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App Attributes and Customer Experience in Online Stock Trading: Examining Their Role in Building Brand Loyalty

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ABSTRACT

Purpose:
This study examines how key app attributes influence customer experience (CX) and subsequently enhance brand loyalty toward stock broking mobile applications in North India. It investigates the role of financial literacy cues, UI/UX design, transaction ease, and security features in shaping a positive and memorable customer experience.

Design/Methodology/Approach:
The study uses Covariance-Based Structural Equation Modeling (CB-SEM), a quantitative research design. A systematic questionnaire was used to gather information from 190 users of mobile stock trading apps in the Delhi-NCR area.

Findings:
Results reveal that user interface, personal financial assistance features, security, and ease of transactions significantly influence customer experience. Among these, user interface emerged as the strongest predictor. Furthermore, customer experience significantly enhances brand loyalty toward stock trading applications.

Practical Implications:
The findings provide strategic insights for fintech app developers, brokerage firms, and policymakers to design secure, intuitive, and educational trading applications that strengthen user trust and long-term loyalty.

Originality/Value:
By experimentally combining app qualities, customer experience, and brand loyalty within a structural modeling framework in the context of Indian stock trading applications, this study adds to the body of literature on fintech and consumer experience.

Keywords: customer experience; FinTech; stock trading applications; brand loyalty

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INTRODUCTION

Stock trading is a process of selling and buying of shares in a particular company. When one owns some stocks and shares of a company, it means that they own a part of the firm. The professional or expert who sells on behalf of a financial company is referred to as stock trader. There are three broad categories of stock traders namely, informed, uninformed and intuitive traders. A person may also become a stock trader. Nonetheless, because the issue of stock trading falls under good financial literacy, an expert or a professional contributes immensely in assisting individuals in making decisions as to which stocks and shares to sell or to purchase. This professional

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may become an intermediary or an institution that assists a trader in making deals. These are referred to as stockbrokers. These stockbrokers accept and execute order as assigned by the stock traders at a commission. Such stockbrokers or brokerage firms might also offer other services, namely equity research and analysis, market advice, portfolio management among others.

The idea behind the existence of brokerage companies dates back to as early as the 18 th century where trading began with the five individuals sitting under a banyan tree at the Mumbai town hall. The Indian stock market became an organized, transparent, and electronic form of trading in 1992 with the recognition of the Bombay Stock Exchange (BSE), the inception of Sensex, the Securities Exchange Board of India (SEBI), and the National Stock Exchange (NSE). With the beginning of the internet era, however, online stock exchanges and trading have become part of retail trading.

A company or the individual that offers trading services online is an online broker or an e-brokerage firm. These brokerage companies are more fast and less costly compared to their offline counterparts. Besides, this turn to digitalisation of stock trading contributed to the overcoming of glitches, time delays, and numerous other problems that dominated the offline trading mode. The emergence of Information and Communications technologies (ICT) has also led to professionalism in the industry, and the marketplace has become very competitive and efficient.

According to FinTech reports from 2023, the value of the entire FinTech business in India is expected to reach over 74 billion by 2030, with investment and online stock broking-based technology accounting for over 9.2 billion of that total in 2022. This colossal growth is a direct consequence of the medical pandemic that hit the world in 2020. Investing in the stock market emerged as one of the newfound hobbies of the millennial and Gen-Z population, especially on mobile trading apps. With a plethora of stock trading apps available on the app stores, such as Angel One, Zerodha, Motilal Oswal, Upstox, Groww, and Binomo, to name a few, the interesting question arises as to what makes these apps popular among people. Cosmetic, educational, transactional, reliability, performance-related, and financial features could be a few factors that could make an app have an edge over its competitors. These features can translate to an overall positive customer experience, thereby helping the stockbroking firms build a long-standing relationship with their customers through the mobile trading apps.

The key objectives of this study are, first, to verify the role of different features of a mobile-based trading app in the overall customer experience. This study will deep dive to analyze educational features such as cue-based videos or tutorials and recommendations on the app, cosmetic features such as the comprehensive design of the app and its ease of use, privacy and security-related features, and performance-based features such as quick navigation between app screens and the app's ability to support multiple languages, including regional ones. Second, this study aims to confirm whether a positive customer experience translates to an increased loyalty towards the app. Moreover, this research adds to the current understanding of the relationship between app attributes and customer loyalty with the app by developing a multi-layered model. The results of this study can be used by brokerage firms and their apps technical divisions to develop appropriate strategies that affect the customer experience the most. In addition, managerial and theoretical implications of this study are discussed.

