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"DIGITAL FINANCIAL LITERACY AND RETAIL SUSTAINABILITY: AN EMPIRICAL STUDY OF SMALL SHOP OWNERS IN UTTAR PRADESH"

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Abstract: This study develops and empirically validates a multidimensional construct of Digital Financial Literacy (DFL) tailored to unorganised retail proprietors in Lucknow. Grounded in contemporary frameworks, DFL is operationalized as a second-order factor comprising: digital device skills, financial knowledge, procedural familiarity with digital financial services (DFS), awareness of digital risks and risk-control practices, knowledge of consumer rights and redress, and self-determination to use DFS. Data were collected via a purposive survey (pilot n = 77) administered January–June 2025; 352 valid responses were retained for analysis. Measurement quality was examined through item loadings, Cronbach's α, composite reliability, AVE, HTMT, and VIF, and the hypothesised structural relationships were tested using Structural Equation Modeling with bootstrapping. Results indicate that financial knowledge, familiarity with DFS, risk/rights awareness, and self-determination are significant positive predictors of DFL, whereas general digital device skills did not exert a significant direct effect. These findings suggest that access to devices alone is insufficient: content-specific financial and procedural competencies, together with awareness of protections and intrinsic motivation, better explain retailers' digital financial capability. The paper concludes with recommendations for targeted training, consumer-protection education, and further research using broader, longitudinal designs and objective behavioral measures.

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Keywords: Digital Financial Literacy, Digital Financial Services (DFS), Financial Knowledge, Risk Awareness & Consumer Protection, Unorganised Retailers (Kirana Stores) and Sustainable Digital Finance

1. Introduction

The term "digital financial literacy" (DFL) describes the set of digital and financial skills that allow people to comprehend and effectively utilize digital financial technologies and services towards their financial well-being in a safe manner (Jamnani & Jamnani, 2024). In actuality, DFL is a multifaceted concept that includes financial knowledge (such as comprehending rates of interest budgeting), digital knowledge (such as using smartphones or apps), and familiar with a range of digital financial services (DFS). It also encompasses knowledge of consumer rights and the hazards associated with digital money, as well as personal agency (self-confidence or self-determination) to use knowledge and make choices. The OECD/INFE definitions, for instance, emphasize that DFL integrates knowledge, skills, attitudes, and behaviors for secure DFS use, but recent empirical research identifies essential components like DFS knowledge, risk awareness, customer rights awareness, and self-determination for applying the knowledge and skill (Ravikumar et al., 2022).

International organizations are beginning to acknowledge the significance of DFL. For instance, the OECD and G20 stress that improving digital financial literacy is a top policy goal as finance becomes more digitalized. According to the OECD guidance, successful DFL activities are required to increase consumers' confidence and protection because the distinctive features of DFS present new opportunities as well as threats. In a similar vein, the World Bank has noted that consumers cannot gain from increased accessibility to financial knowledge and services if they lack a fundamental grasp of finance (Golden & Cordie, 2022). To put it briefly, international recommendations emphasize that in order to create inclusive, sustainable financial systems, DFL must take into account both technology and financial aspects.

DFL is becoming a national issue in India due to the country's drive towards a cashless economy. The National Strategy for Financial Education and Digital India are two initiatives that promote the usage of digital payments and work to increase the financial literacy of the populace. Nonetheless, many Indians remain unprepared: polls show that only approximately 24% of respondents are financially educated (Marvaniya, 2023), and especially among DFS users, most lack a deeper understanding. The focus on DFL is also highlighted by state initiatives; for instance,

the government in Uttar Pradesh has started a massive training program to make graduates "digitally and financially informed" (PTI, 2025) . These initiatives highlight both the difficulty and the potential: improving DFL can assist individuals and companies in efficiently utilizing India's payment gateways (UPI, mobile wallets, etc.), which are already widely used. In fact, India's retail industry, which is among the biggest in the world, is evolving quickly. Around 8% of India's workforce is employed by unorganized neighborhood merchants, or kirana stores, which account for 10% of the country's GDP. Even small businesses are increasingly digital stakeholders because to the recent transformation in payments (such as the enormous rise of UPI), e-commerce, and digital supply chains (Bhattacharjee et al., 2024). Higher DFL among retailers in this context can result in sustainable business methods since it enhances financial inclusion and fosters the long-term viability and expansion of microenterprises. Research demonstrates that improved digital financial competencies for SMEs and microbusinesses result in improved financing availability, more efficient technology utilization, and eventually inclusive economic success (M et al., 2024). For instance, the most recent investigation on Indian microbusinesses concluded that DFL is "crucial for MSMEs to improve the availability of finance, expertise up-gradation with technological assistance that facilitates inclusive growth" whereas combined digital and financial literacy significantly improves firm performance (E & Swarupa, 2022a). Similarly, more extensive research from emerging nations demonstrates that digitization and financial literacy are "pivotal" for long-term, sustainable economic growth (Kumar, Manoj et al., 2024). In spite of this acknowledged significance, not much research has explicitly modeled the DFL concept for unorganized retail settings. Thus, the goal of this study is to develop and evaluate a multidimensional DFL model specifically for small business owners in Lucknow, the capital of Uttar Pradesh. In order to determine which elements (such as digital knowledge, financial understanding, DFS proficiency, risk and rights understanding, self-determination, etc.) make up their DFL as well as how these dimensions connect to one another, we will be interviewing local kirana store owners. Validating a DFL "blueprint" that describes how these elements work together to affect retail financial sustainability is the goal that matters most.

Research Questions:

RQ1: What are the core dimensions of Digital Financial Literacy among small, unorganised retail shop owners in Lucknow?

RQ2: To what extent do digital knowledge, financial knowledge, familiarity with DFS, risk-awareness and control, consumer-rights/redress knowledge, and self-determination explain variance in Digital Financial Literacy?

