



Determinants of Financial Self-Efficacy among Working Adults in Pakistan: Examining the Predictive Role of Financial Behavior, Knowledge, Attitude, and Skills

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Abstract

This research explored the role of Financial Behavior, Financial Knowledge, Financial Attitude, and Financial Skills in contributing to the variance in Financial Self-Efficacy. Specifically, it concentrated on adults who are between 25 and 55 years old and work for nonprofit organizations operating in the development sector of Pakistan. For this purpose, the theories of Social Cognitive Theory by Bandura, Economic Importance of Financial Literacy Theory, and Behavioral Finance Theory were applied. A correlational prediction approach was used as part of the research methodology. The sample size was composed of 397 valid participants residing in Karachi, Lahore, Islamabad, and Peshawar cities. The measurement tools that were used for collecting data were the Financial Literacy Questionnaire (FLQ), Revised Financial Management Behavior Scale (FMBS), and Financial Self-Efficacy Scale (FSES). The combined model significantly explained 31.4% of the variance in Financial Self-Efficacy [$F(4, 392) = 44.857, p < .001, R^2 = .314$]. Individually, Financial Behavior ($\beta = .418, p < .001$) and Financial Skills ($\beta = .148, p = .007$) emerged as significant predictors, whereas Financial Knowledge ($\beta = .042, p = .412$) and Financial Attitude ($\beta = .058, p = .194$) did not reach statistical significance. These findings imply that intervention strategies focusing on practice rather than knowledge alone might prove to be more successful in building financial confidence among working adults in Pakistan. This study is an addition to the indigenous financial literacy literature and provides recommendations to the State Bank of Pakistan, Securities and Exchange Commission of Pakistan, and the development sector.

Keywords: financial self-efficacy, financial behavior, financial literacy, working adults, Pakistan, non-governmental organizations



Introduction

Financial well-being has become one of the most critical aspects of today's economic world, especially in developing countries, where macroeconomic instability is coupled with the lack of financial institutions capable of helping people plan their finances. In Pakistan, the combination of double-digit inflation rates, persistent devaluation of currency in relation to the US dollar, and increasing prices of basic necessities has turned personal finance into one of the key factors that determine people's psychological and social well-being (Hussain & Sajjad, 2022). According to the State Bank of Pakistan (2023), as much as 79% of adult citizens of Pakistan are still unbanked or underbanked. In the face of such challenges, the ability of people to handle their money confidently – the concept of Financial Self-Efficacy – has attracted increasing interest among economists and behavioral scholars.

Financial Self-Efficacy is the extent to which an individual believes himself capable of planning and executing financial behaviors effectively for the realization of desired objectives (Lown, 2011). Following the classical conceptualization of self-efficacy as a domain-specific form of cognition by Bandura (1977), researchers have found that individuals' level of financial confidence influences saving, retirement preparedness, investments, risks, and seeking professional financial advice (Farrell et al., 2016; Asebedo & Payne, 2019). Unfortunately, empirical research on Financial Self-Efficacy in Pakistan is relatively sparse as most extant literature on the subject concerns university students or the recipients of microfinancing in rural areas (Riaz et al., 2022; Iqbal & Nosheen, 2023). The group consisting of working adults between the ages of 25 to 55 years who are involved in non-governmental organizations has been virtually ignored.

It is especially important that non-governmental organizations receive special consideration when analyzing their financial literacy needs due to a number of factors. Firstly, according to the Pakistan Centre for Philanthropy (2023), there are currently around 60,000 registered organizations of the aforementioned kind operating in the country, which employ tens of thousands of educated individuals on a contractual/project basis. The workers often have problems with unstable income streams, lack of pension benefits, and lack of employer-provided financial advice. Thus, they constitute a particularly vulnerable and yet understudied segment of the population.

Three theories underpinning the research include the Social Cognitive Theory, which was developed by Bandura (1977). It was then built up through works of psychologists and financiers who believe that self-efficacy acts as the mediator between knowledge and behavior. The next is the Economic Importance of Financial Literacy Theory that stresses the welfare implications of financial literacy at micro and macro levels according to Lusardi & Mitchell (2014). Last but not least is the Behavioral Finance Theory that focuses on psychological biases in making financial decisions. Jureviciene and Ivanova (2013) along with Prosad et al. (2015) have contributed to it. Overall, the three theories form an effective framework for understanding Financial Self-Efficacy, where Financial Behavior, Financial Knowledge, Financial Attitude and Financial Skills play their part.



Though a plethora of literature is available globally, there remain three major research gaps that provide the rationale for the current study. Firstly, in previous literature, most studies have investigated Financial Knowledge and Financial Behavior independently without incorporating Financial Attitude and Financial Skills in a unified framework (Loza et al., 2024; Noor et al., 2020). Secondly, the importance of Pakistani culture regarding the involvement of the whole family in finance decision-making, Islamic finance principles, and the significance of informal savings such as committee or kameti has largely remained neglected in cross-cultural comparison studies. Lastly, there is no previous literature to support the impact of the four predictors on Financial Self-Efficacy among working adults in Pakistan's NGO sector.

In order to structure the investigation, two research questions guided the research study. The first research question was concerned with the degree to which the variables of Financial Behavior, Financial Knowledge, Financial Attitude, and Financial Skills together accounted for the variation in Financial Self-Efficacy amongst employees from the ages of 25 to 55 working in non-governmental organizations in Pakistan. The second research question concerned the degree to which Financial Behavior, Financial Knowledge, Financial Attitude, and Financial Skills individually account for variations in Financial Self-Efficacy compared to when all predictors are taken into consideration together. The subsequent sections of this paper will unfold as outlined below. Firstly, there is a thematic literature review, which will be followed by a methodology section, and findings section, followed by a discussion and conclusion respectively.

Literature Review

Theoretical Foundations

The conceptual architecture of this study rests on three complementary theoretical traditions that, taken together, illuminate the cognitive, economic, and behavioral pathways through which individuals develop confidence in managing their personal finances. Each tradition contributes a distinct analytical lens, and their integration permits a richer interrogation of the determinants of Financial Self-Efficacy than any single framework could offer.

Social Cognitive Theory

Developed by Bandura (1977) and further refined throughout four decades of research and theory, Social Cognitive Theory postulates the following main idea. Human behavior develops as a result of an interaction between the influence of cognition, the environment, and behavior. Self-efficacy represents one of the key constructs in this framework. According to Bandura (1997), self-efficacy means believing in one's own ability to coordinate and carry out actions necessary for the management of future events. Self-efficacy beliefs are not general dispositions but rather specific cognitions that guide one's efforts, persistence, and resilience in difficult circumstances. From the perspective of financial self-efficacy, one may expect people with high Financial Self-Efficacy to be engaged in financial practices such as budgeting, saving, and investing. They would also demonstrate better recovery from their losses and a higher level of receptivity to learning about finances and making changes in their actions (Rahmawati & Asandimitra, 2018). This idea was



further elaborated by Thomas and Gupta (2021), who incorporated social cognitive theory into a financial well-being framework emphasizing knowledge sharing and social learning. In the Pakistani case, where households experience uncertainties and inflation on a regular basis, the importance of self-efficacy as a psychological resource is particularly evident.

The Economic Importance of Financial Literacy Theory

The theory developed by Lusardi & Mitchell (2014) highlights the idea that financial literacy is an important part of the human capital development process. On the basis of years of survey data across various countries, the authors have posited that financial literacy can be considered an investment in cognitive capital that has clear welfare benefits for individuals as well as for the aggregate economy. The theory identifies several domains in which individuals possess specific financial competencies, ranging from having a general awareness of concepts like inflation and compound interest rates to applying such competencies to real-life situations related to risk diversification. As far as the practical implications of the theory are concerned, they are particularly relevant to the case of developing nations like Pakistan where financial literacy instruction is not included in school curricula (Karandaaz Pakistan, 2022).