After this introduction, the study's theoretical framework is presented, the literature is reviewed, the consequences of the model's adjustable features are described, and the hypotheses are defined. The research approach used for data collecting and analysis is further explained in the publication. Following a presentation and discussion of the results, the study ends with theoretical and managerial implications.

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

The exponential expansion of mobile technology has transformed the way clients connect with financial solutions, particularly in e-stock-trading. With the growing reliance of investors on such mobile apps to control their portfolios, attributes of these apps such as usability, trust, service quality, and personalization serve as a key to improving customer experience (CX) and driving brand loyalty. This literature review explores how app attributes influence CX and, consequently, loyalty in the context of online stock trading.

The vital initial consideration involves understanding privacy alongside trust elements within online transactions. Third-party privacy seal evaluations increase user trust in addition to improving their knowledge-disclosure

readiness on trading platforms but fail to eliminate privacy reservations according to Chen et al.'s (2020) study. The foundation of CX trust should focus on perceived security since this security forms an essential attribute for stock trading applications that handle sensitive financial data. The trust in sellers and platforms increases as Liu et al. (2023) demonstrated the effectiveness of feedback systems operating within a community authority structure for second-hand trading platforms. Stock traders tend to build loyalty because trusted experiences can occur through prominent reliable application features according to these findings.

Another important app feature that surfaces is usability. Abroud et al. (2015) built value (time saving and saving money) and trust into the Technology Acceptance Model assumed that perceived usefulness and ease of use the investors of adoption intention of the use in value opportunistic trading platforms of online stock in Iran. This is in line with Shih & Lee (2017) who observed that service quality and customer relationship management (CRM) in mobile trading platforms do promote attitudes and intentions, keeping to CX and loyalty. Meanwhile, Alhejji et al. (2022) looked at Saudi mobile banking apps and what they found is most users find usability to be a problem such issues as badly managed updates and lack of support reduces CX, implying the need for the user-friendly functionalities in trading apps.

Better personalisation and customisation also had greater impact on CX. Agarwal et al. (2024) presented an AI driven personal financial assistant that renders user-based personalized budgeting and investment guidance optimizing values in financial decision-making and user satisfaction. What this suggests is that stock trading apps with built-in personal insights could further the depth of CX and loyalty by matching with a particular investor's objectives. Similarly, Alang & Nguyen (2022) has also found that compatibility and lower perceived risk improves perceived value of omnichannel retailing and thus enhance shopping intention—a principle that is relevant to trading apps that are focusing on retaining the users by delivering relevant and risk mitigated experience.

Both applications design and psychology elements add up to CX. Liang et al. (2023) found that novel product conceive-ting outweighing self-enhancement and self-verification motivations prompt adoption, suggesting that trendy and workable trading app sites would increase fidelity. Gao et al. (2024) backed this up too by showing that perceived usability, novelty and enjoyment in smartphone UI design enhances UX sharing and in turn US through positive CX. Tran et al. (2021) reportedly found another similar cue of task–service fit in branded apps – it boosts CX and cocreation and leads to more loyalty, implying that the trading apps should have features matching what users' trades.

Quality and convenience of service also important. Huma et al. (2024) found that mobile application service quality (MASQ) and service convenience (SERCON) drive customer satisfaction and retention among young consumers that were concerned on aspects such as system efficiency and privacy/security. Hutahaean et al.(2024) seconded this by indicating that efficiency, effectiveness, and satisfaction as usability components perform in enhancing continuance intention on m-commerce applications. For stock trading, these results suggest that responsive, secure applications enhance CX, and the customer remains loyal for longer with the same broker.

Decentralized systems show also ways to trust management. Waleed et al. (2021) proposed T-Smart, blockchain-based trust model for smart marketplaces, demonstrating resource dependent trust scores enhanced trading accuracy and security. Yu, et al. (2018) did further show that blockchain has the potential to prevent data compromise in IoT implementation, presenting that implementations of blockchain-enabled trading apps could assist in enhancing CX by giving strong trust mechanism, therefore making up higher loyalty.

