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Digital Financial Services Uptake in Industrial Urban Area: A Comparative Insights from Millennials and Gen Z

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***Abstract*—DFS have already become a component of modern financial systems, especially in an industrial city where the concentration of technological infrastructure and the financial flow is the highest. The high rate of growth of digital payment, mobile banking, Internet investment and digital credit has greatly transformed the manner in which people relate with financial institutions. This paper looks into the adoption of DFS with the generational differences between Millennials (Generation Y) and Generation z in a typical industrial urban scenario.**

The study is based on a mixed-method design, which involves the use of quantitative data gathered by use of a structured questionnaire given to 400 participants to be used alongside qualitative information in interpretation. Chi-square tests and multiple linear regression are statistical tools that determine the important factors that determine the adoption of DFS. The results show that neither of the two generations uses DFS without convenience, perceived usefulness, trust, and security, as well as digital financial literacy. Nevertheless, the distinct generational differences are observed. Generation Z possesses a higher level of digital confidence, flexibility, and openness to more sophisticated digital financial applications, whereas Millennials have a more cautious and goal-oriented adoption behaviour, which is mostly determined by data privacy and financial risk issues. Although this is largely known, the fears of fraud, transaction mistakes, and poor consumer protection remain as the drivers to further involvement in DFS.

This research offers real-life implications to the financial institutions, FinTech providers and policy makers to develop secure and user-oriented digital financial products and build confidence among the various generation cohorts.

***Index Terms*—Digital Financial Services, Millennials, Generation Z, Adoption Drivers, Industrial Urban Area**

I. INTRODUCTION

Digital Financial Services (DFS) have fundamentally transformed the manner in which individuals engage with financial institutions, particularly within economies experiencing accelerated digitalisation. By encompassing services such as mobile banking, online payment systems, digital lending, and technology-enabled investment platforms, DFS facilitates financial transactions that are faster, more cost-effective, and increasingly user-centric. These innovations have reshaped conventional financial practices by reducing physical dependency on banking infrastructure and enabling seamless, real-time access to financial services.

Industrial and urban regions, characterised by dense economic activity and higher levels of technological penetration, have emerged as critical centres for the expansion of DFS. Within these environments, younger demographic cohorts specifically Millennials and Generation Z constitute the primary drivers of digital financial adoption. Millennials, born between 1981 and 1996, have experienced a gradual transition from traditional, branch-based banking systems to digitally mediated financial interactions. In contrast, Generation Z, comprising individuals born from 1997 onwards, has been socialised entirely within a digitally networked ecosystem. Both cohorts exhibit extensive reliance on smartphones, high familiarity with online

platforms, and strong acceptance of cashless and mobile-based payment mechanisms.

Despite the rapid diffusion of DFS, adoption patterns remain uneven. Persistent concerns related to digital fraud, cybersecurity threats, limited user awareness, and inadequate customer support continue to impede widespread and consistent usage. Examining generational distinctions between Millennials and Generation Z is therefore essential for understanding differential adoption behaviours and for informing strategies through which financial institutions can enhance digital accessibility, trust, and overall user experience.

The accelerated growth of DFS has consequently reconfigured traditional financial systems by offering technologically advanced alternatives that prioritise speed, convenience, and integration. Services such as mobile banking applications, UPI-based transactions, digital wallets, online lending platforms, and automated investment tools have become integral to contemporary financial activity. Owing to their higher exposure to technology, familiarity with digital interfaces, and preference for mobile-driven interactions, Millennials and Generation Z remain at the forefront of adopting these innovations (Elsaid & Abbas, 2020; Al-Qudah et al., 2024).

II. LITERATURE REVIEW

Digital Financial Services have substantially altered the structure and execution of financial transactions by providing efficient, accessible, and technology-oriented alternatives to conventional banking systems. These services, which include mobile banking, electronic wallets, online lending platforms, and digital payment mechanisms, have contributed to enhanced financial inclusion and accelerated service delivery (Gomber, Koch, & Siering, 2017). The Financial Stability Board (2017) underscores that digital financial innovation has significantly reshaped market dynamics and consumer expectations, particularly within industrial and urban settings where rapid, reliable financial processes are essential. The convergence of expanding digital infrastructure, increased smartphone penetration, and intensified fintech competition has rendered DFS especially attractive to younger, technologically adept populations.

