Bridging the Confidence Gap: An Empirical Study of Digital Financial Literacy and Women's Economic Empowerment in Urban India

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ABSTRACT

In the contemporary landscape of rapid technological integration, digital financial literacy (DFL) has evolved into a cornerstone for achieving gender parity and sustainable economic empowerment. As financial ecosystems transition toward mobile-centric platforms and digital payment architectures, the ability to navigate these tools independently determines a woman's level of economic agency. This research investigates the gendered nuances of digital financial proficiency and its subsequent impact on economic autonomy within an urban setting. Utilizing primary data gathered from a targeted sample of 40 urban respondents (26 female and 14 male), the study employs a structured five-point Likert scale to measure diverse dimensions of digital engagement.

The analysis focuses on several critical metrics: operational self-efficacy, cybersecurity awareness, penetration of digital payment systems, and future-ready digital preparedness. Through a percentage-based comparative framework, the findings indicate that the traditional "first-level" digital divide—characterized by a lack of access to devices or connectivity—is virtually non-existent in this urban set up. Instead, a more subtle "second-level" divide is identified, rooted in variations in independent confidence and risk assessment. Notably, the data reveals that despite superior academic qualifications, female respondents often adopt a more cautious approach toward digital safety compared to their male counterparts.

These results challenge the conventional tale of women as digital laggards. The study highlights a pivotal shift from infrastructural exclusion to a disparity in advanced skill application and digital self-assurance. For policymakers and financial institutions, the implications are clear that the focus must move beyond providing connectivity toward fostering advanced capacity-

building initiatives. Strengthening digital financial agency among women is essential for accelerating entrepreneurial participation.

Keywords: Digital Financial Literacy, Women's Economic Empowerment, Urban Gender Divide, Financial Autonomy, Digital Agency, Inclusive Growth.

1. INTRODUCTION

The relentless expansion of digital technology has fundamentally altered the global economic architecture, redefining the mechanisms through which individuals access financial services and participate in the marketplace. In India, this transformation is characterized by the explosive growth of the Unified Payments Interface (UPI), mobile banking, and a burgeoning fintech ecosystem. However, the utility of these innovations is not merely a function of physical access. Instead, it is increasingly dependent on Digital Financial Literacy (DFL)—a sophisticated blend of knowledge, technical skill, and the psychological confidence required navigating digital ecosystems safely and efficiently. For women, digital financial literacy is not merely a technical skill; it is a prerequisite for economic empowerment. True empowerment involves the transition from financial inclusion (having an account) to financial agency (the ability to control and grow resources). Historically, structural inequalities and mobility constraints have relegated women to the periphery of formal finance. While digital tools provide a "virtual" bridge over these physical barriers, the strength of that bridge depends on a woman's ability to utilize digital resources without external mediation.

The traditional academic discourse on the "digital divide" has historically focused on the gap in hardware ownership. However, in urban India—where smartphone penetration is near-universal—this first-level divide has largely been resolved. As this study's findings highlight, the modern divide is a second-level disparity rooted in qualitative differences relates with the ease with which one navigates complex apps, the degree of caution versus decisive action in digital spaces and the ability to influence the internet for financial growth rather than just social consumption. Contemporary research indicates that gender-based differences in digital finance are increasingly psychological. Even in urban settings where educational attainment is high, women often report lower "perceived" confidence than men, despite having equal or superior functional abilities. This Confidence Gap is often worsened by heightened concerns regarding

cyber security and a lack of gender-sensitive technical guidance. On the other hand, the rise of the Digital India initiative has fostered a new generation of digitally exposed youth, making it essential to empirically test whether these gender gaps are narrowing or simply changing shape.

By analyzing primary data from an urban sample, this study evaluates four key dimensions: operational competence, informational competence, transactional fluency, and security awareness. The objective is to move beyond the access and explore the layers of digital agency. Through this analysis, the study aims to provide evidence-based insights into how digital literacy acts as a catalyst for female entrepreneurial participation, household resilience, and sustainable economic growth.