2. Literature Review

The knowledge, abilities, attitudes, and behaviors necessary to use digital financial services securely and successfully to improve well-being are sometimes referred to as digital financial literacy (DFL). Instead of focusing solely on knowledge, recent guidelines and toolkits stress measurement that encompasses device accessibility, transaction competency, control of risks, and consumer protection skills(OECD/INFE, 2023; Pinto et al., 2021). The OECD/INFE 2024 research tool operationalizes DFL through verified modules on accessibility, transactional competency, risk and fraud awareness, consumer rights, and grievance procedures, providing construct validity and accurate cross-country measurement. This supports the idea that DFL is a second-order factor made up of digital understanding, financial knowledge, proficiency with DFS, control of risks, rights/redress knowledge, and self-efficacy or willingness of employing DFS. Digital delivery guidelines also suggest matching content to consumer readiness and assessing results (OECD/INFE, 2024).

Even in cases where accessibility and phone penetration are widespread, large monitors and cross-national surveys regularly show gaps in digital safety practices, highlighting the importance of evaluating actions in addition to knowledge. Systematic evaluations also find that when it comes to understanding the use of digital finance and risk exposure, indices that combine knowledge, behaviors, and security features perform better than knowledge-only measures (Choung et al., 2023). The fast spread of interoperable rails in India offers a compelling backdrop for testing DFL among small shops, as UPI continues to grow merchant adoption and surpassed approximately twenty billion transactions per month during August 2025 (Economic Times, 2025). Industry handbooks record concurrent expansion and persisting safety/awareness gaps, emphasizing the importance of DFL individual subdimensions on managing risks and redress for local merchants and MSMEs (Gupta & Agarwal, 2023). Policy toolkits stress that in order for users to identify, prevent, and recuperate from fraud or service failures, DFL must incorporate knowledge of rights for consumers, authorized providers, and grievance routes. By aligning survey items with these categories, researchers may address literacy and connect DFL to measurable safe-use behaviors (such as phishing identification and OTP/PIN hygiene), which are essential results for merchant

trust and security (Lonkar et al., 2025). Digital financial inclusion has been connected to SDG progress via resilience, efficiency, and access channels, indicating that safe and efficient use of DFL can promote equitable as well as effective economic growth. According to life-cycle assessments conducted in Europe, digital payments frequently have a lower global warming potential than cash at the point of sale, albeit the differences in size between countries and subsystems justify context-dependent statements. The consideration of sustainability as a supplementary, evidence-based implication instead of as a component of DFL assessment is supported by commentary and central bank analyses that warn that environmental variations rely on infrastructure, equipment lifecycles, and energy mix. Electronic receipts as well as paperless statements are examples of adjacent practices that provide retailers with useful waste-reduction co-benefits and can be presented as supplemental to DFL rather than as its replacement (Neuhoff, 2024; Tay et al., 2022; UNSGSA, 2018). The research as a whole favors a second-order DFL model based on the OECD/INFE instrument for measurement rigor, including first-order variables for digital knowledge, financial knowledge, familiarity with DFS, awareness of risk and risk control, consumer rights and redress procedures, and self-determination (Ravikumar et al., 2022b). In merchant-dense emerging economies like India, there is still a need to validate the measurement model and estimate the structural links between DFL and safe-use behaviors, dispute literacy, and ongoing adoption among small retailers. External evidence can also be used to position sustainability to serve as a contextual co-benefit (Chhillar et al., 2014).

3. Research Methodology

Our study is quantitative and uses Structural Equation Modeling (SEM) to test the proposed multidimensional model of DFL in the retail business. Through purposive sampling, the respondents included small retail shopkeepers in the unorganised retail sector in Lucknow who claimed to be aware of digital finance, i.e., digital payment systems. The sample from the Lucknow district was for maximum representation, taken from each tehsil. Lucknow was also chosen as being a state capital, the retail environment is diverse and dynamic, there is rapid penetration and usage of DFS and the state-driven initiatives for digital infrastructure apply, which makes Lucknow an applicable premise for a sustainability study of DFL.

Recruitment of the sample was through both an in-person and on-line survey, and lasted from January 2025 until June 2025. A pilot study (n = 77) was completed in order to test the clarity of items from the main survey and to provide preliminary evidence of reliability and validity in

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December 2024. Pilot feedback led to targeted edits of items with ambiguous language and refinement of the wording of the measurement stems generally. After the full questionnaire was applied, and common-sense data cleaning (discarding incomplete/invalid questionnaire answers, machine check) had been carried out, the final sample for analysis consisted of 352 valid questionnaires out of 376 completed ones. To investigate the measurement model and the proposed structural links between the DFL dimensions and pertinent results from a sustainability perspective, the cleaned dataset was put through SEM techniques.

A seven-point Likert scale (1 being strongly disagree and 7 being strongly agree) was used to measure each concept. With $\alpha = 0.05$ and power $(1 - \beta) = 0.80$, an a priori power analysis employing G*Power (F test, linear multiple regression: fixed model, R^2 departure from zero) revealed a minimum needed sample of 98 respondents, which was significantly smaller than the study's final sample. There were two phases to the data analyzing process. The measuring model was first evaluated for internal consistency, convergent validity, discriminant validity, and indicator reliability. To test the hypothesized relationships between the DFL dimensions and sustainability-related outcomes, the structural model was estimated. The model evaluation process involved examining the path coefficients and their significance using bootstrapping, explained variance (R2), effect sizes (f2), and predictive relevance (Q2).