An examination of generational differences is central to understanding DFS adoption dynamics. Millennials, also referred to as Generation Y, represent a cohort that has progressively migrated from traditional banking frameworks to digitally enabled financial services. While they value the convenience, flexibility, and time efficiency offered by digital platforms, they often retain heightened concerns regarding trust, data protection, and institutional reliability (Elsaid & Abbas, 2020; Patel & Sharma, 2021). Their adoption behaviour is typically shaped by pragmatic considerations and risk sensitivity, resulting in a comparatively cautious approach to DFS. Conversely, Generation Z is intrinsically digital-oriented, having matured in an environment dominated by smartphones, social media, and online ecosystems. This cohort demonstrates a strong inclination towards mobile-first financial products, biometric security features, AI-driven investment tools, and instantaneous payment solutions (Accenture, 2021). Empirical evidence consistently indicates that Generation Z exhibits greater confidence and adaptability in engaging with emerging financial technologies than Millennials (Al-Qudah et al., 2024).

Theoretical frameworks on technology adoption provide further insight into these generational variations. The Technology Acceptance Model posits that perceived usefulness and perceived ease of use are fundamental determinants of adoption intention (Davis, 1989). This model has been extensively validated within DFS research, demonstrating that both Millennials and Generation Z respond favourably to platforms that are intuitive and operationally efficient (Geidam, Yahaya, & Gasamu, 2024). The Unified Theory of Acceptance and Use of Technology extends this perspective by incorporating factors such as social influence, performance expectancy, and facilitating conditions. Existing studies suggest that Generation Z is particularly responsive to peer influence, online communities, and social networks, whereas Millennials place greater emphasis on functional performance and institutional credibility (Firmansyah, Masri, & Anshari, 2023). Complementary theoretical approaches, including the Theory of Reasoned Action and the Technology Organization Environment framework, further highlight the roles of attitudes, trust, environmental

readiness, and organisational communication in shaping DFS adoption across generational cohorts.

Across the extant literature, convenience consistently emerges as a dominant motivator for DFS usage. Digital platforms eliminate the need for physical visits to financial institutions and enable rapid transaction completion, rendering them particularly valuable in industrial urban contexts where time efficiency is critical (Mackenzie, 2015). While Millennials tend to value simplified processes and reduced administrative burdens, Generation Z places greater emphasis on seamless user experiences, instant feedback mechanisms, and sophisticated interface design (Accenture, 2021). Thus, although convenience influences both cohorts, the nature of their expectations diverges in line with generational preferences.

Security and trust constitute equally critical determinants of adoption behaviour. Users commonly assess DFS reliability based on perceived safeguards against fraud, robustness of cybersecurity measures, and transparency of data privacy policies (Baber, 2020). Having witnessed multiple evolutions in online security standards, Millennials often display heightened sensitivity to data breaches and financial irregularities. Generation Z, despite its digital confidence, expects stringent security protocols and prompt issue resolution, reflecting its deep engagement with real-time digital environments (Hornuf & Hornuf, 2019). Evidence from emerging economies indicates that concerns regarding transaction failure, hacking, and unauthorised access remain significant barriers for both cohorts, albeit manifested in different forms (Kirobo & Lissah, 2022). These findings underscore the necessity of strengthening security frameworks to ensure sustained DFS engagement.

Digital literacy and social influence further shape adoption trajectories. Research by Lusardi and Mitchell (2017) demonstrates that individuals with higher levels of digital and financial literacy exhibit greater confidence and competence in navigating online financial platforms. Millennials predominantly utilise DFS for routine banking activities, whereas Generation Z is more inclined to explore advanced services such as online investments, instant credit applications, and cryptocurrency platforms (Acharya & Bhojak, 2024). Social influence plays a particularly pronounced role for Generation Z, which frequently relies on peer recommendations, social media discourse, and digital influencers in financial decision-making (Firmansyah et al., 2023). In contrast, Millennials tend to place greater trust in institutional communication channels and professional financial advice. These distinctions reflect differing learning processes and engagement styles between the two generations.

