The Impact of Financial Stress and Its Determinants on Financial Behavior: Evidence from Pakistan

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Abstract

This paper investigates the direct relationships between Current Money Management Stress (CMMS), Expected Future Financial Security (EFFS), Financial Stress (FS) and Digital Literacy (DL and Financial Behavior (FB) in urban Pakistani adults. Based on survey data collected on 187 respondents and Partial Least Squares Structural Equation Modeling (PLS-SEM), the research assesses both the measurement and structural models. The findings illustrate that CMMS produces a positive impact on FS ($b = 0.947$, $p < 0.001$) and EFFS produces a smaller yet significant relationship with FS ($b = 0.089$, $p < 0.05$). Nevertheless, the relationship between FS and FB is not statistically significant ($b = -0.012$, $p > 0.05$). Conversely, there is a positive and significantly strong positive impact of DL on FB ($b = 0.688$, $p < 0.001$). The model describes a significant amount of variance in FS and FB (R2 values are shown respectively). These results indicate the comparative relevance of the digital competencies and current financial management stress relative to psychological stress in the formation of financial behavior in the context of the research. The paper is valuable as it empirically investigates the relations between them in a developing economy and provides the implications of the study on the approaches to financial education and digital inclusion.

Keywords: current money management stress, expected future financial security, financial stress, digital literacy, financial behavior.

Introduction

Efficient management of money has now become an indispensable skill in the twenty-first century especially in a society where the economic stability and inflation are long-standing. The increasing urbanization, cost of living and uncertain economic conditions in Pakistan have made it essential to comprehend the factors which influence citizens'

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financial behaviors. Financial Behaviour is the actions and choices that individuals make with regard to their financial resources, including spending, saving, planning, borrowing, investing. Good financial habits, including making sensible savings and borrowing and planning over the longer term are essential for the wellbeing of individuals and the economy. But, many people in Pakistan still have bad financial behaviors that could be related to cognitive, emotional or structural factors.

One of the most significant predictors of financial behavior is Current Money Management Stress (CMMS), which illustrates the amount of stress and anxiety that people experience in their day-to-day financial dealings. High CMMS levels can diminish self-control, poor decision making, and cause behaviors such as buying things that are on credit card and paying high interest rates. An important factor is Expected Future Financial Security (EFFS), which is individuals' expectations regarding their future financial security. Individuals feeling secure in their finances are more likely to engage in proactive activities such as investing in assets or making emergency savings, but individuals who are not sure of their financial future may be hesitant to make long-term commitments.

The psychological burden of financial insecurity is also an important category, and is called financial stress (FS). Chronic FS can negatively impact cognitive functions that enable smart financial choices, and reduce quality of life. Often times, stress can lead to increased planning, but when financial stress is ongoing, there can be negative consequences like skipping out on financial obligations, using unsustainable loans, etc.

Digital Literacy (DL) is a new game-changer in today's digital era when it comes to financial behaviour. Digital literacy (DL) is the ability to make informed financial choices on digital platforms, through mobile banking, using e-wallets and financial management applications. The adoption of digital finance in the urban area in Pakistan has grown due to the introduction of mobile payment systems like Easy paisa and Jazz Cash, but there are still some digital literacy issues. An increase in DL can help individuals to make better financial decisions, manage their finances, access financial services, and study investment opportunities, which ultimately will improve their financial behaviors.

These factors resonate even more strongly in the informal banking systems and advanced fintech services landscape of Pakistan's metropolises. Socio-cultural conventions, family organization and religious beliefs affect the attitude and behavior of money people. It is important to grasp how these systems interact with each other, and how they work in conjunction with other systems—such as a CMMS, EFFS,

FS, and DL—in order to effectively design policies and interventions that promote healthy financial behaviors.

The present study examines the immediate relationships between these four independent factors and financial behaviors without taking into account mediation or moderating effects. It does so by providing straight-forward and precise understanding of the impact of each component on financial decisions in the emerging market scenario. The results of this study would help the policymakers, financial institutions, and educators to create the interventions that can address financial stress, enhance money management skills and increase digital inclusion, thereby boosting financial stability and economic resilience of Pakistan.

