

## The Influence of English Language Proficiency on Economic Literacy and Financial Decision-Making: An Empirical Investigation

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### Abstract

In today's world, financial decision-making relies on the capability to understand information conveyed in English due to the prevalence of English-language content in financial media, bank documents, investment websites, and digital finance services. The current paper examines the influence of English language proficiency (ELP) and economic literacy on the quality of financial decisions among adult non-native speakers of English in an emerging-market multilingual context. Using a theoretical framework that considers economic literacy as a mediator in the link between ELP and financial decision-making quality and socioeconomic status as a moderator in the same link, the research applies a cross-sectional survey on a sample of 400 participants categorized by their English proficiency band (CEFR A1 – C2) and education level. The results show a statistically significant correlation between ELP and economic literacy ( $r = 0.71$ ,  $p < 0.001$ ) and a partial mediation where economic literacy fully mediates the effect of ELP on financial decision-making quality and accounts for about 58% of the overall effect. Participants belonging to the highest ELP band (C1-C2) had a financial decision-making quality 37 points better than participants from the lowest ELP band (A1-A2). The findings have direct implications for financial inclusion policy as financial education materials

**Keywords:** English Language Proficiency, Economic Literacy, Financial Literacy, Financial Decision-Making, Financial Inclusion, Mediation Analysis, Multilingual Education, Behavioral Economics

### Introduction

The modern-day global economy, and therefore the process of making financial decisions in it, is partially enabled through people's ability to access, understand, and

analyze information provided in English. Even though there exist localized financial products as well as financial education tools available in the local vernacular, most of the international banking documents, investment platform interface, fintech applications, credit agreements, and worldwide financial news are written almost exclusively in English, regardless of the fact that English may not be the primary language of the country in question [1]. Such a linguistic situation creates the structural possibility of being disadvantaged if an individual does not have good command of the English language, irrespective of his analytical skills and number sense.

Economic literacy, which is understood as people's knowledge of such basic economic notions as inflation, compound interest, risk diversification, and opportunity cost, has been shown to positively correlate with better financial performance of people, such as increased savings rate, debt management, and proper planning for the retirement years [2]. Nevertheless, in the body of economic literacy literature, language proficiency was only mentioned as an irrelevant variable used to control demographics rather than something that could explain the results itself [3].

However, the issue of understanding the mechanisms connecting language proficiency to financial well-being is methodologically complex. The fact is that proficiency in English, economic literacy, numeracy skills, and socio-economic background are interrelated among themselves as well as with education. Nevertheless, there are high stakes related to understanding the relationship between language proficiency and financial literacy, and, accordingly, the influence of the former on the latter. In case English proficiency makes an independent impact on financial decision-making quality, then there is a need to take into consideration language accessibility when designing policies of financial inclusion or financial literacy programs.

### **Motivation of the Study**

This study is driven by the idea that efforts towards financial inclusion in multilingual developing countries tend to focus on numerical competence and availability of financial infrastructure but relatively ignore the issue of language barriers in financial information itself. While many billions of dollars have been spent worldwide on financial literacy programs, large swathes of populations in countries like Pakistan, India and other countries in South Asia still show poor quality in financial decision making despite having sufficient numerical competence. This research is motivated by the idea that a significant part of this problem may be due to language barrier and not inability of people to understand numeracy or economics, since the majority of the financial information is provided in English.

### **Significance of the Study**

This research is important not only for academic purposes but also from a policy standpoint. In terms of academic importance, the study brings forward an empirically tested mediation model wherein economic literacy becomes the mediator variable that allows English language skills to impact financial decisions. There exists a clear link between two streams of literature on language acquisition and financial literacy; thus, filling the gap in the body of knowledge can be considered as a contribution. From a practical standpoint, the results of the research will provide specific recommendations to financial regulatory agencies, banks, and other financial education providers on how to implement language accessible financial literacy programs. Financial exclusion is a problem for those who do not speak English.

