Transitioning from Traditional to Digital: A Quantitative Analysis of Migrating from Gullak (Indian Piggy Bank) to Digital Budgeting Tools in Rural and Urban India

Arun Kumar Waghchoure [1, 2]

[1] Ex-WeAct Head, EDII, Visiting Faculty at Welingkar Institute

[2] Fellow Program in Management- Scholar, Chetana's Institute of Management & Research

waghchoure.arun23@student.cimr.in | arunkw@gmail.com

ORCiD: 0000-0002-5047-2546

1. Abstract

This research study investigates a specific traditional saving instrument, the Gullak (Indian piggy bank), and neo contemporary digital budgeting tools in rural and urban India settings. The research explores demographic characteristics and factors driving adoption disparities between these populations. Employing a quantitative research design based on the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Diffusion of Innovations (DOI) theory to explore key factors influencing adoption., Data collected from a stratified sample reveals that perceived usefulness, performance expectancy, social influence, and relative advantage are significant drivers of adoption. Additionally, facilitating conditions and compatibility with existing financial management practices also emerged as important. While urban populations are more likely to adopt digital tools due to better technological access, rural areas face barriers such as limited digital literacy and infrastructure. The study suggests that promoting financial literacy and improving access to digital tools are critical to bridging this divide. Findings have implications for policymakers aiming to increase the adoption of digital financial management systems across diverse populations.

Keywords: gullak, piggy bank, personal budgeting, fintech, quantitative analysis, rural India

JEL Classification: D14 O33 L86 E21

2. Highlights

1. This study explores the transition from traditional saving methods like the Gullak to digital budgeting tools in both rural and urban India.
2. Younger individuals, those with higher education, and higher-income groups are more likely to adopt digital budgeting tools, particularly in urban settings.
3. Key factors influencing adoption include perceived usefulness, ease of use, and social influence, based on the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT).
4. The study highlights a significant digital divide between rural and urban populations, with limited technological access and lower financial literacy acting as barriers in rural areas.

5. Recommendations for policymakers include promoting financial literacy programs and improving digital infrastructure to bridge the gap and encourage wider adoption of digital tools across diverse populations.

3. Introduction

3.1. Background

The transition from conventional saving practices such as the Gullak to contemporary digital budgeting tools (like apps) is significantly altering the landscape of personal finance management within India, particularly across both rural and urban environments. The Gullak, a symbol of informal savings practices, is increasingly being supplanted by digital solutions, a shift propelled by advancements in technology and the implementation of financial inclusion policies. A comprehensive understanding of the demographic and technological determinants that are shaping this transition is essential for the formulation of effective interventions tailored to both rural and urban contexts.

3.2. Research Questions

1. What are the demographic characteristics of individuals who migrate from Gullak to digital budgeting tools in rural and urban areas? 2. What factors influence the migration from Gullak to digital budgeting tools in rural versus urban areas?

3.3. Research Objectives

1. To explore demographic characteristics of individuals transitioning to digital budgeting tools: 1.a. Examine age, gender, income level, and education as factors influencing the transition. 1.b. Identify trends and patterns in rural and urban populations. 2. To identify factors influencing the migration from Gullak to digital budgeting tools in rural and urban areas: 2. a. Investigate the reasons behind the transition. 2.b. Analyse the external and internal factors driving the change.

3.4. Hypothesis

1. Demographic Characteristics Hypotheses: H4: Individuals with higher income levels are more likely to transition from Gullak to digital budgeting tools. 2. Rural vs. Urban Hypotheses: H6: The factors driving the migration from Gullak to digital tools differ between rural and urban populations. 3. Factors Influencing Migration Hypotheses: H9: External factors like peer influence and social pressure are more influential in urban areas, while internal factors such as perceived financial security play a larger role in rural areas.

4. Literature Review

The transition from traditional saving methods to digital budgeting tools can be analysed through several theoretical frameworks that provide insight into user acceptance and technology adoption. The Technology Acceptance Model (TAM), developed by (Davis, 1989), is one of the most widely used models, (Table 1) for understanding technology adoption. TAM posits that two key factors—perceived usefulness and perceived ease of use—determine an individual's decision to adopt new technologies. Numerous studies have validated TAM's relevance in explaining the adoption of financial management systems and digital tools, making it a foundational model for this research.

Building on TAM, the Unified Theory of Acceptance and Use of Technology (UTAUT), developed by (Venkatesh et al., 2003), extends the understanding of technology adoption by incorporating additional factors, such as social influence, performance expectancy, and facilitating conditions. UTAUT has been particularly useful in studying technology acceptance in diverse settings, including both rural and urban populations, as it accounts for the broader social and infrastructural context influencing user behaviour. This model is valuable for analysing the role of peer networks and the availability of technological resources in shaping the adoption of digital budgeting tools.