2. LITERATURE REVIEW

2.1 Financial Literacy and Economic Outcomes

Lusardi and Mitchell (2014) provide one of the most influential theoretical and empirical foundations for financial literacy research. Their study establishes that financial literacy significantly influences savings behavior, retirement planning, and wealth accumulation. They argue that financial literacy is not merely knowledge but a critical human capital investment that affects long-term economic security. Importantly, their cross-country analysis consistently finds gender gaps in financial literacy, with women often scoring lower on financial knowledge assessments while simultaneously displaying lower self-confidence in financial decision-making. This foundational work highlights the structural relevance of financial literacy in shaping economic empowerment outcomes [(1)].

Atkinson and Messy (2012), in their OECD working paper on measuring financial literacy, develop a standardized framework for assessing financial knowledge, behavior, and attitudes. Their work emphasizes that financial literacy must be measured across behavioral dimensions, not only theoretical understanding. The OECD framework later became the basis for international surveys evaluating gender disparities in financial capability. Their findings reveal consistent gender differences across multiple countries, particularly in financial confidence and risk assessment behavior [(2)].

2.2 Digital Financial Literacy and Digital Inclusion

Morgan, Huang, and Trinh (2019) extend traditional financial literacy frameworks into the digital era by examining digital financial literacy in Asia. They argue that digital financial literacy incorporates both technological competence and financial understanding. Their research shows that individuals with higher digital financial literacy are more likely to use digital payments, mobile banking, and online financial platforms. However, they observe that gender differences persist, particularly in cyber security awareness and confidence in digital transactions [(3)].

The World Bank's Global Findex Database (2021) provides empirical evidence on financial inclusion trends worldwide. The report highlights that while account ownership has increased substantially, women in many developing economies remain less likely than men to use digital financial services actively. The report emphasizes that access alone does not guarantee usage; digital skills and confidence are essential for meaningful financial inclusion [(4)].

2.3 Gender and the Digital Divide

Hargittai (2002) introduced the concept of the "second-level digital divide," arguing that disparities are not limited to access but extend to differences in digital skills and online competencies. This theoretical framework is critical for understanding contemporary gender gaps in digital engagement. Women may have access to devices yet differ in depth of usage, digital confidence, and online risk management [(5)].

Van Dijk (2020), in his theory of the digital divide, explains that digital inequality progresses through stages: motivational access, material access, skills access, and usage access. Applying this model to gender contexts reveals that even when material access improves, disparities in skill acquisition and strategic usage remain significant determinants of empowerment outcomes [(6)].

2.4 Women's Economic Empowerment and Digital Capability

Kabeer (1999) conceptualizes empowerment as the expansion of people's ability to make strategic life choices. Within financial contexts, empowerment requires resources (access), agency (decision-making capacity), and achievements (economic outcomes). Digital financial

literacy directly enhances agency by strengthening women's capacity to independently manage financial tools and decisions [7].

Suri and Jack (2016), in their study on mobile money in Kenya (M-Pesa), demonstrate that digital financial services significantly increased women's financial resilience and lifted households out of poverty. Their findings provide strong empirical evidence that digital financial capability can directly translate into economic empowerment [8].

Although existing literature extensively establishes the importance of financial literacy in shaping economic security and empowerment outcomes, several limitations remain evident. Foundational studies have demonstrated persistent gender disparities in financial knowledge and confidence, while more recent research has expanded the discourse to include digital financial literacy as a determinant of digital financial inclusion. Theoretical frameworks on the digital divide further suggest that disparities now extend beyond access to differences in skills, confidence, and quality of usage. However, much of the available evidence relies on large-scale cross-country datasets, national surveys, or conceptual analyses rather than micro-level empirical investigations. Moreover, prior research often treats women as a uniformly disadvantaged group without examining whether gender gaps persist within relatively educated and digitally exposed urban populations. Limited studies conduct direct gender-wise comparative analysis using primary survey data to assess dimensions such as digital confidence, online safety awareness, and perceived digital preparedness. Consequently, there is insufficient empirical clarity on whether the contemporary gender digital divide remains substantial or is gradually narrowing in urban contexts. The present study seeks to address this gap by providing a focused gender-based comparison of digital financial literacy indicators and analysing their implications for women's economic empowerment.