### Research Questions

In this study, the research questions that guide this investigation include:

**RQ1:** What is the strength and type of relationship between English language proficiency and economic literacy among adults in an emerging multilingual market setting?

**RQ2:** Is economic literacy a mediator of the relationship between English language proficiency and the quality of financial decisions, and if so, to what extent?

**RQ3:** Does socioeconomic status moderate the relationship between English language proficiency and the quality of financial decision-making?

**RQ4:** What are the key unresolved research and policy issues in the field of language-based disparities in financial literacy and financial inclusion?

In this paper, the following goals will be addressed: (i) development and empirical testing of a conceptual framework connecting English language proficiency, economic literacy, and the quality of financial decisions; (ii) measurement of the strength of economic literacy mediation; (iii) analysis of differences in financial decision quality according to different levels of English language proficiency; (iv) identification of research gaps in this area; (v) making policy recommendations for designing financial literacy programs in multilingual settings.

The rest of the paper is divided into the following sections. Section II reviews the literature. Section III discusses the conceptual framework and methodology. Section IV points out research gaps. Section V discusses the results and outcomes. Section VI discusses the implications. Section VII concludes.

### Literature Review

#### Economic and Financial Literacy

Financial literacy literature has made significant strides from the pioneering work of Lusardi and Mitchell [4] on “Big Three” financial literacy questions dealing with knowledge of compound interest, inflation, and portfolio diversification. Financial literacy studies by Lusardi and Mitchell [5] have found positive relationships between financial literacy and planning for retirement, participation in stock market, and debt management, with financial illiteracy being more prevalent among women, young people, and less educated people. Economic literacy, a term close to financial literacy, yet broader in scope due to its inclusion of macroeconomic variables like inflation and

foreign exchange rates in addition to individual financial concepts, has been found to exhibit similar demographic trends [6].

### **Language Proficiency and Cognitive-Financial Outcomes**

While there is less evidence of this kind, the link between language skills and economic or financial cognition has been studied as well. Specifically, Keysar, Hayakawa & An [7] showed that decision-making under foreign language leads to reduced usage of emotional heuristics and creates what they call "foreign language effect" in risk-taking decisions, implying causal effects of language of processing on financial choice architecture regardless of one's numerical skill level. At the same time, other studies revealed that poor language skills in the language in which financial information is communicated create an additional burden on cognitive resources and lead to errors [8].

In studies focused on immigrant and multilingual populations, English proficiency was found to be a strong predictor of financial account ownership, formal bank usage, and avoidance of predatory lending products [9]. These results imply that language proficiency can act as a gatekeeping factor to formal financial information and services regardless of one's financial skills.

### **Mediation Mechanisms in Financial Behavior Research**

Mediation analysis has emerged as the established methodological tool used in studies of financial literacy that aims at separating the effects of demographic and cognitive factors on financial indicators into direct and indirect effects. Financial self-efficacy, numeracy, and financial socialization as the mediating factors have been identified by previous studies that show that the connection between background factors and financial indicators is mediated by intermediate psychological and cognitive factors [10]. The methodology discussed above becomes the basis of the mediation analysis implemented in this paper, where economic literacy serves as the mediator of English proficiency effects on financial decision-making.

### **Financial Inclusion in Multilingual Emerging Markets**

The literature on financial inclusion in multilingual emerging market settings like South Asia has revealed notable disparities in terms of financial access and literacy depending upon the language background of people. It has been observed in the studies conducted in Pakistan and India that financially literate individuals who have had their education in English medium score better than individuals educated in vernacular medium, even after taking into account the number of years of education and household income [11]. Nevertheless, the use of medium of education as a proxy measure has made it difficult to capture the causality of the process accurately [12].