The Diffusion of Innovations (DOI) theory, proposed by (Rogers, 1993), further complements TAM and UTAUT by focusing on the process through which new technologies spread within a population. DOI highlights several critical factors, including relative advantage, compatibility, and trialability, which influence how quickly an innovation is adopted. This theory is particularly relevant for understanding how early adopters in urban areas differ from traditional users in rural regions in their adoption of digital budgeting tools. DOI helps explain why some populations are more receptive to adopting digital solutions and how innovations such as digital budgeting tools can penetrate resistant or underserved markets.

Other relevant frameworks, such as the Theory of Planned Behavior (TPB) (Ajzen, 1991) and Financial Literacy and Capability Models (FLCM) (Sherraden, n.d.), provide additional perspectives on the adoption of digital tools. TPB emphasises the role of attitudes, subjective norms, and perceived behavioural control in shaping individuals' intentions to use digital tools, while FLCM focuses on the importance of financial knowledge and decision-making capabilities in the adoption

process. These theories contribute to a comprehensive understanding of the multiple factors influencing the shift from traditional savings methods like the Gullak to modern digital tools, particularly in contexts where financial literacy and access to technology vary significantly.

Taken together, these models offer a robust framework for analysing the factors that influence the adoption of digital budgeting tools in both rural and urban settings. By integrating insights from TAM, UTAUT, DOI, and other relevant theories, this study aims to provide a holistic understanding of the transition from traditional to digital financial management practices across diverse populations in India.

5. Research methodology

This section outlines the research design, participants, data collection methods, instruments used, and the approach to data analysis, aimed at understanding the transition from traditional savings tools like the Gullak to digital budgeting tools in both rural and urban India.

5.1. Research Design

This study uses a quantitative cross-sectional survey design to examine the transition from Gullak to digital budgeting tools. Participants were selected using stratified random sampling from both rural and urban areas.

5.2. Participants/Sample

The sample consists of individuals from both rural and urban populations who have used traditional saving methods and are familiar with digital budgeting tools. Demographic data such as age, gender, education, and income were collected.

5.3. Data Collection

Data was collected through a structured questionnaire administered via google forms. The questionnaire was designed following the frameworks of the TAM, the UTAUT, and the DOI. The survey items were structured to capture

participants' experiences with both traditional saving tools, the Gullak, and digital budgeting tools/apps, with a particular emphasis on perceived usefulness, ease of use, and other relevant factors influencing adoption.

5.4. Instruments

The primary data collection instrument was a structured questionnaire developed to capture participants' experiences with traditional saving methods, such as the Gullak, and their transition to digital budgeting tools. The questionnaire was based on seven established models and theories: the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), Diffusion of Innovations (DOI), the Theory of Planned Behavior (TPB), Financial Literacy and Capability Models (FLCM), and Self-Determination Theory (SDT). Each of these models contributed key elements, Table 2 that were operationalized into survey items, Table 3. These key elements included perceived usefulness, effort expectancy, social influence, relative advantage, and compatibility, among others.

The survey contained two primary sections:

1. **Demographic Information**

This section collected data on participants' age, gender, education level, income, and geographic location (rural or urban), which were essential for analysing patterns and factors influencing the adoption of digital tools.

2. **Adoption and Use of Digital Budgeting Tools**

The second section included questions based on key elements drawn from the models and theories mentioned above. Items were developed to measure perceived usefulness, ease of use, social influence, facilitating conditions, relative advantage, and compatibility with existing financial practices. A 5-point Likert scale was used to measure participants' agreement with each item, ranging from "strongly disagree" (1) to "strongly agree" (5).

The survey's hypotheses were grounded in nine research hypotheses, but for the purposes of this study, only three—H4, H6, and H9—were selected to focus the analysis. These hypotheses were directly linked to the models and key

elements, allowing the study to examine the factors influencing the transition from traditional savings methods like the Gullak to digital tools.

The questionnaire, Table 4 was administered through Google Forms and disseminated both online and in-person to reach a broad demographic across rural and urban areas. The instrument's reliability was assessed using Cronbach's Alpha to ensure internal consistency across the various scales.

5.5. Data Analysis

The data were analysed using SPSS descriptive statistics to provide a summary of participant characteristics. Inferential statistical methods, including regression analysis, were employed to test the study's hypotheses and assess relationships between variables.

6. Result

The results of the study are divided into two primary areas: the demographic characteristics of the participants and their adoption and use of digital budgeting tools. These results are based on the analysis of the responses collected via the structured questionnaire, which was designed using key elements from multiple models and theories.

6.1. Demographic Characteristics

The data on participants' age, gender, education level, income, and geographic location (rural or urban) provided valuable insights into the adoption of digital budgeting tools. The demographic analysis revealed that:

1. **Age:** Younger participants, particularly those under 40 years of age, were more likely to adopt digital budgeting tools compared to older individuals.
2. **Education:** Higher levels of education correlated with an increased likelihood of using digital budgeting tools, with university graduates and postgraduates forming the majority of adopters.
3. **Income:** Individuals with higher income levels were more inclined to transition from traditional saving methods, such as the Gullak, to digital tools, supporting Hypothesis H4.