Flow, and content, can give nice nuances to the picture. Rushan et al. (2021) discovered that interactivity and simplicity of mobile apps stimulate goal continuation and dedication, moisture-retention medium by e-trust. Studies found that, effective content display played an important role in mHealth applications, that is, it increased adoption by enhanced perceived value and trust (Liu et al., 2022). A mobile trading app with a decent presentation of understandable, or even simply convenient data is virtually guaranteed or effortless CX, to create user loyalty.

More extensive CX framework also inform here. Zhu et al., (2022) presented a mobile banking UX measurement framework emphasizing functional user needs, such as timely feedback and security—characteristics applicable to trading apps. Pekpazar et al. (2023) underscored privacy and design in OTT platforms as the areas that lead to satisfaction and loyalty, while Gazi et al. (2024) pointed out that reliability in online banking is also an important

factor post-COVID-19. Albayrak et al. (2023) mixed MAQ and offline brand trust to forecast travel app use, pointing that business-to-business apps could just get a brand reputation together with importance to improve CX.

In the end cultural and psychological elements flesh out the story. Ailon (2019) investigated atomistic indifference in financial markets revealing how distrust impacts on the way traders see themselves and Baj-Rogowska & Sikorski (2023) analyzed by means of text mining usability anomalies of Instagram, explaining the role of user's feedback in perfecting CX. Ma et al. (2021) showed that mobile technology's flow experience is connected to purchase intentions. And implied flow experience in immersion of trading apps can build a strong relationship which create loyalty in market strategy.

In all, app characteristics such as trust, usability, personalisation, service quality, and design have significant impact on CX within online stock trading and leads to brand loyalty. Although privacy seals (Chen et al., 2020), blockchain trust (Waleed et al., 2021), and flow experiences (Rushan et al., 2021) creates confidence, usability (Abroud et al., 2015) and personalization (Agarwal et al., 2024) results in satisfaction. By incorporating from these perspectives, stock trading houses may well develop software apps which will fulfil existing needs but also encapsulate the emotional, thus reliable, user in an online market which competition is fierce.

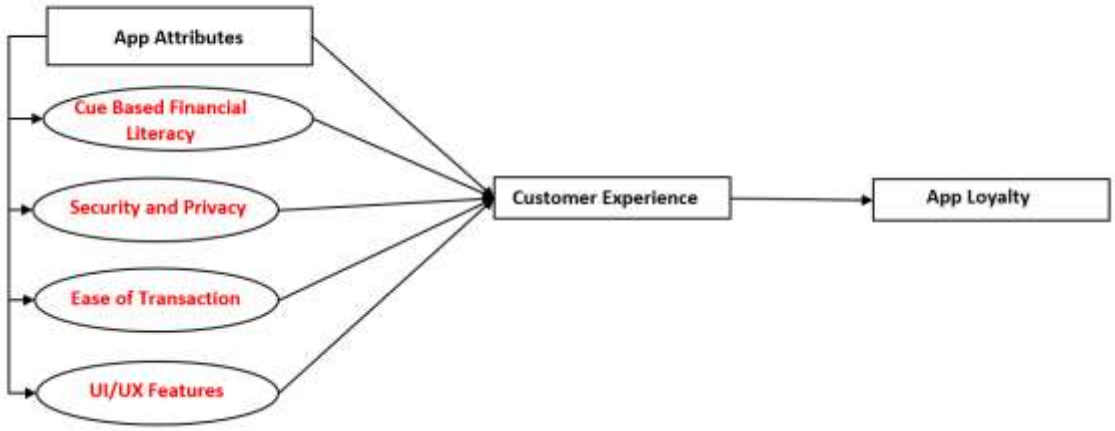

Figure 1: *Conceptual Model*

App Attributes

Stock Exchange being a purely analysis and interpretation-based sector, it is significant that the app being used has substantial and appreciable features so as to make the complicated and overwhelming task of stock investment a piece of cake for the customers. Apps providing financial literacy, security, and easy transactions to the customers with exceptional user interfaces tend to make a long-lasting impact on the customer.

