Journal of Information & Optimization Sciences
ISSN 0252-2667 (Print), ISSN 2169-0103 (Online)
Vol. 46 (2025), No. 8, pp. 2735–2745
DOI : 10.47974/JIOS-2096

The impact of financial literacy on sustainable management of OOP and catastrophic spending : The mediating role of budgeting practices

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Abstract

The study aimed to assess the factors influencing financial literacy and expenditure management, with the mediating role of budgeting habits. The study involves a sample of 519 individuals in Chennai, employing purposive sampling technique to select samples. A causal research design is implemented to investigate the relationships among financial experience, personal motivation, digital literacy, financial literacy, budgeting habits, and managing expenditures. Financial literacy, in turn, significantly influences the management of expenditures. Additionally, budgeting habits exhibit a partial significant effect between financial literacy and the effective management of expenditures. The study confirms that there is a distinct influence of gender, age, education, income, and occupation on various aspects of financial literacy, budgeting habits and managing expenditure.

Subject Classification: *91B06, 62P20.*

Keywords: *Financial literacy, Budgeting habits, Catastrophic expenditure, Out-of-pocket expenditure, Management.*

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1. Introduction and Background

In the contemporary financial environment, the nexus between individual financial literacy and the sustainable management of catastrophic and out-of-pocket (OOP) expenditures stands as a critical area of inquiry. As societies grapple with economic uncertainties and unforeseen financial challenges, understanding the profound impact of financial literacy on mitigating the repercussions of unexpected expenditures becomes paramount. The very essence of the study lies in recognizing that financial literacy is not merely a theoretical construct but a practical tool that equips individuals to make decisions in the face of financial uncertainties. Catastrophic expenditures, encompassing unforeseen events such as medical emergencies, natural disasters, or major household repairs, pose a substantial threat to individuals' financial well-being [1]. Similarly, out-of-pocket expenditures related to healthcare, daily living expenses, and unexpected costs further compound the financial challenges faced by individuals. In this context, the study seeks to elucidate how a heightened level of financial literacy acts as a shield, empowering individuals to navigate these financial minefields with prudence and foresight.

Financial Literacy: Financial literacy epitomizes an individual's acumen in navigating the intricate landscape of personal finance. Awareness of financial rights and responsibilities stands as another pivotal facet of financial literacy.

Budgeting Habits: Budgeting habits form the bedrock of sound financial management, representing a disciplined and strategic approach towards fiscal affairs. Regular tracking and recording of income and expenses denote a meticulous awareness of financial inflows and outflows, nurturing a comprehensive understanding of one's financial landscape.

Managing Expenditure: Managing catastrophic and out-of-pocket expenditures is a complex attempt including resource accessibility, and strategic planning. Catastrophic expenditures typically involve significant and unexpected costs, such as medical emergencies, natural disasters, or major household repairs, which can exert a substantial strain on an individual's or a family's financial resources. Out-of-pocket expenses, on the other hand, pertain to the costs borne directly by individuals for healthcare, daily living, or other incidental needs.

Literature Review

Financial Literacy and Behavior

Studies show that gender, education, and financial experience significantly shape financial literacy and investment decisions [2], [3], [4]. Among students and youth, financial literacy influences money management, spending habits, and entrepreneurial motivation [5], [6], [7]. Motivation theories, such as Self-Determination Theory, highlight that both intrinsic and extrinsic factors guide personal financial management [8].

Digital Literacy and Investment Decisions

Recent findings emphasize that digital literacy, combined with financial awareness, affects investment behavior, with socioeconomic perceptions mediating outcomes [8]. Financial education and experience also enhance rational investment decision-making, particularly when moderated by literacy levels [9].

Out-of-Pocket (OOP) Health Expenditure

Research in Egypt, Nigeria, and Tunisia shows that OOP health spending often leads to catastrophic health expenditure and impoverishment [10], [11], [12]. In India, OOP spending on medicines and institutional deliveries weakens financial protection, especially for below-poverty-line households [1], [13]. Rural studies further confirm its severe burden and predictors, particularly in low-income communities [14], [15].