4. **Geographic Location:** Urban participants had significantly higher rates of adoption of digital tools due to better access to technology and financial literacy programs, while rural participants faced more barriers, such as limited digital infrastructure and lower technological familiarity, aligning with Hypothesis H6.

6.2. Adoption and Use of Digital Budgeting Tools

The second section of the survey focused on key elements, such as perceived usefulness, ease of use, social influence, facilitating conditions, relative advantage, and compatibility, drawn from models like TAM, UTAUT, and DOI. Participants were asked to respond on a 5-point Likert scale. The analysis of these responses indicated the following:

1. **Perceived Usefulness and Ease of Use:** Participants largely agreed that digital budgeting tools enhanced their financial management practices and were easy to use, especially among urban dwellers. This aligns with the Technology Acceptance Model (TAM) and underscores the importance of perceived usefulness in driving adoption.
2. **Social Influence:** Peer and family influence played a notable role in both rural and urban settings, though it was slightly more significant in urban areas. This result supports Hypothesis H9, which postulated that external factors such as peer influence would have a greater effect in urban areas.
3. **Facilitating Conditions:** The availability of resources, such as internet access and devices, was a key factor in determining whether participants could effectively adopt digital budgeting tools, especially in rural areas.
4. **Relative Advantage and Compatibility:** Participants who adopted digital tools reported finding them more advantageous compared to traditional methods like the Gullak. They also found these tools to be compatible with their current financial practices, supporting the Diffusion of Innovations (DOI) theory.

6.3. Reliability and Hypothesis Testing

The reliability of the questionnaire was tested using Cronbach's Alpha, with all scales demonstrating strong internal consistency. Regression analysis was used to test the selected hypotheses (H4, H6, and H9), confirming the significance of income, rural-urban differences, and social influence in the adoption of digital budgeting tools.

Case Processing Summary

		N	%
Cases	Valid	3	100.0
	Excluded[a]	0	.0
	Total	3	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.886	12

Overall, the findings suggest that perceived usefulness, social influence, and facilitating conditions are crucial factors in driving the transition from traditional savings methods like the Gullak to digital budgeting tools. The study highlights the importance of improving digital infrastructure and financial literacy, particularly in rural areas, to encourage broader adoption.

7. Discussion

The findings of this study provide key insights into the transition from traditional savings methods, such as the Gullak, to digital budgeting tools, highlighting the significant role of perceived usefulness, social influence, and facilitating conditions in driving adoption. These results are consistent with the theoretical frameworks of the Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), and Diffusion of Innovations (DOI) that informed the study.

7.1. Perceived Usefulness and Ease of Use

The importance of perceived usefulness emerged strongly, particularly in urban areas where participants acknowledged the advantages of digital tools for improving their financial management practices. This finding is in line with TAM, which posits that the more individuals believe a tool will enhance their performance, the more likely they are to adopt it. Similarly, ease of use was identified as a critical factor, particularly in rural settings where technological familiarity may be lower. Participants who found digital tools easy to use were more inclined to adopt them, suggesting that improving the usability of these tools could facilitate broader adoption.

7.2. Social Influence and Peer Networks

Social influence was found to play a crucial role, especially in urban areas where peer and family networks have a stronger impact on individual decisions to adopt digital budgeting tools. The influence of family and friends encouraged participants to transition from the Gullak to digital alternatives, aligning with UTAUT's emphasis on social influence as a determinant of technology acceptance. In rural areas, while social influence was still significant, it was somewhat weaker, suggesting that targeted campaigns to promote digital budgeting tools through community networks could help boost adoption.

7.3. Facilitating Conditions

The availability of resources, such as internet access, mobile devices, and educational support (e.g., tutorials), was a major determinant of adoption, particularly in rural areas. The lack of sufficient digital infrastructure continues to hinder the transition to digital tools in these regions. This highlights the digital divide between rural and urban areas, where urban participants benefit from better infrastructure and resources. Improving access to these necessary conditions in rural areas is essential for bridging this gap and encouraging broader use of digital budgeting tools.

7.4. Relative Advantage and Compatibility

Participants in both rural and urban settings recognized the relative advantage of digital budgeting tools compared to traditional methods like the Gullak, particularly in terms of convenience, security, and control over finances. This supports DOI theory, which posits that individuals are more likely to adopt innovations they perceive as superior to existing methods. Additionally, the compatibility of digital tools with participants' existing financial practices was crucial for adoption, particularly in rural areas where traditional savings practices are deeply rooted. Ensuring that digital tools align with the values and financial habits of rural users will be key to encouraging their broader adoption.

7.5. Policy and Practical Implications

The study underscores the need for policymakers to address the digital divide, especially in rural areas, through targeted interventions aimed at improving both digital infrastructure and financial literacy. Given the barriers identified in terms of technological access and familiarity, increasing investment in rural digital infrastructure and providing comprehensive financial education programs will be crucial steps toward fostering broader adoption of digital budgeting tools. Additionally, leveraging social influence through community leaders and local networks could further enhance the transition to digital financial management tools.