3. RESEARCH OBJECTIVES

The primary focus of this inquiry is guided by the following specific objectives:

1. **To benchmark** the existing levels of digital financial literacy (DFL) among male and female respondents.
2. **To quantify** gender-based variations in operational confidence concerning the use of smartphones, computing devices, and fintech applications.

3. **To evaluate** the depth of cyber security awareness and online risk-mitigation strategies across gender lines.
4. **To investigate** the extent to which guidance deficits act as a barrier to digital engagement for both men and women.
5. **To synthesize** the findings into a framework that explores the broader implications of digital financial literacy for women's economic empowerment and financial agency.

4. RESEARCH METHODOLOGY

This study employs a descriptive and comparative research framework. The descriptive element allows for a detailed mapping of digital literacy levels, while the comparative dimension facilitates a gendered lens through which disparities in confidence, safety awareness, and digital readiness are scrutinized. The design is tailored to uncover observable behavioral patterns and interpret their sociopolitical implications for gender equality in the digital age.

The research utilizes primary data taken through a structured questionnaire. The questionnaire captured age, gender, educational attainment, professional status, and internet usage frequency and measured key variables through a five-point Likert Scale, specifically targeting confidence, accessibility, and preparedness.

The study analyzes a total of 40 respondents, comprising 26 female and 14 male participants. The sample is primarily situated within the urban and educated demographic. Due to time-bound constraints, a convenience sampling technique was utilized. While this approach prioritizes accessibility, it serves as a viable exploratory tool for examining specific urban trends. Digital financial literacy is conceptualized as a multidimensional construct, operationalized through five key variables:

1. **Operational Self-Efficacy:** The independent ability to navigate digital hardware and software.
2. **Information Literacy:** The proficiency in retrieving and evaluating digital financial information.
3. **Transactional Agency:** The actual utilization of digital ecosystems like UPI and mobile banking.

4. **Cyber-Hygiene Awareness:** The comprehension of security protocols and fraud prevention.
5. **Systemic Preparedness:** The perceived readiness to integrate into the Viksit Bharat 2047 digital economy.

Data processing was executed through percentage-based analysis and gender-wise cross-tabulation. This method was strategically selected to allow for proportional comparisons between unequal group sizes. The findings are visualized through a series of comparative tables and Diagrammatic/graphical representations. The study maintains an exploratory focus, prioritizing descriptive patterns over inferential or predictive modeling. While the primary data for this study was originally collected as part of a broader research initiative, the current paper presents a distinct secondary analysis, re-evaluating the findings through a specific lens of gendered digital agency and urban women empowerment.

5. DATA ANALYSIS AND INTERPRETATION

The following analysis presents the empirical findings derived from a sample of 40 urban respondents. To ensure accuracy across unequal group sizes, percentage-based comparative analysis has been employed.

5.1 Comprehensive Demographic Profiling

The demographic structure of the sample provides a critical foundation for understanding the digital behavior of the respondents.