Conceptual Framework and Hypotheses

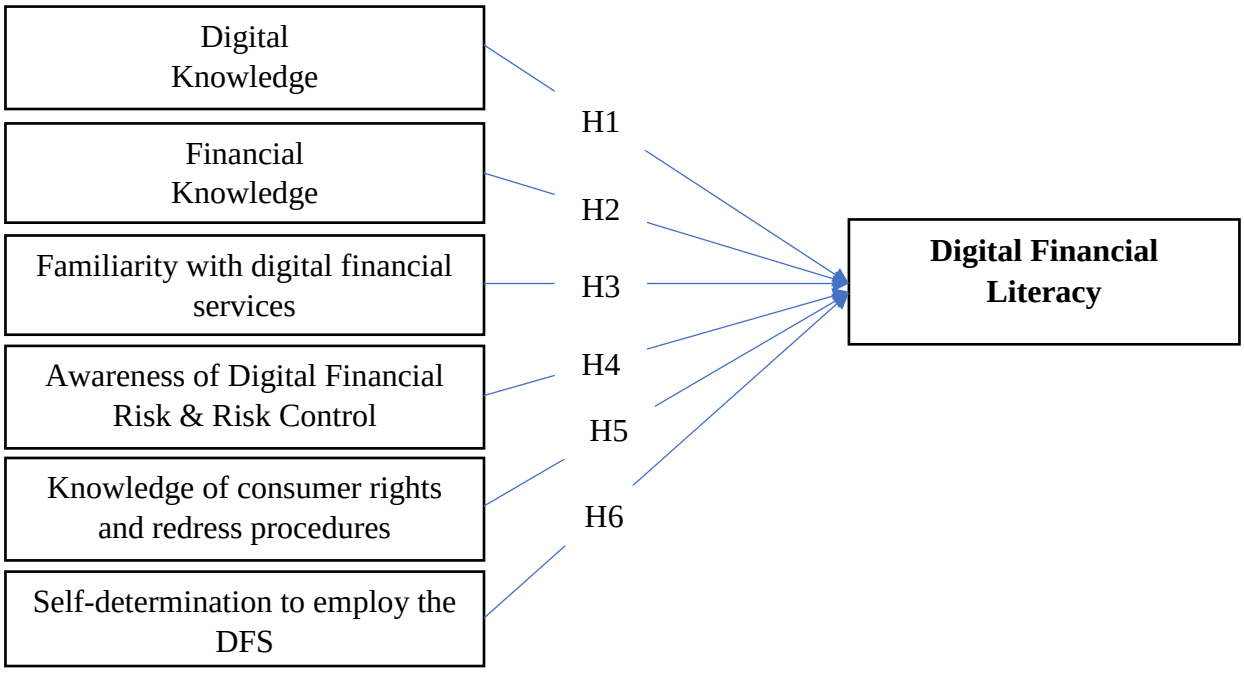

Figure 1: Conceptual Framework

1. **Digital Knowledge:** Effective engagement with digital financial services is made possible by the practical capacity to utilize digital devices and interfaces (such as smartphones, payment applications, online menus, and forms), comprising basic navigation, app operation, and basic troubleshooting abilities (Koskelainen et al., 2023). According to empirical research about internet and digital skill sets, having these abilities is a prerequisite for benefiting from online services: individuals with more digital skill levels are better able to access and utilize online platforms than those with less proficiency (van Deursen & van Dijk, 2015).

Hypothesis (H1). Higher levels of digital knowledge are positively associated with Digital Financial Literacy (DFL).

2. **Financial Knowledge:** A fundamental knowledge of finance and numeracy (such as fees, interest rates, savings logic, basic risk-return calculations, etc.) enables one to assess and select financial products or analyze transaction results (Huston, 2010). Understanding the fundamentals of finance is essential for using digital financial technologies safely and competently. A substantial amount of economic research views financial knowledge as a type of human capital that promotes improved financial decision-making and results (Lusardi & Mitchell, 2014a).

Hypothesis (H2). Greater financial knowledge is positively associated with Digital Financial Literacy (DFL).

3. **Familiarity with Digital Financial Services (DFS):** Practical experience and procedural expertise with particular digital financial products as well as procedures (such as e-KYC flows, electronic wallets, UPI-like quick transfers, and merchant QR payments), going beyond simple awareness (Marjorie et al., 2024). Research on mobile money as well as digital payment deployments indicates that being familiar with product processes improves users' capacity to take use of financial technologies and realize financial gains; DFL evaluation frameworks consider DFS familiarity as a separate, practice-oriented component (Apiors & Suzuki, 2022).

Hypothesis (H3). Greater familiarity with digital financial services is positively associated with Digital Financial Literacy (DFL).

4. **Awareness of Digital Financial Risk & Risk Control:** Understanding common online dangers (such as fraud, phishing, and transaction problems) and useful security measures (such as managing passwords, verifying transactions, and utilizing authentication tools) that lessen exposure when utilizing DFS (Laxman et al., 2024). According to modern DFL frameworks, understanding control procedures and identifying digital hazards are essential for the safe, long-

term adoption of DFS; awareness of risks not only guards against harm but also encourages confident, ongoing use (OECD/INFE, 2023).

Hypothesis (H4). Higher awareness of digital financial risks and risk-control practices is positively associated with Digital Financial Literacy (DFL).

5. Knowledge of Consumer Rights and Redress Procedures: Understanding the legal safeguards, institutional complaint mechanisms, and dispute-resolution procedures and deadlines that apply to online transactions (e.g., where to look for escalation, which solutions are available, and how to make a complaint) (Yang et al., 2023). Guidelines for policies and practices for digital financial inclusion cite consumer protection awareness as essential: being aware of one's rights and available remedies lowers vulnerability, boosts confidence in digital mediums, and increases the likelihood that consumers will interact with DFS in a constructive way (Mckee et al., 2015).

Hypothesis (H5). Better knowledge of consumer rights and redress mechanisms is positively associated with Digital Financial Literacy (DFL).

