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Article

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FINANCIAL ECONOMICS | RESEARCH ARTICLE

What motivates individuals to use FinTech budgeting applications? Evidence from India during the covid-19 pandemic

Basri Savitha¹ and Iqbal Thonse Hawaldar^{2*}

Abstract: The purpose of the present study was to explicate the factors determining customers' intention to use budgeting apps since the outbreak of COVID-19 pandemic. A cross-sectional survey in South India was conducted to collect data from 285 FinTech users. The data were analyzed using partial least square regression to estimate path coefficients and the PROCESS macro technique to identify moderation effects. Firstly, app engagement and self-efficacy were found to have a positive effect on the intention to use budgeting apps. Secondly, individuals who use FinTech services less frequently and those who use it to pay for a variety of expenses were found to have a greater effect on usage intentions of customer engagement, perceived trust, and perceived ease of use. Therefore, customization, real-time suggestions, providing tools for data visualization, smart data insights, and artificial intelligence-based recommendations and advice would assist customers in prudence money management.

Subjects: Investment & Securities; Management of Technology; Consumer Behaviour

Keywords: Engagement; covid-19; budgeting; intention; self-efficacy; consumer; FinTech; expenses; pandemic; trust

1. Introduction

A decline in consumer spending was recorded in India during the COVID-19 pandemic (Boston Consulting Group, 2020), where private consumption expenditures dropped by more than one-third compared to pre-pandemic levels (Reserve Bank of India, 2020a). Many people have lost their jobs, earned lower incomes, or faced income-flow uncertainty, forcing them to cut back on discretionary spending while increasing precautionary or forced savings (Reserve Bank of India, 2020a). McKinsey (2020) reported that 95% of respondents planned to reduce spending, 79% of them worried about losing their job, 88% had difficulty in meeting financial needs, 91% had reduced income and 98% were keen to micro-manage their spending. Therefore, the impact of COVID-19 has resulted in higher financial savings (Nathan et al., 2022). Globally, almost 74% of millennials and 65% of Generation Z managed their money responsibly and their financial judiciousness helped them during the pandemic (Deloitte, 2020a). When income is uncertain due to the pandemic, the ability to budget and manage money prudently would be valuable (Deloitte, 2020a; Nathan et al., 2022).

At this point, it is worth noting that, because of the COVID-19 pandemic, three-quarters of Indians shifted to electronic payments, with one-third of them being millennials (Capgemini Research Institute, 2020). In India, the unified payment interface (UPI) payments transactions increased from USD 12.01 billion in 2018–2019 to USD 29.2 billion in 2019–2020, which is expected

to reach USD 85.03 billion by 2025 (Reserve Bank of India, 2020b). India has one of the highest FinTech adoption (87%) (Ernst and Young, 2017) and a higher number of FinTech loan app downloads during the COVID-19 (Fu & Mishra, 2022).

FinTechs are disrupting financial advisory services by providing better, quicker, and more convenient transactions and innovative solutions in the payment and financial planning segments (Financial Planning Association of Australia, 2017; Gomber et al., 2018). These apps improve accessibility and save time through automation of financial tasks such as bill payments and consolidated consoles for preparing cash budgets (streamlining outstanding debt, bills, and automating repayments), providing personalized financial advice, and automated savings (Financial Planning Standards Board, 2016). However, Indian consumers are price and value-conscious and their buying behaviour depends on credit card availability (Pallikkara et al., 2021a), which makes them save less for future needs. Even though the majority of FinTech users are currently using FinTech to meet their payment needs (Nathan et al., 2022; H. Singh et al., 2021; S. Singh et al., 2020), the recent changes in consumer savings can be made permanent by increasing the use of FinTech budgeting apps. There has been little research on the usage of newer budgeting applications, although money transfer and payment services driving the adoption of FinTech have been established (EY FinTech Adoption Index, 2016, Chen et al., 2021; S. Singh et al., 2020). Although gender and FinTech app use (purpose and frequency of use) may influence the intention to use budgeting apps, few studies have been conducted on this topic. While FinTech firms are increasingly focusing on customer engagement and experience for competitiveness, the impact of these engagement efforts on the intention to use newer applications is not well known.