Fig 5.1.1

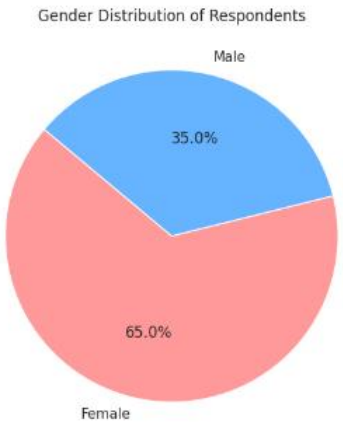
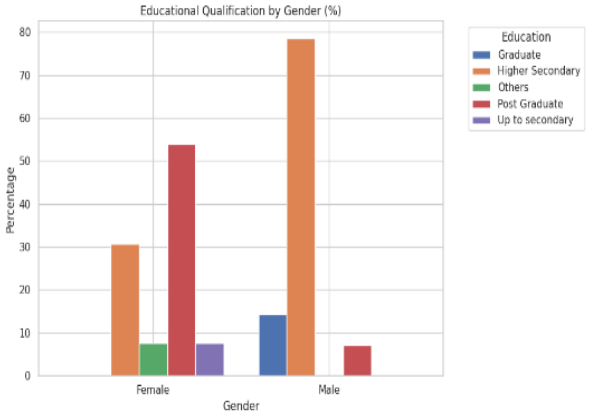


Fig 5.1.2



The empirical findings of this study are derived from a meticulously analyzed sample of 40 urban respondents. To maintain analytical rigor given the unequal group sizes, a percentage-based comparative framework was adopted. This allows for a proportional understanding of gendered trends without the distortion of absolute numbers.

5.1 Demographic and Socio-Economic Profiling

Table 5.1

Category	**Sub-Category**	**Female (%)**	**Male (%)**
Age Profile	Below 20 years	46.15%	85.71%
	21–30 years	3.85%	7.14%
	31–40 years	11.54%	0.00%
	41–50 years	15.38%	7.14%
	Above 50 years	23.08%	0.00%
Education	Postgraduate	53.85%	7.14%
	Graduate	0.00%	14.28%
	Higher Secondary	30.77%	78.57%
Occupation	Student	46.15%	85.71%
	Employed	46.15%	14.28%

The data reveals that a majority of the sample belonged to the female respondents (65%). A stark contrast in the life stages of the respondents was also observed. The male group is overwhelmingly youthful, with over 85% being students under the age of 20. In contrast, the female cohort represents a "Mature Professional" segment; more than 53% are postgraduates and nearly 40% are over the age of 40. The women in this study are academically over-qualified compared to the men, yet they are part of a generation that did not grow up as digital natives. This sets the stage for a confidence gap where high formal education may not immediately translate into high digital self-efficacy.

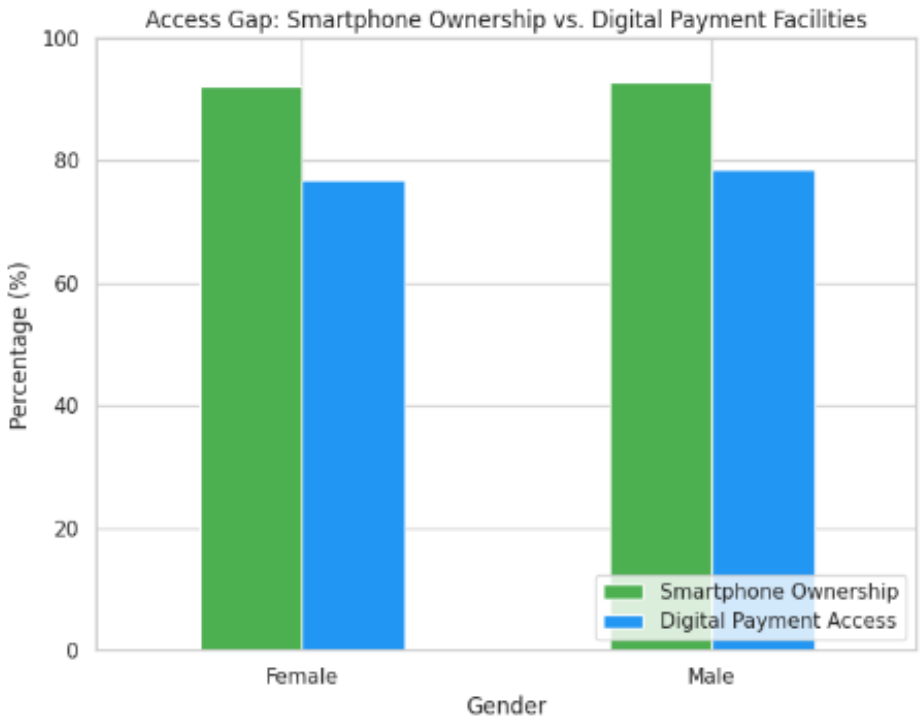
5.2 The Infrastructure Paradox: Access vs. Transactional Agency