This paper will follow a direct-effects modeling strategy in order to form the basic relationships between important constructs and then add complexity to the model. However, unlike previous research which focuses on mediation and moderation, direct isolation of effects can be used to interpret primary relationships more directly and as a reference point to the future extended models that can include conditional relationships.

Research Gap

Although there has been much research on the subject of financial behavior, few studies have conducted research to identify the role of financial determinants of stress along with digital literacy in an integrated framework in the emerging economy of any country like Pakistan. In addition, it has been highlighted that the previous studies have mostly focused on the indirect and mediated relationships, and the direct impacts in this regard are relatively underestimated. To fill in this gap, the current research pays specific attention to explicitly addressing the direct relations to develop the base empirical associations.

Research Question

To that end, the research questions that will guide the study include the following:

RQ1: Does the Current Money Management Stress (CMMS) have a significant effect on Financial Stress (FS)?

RQ2: Does Expected Future Financial Security (EFS) have any effect on Financial Stress (FS)?

RQ3: Financial Stress (FS) and Finance Behavior (FB): Does RQ3 have an effect?

RQ4: Are there relationships between Financial Behavior (FB) and Digital Literacy (DL)?

Literature Review

In the past decade there has been a growing emphasis in academic research over financial behavior and its impact on individual welfare, household stability, and economic development in general. The study of financial behavior is significant from both academic and practical perspectives in the context of developing economies, like Pakistan, where inflationary pressures, economic uncertainty, and technological advancements converge. Purposeful financial behaviors like budgeting, saving, smart borrowing, and smart investing are considered as positive financial behaviors, while impulsive spending, excessive borrowing, and lack of future-oriented behaviors are regarded as bad financial behaviors (Xiao & Porto, 2017; Hira, 2020).The cognitive abilities, psychological stresses and socio-economic factors have been repeatedly demonstrated to affect the financial choices of individuals (Lusardi & Mitchell, 2017; Strömbäck et al., 2017).

The current Money Management Stress (CMMS) is a noteworthy psychological phenomenon that affects financial behavior. It has to do with the quantity of anxiety and stress that an individual experiences in handling their day-to-day financing. Poor decision making, lack of self-control and greater sensitivity to short-term pleasure have been associated with high CMMS levels (Joo, 2018; Serido et al., 2020).Stress related to money management has been linked with negative financial behaviors, including avoiding paying bills, over-depending on credit, and having poor long-term planning skills (Kim et al., 2022).CMMS seems to be a vital component in decoding financial behavior, especially in Pakistan where the volatile values of various currencies and rapid escalations of living costs have further affected household finances.

One of the other factors is called Expected Future Financial Security (EFFS) and represents a person's belief about their ability to maintain financial stability in the future. Research shows that those with higher EFFS are more likely to be proactive in their financial actions, including putting money away for retirement or saving for emergencies (Shim et al., 2019; Gerrans & Heaney, 2020).Contrary, financial risk aversion or financial disengagement is often linked with low perceived financial stability (Ali et al., 2021).The EFFS is not only affected by the income level of individuals, but also by the macro-economic scenario and financial institutions' trustworthiness (State Bank of Pakistan, 2021; Karandaaz, 2023) in Pakistan where longer-term economic forecasts can

be more variable. In the previous literature relationship, Expected Future Financial Security (EFS) is believed to have low financial stress, however, the present study examines EFS when there is economic fluctuation.EFFS is not just presumed to have a stress-reduction effect but is conceptualized as a perception-based construct; an interaction with the financial reality exists, the result of which could potentially be a cognitive dissonance if future expectations are not aligned with the current reality.