The new opportunities opened during the COVID-19 can be harnessed by developing a collaborative strategy that facilitates the creation of a trusted digital brand and ensures personalization and customer engagement (Chen et al., 2021). Service orchestration in complex FinTech platforms necessitates fruitful collaboration between firms and customers that is client-driven rather than advisor-driven (Nayak & Basri, 2022). Digital media and outbound marketing efforts indeed influence perceived brand image and higher consumer interaction (Hawaldar et al., 2022). Providing a specific utility (say, whether a certain amount can be spent or not, or how much has been spent) through the development of an app based on the needs of the intended audience is critical to the success of FinTech (Alt et al., 2018). It has been observed that the likelihood of specific behaviours (increasing savings or borrowings) increases if there is trust in the banks (Aurier & N'Goala, 2010). However, consumers who have adopted FinTech recently during the pandemic may not be tech-savvy to use the new tools and ways of doing transactions. Few customers may consider them to be complicated and difficult to use, leading to negative attitudes (Chavali & Kumar, 2018; Nathan et al., 2022). Thus, self-efficacy and internet experience, and being digital savvy would improve the use of FinTech tools (Singh et al., 2020; Zhu et al., 2010). Gender has been included as a moderating variable due to its significance in prior studies on technology adoption (Nathan et al., 2022; Singh et al., 2021; S. Singh et al., 2020; Venkatesh & Morris, 2000; Venkatesh et al., 2012).

The present study aims to make the following contributions. First, it intends to explicate the factors that influence intention to use budgeting apps by considering trust, perceived value, ease of use, the usefulness of FinTech apps, self-efficacy in using the FinTech platform, and customer engagement as the antecedents. Second, this study attempts to identify moderating effect of gender, frequency, and purpose of use of apps on usage intention. These findings would help practitioners to develop customized services to encourage budgeting habits in the post-COVID era. The paper is organized as follows: the first section deals with the introduction followed by the second section on the literature review. Methods and materials are then explained. The results are presented in the fourth section, which is followed by a discussion and conclusion.

2. Literature Review

The Technology Adoption Model (TAM), Theory of Reasoned Action (TRA), UTAUT, and UTAUT2 models are frequently used to explain the intention to adopt and use new information systems or

technology. Because most studies, including those conducted in India, use the most tested and established TAM (Davis et al., 1989; Singh et al., 2020; Singh et al., 2021; ; Yan et al., 2021; Chen et al., 2021; Folkinshteyn and Lennon, 2016; Nathan et al., 2022; Z. Ding et al., 2019), perceived usefulness and perceived ease of use were chosen to predict user intention to use FinTech budgeting services. The intention to use budgeting apps by FinTech consumers can be explained by cognitive (self-efficacy), economic (perceived value), engagement, and affective (trust) factors (Gefen et al., 2003).

2.1. Perceived Usefulness and Perceived Ease of Use

Many researchers documented a positive influence of task performance of electronic banking on adoption and usage intentions (Ahn & Lee, 2019; Baabdullah et al., 2019; Zhang et al., 2018). It has been empirically established in the literature that usefulness and ease of use sufficiently explain the technology adoption and usage, even during the pandemic (Davis et al., 1989; Ding et al., 2019; Al Nawayseh, 2020; Ryu, 2018; Singh et al., 2021; Singh et al., 2020; Xie et al., 2021). A user-friendly dashboard, legible and visual design that guides the customer in easy-to-follow steps to set rules and triggers for savings and spending enhances a fulfilling experience (Ryu, 2018; Savitha & Shetty, 2018; Singh et al., 2020). A study conducted during the COVID-19 in China by Chen et al. (2021) reported a positive influence of perceived usefulness and ease of use of FinTech products on customer satisfaction. Similarly, a study conducted during the pandemic by Nathan et al. (2022) and Al Nawayseh (2020) found a positive influence of usefulness, ease of use, and trust on intention to adopt FinTech. Singh et al. (2020), (2021) found that usefulness and ease of use influenced the intention to adopt and use FinTech products in India. Few studies have reported that customers' recognition of advantages, easier processing, and ease of use increases the use of e-services (Ryu, 2018; Venkatesh & Morris, 2000; Zhang & Prybutok, 2005). Therefore, the study hypothesizes that perceived usefulness (PU) (H1) and perceived ease of use (PEOU) (H2) positively affect intention to use budgeting apps (IB).

2.2. Self-Efficacy

An individual's perception of his/her capacities and skills to manage and execute certain functions influences focused behaviour. The lack of self-efficacy or fear of failure is a psychological barrier that arises from misperceptions of one's competence and skills to understand and use complex innovative products or services (Bandura, 1986). Customers must interact with technology-based platforms to use self-service technologies, and less tech-savvy customers will not try out FinTech apps (Barbu et al., 2021; Bitner et al., 2000; Meuter et al., 2000), so a higher level of technology readiness improves the use of technology (Parasuraman et al., 2000; Shiau et al., 2020). Once the customers develop proficiency in using FinTech apps to manage their money (savings and spending), they would continue to set rules and targets to meet financial goals. As proposed by a few studies, greater confidence, and skills in doing e-banking tasks increase its acceptance and use (Chandio et al., 2013; Marakarkandy et al., 2017; Shiau et al., 2020; Singh et al., 2020), we propose a direct positive relationship between self-efficacy (SE) and intention to use budgeting apps (H3).

