES	.069	.087	.79	.428	—.102	.239	
health	—.735	.11	—6.67	0	—.951	—.518	***
educ	—.024	.062	—.39	.694	—.145	.097	
ESH	.08	.023	3.55	0	.036	.125	***
ESE	—.007	.006	—1.15	.252	—.018	.005	
Expense	—.036	.027	—1.32	.186	—.088	.017	
Income	—.052	.036	—1.46	.145	—.122	.018	
Total_ asset	0	.001	.15	.883	—.002	.002	
Finance asset	—.035	.02	—1.76	.079	—.075	.004	*
fincome1_per	.456	.097	4.71	0	.266	.646	***
fin	.029	.015	1.92	.055	—.001	.059	*
entrant	.731	.025	28.77	0	.681	.78	***
mortgage	—.022	.024	—.95	.344	—.068	.024	
houseasset_gross	.209	.015	14.35	0	.18	.237	***
familywise	—.193	.069	—2.80	.005	—.328	—.058	***

Constant	–3.86	1.142	–3.38	.001	–6.101	–1.619	***

***p < .01, **p < .05, *p < .1.

Robustness-To enhance the reliability and validity of the findings, a series of robustness checks were performed using alternative model specifications and supplementary analyses. First, the regression models were re-estimated across different data subsamples to verify that the primary results remained stable and consistent. Second, alternative operationalizations of key variables, including economic stability (ES), education (educ), and health, were applied to examine the sensitivity of the results to variations in variable measurement. The outcomes consistently corroborate the original findings, indicating that economic stability exerts a significant positive influence on social relationship expenditure, while health exhibits a negative moderating effect. In addition, the presence of multicollinearity among the explanatory variables was assessed using the Variance Inflation Factor (VIF), and the results confirmed that collinearity does not distort the estimated coefficients.

Overall, these robustness tests strengthen the credibility of the conclusions by demonstrating that the observed relationships are not contingent upon specific model formulations or data constraints.

Conclusion-This study explores the complex interplay between economic stability, education, health, and social relationship expenditures (SRE), revealing multi-layered mechanisms and dynamic features. Economic stability is crucial for social spending, and health positively moderates this relationship. However, higher education is associated with less SRE. Besides, Health and education likely interact; well-educated people may better manage health, affecting SRE. Economic stability can also impact educational choices, which in turn influence future social spending.

The findings indicate that economic stability serves as a crucial foundation for driving social spending, emphasizing the central role of economic resources in enhancing a household's ability to maintain social relationships. Specifically, households with higher eco- nomic stability can allocate resources more flexibly toward social activities, strengthening community ties or maintaining emotional support networks.

Health factors demonstrate a significant moderating effect in this process. The study shows that households with better health are more capable of effectively converting financial resources into social investments. This effect may arise because improved health not only reduces the burden of medical expenses but also increases the ability and willingness of household members to participate in social activities. For instance, those older adults with better health were 30 % more likely to participate in social activities at least once a week compared to those with poor health (Kelly et al., 2017). Healthier family members may engage more frequently in social gatherings, community events, or other forms of interaction, further solidifying their social networks.

In contrast, the negative relationship between education and SRE opens up discussions on multiple dimensions. On one hand, individuals with higher education levels tend to focus more on long-term financial planning, which may lead them to prioritize re- sources for savings, investments, or educational expenses rather than immediate social consumption. On the other hand, higher education may also encourage more rational spending behaviors, reducing reliance on short-term social activities. This trend reflects the pivotal role of education in shaping personal economic behavior patterns. Unignorably, the pursuit of career advancement among highly educated individuals often requires a significant investment of time and effort. Professionals leave less time for traditional social activities and thus reducing expenditures in this area.

In summary, this study highlights the intertwined effects of individual and structural factors on household decision-making. With the support of economic stability and health, households can adjust their resources more flexibly to maintain and develop social relationships. Meanwhile, the negative effect of education reveals the potential tension between rational planning and social consumption. Also, in countries with a strong collectivist culture, maintaining social relationships is often a top priority, even during economic downturns, in contrast, in individualistic cultures individuals are more likely to cut back on social spending to prioritize personal financial security. Future research could further investigate how these factors manifest in different cultural and economic contexts, especially in rapidly changing societal environments, to balance long-term planning with immediate social needs and optimize resource allocation.

Implications and limitations-The findings of this study carry important implications for policymakers and researchers. Enhancing economic stability through targeted financial support programs can play a vital role in promoting social expenditures, particularly in periods of economic un- certainty. The role of health as a moderator underscores the importance of public health initiatives and improving access to healthcare, as healthier households are more likely to allocate resources toward social engagement. Education, on the other hand, shapes financial literacy and long-term planning, which can lead to a reduction in immediate social spending.

Robustness result.

Table-7

SRE	Coef.	St.Err.	t-value	p-value	[95 % Conf	Interval]	Sig
ES	.955	.156	6.11	0	.648	1.262	***
educ	.146	.123	1.19	.236	–.096	.387	
health	–.824	.128	–6.44	0	–1.075	–.573	*
ESe	–.013	.016	–.77	.441	–.044	.019	**
Constant	3.881	1.095	3.55	0	1.732	6.029	***

***p < .01, **p < .05, *p < .1.

These findings underscore the importance of adopting balanced strategies that account for both short-term financial needs and long-term economic objectives, enabling households to invest in education while preserving their ability to sustain social relationships. For instance, community-based financial literacy programs could be introduced to assist households in managing the trade-offs between long-term financial planning and immediate social expenditures. Although the results indicate a negative association between education and social relationship expenditure (SRE), education performs a dual function. Higher levels of education may initially reduce SRE as households prioritize long-term financial investments. At the same time, education improves financial knowledge and skills, contributing to greater financial security over time. Individuals with higher educational attainment are also more likely to secure better-paying employment. In the long run, this enhanced stability can generate additional resources for social spending, thereby strengthening social ties.

Despite these contributions, the study has certain limitations. The analysis is based on a specific dataset, which may restrict the applicability of the findings to other populations or regional contexts. Moreover, the cross-sectional nature of the study does not capture potential changes in these relationships over time, and unobserved factors—such as cultural norms or psychological influences may also affect household financial behaviour.

Future research may overcome these limitations by incorporating broader and more diverse datasets, thereby improving the generalizability of the results. Longitudinal research designs could offer valuable insights into how these relationships develop across different stages of life or economic conditions. In addition, the inclusion of qualitative methods could provide a richer understanding of household decision-making processes, particularly in relation to trade-offs among social spending, education, and health. Further exploration of macroeconomic influences, such as inflation and labour market dynamics, may also enhance understanding of the wider context shaping household financial decisions. Collectively, these directions for future research would deepen knowledge of the determinants of social expenditure and contribute to the formulation of more effective policies and interventions.

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