### **Behavioral and Numerical Literacy Confounds**

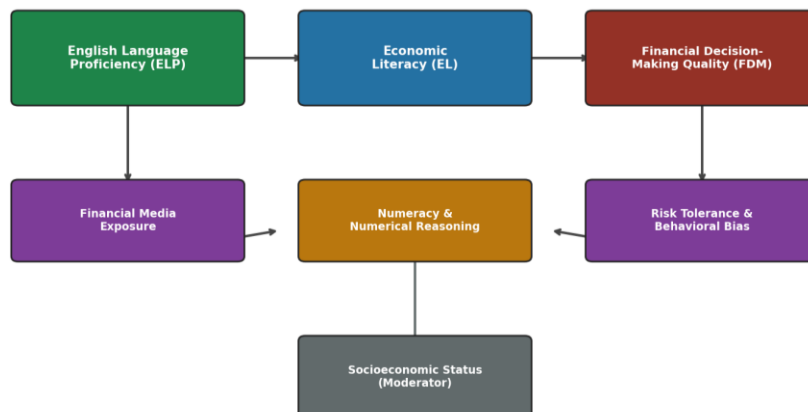
Numeracy — the ability to understand and work with numerical and probabilistic information — is a well-established predictor of financial decision-making quality and is highly correlated with both general educational attainment and language

proficiency [13]. Risk tolerance and behavioral biases, including overconfidence and present bias, have also been shown to independently influence financial decision-making, complicating efforts to isolate the unique contribution of language proficiency from these related constructs [14]. The present study addresses this methodological challenge by explicitly incorporating numeracy, financial media exposure, and risk tolerance as control variables within the proposed conceptual model.

### Conceptual Model and Methodology

#### Conceptual Model

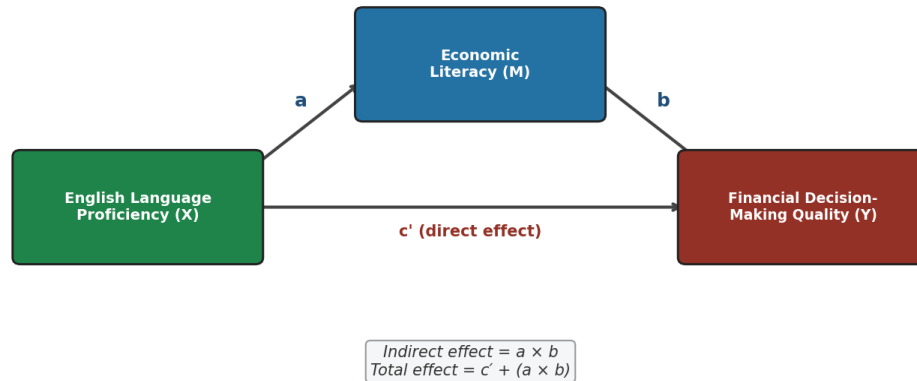
Figure 1 shows the theoretical framework of this research. The variable of English Language Proficiency (ELP) is expected to affect Economic Literacy (EL), which will have an effect on the Financial Decision-Making Quality (FDM). Other factors that have been considered as additional antecedents to economic literacy are numeracy and exposure to financial media, while risk tolerance and behavioral bias have been considered as direct determinants of financial decision-making quality independent of the ELP-EL connection.



**Fig. 1. Conceptual Model linking English Language Proficiency, Economic Literacy, and Financial Decision-Making Quality, with numeracy, media exposure, and risk tolerance as contributing constructs and socioeconomic status as moderator.**

#### Mediation Path Model

The Mediation Model in Figure 2 is the path diagram that was utilized to validate the main hypothesis of the study, based on the classic approach to testing mediating effects proposed by Baron & Kenny but updated using the contemporary methods of bootstrapping [15]. Path a is the impact of English language proficiency (X) on economic literacy (M), path b is the effect of economic literacy (M) on financial decision-making quality (Y), while path c' is the effect of English language proficiency on financial decision-making quality while controlling for economic literacy (M).