The Theory of Behavioral Finance

The third pillar in the theoretical base relates to the Theory of Behavioral Finance, where the concept of the rational expectations theory is criticized for the lack of proof that financial decisions depend on people's emotions, heuristics, and biases (Jureviciene & Ivanova, 2013). Later developments by Prosad et al. (2015) and Antony (2019) added to the list overconfidence, loss aversion, mental accounting, and herding. This theoretical view is pertinent to this research since it acknowledges the dissonance between an individual's financial attitudes and knowledge. Financial self-confidence, in turn, can be attributed not only to a certain amount of knowledge but to the person's psychological disposition toward finance as well. The cultural aspect that makes this theory so applicable in the context of Pakistan includes the importance of making decisions as a community (extended family), alongside the role of religion in shaping acceptable financial behavior.

Financial Self-Efficacy

Financial Self-Efficacy has received increasing academic interest since the creation of the Financial Self-Efficacy Scale in 2011 by Lown, which measures a broad construct by Bandura in the area of personal finances. Empirical evidence supports that Financial Self-Efficacy is a reliable predictor of savings habits, retirement plans, debt control, and financial wellbeing in general (Farrell et al., 2016; Asebedo & Payne, 2019). Research carried out in the United States, the United Kingdom, and Australia shows that there is a positive relationship between Financial Self-Efficacy and lower levels of financial distress and better wealth creation (Brady et al., 2021). Despite the interest generated in other geographical settings, the literature on Financial Self-Efficacy within South Asia appears relatively scanty. Riaz et al. (2022), in their study of Pakistani university students, observed relatively low average values and gender disparities in Financial Self-Efficacy



scores, and Iqbal and Nosheen (2023) made similar observations about women benefiting from microfinance facilities in Punjab. Such results seem to point toward social determinants of low Financial Self-Efficacy in Pakistan, but there is no research that has examined Financial Self-Efficacy among employees in the non-governmental sector, which is one of the main objectives of the current research.

As more and more literature becomes available, it becomes increasingly clear that Financial Self-Efficacy has no inherent nature. This concept is rather a skill set that evolves from experience, socialization, and reinforcement. For example, Asebedo & Payne (2019) demonstrated in their research that financial self-efficacy serves as the mediator between objective financial knowledge and actual saving actions. Thus, confidence works as a psychological mediator between knowledge and actions. The same effect can be observed in the South and Southeast Asian regions as well. As Kartawinata et al. (2021) demonstrated in their study, financial self-efficacy serves as the mediator between financial literacy and financial inclusion among university students from West Java, Indonesia. Similarly, as Triono (2020) demonstrates in his research, financial self-efficacy works as a mediator between financial knowledge and locus of control while forming financial behavior. This is especially relevant in regards to Pakistan since its citizens do not have any formal financial education but extensive practical experience with money management.

Financial Knowledge

Financial knowledge can be understood as the grasp of fundamental finance-related concepts, together with the ability to use such knowledge when making individual financial decisions (Lusardi & Mitchell, 2014). Different operational definitions have been used. They include the three-question Big Three instrument, which concentrates on inflation, compound interest, and portfolio risk. Other measures include multiple questionnaires that cover insurance, credit products, and investments (Atkinson & Messy, 2011). Financial knowledge levels have shown wide disparity globally. For example, Murugiah (2016) showed low-levels of financial literacy among Malaysian adults, and recommended strategic initiatives to enhance their financial skills. In Pakistan, levels of financial knowledge are relatively low. The Karandaaz Financial Inclusion Survey (2022) found that less than 26% of adults were able to provide correct answers to simple interest-rate questions, with women lagging men by roughly fifteen percentage points.

The concept of Financial Knowledge was considered as a pre-requisite to good financial behavior from a theoretical perspective. However, the link between the two constructs empirically had some complexities that were not expected beforehand. For instance, Noor et al. (2020) documented a strong yet moderate relationship between Financial Knowledge and financial confidence among the Malaysian working class. On the other hand, Rabbain et al. (2020) found out that Financial Knowledge had an impact on the financial behavior of the young adult population, though it varied with different settings. Nevertheless, Loza et al. (2024) found out that the knowledge variable had a minimal impact once the behavioral and skill variables were included in the model. The relationship between Financial Knowledge and confidence could be weakened further in the



Pakistani scenario. This is because much of the financial literacy skills that exist in the country are learned verbally at home and by religious teachings on acceptable financial practices.

Financial Behavior

Financial Behavior describes the observable actions carried out by people in their effort to manage their income, expenditures, savings, borrowings, and investments (Dew & Xiao, 2011). The Revised Financial Management Behavior Scale, created by Dew and Xiao (2011), has been increasingly used to measure the concept of Financial Behavior. This is because the scale measures various behaviors in relation to cash management, credit management, savings, and investments. Several studies have found that Financial Behavior is one of the most robust predictors of Financial Self-Efficacy, as behavioral competency builds through the repetitive successful performance of finance-related activities (Brady et al., 2021; Arofah et al., 2018). There has been an exploration of factors associated with responsible financial behavior. Specifically, Bapat (2020) observed that financial risk tolerance was an important moderator of responsible financial management behaviors in young adults, whereas Stromback et al. (2017) established that self-control predicted good financial behaviors and overall financial health.

The significance of the former over the latter in terms of building financial confidence can be seen especially in Pakistan. According to Hussain and Sajjad (2022), there were many working professionals based in Karachi and Lahore who did not have any formal education in finance but had discipline when it comes to saving and budgeting due to their involvement in rotating savings schemes and observing their parents' money habits. This type of learning is consistent with Bandura's (1997) assertion that mastery experiences are among the most powerful sources of self-efficacy expectations. Therefore, Financial Behavior may be the main process by which Pakistani working individuals develop their financial confidence.

Financial Attitude

The Financial Attitude is the psychological perspective with which people view finances and finance-related issues (Atkinson & Messy, 2011). The term 'attitude' refers to one's preference between current and future consumption, risk tolerance, and views regarding personal debts, savings, and wealth generation. According to the extant literature, there have been positive relationships between positive financial attitude and different financial issues, albeit moderately (Muslikhun & Wahjoedi, 2023). Nevertheless, according to Loza et al. (2024), attitudes do not have strong effects when it comes to influencing behaviors and confidence levels after accounting for knowledge and skills.

There is a specific mix of cultural and religious factors that have a direct impact on financial attitudes in Pakistan. The Islamic rules regarding the prohibition of usury, promotion of generosity in the form of zakat and sadqa, and importance of satisfaction with one's socioeconomic status all combine to create a set of values that are quite different from those discussed in secular research in the West (Khan et al., 2021). However, the degree to which the mentioned attitudes affect



Financial Self-Efficacy is unknown, which makes the problem worthy of investigation in the current study.

Financial Skills

Financial Skills refer to applied skills that allow performing specific actions related to finance like budgeting, expenses management, comparing financial offers, and reading financial reports (Loza et al., 2024). As compared to Financial Knowledge which implies cognitive skills, and to Financial Behavior that implies observable behaviors, Financial Skills imply an intermediate level of skill acquisition and thus imply practical skills that link knowing and doing. The Financial Skills scale developed by Loza et al. (2024) was found to be reliable (.89 Cronbach's alpha), and the researchers noted that skills were an important determinant of financial skills among adult students.

Although the importance of Financial Skills for Pakistanis has not been empirically analyzed in the literature, there is theoretical reason to assume that skills might play an especially important role as an influential factor associated with Financial Self-Efficacy in contexts where there is a lack of proper education in financial matters. The sense of mastery that comes after acquiring skills either through practice or peer learning contributes to self-confidence even if one lacks official credentials (Bandura, 1997). Such considerations support the expectation made by the present research that Financial Skills predict Financial Self-Efficacy in Pakistan.