6. Self-Determination to Employ DFS: The person's drive, sense of independence, and desire to embrace and frequently employ digital financial services—demonstrating a readiness to attempt, persevere through minor failures, and incorporate DFS into regular business operations (Anwarul Islam & Khan, 2024). Change in behavior is mostly dependent on motivation and autonomy: Motivation is a crucial psychological enhancer of DFL because, according to Self-Determination Theory, individuals are more inclined to convert knowledge and abilities into consistent action when they consider themselves competent and driven internally (Ryan & Deci, 1985).

Hypothesis (H6). Higher self-determination (motivation) to use DFS is positively associated with Digital Financial Literacy (DFL).

Table 1: Existing measures of DFL source: Researcher's Compilation

S.No.	Researcher	Broader dimension	Sub-dimensions
1	Ravikumar et al. (2022)	Digital Financial Literacy (DFL)	• Quality of DFS • Knowledge of DFS & DFS providers • Awareness of digital finance risk • Digital finance risk control • Digital knowledge • Practical application of knowledge & skill • Digital-savvy • Self-determination to use knowledge & skill • Digital security awareness • Positive financial attitude • Gendered financial knowledge • Rational financial behaviour / Financial knowledge

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S.No.	Researcher	Broader dimension	Sub-dimensions
2	Prasad, Meghwal & Dayama (2018)	Digital Financial Awareness & Usage	• Digital Financial Awareness Index (awareness of platforms/products) • Digital Financial Frequency Index (usage frequency of mobile banking, e-wallets, cards, online transactions) • Demographic correlates (education, occupation, gender)
3	Adnan, Rahim & Ali (2023)	Digital Financial Literacy (DFL)	• Financial Knowledge Score (FKS) • Programme / Study Level (PL) • Gender • Age • Parental influence (PRI) • Peer influence (PEI) • Social media influence (SMI)
4	Widaningsih & Firmialy (2024)	Digital Financial Literacy (DFL)	• Digital knowledge / digital skills• Fintech / product knowledge • Fintech services literacy (procedural familiarity) • Fintech / DFS risk awareness • Risk-control / confidence to transact • Attitudes / preferences toward fintech • Responsible financial behaviour / decision-making
5	Mishra, Agarwal, Sharahiley & Kandpal (2024)	Digital Financial Literacy (DFL)	• Digital Financial Literacy (DFL) (measured as a construct) • Financial attitude • Subjective norms • Perceived behavioral control • Financial accessibility • Financial resilience (moderator) • Financial decision-making / investment intention (outcome)

Table 2: Proposed measures of DFL

Dependent Variable	Dimensions Considered (Independent Variable)	Items Code	Items
Digital Financial Literacy (DFL)	Digital Knowledge (DK)	DFL_DK	I can search for information online using a smartphone, tablet, laptop, or desktop computer. I know how to adjust basic settings on my phone or computer (such as internet, notifications, or security) to carry out digital transactions smoothly.
	Financial Knowledge (FK)	DFL_FK	I prepare a personal budget each month to manage my finances. I can calculate and compare the costs, fees, or interest rates before choosing a financial product or service.
	Familiarity with digital financial services	DFL_FWDFS	I am familiar with digital payment platforms (for example PhonePe, Google Pay, Paytm, Amazon Pay, UPI). I know how to complete transactions such as sending or receiving money through commonly used digital payment applications.

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	Awareness of Digital Financial Risk & Risk Control	DFL_AODFRRC1	I understand that digital financial transactions can expose me to risks such as phishing and spyware.
		DFL_AODFRRC2	I never disclose my OTPs, usernames, passwords, or PINs to anyone.
	Knowledge of consumer rights and redress procedures	DFL_KOCRRP1	I know my consumer rights when using online financial products and services.
		DFL_KOCRRP2	I know where to report fraud if I experience a scam or misuse related to digital financial products.
	Self-determination to employ the DFS	DFL_SDTEDFS1	I prefer digital financial services over traditional methods because they are more convenient.
		DFL_SDTEDFS2	I choose digital transactions because they often offer rewards, incentives, or cashback.
DFL		DFL_1	I am confident in checking and verifying transaction details before confirming a digital payment.
		DFL_2	I understand the basic safety practices (such as protecting PINs or OTPs) while using digital financial services.
		DFL_3	I can identify and avoid suspicious messages or links that may put my digital financial transactions at risk.

4. Data Analysis:

4.1 Demographic Profile

4.2 Measurement Model: Reliability and Validity- The measurement model was assessed for internal consistency employing Cronbach's α (Cronbach, 1951) and Composite Reliability (CR), with a prescribed limit of >0.70. (Hair, et al., 2022) Convergent validity was determined by indicator loadings and AVE (>0.50), whereas discriminant validity was investigated applying the Fornell-Larcker criterion (Fornell & Larcker, 1981) or the HTMT ratio (Henseler et al., 2015).

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Table 3: Outer Loadings

	AODFRRC	DFL	DK	FK	FWDFS	KOCRRP	SDTEDFS
AODFRRC1	0.744						
AODFRRC2	0.798						
DFL1		0.796					
DFL2		0.704					
DFL3		0.805					
DK 1			0.739				
DK 2			0.882				
FK1				0.924			
FK2				0.9			
FWDFS1					0.74		
FWDFS2					0.857		
KOCRRP1						0.761	
KOCRRP2						0.804	
SDTEDFS1							0.709
SDTEDFS2							0.764

The table shows satisfactory item reliability, with loadings ranging from 0.704 to 0.924, reaching the recommended cutoff of > 0.70 for reflective measures. FK1 (0.924) and FK2 (0.900) show the largest relationship, suggesting very high consistency with the Financial Knowledge construct. DFL2 (0.704) shows the lowest loading, which is nevertheless above the threshold and thus acceptable. Since the minimum two indicators measure every latent construct and none of the items show extremely low loadings that would necessitate removal, the loading pattern offers early proof of the measurement model's convergent validity and indicator reliability.