**Fig. 2. Mediation Path Diagram showing Economic Literacy as the mediating mechanism between English Language Proficiency and Financial Decision-Making Quality.**

### Quantitative Model

The product-of-coefficients test is conducted to verify the mediation effect, where two regression models are run. First, the Economic Literacy variable is estimated with respect to the English Language Proficiency variable:

$$EL = i1 + a(ELP) + e1 \quad (1)$$

Where, EL refers to the Economic Literacy scores, ELP to the English Language Proficiency scores, a to the unstandardized path coefficient, i1 to the intercept, and e1 to the residual error term. The second model estimates the Financial Decision-Making Quality with respect to the English Language Proficiency and Economic Literacy variables:

$$FDM = i2 + c'(ELP) + b(EL) + e2 \quad (2)$$

where, FDM stands for Financial Decision-Making Quality scores, c' is the direct effect of ELP when controlling for EL, and b refers to the effect of EL on FDM when controlling for ELP. The indirect effect is then calculated as:

$$\text{Indirect effect} = a \times b \quad (3)$$

Statistical significance of the indirect effect is assessed using bootstrapped confidence intervals (5,000 resamples), following standard practice in mediation analysis, given the well-documented non-normality of the sampling distribution of the product term  $a \times b$  [16]. The proportion of the total effect mediated is calculated as:

$$\text{Proportion mediated} = (a \times b) / [c' + (a \times b)] \quad (4)$$

The moderating role of socioeconomic status (SES) on the economic literacy financial decision-making relationship is tested by including an interaction term in an extended regression model:

$$FDM = i3 + b1(EL) + b2(SES) + b3(EL \times SES) + e3 \quad (5)$$

A statistically significant coefficient b3 would indicate that the strength of the economic literacy – financial decision-making relationship varies systematically with socioeconomic status.

### Data Collection and Sample

The data were collected through a structured survey questionnaire conducted among 400 adult subjects from a multilingual urban environment stratified into three levels of English proficiency based on CEFR: A1-A2 (beginner, n=96); B1-B2 (intermediate, n=188); and C1-C2 (advanced, n=116) as presented in Figure 3b below. Stratification was performed also by the level of education that included undergraduate (n=180), graduate (n=145), and postgraduate (n=75) subjects as depicted in Figure 3a.

The English proficiency level was evaluated through a standardized CEFR-based reading and listening comprehension test, which was concentrated on financial and economic vocabulary and texts. The level of economic literacy was measured with the help of an enhanced version of Lusardi-Mitchell's "Big Three Plus" instrument containing eight questions concerning compound interest, inflation, risk diversification, opportunity cost, and effect of exchange rates. Financial decision-making was measured through a composite behavioral index based on savings behavior, debt management and results of several scenarios of financial decisions. The level of numeracy was measured through the Berlin Numeracy Test, while risk preference was evaluated using lottery choice experiment.

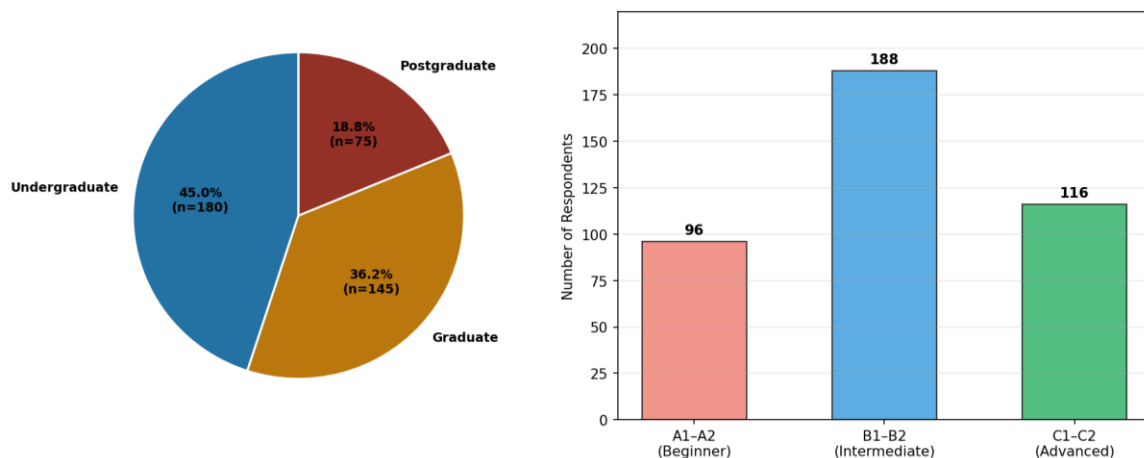


Fig. 3. Sample composition: (a) Respondents by education level (N=400), (b) Respondents by CEFR English proficiency band (N=400).