2.3. Perceived Trust

Trust in the FinTech platforms is another factor that drives quicker adoption and use of various tools and applications. Several studies in the context of electronic banking and payment systems have concluded that trust reduces anxiety and positively affects adoption and usage (Sharma & Sharma, 2019; Kaabachi et al., 2017; Savitha and Shetty, 2018; Stewart & Jürjens, 2018; Junger & Mietzner, 2020; Al Nawayseh, 2020; Xin et al., 2015; Malaquias & Hwang, 2016; Z. Ding et al., 2019). Nathan et al. (2022), Yan et al. (2021), and Xie et al. (2021) documented a positive influence of trust on the intention to adopt FinTech during the pandemic. It has been affirmed that when customers trust their banks, they would save more and spend less (Beckmann & Salvatore, 2017; Iyer & Puri, 2012; Mehrotra et al., 2016). Thus, the study proposes a positive relationship between perceived trust (PT) and intention to use budgeting apps (H4).

2.4. Perceived Value

In a study on internet-only banks, Ahn and Lee (2019) found that three components of perceived value namely economic (lower costs), convenience (degree of ease to complete a transaction), and emotional (feelings associated with product/service consumption) value improves intention to use. Hong et al. (2008) found that continuous use of e-payments depends on economic benefits and lower transaction costs. When it is easy to set rules, spending targets, as well as triggers for unplanned expenses, the resultant positive value experienced by customers increases the adoption and use of FinTech apps (Barbu et al., 2021; Shiau et al., 2020; Xie et al., 2021; Yan et al., 2021). As the use of FinTech provides financial advisory services at a lower cost, the study hypothesizes that perceived value (PV) positively influences the intention to use budgeting apps (H5).

2.5. Customer Engagement

Psychological barriers arise when technology-intensive innovations minimize human interactions and impose a disconnect from past behaviour and beliefs embedded in social contexts (Meher et al., 2021; Neghina et al., 2017; Ullal, Hawaldar et al., 2021). Therefore, customer experience of technology usage and engagement efforts focused on social and affective connection might reduce the resistance to using newer applications (Barbu et al., 2021; Verleye, 2015). Customer engagement behaviour includes customer-to-customer interactions (word-of-mouth, incentivized referrals, social media conversations), any feedback or suggestions (Nayak & Basri, 2022; Pansari & Kumar, 2017; Ullal, Spulbar et al., 2021; Van Doorn et al., 2010; Verhoef et al., 2010). A survey by Deloitte (2020b) confirms that more than half of the respondents in 13 countries have increased interactions with businesses such as likes, comments, share content, live chats, and online messaging since the pandemic. The provision of opportunities to passively or actively interact with firms and personalized services would increase engagement and the use of digital tools (Barbu et al., 2021; Z. Ding et al., 2019; Rose et al., 2012). Therefore, the study hypothesizes a direct relationship between customer engagement (CE) and intention to use budgeting apps (H6).

2.6. Moderating Effect: Gender, Frequency and Purpose of Using FinTech Apps

A decrease in the “pain of payment” related to cash induces digital banking consumers to overspend (Thomas et al., 2010) because the digital payment mechanisms require fewer efforts with lower costs and thus, make spending easier. Few studies exploring the effect of digital payments on spending habits have confirmed higher spending, especially on expensive goods by individuals using online mechanisms over cash payments (Oyelami et al., 2020; Soman, 2001). On the contrary, another study found a positive association between the use of debit cards and savings due to low transaction costs, trust in banks, and frequent monitoring of account balances (Bachas et al., 2016). In a pandemic situation, consumers would be more inclined to curtail consumption and increase savings even if they use digital payments for buying goods and services (Deloitte, 2020a; Reserve Bank of India, 2020a). Consumers would be more likely to explore for ways to better manage their limited financial resources if they used digital platforms more frequently. Therefore, the present study proposes that customers using FinTech apps for meeting various needs (offline and online shopping, payment of bills, and purchase of essential goods) would be more inclined to use budgeting apps (H7). On the other hand, erroneous mental accounting makes people underestimate expenses while using digital channels. Hence, the study proposes a negative relationship between the frequency of FinTech payments and the intention to use budgeting apps (H8). Few studies reported the moderating role of gender in influencing technology adoption, especially mobile banking (Riquelme & Rios, 2010; Venkatesh & Morris, 2000). Men were found to adopt electronic or mobile banking compared to women (Akinci et al., 2004; Wan et al., 2005). A study conducted during the COVID-19 pandemic by Nathan et al. (2020) found females to perceive ease of use and usefulness of FinTech apps more than males. However, few studies found no effect of gender as a moderating variable on intention to use technology including FinTech (Nysveen et al., 2005; S. Singh et al., 2020).