Effect of Personal Financial Assistant in Apps on the Customer Experience

According to a 2022 Asian Development Bank assessment, it is depressing that less than one-third of Indians are financially knowledgeable. According to the RBI, only 24% of women and 27% of adults have the bare minimum of financial literacy. Making informed and prudent judgments is made possible by having a solid understanding of finance. Stock trading apps today provide numerous cues in the form of long educational videos, short vlogs (video vlogs), historical and recent financial data, and recommendations based on market analysis to their customers. This provides a no-cost, no-risk way to enhance a customer's stock investment knowledge. While financial literacy is a crucial life skill that, when instilled at a young age, can prove to play an important part in building a prosperous life, it can still be learned and applied at Middle Ages. These apps provide resources to their customers in the easiest and most comprehensible way to build the financial literacy foundation for their customers. Customers are free to follow the advice and recommendations provided by the apps. This can lead to a memorable and trustworthy customer experience.

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H1. The personal financial assistant provided by Apps has a significant impact on customer experience.

Effect of Security and Privacy in Apps on the Customer Experience

In internet and mobile-based apps, trust built on security and privacy safety is a must (Kaasinen, 2005). Previous literature on the topic, such as Kindberg, Sellen, and Geelhoed (2004), has suggested that it is often the security and privacy concerns that make the user sometimes susceptible and wary of mobile apps (Malhotra, 2020). Many a time, the cause behind an app deletion or non-adoption is the poor security features offered by the apps (Balapour et al., 2020; Levenson, 2016). Old and traditional security features are not enough in today's times (Harris, Brookshire & Chin, 2016); thus, it has become a key app feature for the mobile trading apps adoption now. Advanced, multi-step user authentication, biometric features, and maintaining the incognito mode by apps can act as a potential merit for the growth of mobile trading apps.

H2. The security provided by apps has a significant impact on customer experience.

Effect of Ease of Transactions in Apps on the Customer Experience

For wider penetration and adoption of an app, it must be easy to use and adapt. Affective, sensorial, and cognitive features influence customer experience and satisfaction (Molinillo, 2022). To stay ahead of the competition and afloat, trading companies need to develop simple yet effective mobile apps with personalization and custom features such as push notifications, screen reader support, and text scaling choices. In addition, fast speed, consistency, no lagging issues, multiple device compatibility, and competitive brokerage charges also act as driving factors for higher adoption of any mobile trading app.

H3. Ease of transactions provided by apps has a significant impact on customer experience.

Effect of User Interface and User Experience in Apps on the Customer Experience

User Interface (UI) and User Experience (UX) are the most important factors in an application, as these are the link between the user and the system (Pratama et al., 2020). A well-designed product with a positive user experience can lead to repeat customers, referrals, and positive word-of-mouth advertising. Conversely, a negative user experience can lead to customer churn, negative reviews, and loss of revenue. Quick response time, intuitive navigation, clear labeling, and logical flow contribute to the overall appeal of an app. When an app is intuitive and easy to use, users are less likely to encounter issues or require assistance. Moreover, an app's ability to support multiple languages helps it cater to a much larger audience. Apps that can translate to regional languages and provide speech-to-text conversion and vice versa are able to penetrate deeper into the demography. Hence, user experience is of paramount importance in mobile trading apps and can directly impact customer engagement and experience.

H4. User interface has a significant impact on customer experience.

Effect of Positive Customer Experience on App Loyalty

Beyond simply fulfilling expectations, a great customer experience makes clients feel appreciated, content, and motivated to come back. Brokerage firms and trading enterprises can increase customer acquisition through favorable word-of-mouth and cultivate customer loyalty by providing outstanding service. A comprehensive positive customer experience can generate a feeling of satisfaction in the customers that they have "selected" the right platform and are likely to stay more loyal to the apps and representative brokerage firms. Moreover, stock trading companies and brokerage firms can leverage this built trust and satisfaction into long-lasting loyalty with their customers. A memorable and exceptional customer experience is objectively beneficial for the customers and the apps. It encourages recurring customers and emotional and pragmatic attachment to the app representing the online stock brokerage firm, thereby developing an undeterred loyalty among customers for the app.

H5. The customer experience with apps has significant impacts on their loyalty towards apps.

RESEARCH METHODOLOGY

The objective of the current research is to gauge the customer experience on the financial apps. The research is empirical in form, and the study sample belongs to the Delhi-NCR area in India. The structured questionnaire survey approach is employed to collect the data, and the screening criterion was individuals who transact using the financial apps. The data collection was achieved by making the Google survey form and sharing it via e-mails, WhatsApp, and various social media websites. As online surveys have a speedy reach to the target population, the online data collection method was utilized. Among all the 215 responses obtained, 190 valid responses were analyzed since 15 questionnaires were incomplete. The study is performed with the help of a combination of the non-probability based purposive sampling method and snowball sampling.