Synthesis and Hypothesized Relationships

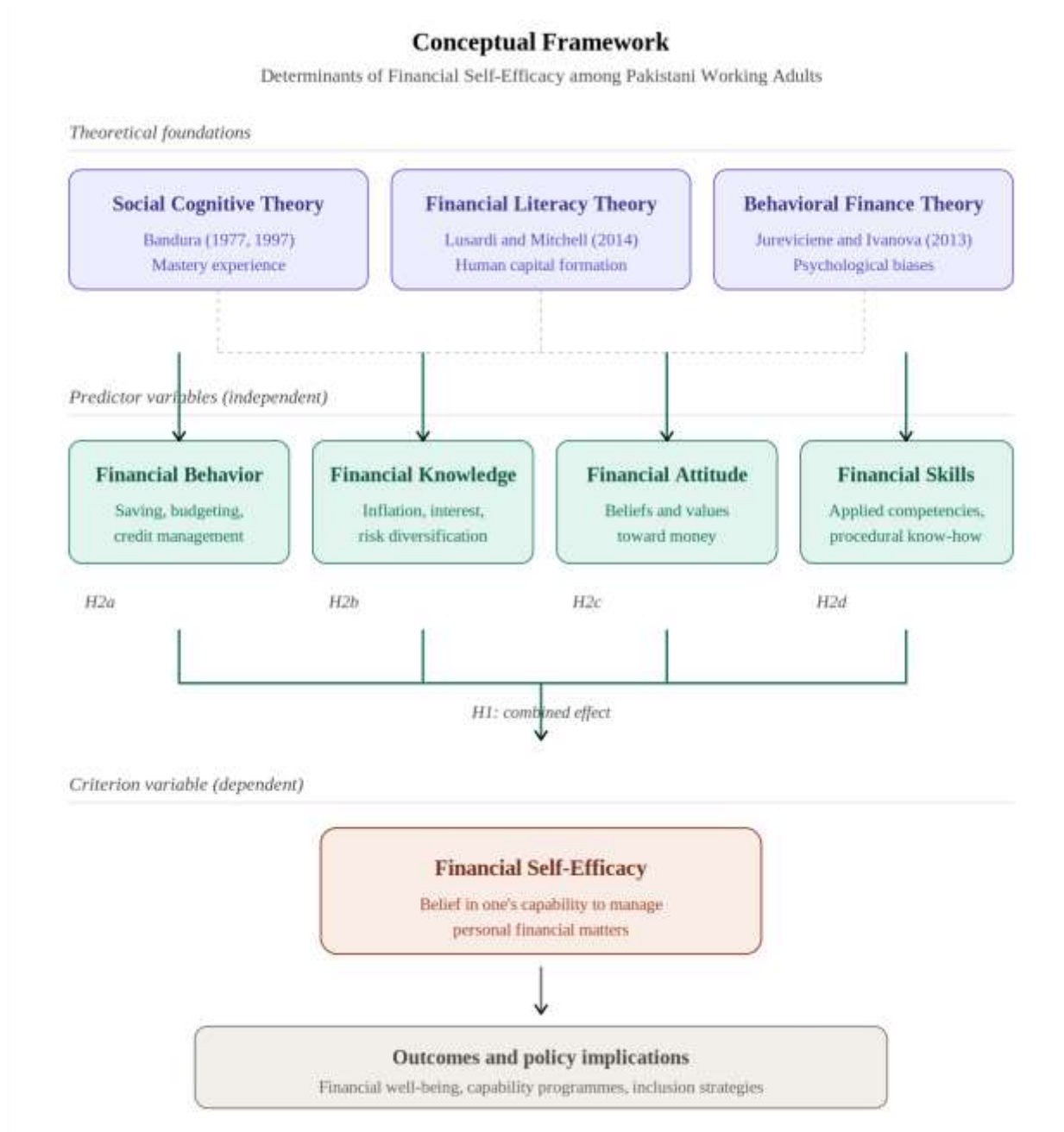
As illustrated above, there is both substantive and obvious divergence between the international body of literature exploring the determinants of Financial Self-Efficacy. Even though Financial Knowledge, Financial Behavior, Financial Attitude, and Financial Skills have individually been identified as potential determinants, the extent of relevance attributed to each predictor is not consistent across the literature. However, it is also important to mention that, previously, no study had evaluated the four determinants simultaneously among a Pakistani working adult population due to the distinctiveness of the Pakistani financial system including Islamic finance principles, collective decision making within families, and informal saving societies.

On the basis of this review, two research questions and corresponding hypotheses guided the present study. The first question examined whether Financial Behavior, Financial Knowledge, Financial Attitude, and Financial Skills, combined, would explain the variance in Financial Self-Efficacy. The second question examined the individual contribution of each predictor relative to the combined model. The integrated conceptual framework guiding the present investigation is depicted in Figure 1, which positions the three theoretical traditions as the analytical foundation, the four constructs as the predictor variables, Financial Self-Efficacy as the criterion variable, and the resulting policy and welfare outcomes as the anticipated downstream contribution of the study. The methodology adopted to address these research questions is described in the section that follows.



Figure 1

Conceptual Framework Illustrating the Hypothesized Relationships among Theoretical Foundations, Predictor Variables, and Financial Self-Efficacy



Note. H1 represents the combined effect of all four predictors on Financial Self-Efficacy. H2a through H2d represent the individual hypothesized effects of Financial Behavior, Financial Knowledge, Financial Attitude, and Financial Skills, respectively. The dashed lines among the theoretical foundations indicate their complementary and integrative function within the conceptual model.



Research Methodology

Research Design

This current study made use of the correlational predictive design, specifically designed for studies that are interested in exploring how a range of independent variables, both individually and as a group, account for the variability in one criterion variable (Creswell & Creswell, 2018). In such instances where causation and description are not possible due to ethical and practical constraints, correlational predictive design is best applicable as it seeks to measure the predictability of constructs towards another based on theory. Considering that Financial Self-Efficacy could not be subjected to manipulation owing to its unethical nature and that the predictors under focus here exist as naturally occurring constructs among working adults, correlational predictive design emerged as the most viable choice.

Furthermore, the choice of a quantitative design over qualitative and mixed methods designs was justified by the objective of making generalizations using statistics, the availability of tested psychometric scales for all the focal constructs, and appropriateness of conducting multiple regression analysis in testing the predictability of variables as stated above. The correlational predictive design used here mirrors those previously used in empirical research on the financial literacy of various populations around the world (Lown, 2011; Noor et al., 2020; Loza et al., 2024).

Population and Sample

The overall population for this research is composed of all working adults ranging in age from 25 to 55 years living in Pakistan. For this research, the target population was further reduced to working adults in this age group who work in non-governmental and developmental organizations situated in four main cities including Karachi, Lahore, Islamabad, and Peshawar. These cities have been chosen on the basis of a high number of non-profit organizations registered in them, representing the leading provinces in Pakistan, and easy access via professional channels for recruiting participants. According to data provided by the Pakistan Centre for Philanthropy (2023), more than sixty thousand non-profit organizations exist in Pakistan, out of which nearly 42% operate in these four cities.

Prior power analysis of statistics was performed using G*Power software 3.1 to estimate the minimum number of samples needed for multiple regression with four predictors. Based on the standard power value of .80, level of significance (.05) and medium effect size ($f^2 = .15$), the analysis revealed a minimum sample size of 85 respondents. In an attempt to increase the power of statistics and to allow for the possibility of dealing with any missing data, the sample size was greatly increased. Ultimately, a total of 397 valid respondents participated in the study, a sample size that greatly exceeds the minimum and is consistent with sample size used in researches conducted by Ph.D. /Postdoctorate researchers in HEC Pakistan approved journals.



Sampling Strategy and Participant Recruitment

A hybrid of convenience sampling and snowball sampling methods were used in recruiting participants for the research study. The main strategy used in sampling participants for the study is convenience sampling, in which respondents are recruited based on their affiliation with the Pakistan Humanitarian Forum, the Pakistan NGOs Forum, and other regional development networks. Snowball sampling then follows after participants have taken the survey questionnaire, where participants are encouraged to pass out the survey link to colleagues who fit the inclusion criteria set by the researchers. A hybrid method was essential due to the temporary and contract-based employment prevalent in the development industry in Pakistan.

The inclusion criteria for the respondents involved being of Pakistani nationality, between the ages of 25 and 55 years old, working in any NGO or development firm in either full-time or contract employment, and being able to answer a survey questionnaire in English. The exclusion criteria included failure to obtain informed consent, answering less than 80% of the survey questions, and having suspicious survey response patterns, such as straightlining.