Bhateja et al. [16], studied working women in Ghaziabad and found that while most had basic financial awareness, gaps persisted in areas like demat accounts and portfolio management, with few women making independent financial decisions. Similarly, Singh et al. [17], examined management students in Bhubaneswar and reported that financial literacy was strongly linked to saving behaviour and knowledge but less so to awareness and satisfaction. Together, these studies highlight both progress and continuing challenges in strengthening financial literacy across different groups in India.

2. Problem Statement

The modern financial atmosphere, individuals often struggle to manage unexpected catastrophic and out-of-pocket (OOP) expenses, such as medical emergencies or sudden repairs, which can threaten financial stability. This study addresses the gap in understanding how financial literacy influences the management of such expenditures, with a focus on the often-overlooked mediating role of budgeting habits. It explores how financial literacy correlates with expenditure management and how budgeting practices strengthen this relationship. The findings aim to inform policies and educational programs that enhance financial literacy and better prepare individuals to handle unforeseen financial challenges.

3. Hypothesis

Hypothesis:

$H_{1.1}$: Precursors have significant effect on financial experience, personal motivation, digital literacy, financial literacy, budgeting habits, and managing expenditure.

$H_{1.2}$: Financial experience, personal motivation and digital literacy have significant effect on financial literacy.

$H_{1.3}$: Financial literacy has significant effect on managing expenditure.

$H_{1.4}$: Budgeting habits has mediating effect between financial literacy and managing expenditure.

$H_{1.5}$: Demographic profile has significant effect on financial experience, personal motivation, digital literacy, financial literacy, budgeting habits, and managing expenditure.

4. Research Methodology

The study uses purposive sampling to select 519 individuals in Chennai from financial institutions like banks, post offices, and insurance offices exceeding Cochran's recommended minimum sample size of 384. A causal research design is adopted to explore the relationship between financial literacy, budgeting habits, and the management of catastrophic and out-of-pocket expenditures. Percentage analysis is used for demographic profiling. Structural Equation Modeling (SEM) examines causal relationships among variables, while One-way ANOVA evaluates the influence of demographic factors. A pilot study with 50 participants was conducted to validate the survey tools. The methodology aims to provide insights into the factors influencing financial behavior and expenditure management.

5. Results and Discussion

5.1. *Analysis of Demographic Profile:*

Demographic profile exhibits the gender distribution, with 54.34% identified as male and 45.66% as female. Regarding age demographics, 37.76% of individuals fall below 30 years, 50.10% are within the 30-55 age range, and 12.14% are aged over 55. Educational attainment reveals that 39.31% completed school or diploma, 28.90% hold undergraduate degrees, and 31.79% possess postgraduate qualifications. In terms of monthly income, 74.18% earn less than Rs.30,000, 15.80% fall within the Rs.30,000–50,000 range, and 10.02% exceed Rs.50,000. Occupational distribution indicates 54.53% as businessmen, 34.49% as employed, and 10.98% as farmers and others.

5.2 *Causal Relationships among Research Variables:*

The primary aim of this study is to assess individuals' financial literacy concerning the management of catastrophic and out-of-pocket expenditures. The research explores the causal relationships among various variables, including Financial Experience (FNEX), Personal Motivation (PMTV), Digital Literacy (DGLT), Financial Literacy (FNLT), Budgeting Habits (BDGT), and Managing Expenditure (MCOP). These variables are categorized based on their direct and indirect effects, observed and unobserved, and endogenous and exogenous variables. The observed, endogenous variables encompass FNEX4, FNEX3, FNEX2, FNEX1, PMTV4, PMTV3, PMTV2, PMTV1, DGLT3, DGLT2, DGLT1, FNLT1, FNLT2, FNLT3, FNLT4, FNLT5, BDGT1, BDGT2, BDGT3, BDGT4, BDGT5, MCOP5, MCOP4, MCOP3, MCOP2, and MCOP1. Unobserved, endogenous variables include FNLT, BDGT, and MCOP, while unobserved, exogenous variables encompass FNEX, PMTV, DGLT, and e1 - e29. The model comprises a total of 61 variables, with 26 being observed, 35 unobserved, 32 exogenous, and 29 endogenous variables. This comprehensive set of variables aims to scrutinize the causal connections among them. The structural equation model, depicted in Figure 1, delineates the relationships.