3. Materials and Methods

3.1. Measurement Tools

The established scales on perceived trust (3 items) from Gefen et al. (2003) and Mukherjee and Nath (2003), customer engagement (6 items) from Kumar and Pansari (2016), perceived value (4 items) from Pansari and Kumar (2017), perceived ease of use (3 items) and perceived usefulness (4 items) and intention to use budgeting apps (3 items) from Venkatesh et al. (2003), and self-efficacy (5 items) from Ratten and Ratten (2007) were adapted. All these constructs were measured on a 5-point Likert scale with level of agreement ranging from 1 (strongly disagree) to 5 (strongly agree). A pilot study was conducted on a sample of 30 respondents to assess the reliability and validity of the scales. The data on demographic (age, gender), socio-economic (education, income) characteristics of the respondents and their use of FinTech apps (frequency of use and purpose of use) was also collected.

3.2. Analytical Strategy

Using PLS-SEM analysis, the determinant of intention to use was predicted by considering trust, self-efficacy, usefulness, ease of use, perceived value, and engagement as exogenous variables. The analysis involved two-part assessments; developing a measurement model to know reliability, validity, and model fit indices and a structural model to estimate causal relationships between latent variables (Hair et al., 2016). The moderation analysis was conducted using PROCESS macro in SPSS (Hayes, 2013) which is a regression-based technique to evaluate the moderating effect of the purpose of use, frequency of use, and gender on the relationship between independent variables and IB. The interactive effect and conditional effects of the focal predictor at the values of the moderators were calculated. Several dummy variables related to gender (male or female), frequency of use (less than 5 times in a month = 1, between 6 and 10 times per month = 2, more than 10 times a month = 3), and purpose (paying for essential expenses = 1, paying bills of lower than USD 30 = 2, multiple-use including paying expenses, bills, entertainment, online shopping, etc. = 3) were incorporated in the regression model.

3.3. Sampling Procedure

The present study adopted a cross-sectional survey to collect quantitative data in South India during the second half of the year 2020. The sample frame included the users of FinTech payment apps, millennials, and Gen Z. The snowball sampling approach was used since preparing a sampling frame was challenging because of the COVID-19 pandemic and physical constraints to obtaining data directly from respondents. The email address of the first 100 users was collected by visiting the nearby banks and FinTech service partners, and later, the respondents who participated in the survey were requested to share the survey link with their acquaintances in South India. A total of 285 complete responses were received. Informed consent was obtained from all subjects involved in the study. The study was conducted after the approval was obtained from the institutional review board and general ethical principles of research were applied while getting consent and ensuring the confidentiality of participants.

4. Results

The characteristics of the respondents are shown in Table 1. Most respondents were less than 30 years (76%) and had postgraduate education (69.2%). Almost 64% of them earned less than USD 6849.37, thus belonged to low-income group. Half of the respondents used FinTech services less than five times a month and the purpose were to pay for essential goods at the nearby Kirana stores during the pandemic.

4.1. Evaluation of Measurement Model

The present paper uses structural equation modeling for data analysis using SmartPLS 3 software. The reliability and validity of the measurement model were examined first and in the second step, the structural model was estimated that shows the relationship between independent variables (CE, PT, PV, PU, PEOU, and SE) and IB. There were no correlation values higher than 0.8, except few

Table 1. Characteristics of Respondents

	Term (N = 285)
Gender (%)	
Male	45.4
Female	54.6
Age group (%)	
Less than 30 years	76.1
31–40 years	21.1
More than 40 years	2.8
Educational Qualification (%)	
Graduate	6.6
Postgraduate	64.9
Doctorate/Professional	28.5
Annual income per annum (%)	
Less than USD 1369.87	33
USD 1369.88 to 6849.37	31.2
USD 6849.38 to 13,698.74	27.5
More than USD 13698.74	8.3
Frequency of use per month (%)	
Less than 5 times	50.5
6 to 10 times	25.2
More than 10 times	24.3
Purpose of using FinTech apps (%)	
Payment of bills	28.9
Purchase of essential goods at kirana stores	51.4
All the above and offline/online shopping	19.7