A total number of 451 participants were identified during the research process. Out of the 451, 18 declined their willingness to sign the informed consent form, 24 had incomplete questionnaires, while 12 did not fit the criteria for selection. Therefore, only 397 participants formed the study group.

Instrumentation

Three validated tests were administered to measure the constructs under investigation, along with a demographic survey.

The Financial Literacy Questionnaire (FLQ), a test validated by Stella et al. (2020), was utilized to assess Financial Knowledge, Financial Skills, and Financial Attitude. The subtest measuring Financial Knowledge involved five multiple choice questions about the topics including inflation, compound interest, and risk diversification. These were coded 1 (correct answer) or 0 (incorrect answer). The subtest evaluating Financial Skills included five questions about the application of financial knowledge, for example, drawing up a budget and managing expenses, which were again scored dichotomously. The third part of the test assessed Financial Attitude through ten questions using a seven-point Likert scale from completely disagree (1) to completely agree (7).

Financial Behavior was measured using the Revised Financial Management Behavior Scale (FMBS) by Dew and Xiao (2011). The questionnaire contains fifteen items measured on a five-point Likert scale ranging from 1 (never) to 5 (always). The test has been validated in many studies and is known to be one of the most referenced instruments related to personal finance behaviors. Two items (number 6 and number 7) have to be reverse-coded before calculating the total score, according to instructions provided by instrument authors.

The criterion variable (Financial Self-Efficacy) was assessed using the Financial Self-Efficacy Scale (FSES) by Lown (2011). The scale consists of six items measured on a four-point Likert



scale ranging from 1 (exactly true) to 4 (not at all true). The scores were reverse-scored so that a higher total score indicates higher Financial Self-Efficacy. The scale was shown to have good internal consistency and reliability across various populations in the USA, Australia, and several Asian countries (Farrell et al., 2016; Asebedo & Payne, 2019).

The Demographic Questionnaire was created by the researcher. It included information about age, gender, educational qualification, monthly income, marital status, city of residence, current position in the organization, and years of service in the non-governmental sector.

Validity and Reliability

Both of the constructs have been tested for validity in past literature, and in the current research, both the questionnaires have been used as is, thus maintaining their instrument validity. For the content validity, the questions were reviewed by two professors of the Department of Economics and one practitioner of the financial sector, who found that the questionnaire items were relevant for Pakistani working adults.

Reliability has been assessed using Cronbach's alpha for each instrument in the current sample. According to Table 1 below, all three instruments have shown reliability levels greater than the benchmark figure of .70 suggested by Nunnally and Bernstein (1994), matching the results reported in past research.

Table 1
Internal Consistency Reliability (Cronbach's Alpha) for Study Instruments

Instrument	Number of Items	Cronbach's Alpha (Present Study)	Cronbach's Alpha (Original Study)
Financial Self-Efficacy Scale (FSES)	6	.87	.76 (Lown, 2011)
Financial Management Behavior Scale (FMBS)	15	.84	.81 (Dew & Xiao, 2011)
FLQ: Knowledge Subscale	5	.81	.89 (Loza et al., 2024)
FLQ: Skills Subscale	5	.83	.89 (Loza et al., 2024)
FLQ: Attitude Subscale	10	.79	.88 (Loza et al., 2024)

Note. $N = 397$.

Data Collection Procedures

The process of data collection took about eleven weeks, from January till March 2025. The survey was carried out electronically via the Google Forms platform that is readily available to all non-governmental organizations in Pakistan. The survey link was distributed using e-mail invitations sent to contacts in organizations, along with postings on professional social networks such as LinkedIn. In each e-mail invitation, participants were provided with the purpose of the study, an estimated time for completing the survey, and a link to the consent form.

The process of filling out the survey was completely voluntary and did not involve any financial incentives. Participants were assured that their information would be kept anonymous and used



solely for research purposes. After completing the survey, the information entered in it was automatically exported to a spreadsheet stored on a secure external drive.

Ethical Considerations

The experiment was approved by the Departmental Research Ethics Committee of the university where the author is enrolled before beginning data collection. This research abided by the principles of ethics mentioned in Belmont Report, which include "respect for persons, beneficence, and justice" (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Consent was given by participants electronically before filling out the questionnaire, and the subjects had the right to withdraw at any time without facing consequences. There was no collection of personal data, and all data gathered was de-identified. There were no risks posed to the subjects other than spending time completing the questionnaire.

Data Analysis

Statistical analyses were done using IBM SPSS Statistics Version 27. The statistical process followed the following four phases. The first phase included data cleaning, which entailed identifying missing values, conducting screening for outliers in terms of standardized residual and Mahalanobis distance, and reverse coding of the relevant items in line with the instructions given in the instrument.

The second phase included data aggregations wherein composite scores of all constructs were created in accordance to the instructions provided by the original instrument developers. For instance, the Financial Self-Efficacy construct was obtained by adding up all six items in FSES scale, Financial Behavior by taking the average score of all fifteen items in FMBS, Financial Knowledge by taking the average score of all five knowledge items, Financial Skills by averaging all five skills items, and lastly, Financial Attitude by averaging all ten attitude items.

The third phase included testing assumptions for multiple linear regressions such as linearity, independent residual, homoscedasticity, normality of residuals, and lack of multicollinearity. These assumptions were tested through partial regression plot for linearity, Durbin-Watson statistic for independence, standardized residual plot for homoscedasticity, Shapiro-Wilk Test and P-P Plot for normality, and tolerance and variance inflation factor for multicollinearity.

The fourth phase entailed the test of hypotheses using multiple linear regression analysis. The overall influence of all four predictors on Financial Self-Efficacy was tested based on the value of the overall F-statistic and the coefficient of determination (R^2), whereas the influence of each predictor individually was tested using standardized beta coefficients, t-statistics, and corresponding p-values. Two-tailed tests of hypotheses were used, with the alpha criterion set at .05, which is a standard criterion used in the field of social and behavioral sciences. Findings from the above-mentioned analyses are reported in the next section.



Results

Sample Characteristics

The final analysis sample included 397 employed adults working for both nongovernmental and development sector organizations operating in Karachi, Lahore, Islamabad, and Peshawar. The demographic profile indicated that the sample had a relatively even mix of males and females representing the demographic composition of Pakistan's development professional labor market. As shown in Table 2 below, the demographic makeup consisted of a slightly greater proportion of males ($218/397 = 54.9\%$) than females ($179/397 = 45.1\%$). The age group ranged from the young and middle ages, including 162 respondents (40.8%) between the ages of 25-34, 148 respondents (37.3%) between the ages of 35-44, and 87 respondents (21.9%) between the ages of 45-55.

Education level in the sample set was relatively high, matching the qualifications needed for working in the formal development sector. Out of the total number of respondents, 211 (53.1%) had postgraduate or higher qualifications, while 156 (39.3%) had bachelor's degrees and 30 (7.6%) had other professional qualifications. In terms of monthly income, 132 (33.2%) of the respondents received between Rs. 50,000 to Rs. 100,000, 178 (44.8%) of them received between Rs. 100,001 to Rs. 200,000, while 87 (21.9%) of them had incomes higher than Rs. 200,000. In terms of geographical distribution, the largest number of respondents came from Karachi ($n=134$, 33.8%), followed by Lahore ($n=112$, 28.2%), Islamabad ($n=96$)

Table 2
Demographic Characteristics of the Sample (N = 397)

Characteristic	Category	Frequency	Percentage
Gender	Male	218	54.9
	Female	179	45.1
Age (years)	25 to 34	162	40.8
	35 to 44	148	37.3
	45 to 55	87	21.9
Education	Bachelor's degree	156	39.3
	Master's degree or higher	211	53.1
	Other professional qualification	30	7.6
Monthly Income (PKR)	50,000 to 100,000	132	33.2
	100,001 to 200,000	178	44.8
	Above 200,000	87	21.9
City	Karachi	134	33.8
	Lahore	112	28.2
	Islamabad	96	24.2
	Peshawar	55	13.9

Note. Percentages have been rounded and may not sum to exactly 100.