Table 4: Construct reliability and convergent validity

Constructs	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AODFRRC	0.784	0.786	0.784	0.521
DFL	0.738	0.76	0.747	0.599
DK	0.789	0.807	0.796	0.662
FK	0.908	0.909	0.909	0.833
FWDFS	0.776	0.788	0.78	0.641
KOCRRP	0.759	0.761	0.76	0.613
SDTEDFS	0.703	0.705	0.704	0.543

As reported in Table 2, all constructs show high internal consistency and convergent validity based on the conventional evaluation standards (Cronbach's α / CR > 0.70; AVE > 0.50). Cronbach's α varies from 0.703 (SDTEDFS) to 0.908 (FK) and the composite reliability (rho_c) has a range from 0.704 to 0.909, indicating an adequate internal reliability from constructs. AVE scores range from 0.521 to 0.833 thus converget validity is also supported (i.e., each construct account for more variance in its indicators). Financial Knowledge (FK) displays the best psychometric results (α = 0.908; rho_c = 0.909; AVE = 0.833); if we exclude it, the variable with the lowest but still acceptable reliability and AVE is DTEDFS (α= 0.703; rho_c= 0.704; AVE= 0.543). Overall, these findings support the utilization of the evaluated constructs in further structural model studies; however, in order to increase measurement robustness, SDTEDFS items may need to be examined more closely in subsequent research.

Table 5: Heterotrait–Monotrait (HTMT) ratios for discriminant validity

Constructs	AODFRRC	DFL	DK	FK	FWDFS	KOCRRP	SDTEDFS
AODFRRC							
DFL	0.882						
DK	0.838	0.824					
FK	0.801	0.832	0.809				
FWDFS	0.825	0.801	0.854	0.844			
KOCRRP	0.831	0.763	0.881	0.803	0.884		
SDTEDFS	0.844	0.768	0.801	0.853	0.868	0.863	

All HTMT ratios range between 0.763 and 0.884, which is well below the generally recognized liberal threshold of 0.90 (Henseler et al., 2015), indicating high discriminant validity throughout the measurement model, according to the HTMT matrix (Table X). This pattern shows that there is little indication overlap between constructs and that each construct addresses a unique conceptual domain. In the upper 0.80s, a small number of construct pairs exhibit HTMT values that are relatively high but still acceptable, reflecting anticipated theoretical relatedness without endangering construct distinctiveness. All things considered, the HTMT results offer solid proof that the constructs can be empirically separated and are appropriate for use in the structural model assessment.

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Table 6: Indicators' Variance Inflation Factors (VIF)—collinearity evaluation

Construct	VIF	Construct	VIF	Construct	VIF
AODFRRC1	1.37	DK 1	1.739	FWDFS2	1.673
AODFRRC2	1.37	DK 2	1.739	KOCRRP1	1.598
DFL1	1.36	FK1	3.253	KOCRRP2	1.598
DFL2	1.54	FK2	3.253	SDTEDFS1	1.415
DFL3	1.822	FWDFS1	1.673	SDTEDFS2	1.415

The indicator-level Variance Inflation Factors (VIFs), which vary from 1.36 to 3.253, are displayed in able Y. The conservative rule-of-thumb VIF < 3.3 and the more lenient threshold VIF < 5 are widely recognized limits for the absence of serious multicollinearity, and all VIF values fall well within them. The Financial Knowledge indicators have the biggest VIFs (FK1, FK2 = 3.253), but since this value is below the conservative cutoff, it does not suggest multicollinearity that could skew parameter estimations. In total, the VIF results show that there is little collinearity between the indicators and that the predictors in the structural model can be read with confidence; corrective measures based on collinearity were not necessary.