Before measuring literacy, the study examined the First-Level Digital Divide—physical access to hardware and connectivity.

Table 5.2.1

Indicator	**Female (%)**	**Male (%)**
Smartphone Ownership (Yes)	92.31%	92.86%
Daily Internet Usage	100%	100%
Access to Digital Payments (UPI/Banking)	76.92%	78.57%

Fig 5.2



In an urban setting, the gender gap in device ownership has effectively vanished, with ownership rates exceeding 92% for both genders. Furthermore, the 100% daily internet usage indicates that connectivity is no longer a luxury but a utility. However, a Transactional Lag is definitely visible. While women have the phones and the data, roughly 23% remain excluded from digital

payment systems (UPI/Banking). This suggests that for nearly one-fourth of urban women, the digital journey stops at communication and entertainment and does not extend to financial management. This is a primary bottleneck for economic empowerment.

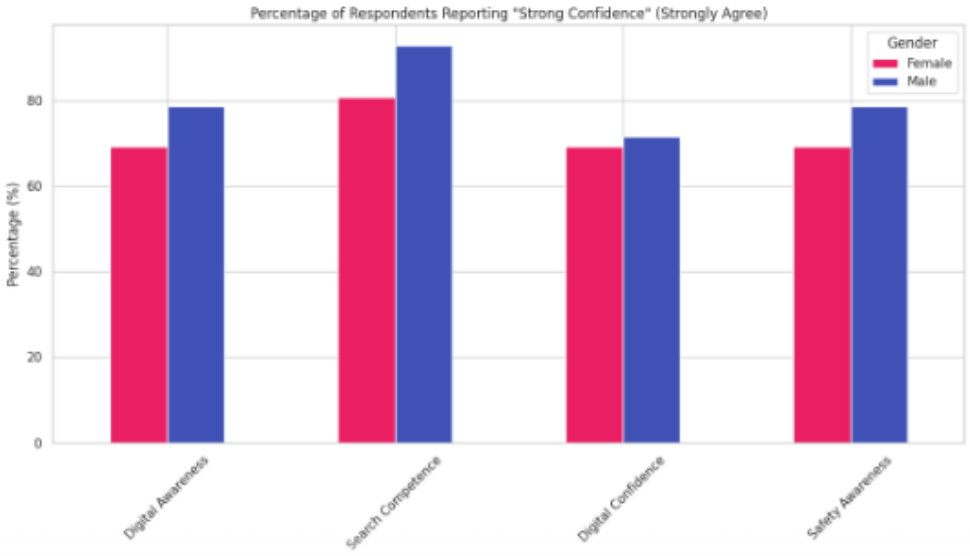
5.3 Measuring Digital Financial Literacy

The core of the study evaluated four stakes of digital competence by measuring the percentage of respondents who strongly agreed with statements of proficiency.

Table 5.3

Digital Literacy Pillar	**Female (%)**	**Male (%)**	**Gap (%)**
Operational Confidence (Device Usage)	69.23%	71.43%	-2.20%
Information Search Competence	80.76%	92.85%	-12.09%
Digital Service Awareness	69.23%	78.57%	-9.34%
Security & Safety Awareness	69.23%	78.57%	-9.34%

Fig 5.3



The study reveals:

- **Operational Parity:** There is high parity in basic device usage, indicating that women are as capable as men in handling the physical interface of smartphones and computers.