Financial Stress (FS) is a greater concept than CMMS, encompassing current and future financial issues' has been well studied and is considered a psychological strain on quality of life and on the ability to make decisions (Archuleta et al., 2018; Lim et al., 2020).Moderate financial stress may foster proactive practices, whereas prolonged FS may lead to avoiding practices, mental health issues, and reliance on informal credit networks (Friedline et al., 2021).Financial stress in emerging countries is often aggravated by not having readily available credit, irregular income sources or weak social safety nets (Demirgüç-Kunt et al., 2018).The findings from the Pakistani households indicate that financial stress influences the household financial choices and it may also restrict the participation of the households in the formal financial markets, continuing the economic vulnerability of the households (Abdullah et al., 2020).

Although they're conceptually similar, CMMS and FS are two different dimensions. MMS will be short-term, day-to-day financial management stress and FS will be a more holistic condition of finances that span short and long-term needs. The reason behind this distinction is to prevent the redundancy of constructs and to have clarity of concepts.

In the last few years, Digital Literacy (DL) has become an important factor in financial decision making. Digital literacy (DL) is the ability to use, manipulate, and communicate information to effectively handle personal finances through digital tools like mobile banking apps, e-wallets, online investing platforms and budgeting apps.The individuals with higher DL exhibit more positive financial attitudes, such as better spending control, financial goods appraisal, and timely repayments, which contributes to positive financial habits (Liao et al., 2021; Lee & Kim, 2022).In Pakistan, DL has created a surge in the utilization of fintech services like Easy paisa and Jazz Cash, especially by urban youth. In Pakistan, DL has sparked a revolution in the adoption of fintech platforms, including Easy paisa and Jazz Cash, among the younger, urban customer base (Karandaaz, 2023). Although there has been substantial increase in the use of digital finance, there are still gaps on the digital skills, specifically across the older population and those with low levels of formal education (World Bank, 2021).

The relationship between these four dimensions and financial behaviors is complex, and has been backed up by increasing empirical evidence. MMS has been associated with FS in several studies, and greater financial stress from increased day-to-day financial strain leads to greater overall financial stress (Serido et al., 2020; Kim et al., 2022).EFFS has also been proven to impact FS, as those who are more confident in their financial future report less stress (Shim et al., 2019).In the literature, FS is determined as a positive or negative influence on financial behaviors, depending on its severity and coping strategies (Archuleta et al., 2018; Lim et al., 2020).Last but not least, there is a consistent positive and direct relationship between DL and FB as digital tools reduce transaction costs, improve transparency, and enhance accessibility to financial information (Liao et al., 2021; Bada & Ojedokun, 2021).

Based on these connections, this research assumes the significance of financial behavior in Pakistan's urban context with the help of CMMS, EFFS, FS, and DL.Both of these aspects are considered as the important factors in previous studies conducted in developed countries such as developed countries of the world, but few studies have demonstrated the influence of both the variables in one model in Pakistan where there are different informal support systems, cultural norms and economic unpredictability which results in the different behavioral pattern (Abdullah et al., 2020; Khan & Noreen, 2022).The study will attempt to gain a comprehensive and culturally responsive view of financial behavior and how it relates to policy makers, financial institutions and teachers.

Theoretical Foundation

In this study, several theoretical perspectives have been based in order to enhance the conceptual rigor. To begin with, Stress Theory is an explanation of the impact of financial pressures on cognitive and behavioral outcomes. Second, according to the Conservation of Resources (COR) Theory, people are struggling to maintain and preserve financial resources and financial stress is a dependent variable of a perceived loss or threatening loss of resources. Third, Behavioral Life-Cycle Theory is useful in understanding how individuals spend the use of financial resources over time when constrained. Lastly, the Theory of Planned Behavior (TPB) contributes to the integration of digital literacy as an ability to improve the perceived behavioral control, which can have an impact on the financial behavior.