After the execution of the structural equation model, various fit indices are computed. The CMIN/df value stands at 2.781, falling below the accepted benchmark range of 3 to 5. The RMSEA value, at 0.058, is comfortably below the benchmark threshold of 0.06. The goodness fit indices, with values of 0.904 for GFI and 0.903 for AGFI, slightly surpass

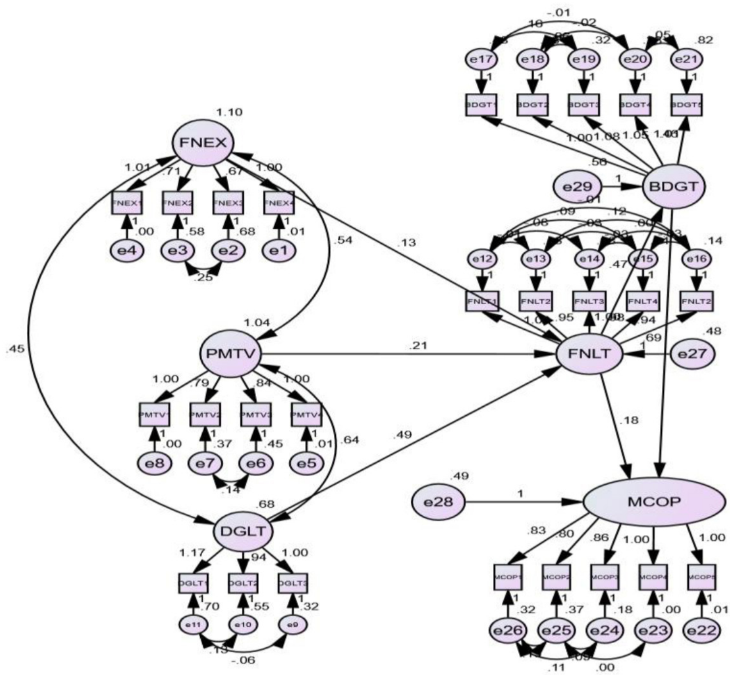

Figure 1

Structural Equation Model

the minimum requirement of 0.9. Additionally, baseline comparison values, including 0.962 for NFI, 0.954 for RFI, 0.975 for IFI, 0.972 for TLI, and 0.975 for CFI, all exceed the prescribed minimum of 0.9. These determined fit index values robustly indicate that the structural equation model impeccably aligns with the provided data.

The p-values, all significant at the 1% level, lend strong support to the validity of ($H_{1.2}$), affirming that financial experience, personal motivation, and digital literacy exert a significant impact on financial literacy. Exploring deeper into the analysis, the coefficient values further elucidate these relationships. A one-unit increase in financial experience corresponds to a 0.134-unit rise in financial literacy, while the same increase in personal motivation and digital literacy leads to a 0.209-unit and 0.485-unit increase, respectively. These coefficients not only validate the hypotheses but also provide quantifiable measures of the strength of these relationships. Extending the examination to managing expenditure, the p-value, again significant at the 1% level, affirms ($H_{1.3}$), underlining the crucial role of financial literacy in managing catastrophic and out-of-pocket expenditure.

The coefficient value signifies that a one-unit increase in financial literacy results in a 0.183-unit increase in adeptly managing such expenditures. In essence, the results highlight that financial experience, personal motivation, and digital literacy are paramount in cultivating essential financial literacy, ultimately supporting individuals in effectively managing diverse financial challenges, including catastrophic and out-of-pocket expenditure. These findings contribute valuable insights for tailoring financial education programs and interventions to enhance financial literacy across diverse segments of the population.

5.3 *Mediating Effect of BDGT between FNLT and MCOP:*

Furthermore, the study aimed to assess the mediating role of individuals' budgeting habits between financial literacy and the management of catastrophic and out-of-pocket expenditures. In line with this, hypothesis ($H_{1.4}$) posits that budgeting habits serve as a mediating factor in the relationship between financial literacy and the effective management of expenditures.