Descriptive Statistics for Study Variables

The descriptive statistics for the criterion variable and predictor variables are shown in Table 3. The sample mean for the Financial Self-Efficacy variable was 17.84 (standard deviation=3.62), out of a maximum of 24; hence, most of the individuals showed moderate to high levels of self-confidence in relation to finances. The mean score for Financial Behavior was 3.41 (standard deviation=0.68), out of 5 points possible, showing that the respondents were following their financial advice at times and often. Financial Knowledge was scored an average of 0.62 (standard deviation=0.22), which means the respondents got right 62% of the questions asked of them about financial matters. The respondents had fairly strong Financial Skills with a score of 0.71 (standard deviation=0.19). Financial attitude had a mean of 5.18 (standard deviation=0.94), out of a total of 7 points possible.

Table 3

Descriptive Statistics for the Criterion and Predictor Variables (N = 397)

Variable	Possible Range	Observed Range	Mean	Standard Deviation
Financial Self-Efficacy	6 to 24	8 to 24	17.84	3.62
Financial Behavior	1 to 5	1.47 to 4.93	3.41	0.68
Financial Knowledge	0 to 1	0.00 to 1.00	0.62	0.22
Financial Skills	0 to 1	0.00 to 1.00	0.71	0.19
Financial Attitude	1 to 7	2.20 to 7.00	5.18	0.94

Assumption Testing for Multiple Linear Regression

Before carrying out the regression analysis, assumptions that form the basis of the multiple linear regression analysis were tested for to ensure the validity of the inferential statistics generated from the test. To test for linearity assumption, a partial regression plot was done for all variables, and the patterns observed indicated an approximate linear relationship between the criterion variable and the independent variables. To test for the independence of errors, a Durbin Watson statistic was carried out to provide a value of 1.94, which falls within the acceptable range of 1.5 to 2.5 (Field, 2018).

To test for homogeneity of variance, a graph of standardized residuals vs standardized predicted values was used, which revealed random distribution of the residuals without any particular pattern. The test of normality was done visually by plotting standardized residuals vs normal scores and looking at their distribution. A normality assumption was supported by histograms of standardized residuals, revealing normality of residuals. Additionally, the Shapiro-Wilk statistic provided a test statistic value of .992 ($p = .067$), thus indicating normality of residuals.

Multicollinearity among predictors was checked based on their tolerance and variance inflation factors. According to Table 4, the tolerance values of the four predictors varied between .58 and .88, while the variance inflation factor varied between 1.14 and 1.72, all of which were well within the recommended range according to Hair et al. (2019). According to Hair et al. (2019), tolerance values should be higher than .20 and variance inflation factor lower than 5.00 to avoid multicollinearity problems.



Table 4

Multicollinearity Diagnostics for Predictor Variables

Predictor	Tolerance	Variance Inflation Factor (VIF)
Financial Behavior	.71	1.41
Financial Knowledge	.67	1.49
Financial Attitude	.88	1.14
Financial Skills	.58	1.72

Correlations among Study Variables

Bivariate Pearson correlations among the criterion variable and the four predictors are reported in Table 5. Financial Self-Efficacy demonstrated significant positive correlations with Financial Behavior ($r = .491, p < .001$), Financial Skills ($r = .308, p < .001$), Financial Knowledge ($r = .192, p < .01$), and Financial Attitude ($r = .164, p < .01$). Out of all the predictors, the one with the strongest relationship was Financial Behavior and Financial Skills, where $r = .421, p < .001$. It is important to note that none of the correlations between the predictors reached the point of being concerned about the possibility of multicollinearity.

Table 5

Pearson Correlations among Study Variables (N = 397)

Variable	1	2	3	4	5
1. Financial Self-Efficacy	1.00				
2. Financial Behavior	.491**	1.00			
3. Financial Knowledge	.192*	.274**	1.00		
4. Financial Attitude	.164*	.218**	.149*	1.00	
5. Financial Skills	.308**	.421**	.336**	.194*	1.00

Note. * $p < .01$, ** $p < .001$.

Multiple Linear Regression Analysis

The analytical focus was to find out to what degree the four predictors, when analyzed either collectively or independently, predicted the Financial Self-Efficacy. Standard multiple linear regression analysis was carried out using Financial Self-Efficacy as the criterion variable while Financial Behavior, Financial Knowledge, Financial Attitude, and Financial Skills were used simultaneously as independent variables.

The results from the model as a whole revealed extremely high statistical significance, with $F(4, 392) = 44.857, p < .001$. Coefficient of determination revealed that the collective contribution of the four predictors explained 31.4% of the variance in Financial Self-Efficacy ($R^2 = .314$, adjusted $R^2 = .307$). Consequently, the first null hypothesis ($H1_0$) had to be rejected while the alternate hypothesis ($H1_A$) stating that the four predictors in conjunction could predict variance in Financial Self-Efficacy among working adults in Pakistan's NGO sector is considered correct.



Details of the prediction made by individual variables are provided in Table 6. Of all four, the contribution by Financial Behavior emerged as highest in the sense that the standardized beta coefficient was found to be .418 ($t = 8.420, p < .001$). Financial Skills also emerged as a statistically significant predictor, with $\beta = .148$ ($t = 2.694, p = .007$), confirming a meaningful independent contribution to the explained variance. In contrast, Financial Knowledge ($\beta = .042, t = 0.822, p = .412$) and Financial Attitude ($\beta = .058, t = 1.301, p = .194$) did not reach statistical significance at the conventional .05 level.

Table 6

Multiple Linear Regression Results Predicting Financial Self-Efficacy (N = 397)

Predictor	B	SE B	β	t	p
Constant	8.247	0.971	—	8.493	< .001
Financial Behavior	2.225	0.264	.418	8.420	< .001
Financial Knowledge	0.691	0.841	.042	0.822	.412
Financial Attitude	0.223	0.172	.058	1.301	.194
Financial Skills	2.820	1.047	.148	2.694	.007

Note. $R^2 = .314$, adjusted $R^2 = .307$, $F(4, 392) = 44.857, p < .001$.

Summary of Hypothesis Testing

The hypothesis testing results may be summarized as follows. With respect to the first research question, the null hypothesis ($H1_0$) was rejected, as the four predictors combined significantly explained variance in Financial Self-Efficacy. With respect to the second research question, the null hypothesis for Financial Behavior ($H2a_0$) was rejected, supporting the alternative hypothesis that Financial Behavior explains variance in Financial Self-Efficacy relative to the model. Similarly, the null hypothesis for Financial Skills ($H2d_0$) was rejected, confirming the alternative hypothesis.

However, the null hypotheses for Financial Knowledge ($H2b_0$) and Financial Attitude ($H2c_0$) were not rejected, indicating that neither predictor exerted a statistically significant individual influence on Financial Self-Efficacy after accounting for the other variables in the model.

These findings establish that Financial Behavior and Financial Skills function as the primary drivers of Financial Self-Efficacy among Pakistani working adults in the non-governmental sector, while Financial Knowledge and Financial Attitude, although correlated with Financial Self-Efficacy at the bivariate level, lose their predictive significance when considered within a multivariate framework. The interpretation of these findings in light of theoretical expectations and the Pakistani socio-economic context is taken up in the discussion that follows.



Discussion and Conclusion

Discussion

This paper investigates the contribution of Financial Behavior, Financial Knowledge, Financial Attitude, and Financial Skills as a cluster and individual predictor towards the explanation of the variance in Financial Self-Efficacy in a sample of 397 Pakistani employees in the non-governmental and development sector. The results obtained from the data analysis were unambiguous and meaningful. As a composite measure, Financial Behavior, Financial Knowledge, Financial Attitude, and Financial Skills predicted about 31.4% of the variance in Financial Self-Efficacy, which is a remarkable result for a cross-sectional study in the field of behavioral finance. Financial Behavior was found to be the most significant individual predictor of Financial Self-Efficacy, followed by Financial Skills. Financial Knowledge and Financial Attitude were not statistically significant in predicting Financial Self-Efficacy after controlling for the other predictors.