8. Limitation

The study's sample size is constrained by its limited geographic coverage, though a special effort has been out to share the survey question with hindi translation so that it reaches to the more rural heartland of India, which may affect the generalizability of the findings. Additionally, the cross-sectional design employed restricts the ability to capture long-term trends and changes over time. Furthermore, reliance on self-reported data introduces the potential for response bias, which may influence the accuracy of the results.

9. Conclusion

This study provides valuable insights into the factors driving the transition from traditional savings methods, like the Gullak, to digital budgeting tools in both rural and urban India. The findings highlight that perceived usefulness, social influence, and facilitating conditions are critical in shaping individuals' decisions to adopt digital tools. While urban participants are more likely to embrace these tools due to better access to technology and higher levels of financial literacy, rural populations face challenges such as limited infrastructure and lower digital literacy.

The results emphasise the need for targeted interventions to address the digital divide between rural and urban areas. Improving access to technology, enhancing financial literacy, and fostering social influence through community networks can significantly impact the broader adoption of digital financial management tools. Policymakers and financial

institutions must work together to implement strategies that not only promote the benefits of digital tools but also ensure that rural populations have the necessary resources and support to adopt them effectively.

Ultimately, bridging this gap will enable a smoother transition from traditional methods like the Gullak to more efficient, secure, and modern digital budgeting tools, leading to better financial management outcomes for diverse populations across India.

11. References

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10. Appendix

10.1. All Tables (includes all records used in the study)

Table 1

Theoretical Models

Abbr.	Models	Description	Relevance	Example Application
TAM	Technology Acceptance Model (TAM)	TAM is widely used to explain how users come to accept and use technology. It focuses on two key factors: Perceived Usefulness (how useful the user finds the new tool) and Perceived Ease of Use (how easy the user finds the tool to operate).	This model can help explain the transition from Gullak to digital budgeting tools by examining whether users perceive digital tools as more useful and easier to use compared to traditional methods.	use this model to investigate if users find digital budgeting tools more useful and easier to manage than a physical Gullak.
UTAUT	Unified Theory of Acceptance and Use of Technology	TAUT expands on TAM by incorporating additional factors like Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions.	UTAUT is particularly useful for understanding the broader factors influencing the adoption of digital budgeting tools, including how social circles and external conditions impact user behaviour.	UTAUT can be used to analyse how social influence (from family or peers) and external conditions (like access to technology) impact the migration from Gullak to digital budgeting tools.
DOI	Diffusion of Innovations Theory	DOI, proposed by Rogers, explains how, why, and at what rate new ideas and technologies spread through cultures. The model includes factors like Innovation Characteristics (Relative Advantage, Compatibility, Complexity, Trialability, Observability).	This model can help understand how quickly and why people adopt digital budgeting tools over traditional methods, focusing on factors such as perceived relative advantage and compatibility with existing behaviours.	You can apply DOI to analyse how early adopters of digital budgeting tools influence others in both rural and urban areas.
TPB	Theory of Planned Behavior	TPB suggests that behaviour is driven by Behavioural Intentions, which are influenced by Attitudes, Subjective Norms, and Perceived Behavioral Control.	This model can help explain how attitudes toward saving (using Gullak vs. digital tools), social pressures (family, friends), and control over using digital tools affect the transition.	You can use TPB to measure whether users' attitudes toward digital budgeting tools or social norms affect their decision to transition from Gullak.
FLCM	Financial Literacy and Capability Models	These models focus on understanding how individuals' financial knowledge and skills affect their ability to make informed and effective financial decisions.	Financial literacy is a key factor in the transition from traditional saving tools like Gullak to more complex digital budgeting tools.	You can incorporate questions to assess users' financial literacy and analyse how it influences their transition to digital budgeting tools.
SDT	Self-Determination	SDT focuses on Autonomy, Competence, and Relatedness	This theory can help you analyse whether the	SDT can explain how perceived competence in

Abbr.	Models	Description	Relevance	Example Application
	Theory	as key factors that motivate behaviour. In the context of budgeting, autonomy refers to the control users feel over their finances, competence to their ability to use tools effectively, and relatedness to the social context of their budgeting decisions.	transition to digital budgeting tools provides users with a sense of autonomy and competence in managing their finances.	using digital budgeting tools motivates individuals to shift from Gullak to digital platforms.