Notwithstanding increasing adoption rates, several constraints continue to impede DFS utilisation. Perceived financial risks, including phishing attempts, technical malfunctions, and fraudulent transactions, discourage hesitant users from fully embracing digital platforms (Kirobo & Lissah, 2022). Limited awareness of advanced financial tools, such as digital investment platforms and robo-advisory services, further restricts engagement, particularly within industrial urban regions (Vijai, 2019). Additional challenges including delayed customer support, opaque fee structures, system downtime, and inadequate communication contribute to user dissatisfaction (Kanimozhi & Rose, 2022). While Millennials tend to prioritise long-term reliability and financial stability, Generation Z is more likely to discontinue usage when platforms fail to deliver intuitive design or real-time assistance.

III. RESEARCH METHODOLOGY

The study employs a descriptive and analytical research design to investigate the adoption of Digital Financial Services and to compare usage behaviour between Millennials and Generation Z within an industrial urban context. Primary data were collected through a structured questionnaire administered to 400 respondents, equally distributed between the two generational cohorts. A stratified random sampling technique was adopted to ensure balanced representation. The instrument captured demographic characteristics, levels of DFS awareness and usage, key adoption drivers, perceived challenges, and overall adoption behaviour, with responses measured on a five-point Likert scale. Data analysis was conducted using SPSS, applying descriptive statistics, multiple linear regression analysis, and chi-square tests at a five per cent level of significance.

IV. RESEARCH OBJECTIVES

To identify key motivators influencing DFS uptake.
To analyse major challenges and risks associated with DFS.
To compare generational differences in adoption behaviour.

Results and Discussion

Survey data collected from Generation Y and Generation Z respondents across various localities in Ankleshwar city were analysed to address the stated objectives. Hypotheses were formulated accordingly, followed by statistical testing and interpretation of results.

Demographic Analysis

Category	Groups	Frequency	Percentage
Age Group	18–27 years	200	50
	28–43 years	200	50
Gender	Male	206	51.5
	Female	194	48.5
Education Level	Higher Secondary	47	11.75
	Diploma	91	22.75
	Undergraduate	95	23.75
	Postgraduate	167	41.75
Occupation	Student	78	19.5
	Employed	156	39
	Self-employed	76	19
	Business Owner	67	16.75
	Other	23	5.75
Monthly Income	Below ₹30,000	117	29.25
	₹30,000–60,000	142	35.5
	₹60,000–90,000	88	22
	₹90,000–1,20,000	33	8.25
	Above ₹1,20,000	20	5

The demographic profile reveals an equal distribution of respondents across the 18–27 and 28–43 age groups, ensuring balanced representation of younger and older cohorts. Gender composition is nearly even, indicating minimal gender-based bias. A substantial proportion of respondents possess undergraduate and postgraduate qualifications, reflecting a relatively high level of educational attainment and digital capability. Occupationally, employed individuals constitute the largest segment, followed by students and self-employed respondents, underscoring the economically active nature of the sample. Income distribution indicates a predominance of lower- and middle-income groups, highlighting the relevance of DFS as affordable and convenient financial solutions. Collectively, these characteristics confirm the suitability of the sample for examining DFS adoption behaviour.

H_0: Convenience, ease of use, trust, security, and digital literacy do not significantly influence DFS uptake.

H_1: Convenience, ease of use, trust, security, and digital literacy significantly influence DFS uptake.

Table 1: Multiple Linear Regression Results Determinants of DFS Uptake

Independent Variable	Standardized Beta (β)	t-value	Sig. (p-value)
Convenience	0.45	3.89	0.001
Ease of Use	0.31	2.98	0.003
Trust	0.28	2.45	0.015
Security	0.32	2.76	0.007
Digital Literacy	0.29	2.61	0.009
Model Summary			
R	0.693		
R^2	0.48		
Adjusted R^2	0.471		
F-value	71.84		0.000