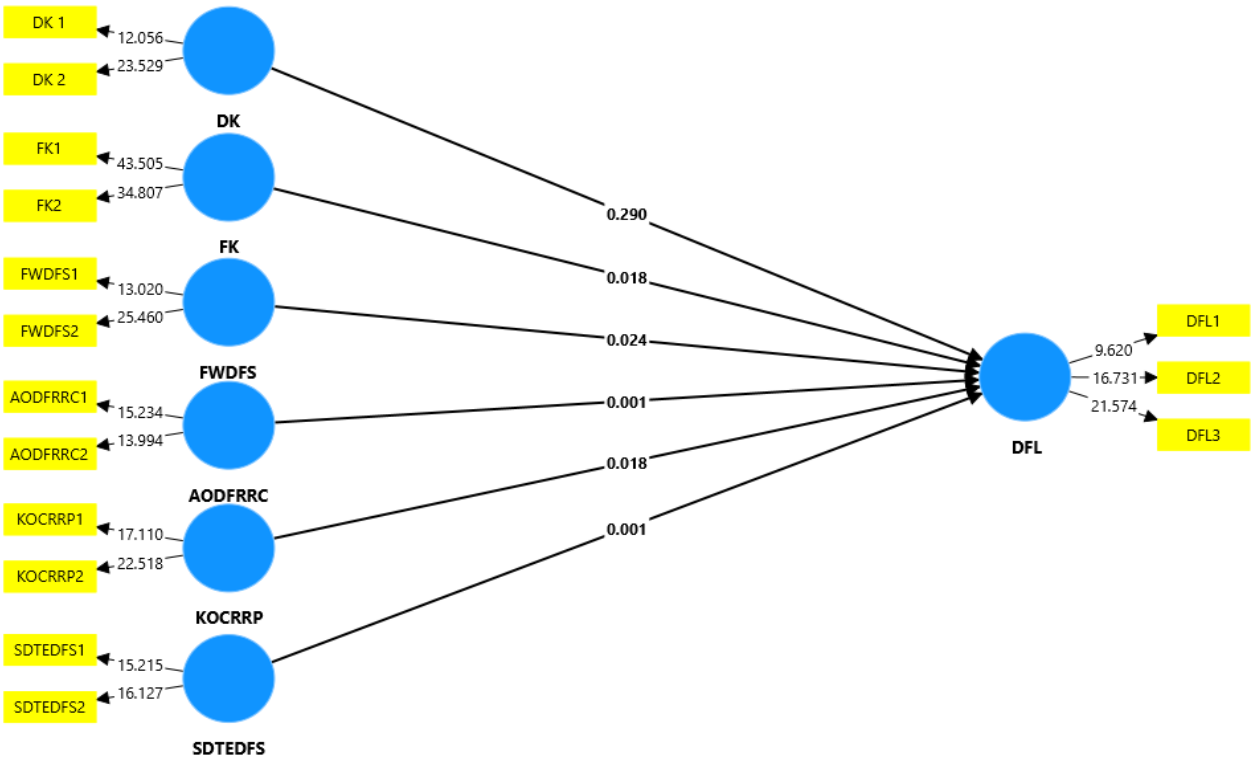

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Figure 2: Results of the structural model: Path coefficients connecting exogenous constructions to DFL

Table 7: Structural model results

Hypothesis	Relationship	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	
H1	**DK -> DFL**	18.197	0.147	17.196	1.058	0.29	
H2	**FK -> DFL**	-41.412	0.039	17.521	2.364	0.018	
H3	**FWDFS -> DFL**	216.709	-1.818	95.664	2.265	0.024	
H4	**AODFRRC -> DFL**	-162.615	0.405	48.579	3.347	0.001	
H5	**KOCRRP -> DFL**	-113.061	1.458	47.619	2.374	0.018	
H6	**SDTEDFS -> DFL**	86.513	0.818	26.28	3.292	0.001	

Five of the six hypothesized direct impacts on Digital Financial Literacy (DFL) have been validated — FK → DFL, FWDFS → DFL, AODFRRC → DFL, KOCRRP → DFL, and SDTEDFS → DFL — but DK → DFL is insignificant. The evidence showing that financial literacy as well as domain-relevant financial knowledge are the main factors influencing financial behavior and competence is consistent with the strong impact of financial knowledge (FK) (Lusardi & Mitchell, 2014b). As anticipated from research demonstrating that digital skill development is fueled by usage and practice instead of abstract knowledge solely, familiarity with and practical experience with digital financial services (FWDFS) determine DFL (van Deursen & van Dijk, 2014). The recognized technology-acceptance hypothesis, which holds that perceived usefulness and ease of use—as well as more general acceptance variables— influence technology competency and adoption, is in line with the significance of attitudes (AODFRRC) as well as perceived ease/usefulness (SDTEDFS) (Davis, 1989). DFL is presumably supported by knowledge of consumer rights & redress Procedures (KOCRRP) since task-specific information improves performance on the task and procedural as well as task-relevant knowledge makes it easier to complete payment tasks correctly in digital contexts. Lastly, the lack of a significant direct effect of Digital Knowledge (DK) can be explained by either the direct effect of DK being attenuated by

measurement specificity or overlap with other predictors, or by DK indirectly influencing DFL (e.g., through enhancing familiarity with digital services or procedural payment knowledge). This pattern is observed in the research on mediation and construct-overlap, which suggests testing indirect paths and improving measurement prior to eliminating theoretically relevant constructs (Zhao et al., 2010).

5. Discussion: Our approach extends and validates the paradigm of digital financial literacy (DFL) in the setting of informal retail in Lucknow. The strong benefits of financial knowledge, DFS familiarity, risk awareness, rights knowledge, and self-determination show that DFL for small merchants incorporates both technical and contextual literacies. Previous research also highlights consumer rights, risk management, and awareness of digital financial products as essential DFL dimensions (Yadav & Banerji, 2024). The strong self-determination impact in our data demonstrates how DFS adoption is driven by individual choice and motivation. Our results further confirm that inclusive growth as well as small-firm performance are supported by strong DFL that includes these characteristics (E & Swarupa, 2022b). In short, the data indicate that comprehending DFL theory in emerging markets retail requires as much financial as well as legal knowledge (for example, how money and rights function) as technical know-how. Interestingly, overall digital literacy was negligible. This suggests that the majority of Lucknow's store owners already have possession of smartphones and other basic technology, with content knowledge filling the remaining knowledge gap. According to surveys, the majority of Indian retailers already have bank accounts and smartphones (Ligon et al., n.d.). In other words, just giving devices will not sufficient; what matters is how retailers use those tools to manage their finances. Other research support this, finding that a stronger understanding of digital banking products and risk management highly predicts uptake (Mbatane & Kekana, 2024). These theoretical insights show that DFL is fueled largely by contextual understanding (financial, security, and rights) as well as motivation than by general digital skills.

These findings suggest that solutions for small merchants should prioritize emphasized literacies. Training initiatives in Uttar Pradesh should integrate fundamental financial management alongside hands-on DFS teaching (e.g., using UPI and mobile wallets), as well as sessions on preventing fraud and consumer rights (e.g., reporting a scam). Isolated technology instruction or device giveaways are unlikely to be effective. In practice, acceptance is frequently hampered by demand-side factors: merchants in India frequently cite a lack of consumer interest or concerns about tax obligation as obstacles (Ligon et al. n.d.). Thus, policymakers should combine DFL instruction with

demand generation (awareness initiatives) and more consumer protection measures. This is consistent with global recommendations for improved financial education as well as consumer protection so that users can handle digital money risks (OECD, 2017). Our findings suggest that sustainable digital banking inclusion in emerging markets requires an emphasis on financial education, risk/rights awareness, and empowerment, rather than just device access.