Measurement development:

This survey questionnaire contains two sections, the first section gauged the demographic characteristics of the survey participants and their acquaintance with financial applications online. The second part included constructs and items question on online financial apps and loyalty. Six constructs were employed in the research (personal online financial assistant (Visesh Agarwal et al., 2024), user interface, ease of transaction, security, user experience, and APP loyalty). The size of PFA is borrowed on the research of (Jolliffe and Cadima, 2016); the user interface is on Bianchi et al. (2015); the ease of transaction is on Verma (2020); security is on Barrera et al. (2023); user experience is on Dirin and Laine (2018); and app loyalty is on Baek and Yoo, C. Y. (2018). Cronbach alpha value was used to know the reliability of all the latent variables. Reliability of the measurement scale performed well before administering the second survey.

Results:

Demographic Profile of the sample

The demographic result of the sample shows in Table 1

Table 1: *Demographic profile of the sample*

Elements	Demographic profile	No. of Respondents	Percentage
Gender	Male	144	66.98%
	Female	71	33.02%
Age	16-25	24	11.16%
	26-35	62	28.83%
	36-45	52	24.19%
	46-55	48	22.33%
	56 and above	29	13.49%
Employment status	Employed	67	40.2%
	Students	14	6.51%
	Self-employed	45	20.93%
	Unemployed	59	27.44%
	Retired	30	13.95%
Annual Income	0-2 Lac	6	2.79%
	2-4 lac	16	7.44%
	4-8 Lac	76	35.35%
	8-12 Lac	71	33.02%
	More than 12 Lac	46	21.40%
Frequency to using online Apps	Once a week	47	20.93%
	Once in a month	62	27.90%
	Several times in a month	49	21.86%
	Quarterly	29	12.55%
	Several times in a year	37	16.74%
Reasons of using Financial Apps	Peer to Peer Payments	58	26.97%

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	Budgeting and Expenses Tracking	32	14.88%
	Investing	29	13.48%
	Debt Management	19	8.83%
	Financial Planning	40	18.60%
	Credit Monitoring	37	17.20%

Measurement model

In this study, we used a structural equation modelling technique to measure the relationship between different attributes of financial apps and their impact on customer experience. Structural regression modelling is a multiple regression technique through which we test conceptual models. SEP is a two-step process; in the first step, wetest the structural model, and in the second step, we test the structural model. Table 2 shows the results of the measurement model. In the measurement model, we applied CFA in which we calculated the reliability and validity of the constructs used in the study. The outcome demonstrates that all three reliability values (alpha, CR, and AVE) met the threshold limitations; the scales were deemed appropriate for validity and convergence reliability.

Table 2: *Construct Reliability & Validity*

Construct & Items	**Factor Loading**	**Alpha**	**CR**	**AVE**
Personal Financial Assistant		0.872	0.882	0.653
PFA1	0.781			
PFA2	0.863			
PFA3	0.796			
PFA4	0.789			
Ease of Transaction		0.881	0.919	0.766
ET1	0.897			
ET2	0.929			
ET3	0.874			
User Interface		0.815	0.856	0.606
UI1	0.753			
UI2	0.905			
UI3	0.871			
UI4	0.530			
Security		0.845	0.847	0.734
SE1	0.830			
SE2	0.883			
SE3	0.662			
User Experience		0.884	0.929	0.690
EX1	0.828			
EX2	0.839			
EX3	0.834			
EX4	0.605			
EX5	0.748			
APP loyalty		0.876	0.879	0.708
AL1	0.787			
AL2	0.839			

AL3	0.894

The correlation matrix for discriminant validity is displayed in Table 3. To validate the discriminant validity of the constructs, the matrix verifies that all diagonal values are greater than those positioned below these diagonal values. The fitness of the model and the constructs employed in this study were assessed using the measurement model. For analysing the measurement model, we employed the maximum likelihood estimations method (MLE).