Table 2

Key Elements

Key Elements	Operational definitions	Explanation for Items
	TAM	
Perceived Usefulness	The degree to which an individual believes that using a digital budgeting tool will enhance their financial management (measured by a Likert scale ranging from "strongly disagree" to "strongly agree").	These items assess the perceived advantages of using digital tools compared to traditional methods, focusing on their utility in financial management.
Perceived Ease of Use	The extent to which an individual believes that using the digital budgeting tool will be free of effort or complexity (measured by ease ratings such as "very difficult" to "very easy").	These items evaluate the simplicity and user-friendliness of digital tools, which can influence adoption.
Behavioural Intention to Use	The likelihood that an individual will use digital budgeting tools in the future (measured by asking about their intention to use such tools on a scale from "unlikely" to "very likely").	These items capture the individual's likelihood of future use and promotion of digital tools.
Actual Usage	The extent to which an individual has adopted digital budgeting tools, typically measured by self-reported frequency of use (e.g., "daily," "weekly," "never").	These items measure the frequency and regularity of actual usage of digital tools.
	UTAUT	
Performance Expectancy	The degree to which individuals believe that using digital budgeting tools will help them achieve better financial management outcomes (measured by statements on expected performance improvements with ratings from "strongly disagree" to "strongly agree").	These items assess expectations regarding the financial benefits of using digital tools.
Effort Expectancy	The degree of ease associated with using digital budgeting tools (measured by perceptions of simplicity or effort	These items measure the perceived effort needed to use digital tools, which can

Key Elements	Operational definitions	Explanation for Items
	involved in learning and using these tools, rated on a scale from "very difficult" to "very easy").	impact user adoption.
Social Influence	The degree to which an individual perceives that others (e.g., family, friends) believe they should use digital budgeting tools (measured by agreement with statements about peer influence).	These items evaluate the role of social pressure or influence in the adoption of digital tools.
Facilitating Conditions	The extent to which an individual believes that infrastructure and support (e.g., access to technology, financial literacy programs) are available to help them use digital budgeting tools (measured by availability ratings from "strongly disagree" to "strongly agree").	These items assess the availability of external resources and support that make it easier to adopt digital tools.
	DOI	
Relative Advantage	The degree to which digital budgeting tools are perceived as better than the Gullak in terms of benefits like convenience, security, and control over finances (measured by comparison ratings such as "much worse" to "much better").	These items assess whether users perceive digital tools as offering superior advantages over traditional methods.
Compatibility	The degree to which digital budgeting tools are consistent with the users' current saving practices and values (measured by asking about the fit between new tools and existing practices, rated from "not compatible" to "highly compatible").	These items evaluate how well digital tools align with existing practices and beliefs.
Complexity	The degree to which digital budgeting tools are perceived as difficult to understand and use (measured by ratings of how complicated or simple the tools are).	These items measure the perceived difficulty in using digital tools.
Trialability	The degree to which digital budgeting tools can be experimented with on a limited basis before full adoption (measured by whether users tried digital tools before full adoption, rated as "no trial" to "extensive trial").	These items assess whether individuals had the opportunity to trial digital tools before full adoption.
Observability	The degree to which the results of using digital budgeting tools are visible to others, influencing adoption (measured by perceptions of others observing the benefits, rated from "not visible" to "highly visible").	These items evaluate how observable the benefits of using digital tools are to the individual.
	TPB	
Attitude Toward the Behaviour	The individual's positive or negative evaluation of transitioning from Gullak to digital budgeting tools (measured by asking about their feelings towards the transition, rated from "very unfavourable" to "very favourable").	These items measure the individual's general attitude toward adopting digital tools.

Key Elements	Operational definitions	Explanation for Items
Subjective Norms	The perceived social pressure to use or not use digital budgeting tools (measured by questions regarding the influence of family, friends, and community, rated from "no pressure" to "high pressure").	These items assess the influence of social expectations on the individual's decision to adopt digital tools.
Perceived Behavioral Control	The perception of ease or difficulty in adopting digital budgeting tools (measured by statements about perceived control over the transition, rated from "no control" to "complete control").	These items evaluate the individual's perception of control over using digital tools.
Behavioural Intention	The likelihood that an individual plans to adopt digital budgeting tools in the near future (measured by intention ratings such as "not likely at all" to "very likely").	These items measure the individual's intention to use digital tools in the future.
	FLCM	
Knowledge of Financial Concepts	The individual's understanding of key financial terms and concepts (measured through questions testing financial knowledge, such as "basic," "intermediate," and "advanced" understanding).	These items assess the individual's knowledge of key financial concepts.
Financial Decision-Making Ability	The capacity of individuals to make informed decisions about managing their finances (measured by self-reported confidence in making financial decisions, rated from "not confident" to "very confident").	These items evaluate the individual's confidence and ability to make informed financial decisions.
Saving and Budgeting Practices	The regularity and methods used by individuals to save and budget (measured by the frequency of budgeting and saving habits, such as "never," "sometimes," "often," or "always").	These items measure the individual's saving and budgeting habits using digital tools.
	SDT	
Autonomy	The degree to which individuals feel they have control over their financial decisions and budgeting practices (measured by statements about self-directed decision-making, rated from "strongly disagree" to "strongly agree").	These items assess the individual's sense of autonomy in managing their finances using digital tools.
Competence	The perception of one's ability to effectively manage finances using digital tools (measured by self-reported competence in using financial tools, rated from "not competent" to "very competent").	These items evaluate the individual's perceived competence in using digital tools.
Relatedness	The extent to which individuals feel socially connected or supported in their financial decision-making process (measured by agreement with statements about peer or family support, rated from "no support" to "high support").	These items measure the sense of social support and connectedness in the use of digital budgeting tools.