6. Limitations and Future Research: When evaluating these findings, it is important to keep a few things in mind. Although it reduces external generalizability, the purposeful, single-city (Lucknow) sample offers contextual depth. Common-method bias may be introduced and causal interpretation is limited by the cross-sectional, self-report design. Measurement precision may be impacted by the fact that some constructs were assessed using comparatively few signs, and one (SDTEDFS) had borderline reliability. Lastly, the analysis is limited to literacy dimensions and excludes a variety of contextual variables (store size, owner qualifications, local infrastructure) that could condition the observed associations as well as objective behavioral/performance measurements (e.g., transaction reports, complaint records). Future studies could use multi-district or stratified sampling to increase coverage across regions in order to evaluate generalizability; longitudinal or experimental designs to investigate causal dynamics; additional items and cognitive testing to enhance measurement, especially for SDTEDFS; integration of objective behavioral and administrative information to validate practical impacts; and explicit modeling of contextual moderators (shop size, owner education, local infrastructure) to enhance targeting of DFL interventions and define boundary conditions.

7. Conclusion: This study uses structural equation modeling and a purposive sample to empirically validate a multidimensional, context-specific "DFL Blueprint" for small, unorganized retailers in Lucknow. While general device-oriented digital knowledge did not directly affect digital financial literacy, financial knowledge, familiarity with digital financial services, awareness of digital risks and controls, consumer-rights/redress knowledge, and self-determination emerged as significant determinants of digital financial literacy. The paper's methodology operationalizes DFL as a second-order construct and shows that the suggested measures have acceptable psychometric properties. In practice, it suggests that empowerment, risk/rights literacy, and content-specific financial and procedural training should take precedence over device distribution alone in capacity-building. The results are limited by a cross-sectional, single-city, self-report design, and they could be useful for testing causality and connecting DFL to objective behavioral and firm-level outcomes in future longitudinal, experimental, or mixed-method studies.

References:

Anwarul Islam, K. M., & Khan, M. S. (2024). The role of financial literacy, digital literacy, and financial self-efficacy in FinTech adoption. *Investment Management and Financial Innovations*, *21*(2), 370–380. https://doi.org/10.21511/IMFI.21(2).2024.30

Apiors, E. K., & Suzuki, A. (2022). Effects of Mobile Money Education on Mobile Money Usage: Evidence from Ghana. *The European Journal of Development Research*, *35*(3), 715. https://doi.org/10.1057/S41287-022-00529-X

Bhattacharjee, B., Kumar, S., Verma, P., & Maiti, M. (2024). Determinants of Digitalization in Unorganized Localized Neighborhood Retail Outlets in India. *Journal of Theoretical and Applied Electronic Commerce Research* , *19*(3), 1699–1716. https://doi.org/10.3390/JTAER19030083/S1

Chhillar, N., Arora, S., & Chawla, P. (2014). Measuring Digital Financial Literacy: Scale Development and Validation. *Thailand and The World Economy*.

Choung, Y., Chatterjee, S., & Pak, T. Y. (2023). Digital financial literacy and financial well-being. *Finance Research Letters*, *58*, 104438. https://doi.org/10.1016/J.FRL.2023.104438

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297–334. https://doi.org/10.1007/BF02310555/METRICS

Davis, F. D. (1989). *Perceived Usefulness, Perceived Ease Of Use, And User Accep Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology*.

Economic Times. (2025, September 1). *UPI sets remarkable new volume milestone in August - The Economic Times*. https://economictimes.indiatimes.com/industry/banking/finance/banking/upi-sets-remarkable-new-volume-milestone-in-august/articleshow/123633627.cms?utm_source=chatgpt.com

E, V., & Swarupa, G. (2022). Gauging the Impact of Digital Financial Literacy on MSME Firms' Performance in India. *SSRN Electronic Journal*. https://doi.org/10.2139/SSRN.4130167

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), 39. https://doi.org/10.2307/3151312

Golden, W., & Cordie, L. (2022). Digital Financial Literacy. *Adult Literacy Education: The International Journal of Literacy, Language, and Numeracy*, *4*(3), 20–26. https://doi.org/10.35847/WGOLDEN.LCORDIE.4.3.20

Gupta, U., & Agarwal, B. (2023). The Role of Digital Financial Services on Indian MSMEs. *Indian Journal of Finance*, *17*(2), 08–26. https://doi.org/10.17010/IJF/2023/V17I2/170125

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. https://doi.org/10.1007/S11747-014-0403-8/FIGURES/8

Huston, S. J. (2010). Measuring Financial Literacy. *Journal of Consumer Affairs*, *44*(2), 296–316. https://doi.org/10.1111/J.1745-6606.2010.01170.X;REQUESTEDJOURNAL:JOURNAL:17456606;CSUBTYPE:STRING:SPECIAL;PAGE:STRING:ARTICLE/CHAPTER

Jamnani, A., & Jamnani, J. (2024). Determinants of digital financial literacy: An exploratory study. *ITM Web of Conferences*, *68*, 01029. https://doi.org/10.1051/ITMCONF/20246801029

J. Joseph F. Hair, G. T. M. Hult, C. M. Ringle, and M. S. (2022). A primer on partial least squares structural equation modeling (PLS-SEM). *International Journal of Research & Method in Education*, *38*(2), 220–221. https://www.researchgate.net/publication/354331182_A_Primer_on_Partial_Least_Squares_Structural_Equation_Modeling_PLS-SEM

Koskelainen, T., Kalmi, P., Scornavacca, E., & Vartiainen, T. (2023). Financial literacy in the digital age—A research agenda. *Journal of Consumer Affairs*, *57*(1), 507–528. https://doi.org/10.1111/JOCA.12510