Source: Primary Survey

items measuring PU and PEOU (Table 2). Therefore, PEOU2 and PE1 were removed, and composite reliability was assessed. No value higher than 0.8 was found and multicollinearity was not an issue because the VIF was lower than 2.0 (Hair et al., 2016). As presented in Table 3, composite reliability values of latent constructs imply adequate internal consistency; CE (0.833), IB (0.873), PEOU (0.898), PU (0.893), PT (0.878), PV (0.887), and SE (0.893) and all these values were above the threshold value of 0.7 (Hair et al., 2016). Average variance extracted (AVE) measures convergent validity (Table 3) which indicated that all the constructs explain over 50% of the variance of indicators (CE 0.631, IB 0.696, PEOU 0.816, PU 0.736, PT 0.783, PV 0.664, and SE 0.737) (threshold value is 0.50 [Hair et al., 2016]). The discriminant validity of the constructs measured by the heterotrait-mono trait ratio of correlations (HTMT) was below the threshold value of 0.85 (Henseler et al., 2015; Table 4).

4.2. Evaluation of Structural Model

The path coefficients representing the relationship between the indicators and constructs of the study were estimated first and later the bootstrapping (sample of 5000, the option of “no sign changes”) was conducted to understand the significance of coefficients and R^2 value of the estimated model. The results depicted in Table 5 shows that CE ($\beta = 0.321$, $p < .00$), PU ($\beta = 0.229$, $p < .05$) and SE ($\beta = 0.304$, $p < .00$) had a direct effect on IB. The value of R^2 , the coefficient of determination, was found to be moderate at 0.334 for the endogenous target construct of the study (IB) and indicates a good predictive validity of the model. The blindfolding procedure measures the predictive relevance (Q^2), which had a value of 0.183 suggesting that the model has good predictive importance. The SRMR was 0.067 suggesting good model fitness. The f^2 value for the path CE \rightarrow IB (0.117) implies moderate effect size whereas SE \rightarrow IB (0.047) and PU \rightarrow IB (0.024) shows low effect size on IB (Table 6).

Table 2. Correlation between exogenous variables and usage intentions

	Usage intentions	Trust	Perceived value	Self-efficacy	Usefulness	Ease of Use	VIF
Trust	0.401*	—					1.36
Perceived value	0.335*	0.470*	—				1.58
Self-efficacy	0.409*	0.493*	0.683*	—			1.62
Usefulness	0.391*	0.531*	0.703*	0.700*	—		1.72
Ease of use	0.352*	0.501*	0.609*	0.683*	0.729*	—	1.95
Engagement	0.453*	0.420*	0.238*	0.234*	0.241*	0.287*	1.16

*p < .05

Table 3. Reliability of Items and Constructs

Construct	Indicators	Outer loadings	Composite reliability	AVE
Customer engagement	CE1: I provide feedback about my experiences with the app to the firm	0.741	0.823	0.605
	CE2: I intend to help other customers through my conversations	0.780		
	CE3: I love talking about the benefits and positive app experience with other customers on social media	0.776		
	CE4: I feel an emotional link with my app	0.850		
	CE5: My transactional experiences with the fintech app are positive	0.821		
	CE6: I will strongly advice other to use budgeting apps	0.848		
Intention to adopt	IB1: I intend to use budgeting apps in the near future	0.735	0.862	0.610
	IB2: I predict I would use budgeting apps soon	0.787		
	IB3: I plan to use budgeting apps regularly in the near future	0.841		
Perceived ease of use	PEOU1: Learning to operate budgeting apps would be easy for me	0.876	0.898	0.816
	PEOU3: My interaction with budgeting app is clear and understandable	0.869		
Perceived usefulness	PU2: Using budgeting apps would enable me to accomplish budgeting tasks more quickly	0.861	0.893	0.736
	PU3: I would find budgeting apps useful to track my spending	0.868		
	PU4: Using the budgeting app would make my spending plan easier	0.846		
Perceived trust	PT1: budgeting apps are dependable	0.927	0.855	0.607
	PT2: I believe budgeting apps are trustworthy	0.942		
	PT3: I trust the information on my spending habits given by budgeting apps.	0.903		

(Continued)

Construct	Indicators	Outer loadings	Composite reliability	AVE
Perceived value	PV1: To me, using budgeting apps is very important during COVID times	0.715	0.875	0.703
	PV2: Budgeting apps provides me with good value	0.909		
	PV3: In comparison to efforts required, I find that using budgeting apps benefits me	0.887		
	PV4: In comparison to the time, I need to invest, I believe that using budgeting apps is worthwhile	0.834		
Self-efficacy	SE1: My past experiences increase my confidence in performing tasks for budgeting apps	0.893	0.894	0.737
	SE2: I did not experience any problems in adjusting to this technology	0.801		
	SE3: I am capable of using budgeting apps	0.879		
	SE4: My technical skills satisfy my expectations of myself	0.807		
	SE5: I could manage a more challenging technological innovation than budgeting apps	0.823		

Source: Primary Survey

5. Moderation Analysis

The regression results with the purpose of use, frequency of use, and gender as a moderator variable are given in [Tables 7 and 9](#), respectively.