Conceptual Model

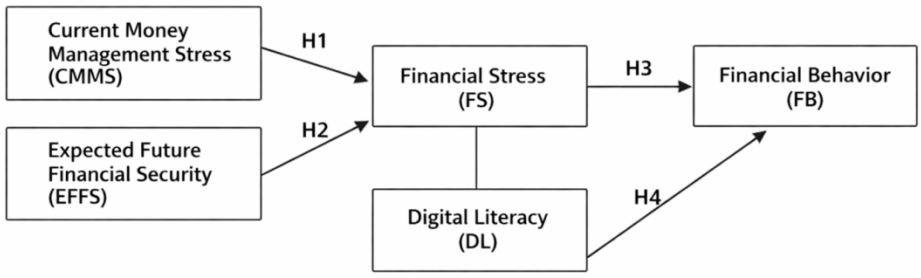

Figure 1: Conceptual Model

Methodology

This study used a quantitative research technique to examine the direct links between present money management stress, predicted future financial stability, financial stress, digital literacy, and financial behavior in urban Pakistan. A deductive research technique was used, based on theoretical and empirical insights from existing literature, to formulate hypotheses and test them statistically using primary data. The choice to utilize a quantitative methodology stemmed from the requirement to measure latent variables using established scales and assess the strength, direction, and statistical significance of the hypothesized associations. This technique is objective and can generalize results in the target group.

The target audience were the Pakistani urban masses aged 18 to 45, who are most active in financial decision-making and digital finance adoption. The purposive sampling technique was employed as it was a

non-probability sampling technique and ensured that the respondents would be relevant to the study objectives. In total, 187 answers were received that meet the sample size requirements for models of similar complexity according to current PLS-SEM standards (Hair et al., 2019). This sample size was considered adequate to ensure the statistical power and to avoid the non-response bias.

A standardized self-administered questionnaire which uses previously known scales was used to ensure reliability and validity. The items measuring Current Money Management Stress (CMMS) were adapted from existing financial stress measures (Joo, 2018; Serido et al., 2020).The elements of Expected Future Financial Security were adapted from the studies on financial planning and perceived financial security (Shim et al. 2019; Gerrans & Heaney 2020).The Financial Stress (FS) was evaluated by validated instruments from current research in behavioral finance that measure psychological stress from financial uncertainty (Archuleta et al., 2018; Lim et al., 2020).Measures developed for recent studies on Digital skills and digital use of fintech (Bada & Ojedokun, 2021; Liao et al., 2021) were used to measure Digital Literacy (DL).Financial Behavior (FB) was evaluated through budgeting habits, savings practices, debt management and responsible spending behaviors based on Lusardi and Mitchell (2017) and Xiao and Porto (2017).Items were all rated on a five-point Likert scale from "strongly disagree" to "strongly agree" to reflect the extent of agreement and/or the frequency of behaviors.

Before participants, ethical issues were addressed followed by informing respondents about the objective of study, anonymity and informed consent. The details supplied by the participants would only be used for academic purposes and no personal identifying information would be gathered.

The data of the study was analyzed by means of Partial Least Squares Structural Equation Modelling (PLS-SEM) using SmartPLS 4.0. This technique was chosen for capacity to handle complicated models, function with small sample numbers, and be resilient against breaches of normality assumptions (Hair et al., 2019). This investigation

Component	% of Variance Explained
FS	28.70%
DL	24.30%
CMMS	18.90%
EFFS	14.10%
Total	~86%

was separated into two phases: assessment of the measurement model, and assessment of the structural model. All the measurement model reliability was checked for Internal consistency reliability with Cronbach's alpha and Composite reliability, convergent validity was tested with the Average variance extracted, discriminant validity was tested with Fornell-Larcker criterion and the Heterotrait-Monatrait ratio. The model assessment of the structures was performed by the path coefficients, t values, p values and R2 values to evaluate the strength of the relationships hypothesized in the model and their significance.

The study is carried out among urban respondents, which can be considered as a limitation of the research but not representative of the whole population. To get reliable estimates of the statistical significance of path coefficients, 5,000 resamples were bootstrapped. It was also possible to implement this way to obtain bias-corrected confidence intervals that could be used to validate the results from the hypothesis testing. In the analytical process, four direct hypotheses were formulated: (1) if there is an effect of CMMS on FS, (2) if there is an effect of EFFS on FS, (3) if there is an effect of FS on FB, and (4) if there is an effect of DL on FB.The study only looks at direct links, thus eliminating the complexity of mediating and moderating effects, which makes it possible to simply assess the key drivers of financial decision making by the urban population in Pakistan