The multiple linear regression results demonstrate that the overall model is statistically significant ($F = 71.84$, $p < 0.001$) and accounts for approximately 48 per cent of the variance in DFS uptake ($R^2 = 0.48$). Among the independent variables, convenience emerges as the most influential determinant, underscoring the importance of time efficiency and continuous accessibility. Ease of use also exerts a significant positive effect, indicating that intuitive platform design encourages adoption. Security and trust significantly influence usage behaviour, reflecting user concerns regarding data protection and service reliability. Digital literacy likewise enhances adoption, suggesting that greater confidence in digital tools translates into higher utilisation. As all predictors are significant at the five per cent level, the null hypothesis is rejected. The results confirm that convenience, ease

of use, trust, security, and digital literacy significantly influence DFS uptake.

H_{02}: Challenges such as transaction failure, security concerns, poor customer support, and hidden fees do not significantly affect DFS uptake.

H_{12}: Challenges such as transaction failure, security concerns, poor customer support, and hidden fees significantly affect DFS uptake.

Table 2: Challenges Affecting DFS Uptake

Challenge Factor	Frequency	(%)
Transaction failures	160	40
Security and fraud concerns	120	30
Poor customer support	80	20
Hidden fees and charges	40	10

The frequency analysis indicates that transaction failures and refund issues (40%) are the most commonly reported challenges faced by respondents while using Digital Financial Services, followed by security and fraud concerns (30%). Issues related to poor customer support (20%) and hidden fees (10%) were reported less frequently but remain notable barriers.

Table 3: Chi-Square Test Results – Challenges and DFS Uptake

Test Statistic	Value
Chi-Square (χ^2)	15.62
Degrees of Freedom	3
Significance (p-value)	0.001

The chi-square test confirms a statistically significant association between these challenges and DFS uptake ($p = 0.001$), leading to the rejection of the null hypothesis. These findings highlight the need for improved system reliability, robust cybersecurity measures, and responsive customer support mechanisms.

H_{03}: There is no significant difference in DFS adoption behaviour between Millennials and Generation Z.

H_{13}: There is a significant difference in DFS adoption behaviour between Millennials and Generation Z.

Table 4: DFS Adoption Level by Generation

Test Statistic	Value
Chi-Square (χ^2)	13.79
Degrees of Freedom	3
Significance (p-value)	0.003

A noticeable difference in DFS adoption levels between Generation Z and Millennials. Among Generation Z respondents, 86.5 percent report high adoption of Digital Financial Services, while only 13.5 percent fall under the low adoption category. In contrast, 73 percent of Millennials exhibit high adoption, whereas 27 percent demonstrate low adoption behaviour.

Table 5: Chi-Square Test Results – Generation and DFS Adoption

Adoption Level	Generation Z	Millennials	Total
High Adoption	173	146	319
Low Adoption	27	54	81
Total	200	200	400

The chi-square test further confirms that this difference is statistically significant ($p = 0.003$), indicating that adoption behaviour varies meaningfully across generational cohorts. The findings confirm that DFS adoption behaviour differs significantly between Generation Z and Millennials, with Generation Z demonstrating a higher level of adoption.

V. CONCLUSION

The study offers empirical insights into the adoption of Digital Financial Services within an industrial urban context, with particular emphasis on generational differences. The findings establish convenience, ease of use, trust, security, and digital literacy as significant determinants of DFS uptake. Persistent challenges including transaction failures, security concerns, inadequate customer support, and hidden fees continue to influence adoption behaviour. A pronounced generational divide is evident, with Generation Z demonstrating higher levels of adoption than Millennials, reflecting greater digital confidence and adaptability. While DFS adoption is widespread, sustained growth will depend on enhancing system

reliability, strengthening cybersecurity frameworks, and continuously improving user experience.

VI. FUTURE SCOPE OF THE STUDY

Future research may broaden the geographical scope to include diverse urban and rural regions, thereby enhancing the generalisability of findings. Longitudinal designs could provide deeper insights into evolving adoption patterns over time. Further investigations may also assess the influence of emerging technologies, such as artificial intelligence and blockchain, on digital finance adoption. The incorporation of qualitative approaches could yield richer understanding of user perceptions, trust formation, and behavioural motivations across demographic groups.

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