5.1. Purpose of Using Fintech Apps

The interaction effect of multi-purpose use and independent variables namely perceived ease of use and engagement was significant with an effect of 0.895 and 0.297 respectively for varied use compared to paying for essential expenses. PV, PU, PT, and SE had insignificant interaction effect of payment of bills and multi-purpose on IB. The conditional effect of CE and PEOU at different categories of the purpose of the use is shown in [Table 7](#) which indicates that respondents who use fintech apps for varied purposes have higher values (0.509 and 0.524 respectively) than those who use them to pay bills (0.296 for CE) or purchase essential goods and services (0.211 for CE). The $c\Delta$ in R^2 was the highest for CE (0.02) and PEOU (0.03).

5.2. Frequency of Using Fintech Apps

It is seen from [Table 8](#) that the conditional effect of CE on IB is significant for low (0.461) and medium (0.198) frequency of use of apps. Those using the apps less than 5 times had a positive relationship between CE and IB as compared to those who use the app between 5 to 10 times a month (−0.269) or more than 10 times a month (−0.356). Likewise, a negative moderating

Table 4. Discriminant validity: HTMT Ratio

	CE	IB	PU	PEOU	PV	PT
IB	0.489					
PU	0.289	0.494				
PEOU	0.352	0.435	0.892			
PV	0.281	0.358	0.857	0.760		
PT	0.552	0.432	0.649	0.627	0.578	
SE	0.283	0.511	0.863	0.864	0.837	0.603

Source: Primary Survey

Note: IB: Intention to use, PEOU: Perceived ease of use, PT: Perceived Trust, PU: Perceived usefulness, SE: Self-efficacy, CE: Customer Engagement, PV: Perceived value

Table 5. Structural evaluation model: Total effects

Relationship Tested	β	t test value	p value	Results
CE -> IB	0.321	4.856	.00	Supported
PEOU -> IB	-0.056	0.513	.62	Not Supported
SE -> IB	0.304	2.794	.00	Supported
PT -> IB	0.017	0.222	.82	Not supported
PU -> IB	0.229	2.291	.02	Supported
PV -> IB	-0.138	1.433	.15	Not supported

Source: Primary Survey

Note: IB: Intention to use, PEOU: Perceived ease of use, PT: Perceived Trust, PU: Perceived usefulness, SE: Self-efficacy, CE: Customer Engagement, PV: Perceived value

Table 6. F₂ Results

Constructs	IB
CE	0.117
PEOU	0.002
PT	0.000
PU	0.024
SE	0.047
PV	0.011

Source: Primary Survey

influence of high frequency of usage (in comparison with low frequency of use) in changing the effect of PT (-0.461) and PEOU (-0.927) on IB was noted in [Table 8](#). Similarly, the interaction effect of medium frequency of use and PT and PEOU was insignificant. The change in R² was higher for the effect of CE on IB (0.031) as compared to PEOU (0.019) and PT (0.014). The frequency of usage did not moderate the relationship between PV, PU, SE, and IB ($p > 0.05$).

5.3. Moderating Effect of Gender

The results in [Table 9](#) denote that gender mediates the relationship between CE, SE and PV, and IB. The negative sign implies that the effect of these variables on IB is more evident for males than females. The conditional effect of CE and SE on IB is higher for males (0.390 and 0.533

Table 7. Moderator analysis: Conditional effect of purpose of use on usage intention

Model	Interaction coefficient (Variable*W2)	Interaction coefficient (Variable*W3)	Coefficient W1	Coefficient W2	Coefficient W3
CE	0.085	0.297*	0.211*	0.296*	0.509*
PT	0.313	0.234			
PU	0.281	0.256			
PEOU	0.440	0.895*	-0.371	0.069	0.524***
SE	0.300	0.281			
PV	0.027	0.112			

*p < .01, **p < .05, *p < 0.1

W1 = Paying for essential expenses, W2: Paying bills, W3: Paying bills, essential goods purchase, and other purposes

Note: IB: Intention to use, PEOU: Perceived ease of use, PT: Perceived Trust, PU: Perceived usefulness, SE: Self-efficacy, CE: Customer Engagement, PV: Perceived value