Results and Discussion

The data was analyzed using the measurement model before proceeding onto the structural model to ensure all items within the study had required reliability and validity. Results indicated that all constructs had good internal consistency reliability with Cronbach's α and composite reliability (CR) values exceeding the generally accepted threshold of 0.70 (Hair et al., 2019). All constructs had average variance extracted values above 0.50, which are considered acceptable for convergent validity and indicate that over half of the variance of the indicators in the constructs was accounted for by the indicators. Fornell-Larcker criterion was also used to test if the square root of each construct’s AVE was greater than the construct’s correlations to the other constructs, with the results showing that all construct pairs met the criterion. The Herograft-Monotrait (HTMT) ratio was also performed using the criterion that all construct pairs were lower than 0.85, the conservative threshold, as the correlations between the constructs were below the threshold.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.706	
	df	231
	Sig.	0.000

CMMS					0.893	4
EFFS					0.91	4
	B	t	Sig.	VIF	0.939	5
(Constant)	1.9	2.969	0.003			
CMMS	-0.198	-1.319	0.189	6.459		
EFFS	0.188	2.02	0.045	2.461		
FS	0.187	1.422	0.157	5.175		
DL	0.39	4.97	0	1.408		
Durbin-Watson	1.478					
Adj.R2	0.478					
F-Statistics	18.416(0.000)					
a. Dependent Variable: FB						
FS						
DL					0.908	5
FB					0.883	4
Overall Reliability					0.772	22

After the measuring model was confirmed, the structural model was evaluated to investigate the hypothesized links between present money management stress (CMMS), projected future financial security

(EFFS), financial stress (FS), digital literacy (DL), and financial behavior (FB). The explanatory power of the model was evaluated from the R^2 values that indicate the amount of variation in the dependent variables explained by the model. The findings demonstrated that CMMS

and EFFS explained a major amount of the variance in FS, whereas FS and DL accounted for a considerable proportion of the variance in FB. The high R^2 value for FS indicates that financial management psychological strain is heavily impacted by current stress and future security expectations. Similarly, the R^2 value for FB indicated that a meaningful proportion of financial behavior can be predicted from FS and DL. Path coefficients, t-values and bootstrapped confidence intervals of 5,000 resamples were used to evaluate the structural model. The VIF was calculated to determine multicollinearity, and none of them exceeded acceptable values. The standardized measures like SRMR where applicable were used to further assess a model fit. The path coefficient between CMMS and FS is exceptionally high which could suggest the possibility of conceptual overlap or shared variance between the constructs. Even though this relationship met the criteria of the discriminant validity, it should be viewed with some reservations.

Path coefficient analysis offered further information on the size and direction of the relationships between the variables. Bootstrapping with 5,000 subsamples was used to calculate t-statistics and p-values for hypothesis testing, assuring statistical reliability. The results of the study confirmed a significant positive correlation between CMMS and FS (β=0.947, t=40.66, p<0.001) indicating that persons who have problems managing finances are inclined to have financial stress. This is in line with previous research where poor money management skills were found to be directly related to higher levels of stress (Serido et al., 2020; Lim et al., 2020).

EFFS was also found to have a positive relationship, although less significant, with FS (β = 0.089, t = 2.056, p = 0.040), suggesting that even individuals who have higher expectations of their future financial security can experience financial stress, possibly because of the difference between what they have and what they expect to experience in the future. This paradoxical result might be a reflection of the country's unique context, as they have to balance their future aspirations with economic insecurity, inflation and income variability (Khan & Noreen, 2022).

Financial stress did not significantly affect financial behavior (FB) (β = -0.012, t = 0.218, p = 0.828). This finding contradicts previous western studies where financial stress is associated with worse financial behaviors (Norvilitis et al., 2006; Strömbäck et al., 2017). One possible reason behind the difference is that the culture of the Pakistan that offers social safety nets, religious obligations such as zakat, and informal sources of credit could moderate the behavioral effects of financial difficulties.