Interpretation of the Combined Model

The conclusion that the four variables jointly accounted for 31.4% of the variation in Financial Self-Efficacy marginally surpasses the results reported in the initial dissertation conducted by Taiwo (2025) on a similar American sample, which reported an R^2 value of .236. It is possible that several factors, peculiar to the present Pakistani sample, might explain why these four predictors have a slightly more pronounced effect than those identified in the original dissertation. First, in regions where economic uncertainty is high and institutional support systems are less well-established, these cognitive and behavioral resources may play a more significant role in influencing an individual's perception of financial self-efficacy because people have to depend more on their own capacities rather than formal financial mechanisms (Hussain & Sajjad, 2022). Secondly, due to the homogenous nature of the development sector employees regarding education level and experience in financial organization management, better prediction effects were attained.

Such an interpretation is consistent with the theory posited by Bandura (1997), who stated that the highest levels of self-efficacy will emerge in those areas where there is an active involvement of the individual with the task at hand, along with immediate and tangible consequences for both competent and incompetent behavior. The Pakistani working adults, working in a contractual setup without proper retirement plans on the part of the employer, clearly find themselves in such a critical monetary situation. This is why their FSE is closely related to their financial behavior.

The Primacy of Financial Behavior

That Financial Behavior emerged as the highest single predictor ($\beta = .418, p < .001$) is another example of an observation made consistently in international literature (Brady et al., 2021; Arofah et al., 2018; Taiwo, 2025). This result can be viewed from the point of view of Bandura's (1997) assertion that mastery experience is the most powerful influence on the development of self-efficacy beliefs. The repeated experience of performing the acts of budgeting, saving, accounting



for expenses, and responsible borrowing results in the formation of high self-efficacy beliefs, far more powerful than any knowledge or attitude alone would generate.

Within the Pakistani setting, the behavioral approach towards confidence takes on a unique cultural flavor. Most adult workers within Pakistan learn disciplined finance practices not from educational training, but from engagement with informal financial institutions and through socialization within the larger family networks. In the case of Pakistan, the most common practice of disciplined saving is that of the rotating savings and credit association, also called committee or kameti. Through these informal financial systems, individuals are socially accountable for their saving habits as well as the accumulation of lump sums of money for expenditures, leading them to be financially disciplined (Khan et al., 2021). Perhaps the reason for behavior's immense influence on confidence levels is the practical nature of the latter's acquisition, especially by participants scoring poorly on financial knowledge tests.

It carries important implications in designing financial capability interventions. Interventions that focus on behavior change, such as conducting budgets, automatically depositing savings, and practicing financial applications such as Raast, JazzCash, and Easypaisa, will generate higher levels of financial self-efficacy compared to knowledge-based interventions conducted through classroom settings. The National Financial Literacy Programme of the State Bank of Pakistan (State Bank of Pakistan, 2023), which traditionally has focused on knowledge acquisition, can benefit from incorporating behavior into its program based on this research.

The Significant Role of Financial Skills

Financial Skills were the second important predictor of statistical significance ($\beta = .148, p = .007$), corroborating the findings of Loza et al. (2024) and confirming the theory that procedural competence is an essential element in the hierarchy between conceptual understanding and observable action. Given the statistical significance of skills and the lack thereof of knowledge, it can be said that while knowing the definitions of certain terms related to finance might not be as important in building up Financial Self-Efficacy, applying those definitions in decision-making circumstances is of much more importance.

Given that in Pakistan, financial education has been absent from all schools and universities for years, and yet individuals manage to achieve high levels of practical financial competency regardless of the lack of formal training, the ability to create a budget taking into account the irregular payments typical of development sector contractual positions, comparing financial service offerings and negotiating market prices becomes an essential skill which contributes to financial intelligence that is not measured by tests but which makes a huge difference in daily life. From a practical perspective, financial capability interventions in Pakistan should focus on enhancing practical skills and not knowledge alone.

The Non-Significance of Financial Knowledge

Undoubtedly, one of the most interesting theoretical insights of this research can be seen from the insignificance of Financial Knowledge in predicting Financial Self-Efficacy after taking into



account the factors of Financial Behavior, Financial Skills, and Financial Attitude ($\beta = .042$, $p = .412$). Bivariate correlations between Financial Knowledge and Financial Self-Efficacy were found to be positive and significant ($r = .192$, $p < .01$), but they vanished when considering all three other variables simultaneously.

This result contradicts the widely held belief embedded in the design of financial literacy programs that knowledge represents the main tool that contributes to enhancing financial confidence. This result is in agreement with Loza et al. (2024) and increasingly common academic criticism towards the so-called knowledge, attitude, and practice framework, which has long been the guiding star of financial education policy. In the case of Pakistan, this nonsignificant relation between financial confidence and knowledge can be explained by the difference between abstract concepts associated with finance that are included in measurement scales designed mostly in Western countries and actual financial situations with which Pakistani adults struggle daily. For example, an individual may fail to answer a multiple-choice question regarding compound interest but still feel confident when budgeting at home, sending money to his or her relatives, or being involved in a roscas group.

An alternative explanation is based on the cultural transmission of financial knowledge in Pakistani families. Much of the financial knowledge in Pakistan comes from oral teaching by family members, watching how family members make their financial decisions, and teaching from religion about what kind of economic behavior is acceptable (Khan et al., 2021). Although this type of informal financial knowledge does not necessarily reflect the right answers to a standard financial knowledge test, it can instill a high level of financial self-confidence. This hypothesis calls for more qualitative research on sources of financial self-confidence in Pakistan.

The Non-Significance of Financial Attitude

Also, like in the study conducted in America, the Financial Attitude variable was not significant at the individual level ($\beta = .058$, $p = .194$). Although this result seems unexpected considering the prominence of attitudes in both Theory of Planned Behavior and the Theory of Behavioral Finance, empirical studies show that despite the correlation between attitudes and outcomes, such variables tend to lose importance if behavioral variables and skill variables are included in the regression analysis (Muslikhun & Wahjoedi, 2023).

On the other hand, the absence of significance for the Financial Attitude variable can be explained by cultural peculiarities that may affect the Pakistani sample. In this country, the attitudes toward finance are highly influenced by religious norms regarding avoiding any deals that imply earning interest from money, being generous with zakat and sadqa, and being happy with the economic position provided by God (Khan et al., 2021). Consequently, such attitudes can be prevalent throughout the nation. In turn, their high prevalence means low variability among standardized scores of the attitude scale, which reduces the contribution of Financial Attitude to the variation of Financial Self-Efficacy.



Comparison with the Original Study and the International Literature

The results pattern obtained in this study in Pakistan regarding the significant contributions of Financial Behavior and Financial Skills and non-significant contributions of Financial Knowledge and Financial Attitude, generally speaking, corresponds with the results pattern obtained by Taiwo (2025) in the sample from the US non-governmental organization in which practice-based constructs had significantly higher impact on the level of financial confidence in comparison with cognitive and attitudinal constructs.

On the other hand, certain distinctions can be identified as well. First, the value of explanatory power is somewhat larger in the case of Pakistan sample ($R^2 = .314$) than in the case of the US sample ($R^2 = .236$). Second, Financial Behavior remained the most significant predictor for financial confidence in both samples. All things considered, there are grounds to assume that in developing countries, practice-based constructs may have even more powerful effect due to less developed financial infrastructure and higher relative significance of personal skills. Thus, further cross-national research should investigate whether similar results can be obtained in South Asia and in other emerging markets.

Theoretical Contributions

The current research makes contributions to theory on three fronts. To begin with, it enhances the Social Cognitive Theory through empirical evidence, generated using a developing economy case study, for Bandura's (1997) claim that procedural and practical competency, rather than conceptual understanding, are stronger predictors of self-efficacy beliefs. In addition, it qualifies the Economic Importance of Financial Literacy Theory developed by Lusardi and Mitchell (2014), showing how the welfare-related aspects of financial literacy could be more dependent on applied skill than knowledge testing. Finally, it advances the Theory of Behavioral Finance by embedding it in the cultural setting where attitudes emerge from the religious and social milieu that differs from that of the West-based behavioral economics scholarship.