Laxman, V., Ramesh, N., Jaya Prakash, S. K., & Aluvala, R. (2024). Emerging threats in digital payment and financial crime: A bibliometric review. *Journal of Digital Economy*, *3*, 205–222. https://doi.org/10.1016/J.JDEC.2025.04.002

Ligon, E., Sheth, K., Trachtman, C., & Malick, B. (n.d.). *Adoption of Digital Payments by Small Merchants in India*. Retrieved September 10, 2025, from https://cega.berkeley.edu/collection/digital-credit-linked-to-digital-payments-impact-on-small-merchants-in-india/#:~:text=The%20researchers%20found%20that%2058,account%20for%20low%20adoption%2C%20then-%20is%20airticle%20ka%20yaear%20bataiye

Lonkar, A., Dharmadhikari, S., Dharurkar, N., Patil, K., & Phadke, R. A. (2025). Tackling digital payment frauds: a study of consumer preparedness in India. *Journal of Financial Crime*, *32*(2), 257–278. https://doi.org/10.1108/JFC-01-2024-0029

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

Marjorie, A., Silva, B., Mendoza Villena, G., Rabino, A. R., Cristina, M., & Melo, F. (2024). Digital financial literacy and the utilization of digital financial tools of college students in Calapan City. *Https://Wjarr.Com/Sites/Default/Files/WJARR-2024-3965.Pdf*, *24*(3), 2431–2446. https://doi.org/10.30574/WJARR.2024.24.3.3965

Marvaniya, N. M. (2023). A Study of Conceptual Framework and Need of Digital Financial Literacy in India. In *Quest Journals Journal of Research in Business and Management* (Vol. 11). www.questjournals.org

Mbatane, S., & Kekana, M. K. (2024). *The Role of Digital Financial Literacy in the Use of Financial Technology Products and Services for University Students*. https://doi.org/10.2139/SSRN.4974284

Mckee, K., Kaffenberger, M., & Zimmerman, J. M. (2015). *Doing Digital Finance Right: The Case for Stronger Mitigation of Customer Risks*.

M, M. K., Almuraqab, N., Moonesar, I. A., Braendle, U. C., & Rao, A. (2024). How critical is SME financial literacy and digital financial access for financial and economic development in the expanded BRICS block? *Frontiers in Big Data*, *7*, 1448571. https://doi.org/10.3389/FDATA.2024.1448571

Neuhoff, J. (2024, July 24). *Evaluating the environmental impact of cash vs. digital payments | European Payments Council*. https://www.europeanpaymentscouncil.eu/news-insights/insight/evaluating-environmental-impact-cash-vs-digital-payments

OECD. (2017). Ensuring financial education and consumer protection for all in the digital age. *Ensuring Financial Education and Consumer Protection for All in the Digital Age*. https://doi.org/10.1787/D931693B-EN

OECD/INFE. (2023). *OECD/INFE survey instrument to measure digital financial literacy*.

OECD/INFE. (2024). OECD/INFE survey instrument to measure digital financial literacy. *OECD/INFE Survey Instrument to Measure Digital Financial Literacy*. https://doi.org/10.1787/548DE821-EN

Pinto, F., Mohsen Akbari, M., Ssonko Wilson, G., Benkhalifa, A., Khalil, O., Zia-Ul Haque, S., Roberto Benjamin, and, Raquel Del Cid Marroquín, H., Ochan, A., Nabbanja Turyagyenda, T., & Bala Mustafa Central Bank, H. (2021). *The following AFI member institutions provided qualitative insights through in-depth interviews*.

PTI. (2025, May 16). *UP govt launches initiative to digitally financially empower girl students*. https://www.theweek.in/wire-updates/national/2025/05/16/des96-up-girls-digital-empowerment.html

Ravikumar, T., Suresha, B., Prakash, N., Vazirani, K., & Krishna, T. A. (2022). Digital financial literacy among adults in India: measurement and validation. *Cogent Economics & Finance*, *10*(1). https://doi.org/10.1080/23322039.2022.2132631

Ryan, R. M., & Deci, E. L. (1985). *Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being Self-Determination Theory*. Ryan.

Tay, L. Y., Tai, H. T., & Tan, G. S. (2022). Digital financial inclusion: A gateway to sustainable development. *Heliyon*, *8*(6), e09766. https://doi.org/10.1016/J.HELIYON.2022.E09766

UNSGSA. (2018). *Igniting SDG Progress Through Digital Financial Inclusion | Department of Economic and Social Affairs*. https://sdgs.un.org/publications/igniting-sdg-progress-through-digital-financial-inclusion-30370

van Deursen, A. J. A. M., & van Dijk, J. A. G. M. (2014). The digital divide shifts to differences in usage. *New Media and Society*, *16*(3), 507–526. https://doi.org/10.1177/1461444813487959

van Deursen, A. J. A. M., & van Dijk, J. A. G. M. (2015). Internet skill levels increase, but gaps widen: a longitudinal cross-sectional analysis (2010–2013) among the Dutch population. *Information Communication and Society*, *18*(7), 782–797. https://doi.org/10.1080/1369118X.2014.994544;SUBPAGE:STRING:ABSTRACT;REQUESTEDJOURNAL:JOURNAL:RICS20;WGROUP:STRING:PUBLICATION

Yadav, M., & Banerji, P. (2024). Systematic literature review on Digital Financial Literacy. *SN Business & Economics*, *4*(11), 142. https://doi.org/10.1007/s43546-024-00738-y

Yang, J., Wu, Y., & Huang, B. (2023). Digital finance and financial literacy: Evidence from Chinese households. *Journal of Banking & Finance*, *156*, 107005. https://doi.org/10.1016/J.JBANKFIN.2023.107005

Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, *37*(2), 197–206. https://doi.org/10.1086/651257