- **The Information Search Gap:** A significant 12% gap exists in information searching. This is critical because economic empowerment relies on Information Power—the ability to find loan schemes, investment opportunities, or market prices. The lower female score suggests a reliance on others for data retrieval.
- **The Cyber security Caution:** In both general awareness and security, women score 9% lower than men in strong agreement. Qualitative analysis of the data shows that women frequently chose moderate agreement. This confirms a Caution Gap. Women in urban areas are digitally active but remain psychologically hesitant about the security of digital platforms, which likely prevents them from moving into higher-stakes digital financial activities.

5.4 Guidance Barriers and Future Aspirations

The study explored the guidance deficit—the degree to which lack of formal training hinders digital participation.

Perception Statement	**Female (%)**	**Male (%)**
Lack of Guidance is a Major Barrier (Strong)	19.23%	28.57%
Willingness to Improve Skills (Yes)	100%	100%
Preparedness for Viksit Bharat 2047	88.46%	85.71%

Interestingly, males reported a higher strong difficulty with the lack of guidance, while females were more likely to provide a neutral/moderate response (30.7%). This suggests that while men are aware they need help to master complex systems, women may be underestimating the role that formal guidance could play in boosting their confidence. Most significantly, the 100% willingness to undergo training across both genders provides a clear mandate for policymakers. Urban respondents are not resistant to technology; they are simply waiting for structured pathways to mastery.

5.5 Conclusion of Analysis: The "Confidence Ceiling"

The detailed analysis suggests that the urban woman’s barrier to economic empowerment is no longer the digital divide/access but a confidence ceiling. Despite having higher education and equal device access, the female respondents are plagued by a perceived lack of safety and a

hesitation in independent information searching. For these women, digital financial literacy is the missing link that will turn their smartphones from a communication tool into a financial management engine. Bridging this 10-12% confidence gap is essential for creating a gender-inclusive digital economy.

6. DISCUSSION

This study's results give us a clear and detailed look at how digital technology is being used in Indian cities today. People used to think the 'digital divide' was just about whom had a phone and who didn't, but this research shows that in cities, the problem has changed into something more complicated. In a setting where daily internet usage is universal (100%) and smartphone ownership is nearly total (approx. 92%), the barriers to women's economic empowerment have shifted from physical exclusion to psychological and skill-based touches.

6.1 The Educational-Confidence Dissonance

A substantial majority of female respondents (53.8%) are postgraduates, representing a highly educated demographic. On the other hand, the male sample is predominantly composed of younger students at the higher secondary level (78.57%). Majority of males reported strong agreement regarding digital awareness, compared to females. This indicates that in the digital economy, academic degrees are not a proxy for digital agency. The younger male demographic likely benefits from digital immersion i.e. a life-long exposure to technology that fosters high self-efficacy. For women's economic empowerment, the implication is profound: higher education alone will not bridge the financial gender gap. Policy interventions must pivot toward vocational and financial training that complements formal schooling.

6.2 The "Caution Gap" and Risk Perception

A recurring pattern in the data is the high concentration of moderate responses among women regarding cyber security and information searching. While 80.76%of females feel they can search for information, only 69.23% feel strongly confident about online safety, with a notable 26.92% opting for cautious, mid-scale agreement. While risk-aversion is a protective trait against cyber-fraud, it can also act as a deterrent to entrepreneurial innovation. If a woman perceives her digital security skills as merely moderate, she may hesitate to engage with higher-risk, higher-

reward digital financial instruments such as digital credit, stock market applications, or complex e-commerce payment gateways. This psychological barrier prevents the transition from a "digital user" to a "digital decision-maker."