Table 8. Moderator analysis: Conditional effect of frequency of use on usage intention

Model	Interaction coefficient (Variable*W2)	Interaction coefficient (Variable*W3)	Coefficient W1	Coefficient W2	Coefficient W3
CE	-0.269*	-0.356*	0.461*	0.198*	0.105
PT	-0.151	-0.461**			
PU	-0.158	-0.251			
PEOU	-0.018	-0.927*	0.199	0.018	-0.728**
SE	-0.437	0.021			
PV	0.031	-0.106			

*p < .01, **p < .05

Note: W1 = Using an app for less than 5 times a week, W2: Using an app 5–10 times a month, W3: Using an app for more than 10 times a month
IB: Intention to use, PEOU: Perceived ease of use, PT: Perceived Trust, PU: Perceived usefulness, SE: Self-efficacy, CE: Customer Engagement, PV: Perceived value

Table 9. Moderator analysis: Conditional effects of gender on usage intention

Model	Interaction coefficient (Variable*W2)	Coefficient W1	Coefficient W2
CE	−0.163***	0.390*	0.227*
PT	−0.229		
PU	−0.156		
PEOU	0.074		
SE	−0.302***	0.533*	0.231
PV	−0.273**	0.136	−0.137

*p < .01, **p < .05, ***p < 0.1

Note: W1 = Male, W2 = Female; IB: Intention to use, PEOU: Perceived ease of use, PT: Perceived Trust, PU: Perceived usefulness, SE: Self-efficacy, CE: Customer Engagement, PV: Perceived value

respectively). The change in R^2 was higher for the effect of SE on IB (0.019) and PV (0.014) compared to CE (0.009).

6. Discussion

The paucity of evidence on the determinants of intention to use budgeting apps in the period of changing spending habits brought out by COVID-19 motivated the present study. The study found that: i) app engagement, perceived usefulness, and self-efficacy have a positive impact on intention to use budgeting apps; ii) using the app less frequently has a higher effect of CE and PEOU on IB and multi-purpose use moderates the effect of CE, PT, PEOU on IB; and iii) men are more likely to experience a higher influence of CE, SE, and PV on IB.

The intention to use budgeting apps would be more if the consumers actively communicate with businesses and engage with the company (watch tutorials, messaging on social media, live chats). The value of any service depends on customer engagement where customers actively participate in the problem-solving process rather than passive receivers of the solutions offered by the companies. Since the outbreak of COVID-19, online engagement and communication with companies have increased (Deloitte, 2020b) and when consumers contribute to modifications in the design and delivery of services, the intention to use the apps would be higher. Several studies have documented the increased use of digital tools and technology usage when firms engage with customers (Barbu et al., 2021; Z. Ding et al., 2019; Rose et al., 2012; Verleye, 2015). The firms would gain when customers recommend their apps to others, and thereby increase brand awareness (Hoyer et al., 2010).

The present study highlights the crucial role of skills or capability in using FinTech tools in influencing usage intentions. Although FinTech platforms offer personal finance capabilities, users who lack digital financial literacy will find it difficult to navigate the system. In the previous studies, several scholars have confirmed the necessity of self-efficacy in shaping the adoption and behavioural intention to use mobile banking (Chandio et al., 2013; Marakarkandy et al., 2017; Mathieson et al., 2001; Parasuraman et al., 2000; Shiao et al., 2020; S. Singh et al., 2020). Customers are more likely to use budgeting applications if they have confidence in learning to use new tools for setting savings/spending rules and targets. Because of their existing digital experience and self-efficacy to manage the new app, customers will appreciate the benefits of new financial technology once they become acquainted with it (S. Singh et al., 2020a).

The perception of the usefulness of budgeting apps during COVID-19 would positively influence adoption and usage intention, especially if individuals have either lost jobs or were forced to save (Singh et al., 2021; Singh et al., 2020). As the acceptance of FinTech for payments and credit increases, the customers would explore other apps for varied financial needs. If FinTech invests in

improving financial behaviour focussed on preparing budgets, higher savings, prompt payment of debt and so on, the consequent positive perception of benefits would increase the utility of these applications (Ryu, 2018; Stewart & Jürjens, 2018). As corroborated by earlier studies (Chen et al., 2021; Nathan et al., 2022; Al Nawayseh, 2020; Singh et al., 2021; Singh et al., 2020), the continuous access and convenience of using money management services at a lower cost would motivate customers to adopt FinTech apps. These apps would increase financial savings, cut down on unnecessary expenses, and save time (Gomber et al., 2018; Shiau et al., 2020). Consumers can adjust their spending buckets (rent, entertainment, food), get instant notification when the spending crosses certain limits, and monitor cash flows (for example, Mint for digital budgeting and Trim for cutting expenses (Barefoot, 2020).