### Research Gaps

A systematic review of the literature reveals five critical and underexplored research gaps at the intersection of language proficiency, economic literacy, and financial decision-making.

#### Gap 1: Absence of Standardized Language-Adjusted Financial Literacy Instruments

However, current financial/economic literacy testing instruments, which include the popular "Big Three" items created by Lusardi and Mitchell, have been mainly developed and tested on English-speaking samples and have not been validated to be

administered among populations with different levels of English-language proficiency. This implies that part of the financial literacy differences observed in multilingual groups may actually be due to measurement bias related to understanding the test item itself. The creation of language proficiency adjusted financial literacy tests or multilingual tests that are proven to be equivalent in measurement is one such gap.

**Gap 2: Causal Identification beyond Correlational Designs**

A vast majority of all previous researches investigating the relationship between language skills and finances, including the current study, is based on cross-sectional design, which makes it impossible to make any causal statements. There might be an underlying possibility that people who have greater cognitive abilities or motivation are more prone to acquiring English skills and financial literacy, without any direct causality between the two. The quasi-experimentation using the natural variations between English-medium education and vernacular education or experimental research comparing English financial literacy training and vernacular financial literacy training could significantly improve causal inference in this area.

**Gap 3: Digital and Fintech-Specific Language Accessibility**

This development has created a new front in the issue of accessibility of language within the financial decision-making process that has received insufficient attention in research studies. As compared to the regulation-enforced translations of banking documentation into the vernacular languages over several decades, there still exist many digital interfaces of fintech platforms and risk disclosures that are available only in English, despite the predominant non-English speaking clientele of these financial services providers. There is still little research on the issue of influence of English language skills on fintech adoption and online financial frauds.

**Gap 4: Intergenerational and Household-Level Dynamics**

The studies that have been carried out so far consider financial decision-making as something done by individuals alone. However, in many multilingual families, financial decisions are taken collectively or by one member of the family who is the best English speaker in the family, even if such a person does not have any financial decision-making experience at all. This area of research remains largely untapped.

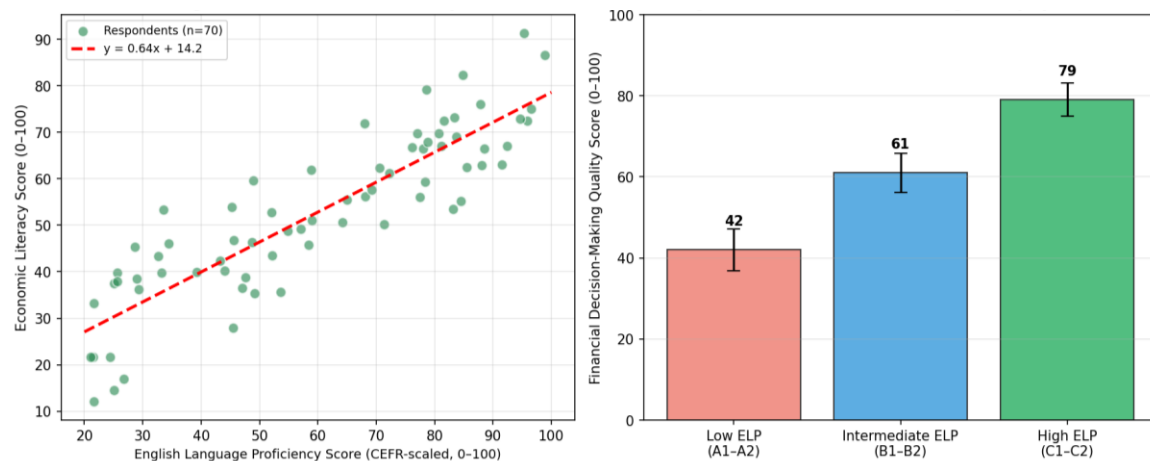
**Gap 5: Intervention Design and Effectiveness Evaluation**