By embedding these three theories into one study and illustrating their complementary value when explained together on an indigenous sample of working adults, a gap in the native economic literature is filled and serves as a platform for future research. Indeed, it can be concluded that Financial Self-Efficacy is best regarded as an experiential concept, acquired through the process of repeatedly engaging in financial activity and developing skills, and not as an outcome of gaining knowledge or having particular attitudes.

Conclusion, Implications, Limitations, and Future Research

In the current study, an effort was made to understand the role played by the factors of Financial Behavior, Financial Knowledge, Financial Attitude, and Financial Skills, separately and jointly, as determinants of the variation in Financial Self-Efficacy of working adults between the ages of 25 to 55 years, who were employed in the non-governmental and development sectors of Pakistan. With the use of a well-constructed sample of 397 individuals in the four major cities, and the three internationally recognized tools analyzed using multiple linear regression, a comprehensive



pattern of results has been obtained. As joint factors, the four variables have been found to explain about 31.4% variance in Financial Self-Efficacy, which is quite an impressive explanation of variance for a cross-sectional study on behavioral finance. Individually, Financial Behavior proved to be the strongest predictor, whereas Financial Skills followed by a little margin.

There emerges a clear theme underlying these results from a theoretical perspective: the formation of financial confidence amongst working-age Pakistani individuals seems to stem more from active involvement in performing financial activities and the development of practical abilities than from gaining knowledge or holding a certain attitude towards money. Indeed, the finding is consistent with the stress by Bandura (1997) on the importance of mastery experience in self-efficacy, and increasingly supported globally by findings that behavior and abilities have more power in predicting financial confidence than knowledge.

Implications for Policy

The results have significant policy implications for several institutions actively working on improving the financial literacy and inclusion of Pakistan. For example, through its National Financial Literacy Programme, the State Bank of Pakistan has spent considerable effort on educating individuals via awareness campaigns and knowledge-based training (State Bank of Pakistan, 2023). According to the current research results, the gains from the above-mentioned practices could be low if not combined with the practice-based training of practical skills. Therefore, one could think about supplementing the existing educational activities with the following measures: workshops where budget planning takes place; practice with the use of online banking tools such as Raast and JazzCash; and exercises aimed at making investment-related decisions while receiving feedback on the performance of those decisions.

Finally, the Securities and Exchange Commission of Pakistan (responsible for running the investor awareness programmes) could gain from shifting its investor education practices towards building investors' capabilities, because protection is achieved through the capability to protect oneself. In other words, it may be worth supplementing existing seminars with some other activities, for instance, practice of using the simulated trading platform; evaluation of the prospectuses of mutual funds; and experience with documentation.

Institutions like the Pakistan Microfinance Network, in addition to other development organizations involved in financial capability building within low-income communities, will especially benefit from the results of the current research. Traditionally, microfinance institutions have used a combination of financing and financial education; however, the latter usually focuses on imparting knowledge. According to the results obtained in the course of the current study, it would be useful to incorporate behavioral interventions such as commitment savings programs, automatic repayment programs, and graduated responsibility ladders.

For those in charge in the non-governmental employment sphere, the findings obtained highlight the importance of the employer's role in building financial confidence among their employees by means of experience-building approaches. Savings programs for employees offered by the



employer, contribution programs, financial counseling services, and involvement in personal finance-related decisions are just some ways to develop financial confidence among employees.

Implications for Theory and Practice

In addition to its practical implications for public policy, the research makes valuable contributions to financial economics and behavioral finance in the theoretical sense. By proving that the theory combining Social Cognitive Theory, Economic Importance of Financial Literacy Theory, and Theory of Behavioral Finance can still explain observed phenomena in a working adults' population from Pakistan, the research extends the scope of geographic and cultural application of the two approaches and paves the way for future comparative cross-national research in these fields. The insignificance of knowledge and attitudes as individual factors in explaining the phenomenon under examination is also repeated in an earlier study by Taiwo (2025) in America, thus challenging existing assumptions about the role of knowledge in financial literacy theories.

These results have implications for practitioners involved in financial education and empowerment in the form of several key considerations. Programmes should emphasize action rather than knowledge by ensuring that participants are actively involved in budgeting, saving and financial planning rather than just learning about these processes. Educational programmes must take account of and utilize the financial knowledge gained through the experience of being involved in informal institutions like the kameti. Knowledge tests alone should not be used to measure outcomes since behaviour change and skill acquisition are the immediate factors affecting financial self-confidence according to our study results.

Limitations of the Study

Several limitations must be mentioned explicitly. First, due to its cross-sectional nature, the research does not allow establishing a causal relationship. In other words, although the research has revealed statistically significant relationships between variables, the causality remains unclear. There is no doubt that Financial Self-Efficacy can impact Financial Behavior and Skills development, but at the same time, it is possible that it is Financial Self-Efficacy that arises as a result of certain actions.

Second, non-probability sampling was used in the research design. The application of convenience and snowball sampling methods may affect the external validity due to the known biases associated with these two methods. Since no random selection took place during the process of participant sampling, the sample used is unlikely to be representative of the population, which means that neither the sampling frame nor the response rate can be estimated. Furthermore, the use of snowball sampling introduces additional bias since potential participants have been introduced by current participants who are likely to belong to the same professional group, having more or less comparable educational background, income level, and financial behavior. Therefore, it is very likely that the diversity of the sample will be limited, thus increasing the probability of obtaining inflated results. The participants selected for the study lived in only four cities, belonged to either the non-governmental or development sector, which means that the results obtained will not reflect



the realities of the population, particularly those belonging to the private corporate or public sector, as well as the rural or informal sector.

Thirdly, the use of self-reporting survey instruments leads to the risk of common method bias and social desirability response styles. Participants may have reported more positively than they should have regarding recommendations on financial behavior and reported fewer incidents of risky or imprudent financial actions, given that this is a cultural environment that values prudence. Future studies can address this issue by employing the triangulation approach and combining self-reports with objective measures of participants' financial behavior based on their bank account information, mobile financial services, or organization-based financial literacy evaluations.

Fourthly, while the scales used are globally tested and verified, they are based on Western constructs of financial capability and might not reflect some essential aspects of financial competency for the context of Pakistan. For instance, the concept of Financial Knowledge is likely underestimated by measuring participants' ability to calculate inflation rates and interest rates. In addition, financial knowledge in Pakistan entails awareness of Islamic financial concepts, knowledge of the means through which money is sent across borders, as well as competencies related to participation in informal savings organizations.

Directions for Future Research

These findings suggest a number of fruitful directions for future research. Studies involving longitudinal analysis of the development of financial behaviors, competencies, and self-confidence over time would establish the causal relationship between these factors and reveal the developmental processes involved in the development of financial confidence. These studies could be conducted using evaluations of financial literacy programs currently run by the State Bank of Pakistan or the Securities and Exchange Commission of Pakistan.

Research extending the present methodology to new groups in Pakistan, such as private company workers, workers in the informal economy, agricultural families, and homemakers, would examine the applicability of the present results and identify specific trends within various populations. Comparative studies expanding the present analysis to South Asian countries such as India, Bangladesh, and Sri Lanka would reveal the cultural and structural variables moderating the relationships established in the current study.

Further qualitative study exploring the origins and nature of financial confidence amongst Pakistani employees will help understand the results obtained through quantitative analysis in this study. Semi-structured interviews of participants exhibiting high and low Financial Self-Efficacy will allow us to explore the experiential processes, family socialization, religious effects, and institutional experiences that affect financial confidence beyond the reach of survey questions.

Experimentation with different kinds of financial capability programmes based on knowledge, skills, and behavioral components, respectively, will enable testing of the policy recommendations proposed in this study. These experiments can be carried out in collaboration with non-



governmental organizations, microfinance organizations, or employer associations, thus translating theoretical conclusions into practical solutions.

Lastly, further research on the cultural and religious aspects of financial activities among Pakistani people needs to be undertaken. It is important to investigate the influence of Islamic values on the development of beliefs, practices, and attitudes of individuals, the impact of joint-family decision-making systems, and the prevalence of informal financial organizations. This will enrich both the local scholarship and the global academic debate around financial capability construction within other cultures.