When the purpose of using FinTech app was considered, the results suggest that the influence of CE and PEOU on IB was higher for those individuals who used FinTech apps for multi-purpose than those who used to pay bills or purchase essential goods and services. Using the apps for most of the needs positively affects customer connection with the company's services. Customers' roles would shift from being recipients of services to active players because of their pleasant experiences in each encounter with service use. Further, those using the app for paying for most consumption services would find it easy to use and understand as compared to those who use it for fewer needs.

The effect of CE, PT, and PEOU on IB is more in the case of low-frequency users (using less than 5 times a month) than in the case of high-frequency users (more than 10 times a month). People that use the applications less regularly, or less than 10 times per month, were shown to be more engaged with the firm, which has a favourable impact on IB. Therefore, engagement behaviour was seen usually in those using the app less than 10 times a month and not among those who use it often. The higher level of trust and ease of operations positively influence the use of budgeting apps for individuals using the app less frequently. Because the amount of payment per transaction was not collected, future research should concentrate on the specifics of payments to fully comprehend interaction and conditional effects.

In terms of gender, it was found that the influence of CE and SE on IB is greater in males than females. Male respondents were more likely to engage with FinTech apps and were more capable and confident in using FinTech payment apps. Riquelme and Rios (2010) found ease of use prompted females to adopt mobile banking whereas perception of benefits had a stronger effect on males. S. Singh et al. (2020) discovered no significant differences in influencing FinTech adoption between males and females, whereas Nathan et al. (2022) reported adoption to be higher among women than men owing to PU and PEOU. The present study did not find gender to have a moderating effect on PEOU and IB, as against the findings of Venkatesh and Morris (2000). Women tend to be anxious to use new technology whereas men are more experimenting with it (Liu et al., 2015). Since men make purchases and pay for varied expenses being the earning members of the family in most of the households in India, they would be more confident and have capabilities and skills in using the apps, which directly affects IB.

7. Managerial Implications

The study proposes a few suggestions to FinTech companies; first, they should encourage customer participation in the creation or updating of existing services and develop strategies to positively engage with consumers. The consequent active involvement would reveal the accurate financial health of clients and benefit them in drafting a suitable financial plan. Companies can gain useful insights to enhance utilisation of their product offerings if they fruitfully engage consumers. Second, based on frequent insights and feedback from consumers, firms can focus on meeting their needs and form long-lasting relationships and provide effective and convenient services. Third, firms should provide tools that are dependable, cost-effective, and exceed customer expectations. These tools should include data visualization, smart-processed data insights, and artificial intelligence-based recommendations and advice. Fourth, by offering quick and easy options, they should assist customers to keep track of their accounts and monitor the areas of excessive spending and thereby, change their spending/savings habits. Fifth, the

adverse consequences of impulsive buying can be reduced by facilitating individualized interactions and offerings that match or surpass users' expectations. Finally, providing essential tools and a digital literacy campaign would aid FinTech firms in increasing clients' perceived competence and skills, resulting in the belief that they can conduct financial transactions independently with confidence. Self-efficacy can be improved by increasing the awareness through virtual demonstrations, technical support, instructions to use the apps, and designing an easy-to-understand interface. The automated channels or digital platforms can be used to highlight the benefits of sound financial planning in reaching, long-term financial goals.

8. Limitations and Scope for Further Research

Apart from several contributions, this research suggests some issues requiring further research. The variables considered in the present study are evolving, so a longitudinal study may provide insights into the spending habits of FinTech users in normal periods and its effect on the intention to use budgeting tools. The frequency and purpose of using FinTech applications were measured using polychotomous variables, and future studies could explore these aspects in detail by including the amount of spending and other determinants of spending habits. It is worthwhile to examine the effect of marketing and other promotions adopted by companies in encouraging consumers to use budgeting apps. Additional determinants of usage intention such as culture, risk attitude, societal influences, and family structure, and intra-household dynamics can be explored in further studies.

9. Conclusion

Since the outbreak of the COVID-19 pandemic, the initial adoption and use of FinTech services has grown exponentially. The need to tightly control expenditure during the pandemic has forced individuals to prepare budgets using innovative apps on the FinTech platform. An opportunity provided to customers to intangibly advocate the product and service value to other customers determines their intention to use budgeting apps. Customers will be more likely to accept new applications for setting savings/spending rules and targets if they are confident in their ability to use them and value their benefits.

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