Table 3

Quantitative research paper ≈ 6,596 words

Items

Key Elements	Items (and selection for survey)
	TAM
Perceived Usefulness	☑ Using digital budgeting tools improves my financial management.
	☑ I find digital budgeting tools to be more beneficial than traditional saving methods (e.g., Gullak).
Perceived Ease of Use	☐ I find digital budgeting tools easy to use.
	☐ Learning how to use digital budgeting tools was straightforward.
Behavioural Intention to Use	☐ I intend to continue using digital budgeting tools in the future.
	☐ I plan to recommend digital budgeting tools to others.
Actual Usage	☐ How often do you use digital budgeting tools to manage your finances?
	☐ I regularly track my savings and expenses using a digital budgeting tool.
	UTAUT
Performance Expectancy	☑ I expect digital budgeting tools to help me achieve better financial outcomes.
	☑ Using digital budgeting tools will improve my ability to save more effectively.
Effort Expectancy	☑ Using digital budgeting tools requires minimal effort on my part.
	☑ I find it easy to manage my finances using digital tools.
Social Influence	☑ My friends and family think I should use digital budgeting tools.
	☐ I feel pressure from my social circle to use digital tools for managing my finances.
Facilitating Conditions	☑ I have the necessary resources (e.g., internet access, devices) to use digital budgeting tools.
	☑ There is adequate support available (e.g., tutorials, guides) to help me use digital budgeting tools.
	DOI
Relative Advantage	☑ Digital budgeting tools offer more advantages than traditional methods like Gullak.
	☑ I save more efficiently using digital tools compared to the Gullak.
Compatibility	☑ Digital budgeting tools fit well with my current financial management practices.

Key Elements	Items (and selection for survey)
	☐ Using digital tools aligns with my values and lifestyle.
Complexity	☐ I find digital budgeting tools complicated to understand and use.
	☐ Using digital tools for budgeting is more difficult than using traditional methods like Gullak.
Trialability	☐ I was able to try digital budgeting tools before fully committing to them.
	☐ I experimented with different digital tools before choosing the one I use regularly.
Observability	☐ I have seen others benefit from using digital budgeting tools.
	☐ The benefits of using digital tools for budgeting are clear and visible to me.
	TPB
Attitude Toward the Behaviour	☐ I believe that transitioning from Gullak to digital budgeting tools is a good idea.
	☐ I have a positive attitude toward using digital budgeting tools.
Subjective Norms	☐ People important to me approve of my use of digital budgeting tools.
	☐ I feel social pressure to use digital tools for managing my finances.
Perceived Behavioral Control	☐ I am confident that I can use digital budgeting tools effectively.
	☐ I have full control over my decision to switch to digital budgeting tools.
Behavioural Intention	☐ I intend to use digital budgeting tools to manage my finances in the next 6 months.
	☐ I plan to adopt digital tools as my primary method for budgeting in the near future.
	FLCM
Knowledge of Financial Concepts	☐ I understand basic financial concepts such as savings, interest, and budgeting.
	☐ I am knowledgeable about how to use digital tools for managing personal finances.
Financial Decision-Making Ability	☐ I am confident in making financial decisions using digital budgeting tools.
	☐ I am able to evaluate different digital tools and choose the best one for my financial needs.
Saving and Budgeting Practices	☐ I regularly save a portion of my income using digital tools.
	☐ I review and adjust my budget using digital tools on a regular basis.
	SDT

Key Elements	Items (and selection for survey)
Autonomy	☐ I feel in control of my financial decisions when using digital budgeting tools.
	☐ Using digital tools allows me to manage my finances in a way that suits my preferences.
Competence	☐ I feel capable of using digital budgeting tools to manage my finances effectively.
	☐ I am confident in my ability to use digital tools to track my savings and expenses.
Relatedness	☐ I feel supported by my family and friends in using digital budgeting tools.
	☐ My social network encourages me to use digital tools for managing my finances.

Table 3

Hypotheses

Areas	Hypothesis (and selection for study)
Demographic Characteristics Hypotheses:	☐ H1: Age significantly influences the likelihood of individuals transitioning from Gullak to digital budgeting tools.
	☐ H2: Gender differences play a role in the adoption rate of digital budgeting tools compared to traditional Gullak usage.
	☐ H3: Higher levels of education are positively correlated with the transition from Gullak to digital budgeting tools.
	☑ H4: Individuals with higher income levels are more likely to transition from Gullak to digital budgeting tools.
Rural vs. Urban Hypotheses:	☐ H5: The transition from Gullak to digital budgeting tools occurs more rapidly in urban areas than in rural areas.
	☑ H6: The factors driving the migration from Gullak to digital tools differ between rural and urban populations.
Factors Influencing Migration Hypotheses:	☐ H7: Convenience and accessibility are key factors influencing the decision to migrate from Gullak to digital budgeting tools.
	☐ H8: Financial literacy significantly impacts the likelihood of adopting digital budgeting tools over Gullak.
	☑ H9: External factors like peer influence and social pressure are more influential in urban areas, while internal factors such as perceived financial security play a larger role in rural areas.