The role of digital abilities in predicting financial behaviors was found to be significant (β = 0.688, t = 18.93, p < 0.001), further emphasizing the

growing importance of digital skills in the prediction of financial behaviors. People with a higher digital literacy are more likely to engage in responsible financial practices like using budgeting apps, making informed online purchases and saving and investing through financial technology. This is in line with the international findings which shows that digital literacy contributes to financial inclusion and improved consumer decision making in the financial sector (Bada & Ojedokun, 2021; Liao et al., 2021).

Hypothesis	Path (From → To)	Beta	T-value	P-value	Support
H1	CMMS → FS	0.947	41.33	0.000	Yes
H2	EFFS → FS	0.089	2.04	0.040	Yes
H3	FS → FB	-0.012	0.22	0.828	No
H4	DL → FB	0.688	19.11	0.000	Yes

These findings altogether give a clearer picture of the financial practices of urban Pakistanis. The close association between CMMS and FS emphasizes the need of enhancing present money management abilities as a way to alleviate financial stress. However, the modest, but significant, effect of EFFS on FS indicates that even though financial expectations in the future do contribute to financial stress, they are not enough to reduce financial stress without changes to FS practices. This could mean that in Pakistan, there are individuals who may be in financial stress but do not exhibit negative or positive financial behaviors or vice versa. An example of the relationship of cultural, family and social supports as an intermediary between stress and behaviour. Finally, the important role that DL plays in FB demonstrates that digital skills have emerged as an important catalyst for responsible money management practices in a more digitalized economy.

The discoveries have substantial theoretical ramifications. They are an important addition to the emerging literature emphasizing the importance of cognitive and technology skills in the development of financial behaviors, particularly in developing nations. Secondly, they question the usefulness of models created in the Western world where economic problems are more salient to behavior. A number of non-economic factors are identified as having a positive impact on reducing the impact of stress on behavior, especially in Pakistan where there is high trust in family networks, values and informal financial markets.

The study suggests that a practical application is to prioritize helping participants learn to manage their finances and become more digitally literate, and not reducing their stress levels first. Policymakers, financial education providers and financial services providers might work together to incorporate financial education into a digital skills Programme, focused on young adults and working adults. They may take the form of initiatives through the workplace, internet educational materials, or community-based seminars.

Conclusion

The findings of the present study may be considered associative, but not causal because the study is a cross-sectional study. Besides, the report will be relevant to Urban Pakistan and may not be applicable in other settings. The purpose of this study was to look at how present money management stress (CMMS), projected future financial security (EFFS), financial stress (FS), and digital literacy (DL) affected financial behavior (FB) among Pakistani urban people. It is important from an academic and practical perspective in the context of increased cost of living, economic uncertainty, and accelerated digitalization. The results provide a full picture of the behavioral, psychological and technical aspects that affect financial behavior in a developing nation.

The study concluded that the top factor for FS is the use of CMMS: People who are struggling with their current finances rate financial stress significantly higher than those who are using CMMS.This is consistent with worldwide evidence that poor day-to-day money management habits relate directly to increased stress (Seri do et al., 2020; Lim et al., 2020).It highlights the importance of building solid budgeting, cost tracking, and debt management abilities as a proactive way to ward off financial difficulties.

There was also a statistically significant, but weaker, positive relationship between EFFS and FS. This finding seems paradoxical on the surface as one would think that a positive attitude towards future security would have a positive impact on reducing stress; however, it is more likely to be due to the socioeconomic realities of Pakistan, where people's optimism does not guarantee their future security but instead may stem from daily financial concerns arising from high inflation, low income security, and small savings buffers (Khan & Noreen, 2022).This study suggests that increases in financial skills in the present time is needed in addition to increases in future-oriented financial confidence, in order to effectively lower financial stress.

Interestingly, there was no significant influence of FS on FB.The challenges the theories of financial behavior typically used in the Western

world, where poor financial decisions are often attributed to stress (Strömbäck et al., 2017).This result could be interpreted in the Pakistani context as culture and society; extended family support systems, community-based support and religiously motivated financial responsibilities like zakat could be the reasons for reducing the behavioral consequences of stress. These casual safety nets tend to buffer the direct link between stress and behavior, and people may be able to maintain their financial behaviors in the face of stress.