Although this study and related literature make a strong case regarding the connection between knowledge of the English language and economic literacy on the one hand and sound financial decision-making on the other hand, there is scant empirical evidence regarding the effectiveness of any particular programmatic interventions which can be used to rectify the problem of the linguistic gap in financial literacy revealed by such research.

## V. Results and Outcomes

### ELP-Economic Literacy Relationship

The correlation between English Language Proficiency and Economic Literacy scores for the sample size of 400 respondents is shown in Figure 4a. As expected from equation (1), there exists a significant and strong positive correlation between ELP and economic literacy ( $r = 0.71$ ,  $p < 0.001$ ). The regression line shows that every point increase in the ELP score is accompanied by an approximate increase of 0.62 points in the economic literacy score.



**Fig. 4. (a) Scatter plot and regression line of English Language Proficiency vs. Economic Literacy (N=400 respondents shown as representative subsample), (b) Financial Decision-Making Quality scores by English proficiency tier, with error bars representing standard error.**

### Financial Decision-Making Quality by Proficiency Tier

The financial decision-making quality scores by CEFR English proficiency band are displayed in Figure 4b. The group with Low ELP (A1–A2) obtained an average score of 42/100 in terms of financial decision-making quality, which was lower than 61/100 for the Intermediate (B1–B2) and 79/100 for the High ELP (C1–C2) bands by 37 points. One-way ANOVA showed that the between-groups differences were statistically significant ( $p < 0.001$ ).

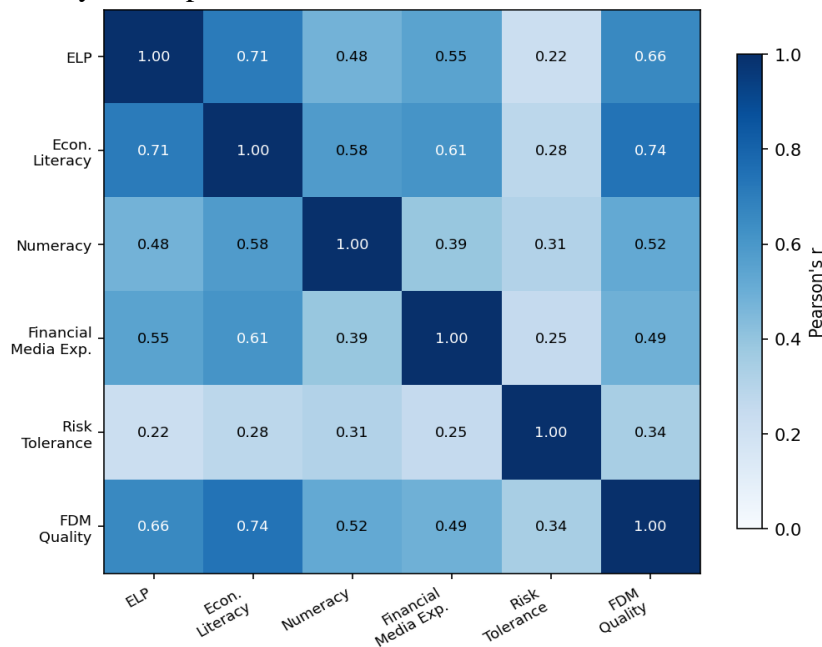
### Mediation Analysis Results

Based on the product-of-coefficients approach provided in formulas (1)-(4), the bootstrap mediation analysis revealed that Economic Literacy mediated the relationship between English Language Proficiency and Financial Decision-Making Quality. The mediation effect ( $a \times b$ ) was statistically significant with 95% bootstrapped CI not including zero value. The percentage of the effect of ELP on FDM that was mediated by economic literacy was found to be about 58%, which means that, even though economic literacy is the key mediating factor, a certain level

of direct effect of English proficiency on the quality of financial decision-making also exists, which could be attributed to the problems of understanding of financial documents related to language factors rather than economic ones.