Concluding Reflection

All in all, the Financial Self-Efficacy of Pakistani working adults who belong to the non-governmental sector is better predicted by Financial Behavior and Financial Skills than Financial Knowledge and Financial Attitude. The implications of this research will influence future research, the understanding of financial confidence and the way financial literacy programs, investor education, and workplace well-being programs are designed. Considering the particular context of culture, religion, and economics of Pakistan, the present study adds to the literature by offering an example of indigenous research in the field of financial self-efficacy.

References

- Antony, A. (2019). Behavioral finance and portfolio management: Review of theory and literature. *Journal of Public Affairs*, 20(2), Article e1996. <https://doi.org/10.1002/pa.1996>
- Arofah, A. A., Purwaningsih, Y., & Indriayu, M. (2018). Financial literacy, materialism and financial behavior. *International Journal of Multicultural and Multireligious Understanding*, 5(4), 370–378. <https://doi.org/10.18415/ijmmu.v5i4.171>
- Asebedo, S. D., & Payne, P. (2019). Market volatility and financial satisfaction: The role of financial self-efficacy. *Journal of Behavioral Finance*, 20(1), 42–52. <https://doi.org/10.1080/15427560.2018.1434651>
- Atkinson, A., & Messy, F. A. (2011). Assessing financial literacy in 12 countries: An OECD/INFE international pilot exercise. *Journal of Pension Economics and Finance*, 10(4), 657–665. <https://doi.org/10.1017/S1474747211000539>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. <https://doi.org/10.1037/0033-295X.84.2.191>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman.
- Bapat, D. (2020). Antecedents to responsible financial management behavior among young adults: Moderating role of financial risk tolerance. *International Journal of Bank Marketing*, 38(5), 1177–1194. <https://doi.org/10.1108/IJBM-10-2019-0356>
- Brady, M. P., Stueve, A., & Loibl, C. (2021). Financial behavior and financial self-efficacy among adults: Evidence from a U.S. national sample. *Journal of Financial Counseling and Planning*, 32(2), 248–265. <https://doi.org/10.1891/JFCP-19-00080>



- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Dew, J., & Xiao, J. J. (2011). The financial management behavior scale: Development and validation. *Journal of Financial Counseling and Planning*, 22(1), 43–59.
- Farrell, L., Fry, T. R. L., & Risse, L. (2016). The significance of financial self-efficacy in explaining women's personal finance behaviour. *Journal of Economic Psychology*, 54, 85–99. <https://doi.org/10.1016/j.joep.2015.07.001>
- Field, A. (2018). *Discovering statistics using IBM SPSS Statistics* (5th ed.). SAGE Publications.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.
- Hussain, M., & Sajjad, F. (2022). Financial well-being and economic stress among working professionals in urban Pakistan: An empirical investigation. *Pakistan Journal of Commerce and Social Sciences*, 16(3), 411–432.
- Iqbal, S., & Nosheen, S. (2023). Determinants of financial self-efficacy among women microfinance beneficiaries in Punjab: Evidence from rural Pakistan. *Journal of Managerial Sciences*, 17(2), 88–106.
- Jureviciene, D., & Ivanova, O. (2013). Behavioural finance: Theory and survey. *Mokslas: Lietuvos Ateitis / Science: Future of Lithuania*, 5(1), 53–58. <https://doi.org/10.3846/mla.2013.08>
- Karandaaz Pakistan. (2022). *Financial inclusion insights: Pakistan, wave 5 report*. Karandaaz Pakistan. <https://karandaaz.com.pk>
- Kartawinata, B. R., Fakhri, M., Pradana, M., Hanifan, N. F., & Akbar, A. (2021). The role of financial self-efficacy: Mediating effects of financial literacy and financial inclusion of students in West Java, Indonesia. *Journal of Management Information and Decision Sciences*, 24(7), 1–9.
- Khan, A. R., Saleem, S., & Mahmood, T. (2021). Islamic financial principles and household saving behavior in Pakistan: Evidence from an urban sample. *Pakistan Development Review*, 60(4), 521–544. <https://doi.org/10.30541/v60i4pp.521-544>
- Lown, J. M. (2011). Development and validation of a financial self-efficacy scale. *Journal of Financial Counseling and Planning*, 22(2), 54–63.
- Loza, R., Romani, G., Castañeda, W., & Arias, D. (2024). Financial literacy, financial behavior and financial confidence: Evidence from adult learners. *Journal of Risk and Financial Management*, 17(2), Article 78. <https://doi.org/10.3390/jrfm17020078>
- Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44. <https://doi.org/10.1257/jel.52.1.5>
- Murugiah, L. (2016). The level of understanding and strategies to enhance financial literacy among Malaysian. *International Journal of Economics and Financial Issues*, 6(S3), 130–139.
- Muslikhun, M., & Wahjoedi, W. (2023). Financial attitude, financial skills, and financial behavior of working adults: Evidence from Indonesia. *International Journal of Economics, Business and Accounting Research*, 7(1), 314–328.



National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. (1979). *The Belmont Report: Ethical principles and guidelines for the protection of human subjects of research*. U.S. Department of Health, Education, and Welfare.

Noor, N., Batool, I., & Arshad, H. M. (2020). Financial literacy, financial self-efficacy and financial account ownership behavior in Pakistan. *Cogent Economics and Finance*, 8(1), Article 1806479. <https://doi.org/10.1080/23322039.2020.1806479>

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). McGraw-Hill.

Pakistan Centre for Philanthropy. (2023). *The state of the non-profit sector in Pakistan: Annual report 2023*. Pakistan Centre for Philanthropy.

Prosad, J. M., Kapoor, S., & Sengupta, J. (2015). Behavioral biases of Indian investors: A survey of Delhi-NCR region. *Qualitative Research in Financial Markets*, 7(3), 230–263. <https://doi.org/10.1108/QRFM-04-2014-0012>

Rabbain, R. M., Rambli, A., Yusoff, M. H., & Jaffar, N. (2020). Financial knowledge and financial behaviour among young adults. *International Journal of Academic Research in Business and Social Sciences*, 10(11), 905–919. <https://doi.org/10.6007/IJARBSS/v10-i11/8204>

Rahmawati, N. W., & Asandimitra, N. (2018). Influence of financial knowledge, financial attitude and locus of control on financial behavior of consumer in Surabaya. *Jurnal Ilmu Manajemen*, 7(2), 549–558.

Riaz, S., Khan, H. H., Sarwar, B., Ahmed, W., Muhammad, N., Reza, S., & Khan, M. N. (2022). Influence of financial social agents and attitude toward money on financial literacy: The mediating role of financial self-efficacy and moderating role of mindfulness. *SAGE Open*, 12(3). <https://doi.org/10.1177/21582440221117140>

State Bank of Pakistan. (2023). *Annual report 2022, 2023: The state of Pakistan's economy*. State Bank of Pakistan. <https://www.sbp.org.pk>

Stella, G. P., Filotto, U., Cervellati, E. M., & Graziano, E. A. (2020). The effects of financial education on financial literacy in Italy. *International Business Research*, 13(4), 1–11. <https://doi.org/10.5539/ibr.v13n4p1>

Stromback, C., Lind, T., Skagerlund, K., Vastfjall, D., & Tinghog, G. (2017). Does self-control predict financial behavior and financial well-being? *Journal of Behavioral and Experimental Finance*, 14, 30–38. <https://doi.org/10.1016/j.jbef.2017.04.002>

Taiwo, B. A. (2025). *Explaining financial self-efficacy variance: Behavior, knowledge, attitude, and skills* [Doctoral dissertation, Grand Canyon University]. ProQuest Dissertations and Theses Global.

Thomas, A., & Gupta, V. (2021). Social capital theory, social exchange theory, social cognitive theory, financial literacy, and the role of knowledge sharing as a moderator in enhancing financial well-being. *Frontiers in Psychology*, 12, Article 664638. <https://doi.org/10.3389/fpsyg.2021.664638>

Triono, B. S. (2020). The influence of financial knowledge and locus of control on financial behavior with financial self-efficacy as mediating variable. *Jurnal Penelitian Ekonomi dan Bisnis*, 5(2), 132–144.