Table 1

Mediation of BDGT between FNLT and MCOP

Effect	Path			Estimate	p
Mediation Effect – Path A	BDGT	<---	FNLT	.466	***
Direct	MCOP	<---	FNLT	.183	***
Mediation Effect – Path B	MCOP	<---	BDGT	.693	***

Table 1 presents the direct impact of financial literacy on effectively managing catastrophic and out-of-pocket expenditures, yielding a significant and positive coefficient of 0.183. To explore into the mediating dynamics, the calculated coefficients for the influence of financial literacy on budgeting habits and the subsequent impact of budgeting habits on managing such expenditures are 0.466 and 0.693, respectively. The resulting mediation value stands at 0.322938 (0.466 x 0.693), reflecting an overall effect of 0.505938. With a mediation effect variance of 0.6383, surpassing the threshold of 0.2, there is a strong indication of significant partial mediation effect. Consequently, it can be affirmed that budgeting habits play a significant role as a strong partial mediator between financial literacy and the adept management of catastrophic and out-of-pocket expenditures. The outcomes substantiate that individuals' budgeting habits, influenced by their level of financial literacy, exert a considerable impact on their ability to effectively handle such financial challenges.

5.4 *Effect of Demographic Profile on Research Variables:*

The effect of demographic profile of individuals with regard tofinancial experience, personal motivation, digital literacy, financial literacy, budgeting habits, and managing expenditure are examined using One-way ANOVA. The hypothesis ($H_{1.5}$) declares that demographic profile has significant effect on financial experience, personal motivation, digital literacy, financial literacy, budgeting habits, and managing expenditure.

Table 2

One-way ANOVA

Constructs	Gender		Age		Education		Monthly Income		Occupation	
	t	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.
Financial Experience	.721	.471	.256	.774	3.775	.024**	12.303	.000***	.095	.910
Personal Motivation	.907	.365	12.799	.000***	6.752	.001***	12.944	.000***	10.475	.000***
Digital Literacy	2.076	.038**	11.813	.000***	6.447	.002***	15.020	.000***	12.530	.000***
Financial Literacy	.022	.983	5.743	.003***	1.524	.219	8.971	.000***	.228	.796
Budgeting Habits	2.341	.020**	2.289	.102	8.104	.000***	16.135	.000***	1.275	.280
Managing Expenditure	.864	.388	6.454	.002***	2.935	.054	9.284	.000***	2.133	.120

** Significant at 5%, *** Significant at 1%.

Table 2 displays the outcomes of the One-way ANOVA test, followed by subsequent post-hoc tests to discern significant results. T-test findings indicate that gender significantly influences digital literacy and budgeting habits at a 5% significance level. Meanwhile, the age factor significantly impacts personal motivation, digital literacy, financial literacy, and managing expenditure at a 1% significance level. The Tukey HSD post-hoc test, in response to age, establishes two comparable subsets; 30 – 55 years in subset *a* and less than 30 years and more than 50 years in subset *b* for personal motivation and digital literacy. Similarly, it forms two similar subsets; 30 – 55 years and less than 30 years in subset a and more than 50 years in subset *b* for financial literacy and managing expenditure. Education of individuals significantly affects financial experience (at 5% significance), personal motivation, digital literacy, and budgeting habits at a 1% significance level. Monthly income of individuals significantly influences financial experience, personal motivation, digital literacy, financial literacy, budgeting habits, and managing expenditure at a 1% significance level. Concerning monthly income, Scheffe's post-hoc test establishes two comparable subsets; below Rs.30,000 and Rs.30,000-50,000 in subset *a* and above Rs.50,000 in subset *b* for financial experience, personal motivation, digital literacy, financial literacy, budgeting habits, and managing expenditure.Occupation of individuals significantly affects personal motivation and digital literacy at a 1% significance level. For occupation, the Tukey HSD post-hoc test forms two similar subsets; businessmen in subset *a* and employed and farmer/others in subset *b* for personal motivation and digital literacy.

6. Conclusion

The empirical evidence supports that financial experience, personal motivation, and digital literacy are indeed influential factors shaping an individual's financial literacy. Moreover, it reaffirms the critical role of financial literacy in effective expenditure management. The hypothesis on the substantial effect of financial literacy on managing expenditure is validated, emphasizing the pivotal role of financial knowledge in nurturing sustainable spending habits. Additionally, it reveals that budgeting habits serve as a potent mediator, reinforcing the importance of cultivating effective budgeting practices in translating financial literacy into tangible financial management behaviors.

The multidimensional nature of financial experience, personal motivation and digital literacy emerges as a key driver in influencing financial literacy, encompassing motives to save, continuous learning on financial assets, long-term financial planning, and the desire for financial independence.

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Received January, 2025