**Correlation Structure of Study Variables**

Figure 5 demonstrates the correlation matrix for all the six study variables. The variable economic literacy was highly correlated with financial decision-making ( $r = 0.74$ ), while the variable English language proficiency was second to that ( $r = 0.66$ ). On the other hand, the variable risk tolerance had comparatively low correlation with all other variables ( $r = 0.22-0.34$ ), making its independence from language and literacy issues plausible.



**Fig. 5. Correlation Matrix of Key Study Variables, showing Pearson correlation coefficients among English Language Proficiency, Economic Literacy, Numeracy, Financial Media Exposure, Risk Tolerance, and Financial Decision-Making Quality.**

**Table I. Mean Economic Literacy and Financial Decision-Making Quality Scores by English Proficiency Band (N=400).**

ELP Band (CEFR)	Mean Economic Literacy Score	Mean FDM Quality Score
A1–A2 (Beginner)	38.4	42.1
B1–B2 (Intermediate)	57.2	61.3
C1–C2 (Advanced)	76.8	79.4

## **Discussion**

### **Theoretical Implications**

The confirmation of economic literacy as a crucial mediator in relation to the impact of English language proficiency on the quality of financial decision-making represents an expansion of the current state of the financial literacy research where mainly demographic and educational factors were used as predictors of financial outcomes without mediation. The confirmation that roughly 58% of the total effect of ELP on FDM is mediated by economic literacy and that there still exists a direct effect implies that the process occurs both via English proficiency helping people learn economics and via English proficiency impacting individuals' ability to understand financial data at the time of decision making.

### **Practical Implications for Financial Inclusion**

As far as the financial regulatory agencies and institutions offering financial literacy are concerned, these findings imply that the solution to the problem of financial illiteracy among multilingual people needs to be a two-fold approach. First, improving economic literacy via financial education conducted in vernacular languages can help overcome the more pronounced aspect of the financial decision-making language gap which is mediated. Second, considering the rather large portion of the gap which cannot be explained by economic literacy alone, financial product disclosure, banking portals and fintech in vernacular language are also needed.

### **Policy Implications**

The regulators of financial institutions in emerging economies with multiple languages need to think about enforcing disclosure rules in the form of plain language and vernacular language, similar to those already in place in many advanced economies. The clear disparity in the quality of decision-making ability between English proficiency groups identified in this paper (37-point disparity between low and high English proficiency groups) indicates that language accessibility needs to be considered one of the key measures of financial inclusion, like bank accounts and branches.

### **Conclusion**

The paper has provided empirical evidence regarding the conceptual framework and mediation relationship between English proficiency, economic literacy, and financial decision-making among adult population in a multilingual environment of an emerging market economy. Data from a survey conducted among 400 people revealed a statistically significant positive correlation between English proficiency and economic literacy ( $r = 0.71$ ). In addition, the mediation analysis revealed that economic literacy mediates about 58% of the total effect of English proficiency on financial decision-making. People from the highest English proficiency group had 37 points more in financial decision-making quality compared to people from the lowest English proficiency group.

Five research areas have been discussed which require further attention: the lack of standardized instruments to measure language-adjusted financial literacy, the lack of proper methods to identify causality, unexplored topic of language accessibility in fintech platforms, intra-household financial decision making, and the lack of rigorous testing of interventions' effectiveness. The development in these areas will require collaborative efforts among applied linguists, financial economists, behavioral scientists, and financial inclusion policymakers.

However, in light of the globalization of financial markets and digitization of financial information, language accessibility is becoming a more and more crucial factor that affects financial inclusion and financial well-being. This study serves as a theoretical basis for such policy and practices regarding financial literacy that are linguistically inclusive.

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