DL was the most influential variable in the present study, it had a strong, statistically significant positive effect on F.B.I. illustrates the transformative capabilities of digital skills in enhancing financial practices, from using mobile banking tools, budgeting apps, to online financial product information, all the way to safe digital transactions. These results align with the broader research on financial inclusion, which identifies digital literacy as a key enabler of financial decision-making and economic empowerment (Bade& Ojedokun, 2021; Liao et al., 2021). In today's rapidly digitized Pakistan, improving the DL is expected to bring a marked improvement in the overall financial situation.

As a whole, our findings contribute to the literature as the study showed that financial behavior is more influenced by the current financial management capacities and technology skills than psychological stress in an urban context of Pakistan. In principle, this will enhance the understanding of behavioral finance in developing countries by putting focus on the interaction between economic reality, cultural safety nets, and digital revolution.

Managerial Implications

The findings generated from this research can have ramifications for policy, financial institutions, educators, and technology providers. Policies and programmes ought to focus on embedding financial education in national schooling programmes and to focus on both financial education and financial literacy. This can be achieved at Secondary schools, Universities and Vocational education institutions to raise awareness from early on budgeting skills and savings as well as safe digital financial practices. SBP may include Partnerships with fintech companies to sensitize urban youth and working people in the digital age about Financial Responsibility in Public Awareness programmes.

Bank, microfinance service providers and fintech startups will be able to leverage these insights to devise products that encourage good financial practices. This can be achieved through gamified savings apps, goal setting and personalized financial dashboards that promote financial responsibility and saving for the future. Offering services in the language

of the target audience and in simple user interfaces will help people with low-to-moderate digital literacy levels to use these services.

Workshops that present traditional approaches to financial management for digital skills can be delivered at universities and/or professional training institutions. This could involve courses in secure mobile banking, online investment platforms, and fraud awareness, to help make the theory into practice.

Building products that are inclusive requires Fintech companies to focus on products that are socially acceptable to the Pakistani environment. This can include the introduction of products such as community lending networks, mobile platforms and family saving arrangement, Sharia-compliant savings plans. Moreover, cooperation with the telecoms can be used to deliver the financial planning and online security educational content to a larger audience.

This outreach to urban areas can be done by non-profit organizations through financial literacy camps, which are free to the participants, especially for young entrepreneurs and women. They should be designed to build up both CMMS and DL and should offer practical experience to build effective financial management skills as they progress through the digital economy.

Recommendations

Future studies have to focus on further development of the scales of measurement, on documentation of the dynamics over time of the financial stress and on the inclusion of the potential moderating factors, such as cultural, social support mechanisms in order to draw in the conditional relations better.

The findings of this research have been useful and recommendations have been suggested for further research. Moving forward, there is a need to increase the sample size to more rural areas where digital tools and financial services are far less equally distributed. It could be a comparison between rural and urban areas, which might be helpful to acknowledge structural inequities and help inform specific actions. In addition, longitudinal studies could explore the relationship of the changes in CMMS, EFFS, FS, and DL over time with changes in FB, giving a more dynamic perspective to behavioral changes. For future studies, other potentially relevant factors such as financial self-efficacy, personality traits or social capital should also be considered to understand the issue of behavioral finance in Pakistan.

Future research should consider the impact of emerging technologies such as artificial intelligence on personal financial management, blockchain-based financial solutions, and digital credit

scoring systems, given the swift evolution of digital finance. Knowledge of the interaction between these technologies and CMMS, EFFS, FS and DL could help policy makers and service providers design more inclusive and effective financial systems.

Qualitative data can complement quantitative data, such as through in-depth interviews or focus group discussions, to capture the lived experiences of Pakistanis when making financial decisions. This would extend the context in which FPF's meaning is derived, as in some culturally specific contexts, certain factors, including FS, might not have a direct impact on FB.

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