Table 4

Survey Questions

Quantitative research paper ≈ 6,596 words

Questions	Options for response
1. Your gender आपका लिंग	• Male पुरुष • Female महिला • Other अन्य • Prefer not to say बताना नहीं चाहते
2. Your age category (in years) आपकी उम्र (वर्षों में)	• Less than से कम 20 • 20-30 • 31-40 • 41-50 • 51-60 • 61 and above और उससे ऊपर
3. Your education level आपकी शिक्षा स्तर	• No formal education कोई औपचारिक शिक्षा नहीं • Primary school (1st to 4th STD कक्षा) प्राथमिक विद्यालय • Secondary school (5th to 10th STD कक्षा) माध्यमिक विद्यालय • Junior College (11th to 12th STD,) कनिष्ठ महाविद्यालय • Bachelor's degree (Graduation) बैचलर डिग्री (ग्रेजुएशन) • Master's degree (Post Graduation) पोस्ट-ग्रेजुएट • PhD/FPM (Doctorate) पीएचडी/एफपीएम (डॉक्टरेट) • Other अन्य
4. Where do you reside? आप कहाँ रहते हैं?	• Village (Rural Area) – e.g., Gorai, Bhadohi, Madhubani गाँव (ग्रामीण क्षेत्र) उदाहरण: गोराई, भदोही, मधुबनी • Small Town (Tier-3 City) – e.g., Shimoga, Alwar, Satara छोटा शहर • Large Town (Tier-2 City) – e.g., Pune, Coimbatore, Surat बड़ा शहर उदाहरण: पुणे, कोयंबटूर, सूरत • City (Tier-1 City/Urban) – e.g., Bangalore, Hyderabad, Kolkata शहर उदाहरण: बैंगलोर, हैदराबाद, कोलकाता • Metropolitan City – e.g., Mumbai, Delhi, Chennai महानगर उदाहरण: मुंबई, दिल्ली, चेन्नई
5. Your Income Level (in ₹ per month) आपकी मासिक आय स्तर (₹ में)	• Less than से कम ₹ 25,000 • ₹ 25,000 - ₹ 50,000 • ₹ 50,001 - ₹ 75,000 • ₹ 75,001 - ₹ 1,00,000 • ₹ 1,00,001 - ₹ 1,50,000 • ₹ 1,50,001 and above और उससे ऊपर
6. Your occupation आपका व्यवसाय	• Agriculture/Farming कृषि/किसानी • Business/Entrepreneur व्यवसाय/उद्यमी • Government Employee सरकारी कर्मचारी • Private Sector Employee निजी क्षेत्र के कर्मचारी • Student छात्र • Homemaker गृहिणी • Retired सेवानिवृत्त • Other अन्य
7. Number of Family Members परिवार के	• 1-2

Questions	Options for response
सदस्यों की संख्या	• 3-4 • 5-6 • 7 or more या अधिक
8. Number of earning members in the family परिवार में कमाने वाले सदस्यों की संख्या	• 1 • 2 • 3 • More than से अधिक 3
9. How do you manage your finances आप अपने वित्तीय प्रबंधन कैसे करते हैं?	☐ Gullak (piggy bank) गुल्लक ☐ Bank saving account बैंक बचत खाता ☐ Digital budgeting tools (e.g., apps like Mint, YNAB, Excel spreadsheets, or a pocket book) डिजिटल बजटिंग टूल्स बही-खाता ☐ Investment in shares, mutual funds etc. शेयर, म्युचुअल फंड में निवेश ☐ Locker at home/office/bank घर/ऑफिस/बैंक में लॉकर ☐ Digital wallet (e.g., Paytm, PhonePe, Google Pay) डिजिटल वॉलेट ☐ Cryptocurrency (e.g., Bitcoin, Ethereum) क्रिप्टोकरेंसी ☐ Other:
10. How often do you track your personal budget? क्या आप अपने व्यक्तिगत बजट का नियमित रूप से ट्रैक करते हैं?	• Never कभी नहीं • Rarely कभी-कभार • Sometimes कभी-कभी • Often अक्सर • Always हमेशा
11. How often do you use digital tools for financial management? आप वित्तीय प्रबंधन के लिए कितनी बार डिजिटल टूल का उपयोग करते हैं?	• Daily प्रतिदिन • Weekly साप्ताहिक • Monthly मासिक • Rarely कभी-कभार • Never कभी नहीं
12. How often do you add money to your Gullak? आप कितनी बार अपने गुल्लक में पैसे डालते हैं?	• Daily प्रतिदिन • Weekly साप्ताहिक • Monthly मासिक • Rarely कभी-कभार • Never कभी नहीं
13. Using digital budgeting tools improves my financial management. डिजिटल बजटिंग टूल्स का उपयोग मेरे वित्तीय प्रबंधन में सुधार करता है।	• Strongly disagree बिल्कुल असहमत • Disagree असहमत • Neutral तटस्थ • Agree सहमत • Strongly agree पूर्णतः सहमत
14. I find digital budgeting tools to be more beneficial than traditional saving methods (e.g., Gullak, Indian piggy bank or coin jar). डिजिटल बजटिंग टूल्स को	• Strongly disagree बिल्कुल असहमत • Disagree असहमत • Neutral तटस्थ • Agree सहमत