6.3 The "Last Mile" of Financial Inclusion

Perhaps the most actionable finding is the gap between smartphone ownership and digital payment access. In this urban sample, nearly 23% of women report a lack of access to facilities like UPI and mobile banking, despite having the hardware and internet connectivity to support them. In an era where the Indian economy is rapidly moving toward a cashless model, this gap represents a significant segment of the population that is digitally connected but financially sidelined. This "Last Mile" gap suggests that the barrier is no longer the price of technology, but likely a combination of lack of guidance, lack of independent bank account control, or a perceived complexity in digital financial management.

6.4 The Universal Demand for Structured Guidance

The study highlights a critical structural failure: the reliance on informal self-learning. A significant portion of males and a dispersed but high percentage of females indicated that the lack of proper guidance is a hurdle. This debunks the myth that the digitally native youth do not require formal instruction. For urban women, who often balance professional and domestic roles, the absence of a structured support system for digital financial literacy remains a primary inhibitor of economic autonomy.

7. CONCLUSION: STRATEGIC PATHWAYS TO DIGITAL AGENCY

This research concludes that the gender digital divide in urban India has evolved into a "Second-Level Divide"—one characterized by a confidence deficit and a disparity in advanced financial application rather than a lack of physical access. As the nation marches toward the vision of Viksit Bharat 2047, the digital participation of women must move from the periphery to the center.

7.1 Summary of Key Contributions

- **Access is No Longer the Bottleneck:** For urban educated demographics, the focus must shift entirely away from providing devices to building capacity.

- **The Gendered Nature of Confidence:** Women, despite being more academically qualified, exhibit a more cautious digital persona. Empowerment initiatives must focus on confidence-building and risk management rather than just basic how-to training.
- **Financial Integration Lag:** The lag in digital payment adoption among connected women indicates that digital literacy programs must be specifically integrated with financial service onboarding (FinTech integration).

7.2 Recommendations for Policy and Practice

To foster a truly inclusive growth model, this study proposes a three-pronged strategy:

1. **Gender-Sensitive Cyber security Training:** To convert cautious awareness into informed confidence, specific workshops on cyber-hygiene and fraud recovery are essential to lower the psychological barrier to digital banking.
2. **FinTech for Entrepreneurs:** Digital financial literacy should be rebranded as a business tool. Training should focus on advanced modules: digital record-keeping, e-taxation, and digital credit access.
3. **Institutionalized Digital Mentorship:** The guidance gap can be addressed through community-based or workplace-led digital mentorship programs, where early adopters help bridge the skill gap for others.

7.3 Future Outlook

The 100% willingness to learn and high perceived readiness observed in this sample are highly encouraging. It indicates a population that is digitally ready but instructionally hungry. If the confidence gap can be closed through targeted, urban-centric interventions, digital financial literacy will cease to be a barrier and instead become the most potent catalyst for women's economic empowerment in India.

Ultimately, digital empowerment is realized when a woman does not just have a phone in her hand, but has the absolute confidence to manage her financial destiny through it. By shifting our focus from digital inclusion to digital agency, we can ensure that the urban woman is not just a participant in the digital economy, but a leader of it.

REFERENCES

1. Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature, 52*(1), 5–44.
2. Atkinson, A., & Messy, F. A. (2012). Measuring financial literacy: Results of the OECD/INFE pilot study. *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 15.
3. Morgan, P. J., Huang, B., & Trinh, L. Q. (2019). The need to promote digital financial literacy for the digital age. *ADB Institute Working Paper*.
4. World Bank. (2021). *The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19*. World Bank.
5. Hargittai, E. (2002). Second-level digital divide: Differences in people's online skills. *First Monday, 7*(4).
6. Van Dijk, J. (2020). *The digital divide*. Polity Press.
7. Kabeer, N. (1999). Resources, agency, achievements: Reflections on the measurement of women's empowerment. *Development and Change, 30*(3), 435–464.
8. Suri, T., & Jack, W. (2016). The long-run poverty and gender impacts of mobile money. *Science, 354*(6317), 1288–1292.