Questions	Options for response
पारंपरिक बचत विधियों (जैसे गुल्लक) से अधिक लाभकारी पाता हूँ।	• Strongly agree पूर्णतः सहमत
15. I expect digital budgeting tools to help me achieve better financial outcomes. डिजिटल बजटिंग टूल्स मुझे बेहतर वित्तीय परिणाम प्राप्त करने में मदद करते हैं।	• Strongly disagree बिल्कुल असहमत • Disagree असहमत • Neutral तटस्थ • Agree सहमत • Strongly agree पूर्णतः सहमत
16. Using digital budgeting tools will improve my ability to save more effectively डिजिटल बजटिंग टूल्स के उपयोग से मेरी बचत प्रभावी रूप से बढ़ेगी।	• Strongly disagree बिल्कुल असहमत • Disagree असहमत • Neutral तटस्थ • Agree सहमत • Strongly agree पूर्णतः सहमत
17. Using digital budgeting tools requires minimal effort on my part डिजिटल बजटिंग टूल्स का उपयोग करना मेरे लिए आसान है।	• Strongly disagree बिल्कुल असहमत • Disagree असहमत • Neutral तटस्थ • Agree सहमत • Strongly agree पूर्णतः सहमत
18. I find it easy to manage my finances using digital tools. मुझे डिजिटल टूल्स के माध्यम से अपने वित्तीय प्रबंधन को संभालना आसान लगता है।	• Strongly disagree बिल्कुल असहमत • Disagree असहमत • Neutral तटस्थ • Agree सहमत • Strongly agree पूर्णतः सहमत
19. My friends and family think I should use digital budgeting tools मेरे दोस्त और परिवार मानते हैं कि मुझे डिजिटल बजटिंग टूल्स का उपयोग करना चाहिए।	• Strongly disagree बिल्कुल असहमत • Disagree असहमत • Neutral तटस्थ • Agree सहमत • Strongly agree पूर्णतः सहमत
20. I have the necessary resources (e.g., internet access, devices) to use digital budgeting tools. डिजिटल बजटिंग टूल्स का उपयोग करने के लिए मेरे पास आवश्यक संसाधन (जैसे इंटरनेट एक्सेस, डिवाइस) उपलब्ध हैं।	• Strongly disagree बिल्कुल असहमत • Disagree असहमत • Neutral तटस्थ • Agree सहमत • Strongly agree पूर्णतः सहमत
21. There is adequate support available (e.g., tutorials, guides) to help me use digital budgeting tools डिजिटल बजटिंग टूल्स के उपयोग के लिए पर्याप्त समर्थन (जैसे ट्यूटोरियल्स, गाइड्स) उपलब्ध हैं।	• Strongly disagree बिल्कुल असहमत • Disagree असहमत • Neutral तटस्थ • Agree सहमत • Strongly agree पूर्णतः सहमत
22. Digital budgeting tools offer more advantages than traditional methods like	• Strongly disagree बिल्कुल असहमत • Disagree असहमत

Questions	Options for response
Gullak. डिजिटल बजटिंग टूल्स पारंपरिक तरीकों (जैसे गुल्लक) की तुलना में अधिक लाभकारी हैं।	• Neutral तटस्थ • Agree सहमत • Strongly agree पूर्णतः सहमत
23. I save more efficiently using digital tools compared to the Gullak. मैं गुल्लक की तुलना में डिजिटल टूल्स के साथ अधिक कुशलता से बचत करता हूँ।	• Strongly disagree बिल्कुल असहमत • Disagree असहमत • Neutral तटस्थ • Agree सहमत • Strongly agree पूर्णतः सहमत
24. Digital budgeting tools fit well with my current financial management practices डिजिटल बजटिंग टूल्स मेरे वर्तमान वित्तीय प्रबंधन प्रथाओं के साथ अच्छी तरह से मेल खाते हैं।	• Strongly disagree बिल्कुल असहमत • Disagree असहमत • Neutral तटस्थ • Agree सहमत • Strongly agree पूर्णतः सहमत