Table 3: *Discriminant validity*

	PFA	**ET**	**UI**	**SE**	**EX**	**AL**
PFA	0.77846					
ET	0.471	0.830662				
UI	0.529	0.482	0.808084			
SE	0.270	0.137	0.193	0.856738		
EX	0.470	0.656	0.634	0.168	0.841427	
AL	0.283	0.288	0.310	0.544	0.319	0.8508

After confirming the reliability and validity of constructs used in the study, we tested the fitness of the measurement model. The results of the model fitness showed that all the fitness indexes followed the threshold values of Cmin/df 5 2.14, CFI 0.907, TLI 5 0.872, AGFI 0.803, and RMSEA 0.084 (Hair et al., 2012). That shows that model is a good fit.

STRUCTURAL MODEL

Once the measurement model's fitness had been determined, we put a structural model to the test. The overall values of the structural model fit indices were in accordance with Hair et al. (2012) suggested threshold values of Cmin/df 5 2.228, CFI 0.916, TLI 0.889, AGFI 5 0.794, and RMSEA 5 0.081. The relationships between independent and dependent variables from the proposed hypotheses can be ascertained with the use of the structural model estimates. Every path's t-statistic and standard estimate were calculated in order to assess each hypothesis's significance. Table 4 provides a summary of the hypotheses results.

Table 4: *Hypothesis Testing*

	Estimates	**S. E**	**C.R.**	**P**	**Hypothesis**
PFA→EX	0.394	0.147	5.71	***	'H1: Supported'
ET→EX	0.314	0.107	4.07	***	'H2: Supported'
UI→EX	0.448	0.050	5.20	***	'H3: Supported'
SE→EX	0.356	0.074	4.81	***	'H4: Supported'
EX→AL	0.532	0.097	5.48	***	'H5: Supported'

DISCUSSION

The results show that most males are increasingly interested in using online financial apps for peer-to-peer payment, financial planning, and investment purposes. Research has overlooked the attributes of online financial apps as a potential topic of interest. This study explores the impact of online financial assistants, security, ease of transaction, and UI in influencing user experience towards mobile apps and that increases customer loyalty towards financial apps. Our research highlights that user interface is a critical factor of online financial apps. If the interface is not friendly, then it becomes very complicated for the user to open, enter into the app, search, and navigate on the app. So, the layout, design, and interface should be very simple and easy to use. The other

important factor is personal assistance because people who are using apps for financial planning and investment should be guided and provided appropriate advice for all their financial transactions. Security is the other main concern or element of financial apps because users share all their financial cards, payment details, and bank accounts in the app. Therefore, the security feature in the app must be given so the user can rely on the app and confidently perform all the transactions. If apps incorporate all these attributes, it increases user experience. These seamless experiences and transactions through the app also develop customer loyalty towards these apps.

POLICY IMPLICATIONS

The study delivers practical solutions that stakeholders throughout the online stock trading sphere should consider including app developers and brokerage firms as well as the Securities Exchange Board of India (SEBI). The priority for app developers should include developing user-friendly interfaces for both design and application and creating extensive financial literacy tools which leverage AI-driven analysis and multilingual educational resources to develop user capabilities in financial decision-making. Profit-seeking brokerages should implement state-of-the-art security tools that combine multi-factor authentication along with biometric security practices and data protection technologies to establish trust with their clients. The government should promote universal security guidelines for online apps while offering financial incentives for education features that correspond with India's low financial literacy levels (27% of adults based on the 2022 Asian Development Bank report). Educational institutions and fintech companies should establish joint initiatives to run awareness campaigns which train users to use fintech products for true wealth creation instead of risky transaction ventures and sustainably increase market expansion.

CONCLUSION

The research on "Impact of Application Features on Customer Experience (CX) in Fostering Brand Loyalty for Online Stock Trading" demonstrates how particular app features directly affect user experience which shapes brand loyalty among North Indian stock trading application users. The research based on SEM-PLS supports personal financial assistants (such as AI/ML-driven recommendations and educational videos), security measures, ease of transactions and user interface/user experience (UI/UX) as key factors driving positive CX results. User interface stands out as the main influence with personal financial assistance and security constituting secondary influences because they enhance user comprehension of stock trading while developing user trust. A key driver of enhanced customer experience comes from easy transactions as this feature enables smooth and efficient interactions which satisfies tech-orientated millennial and Gen-Z stock market customers.

This study demonstrates that quality experiences create loyal stock trading platform users which confirms recommendations that genuine services will generate enduring patronage. This data proves essential considering the projected $74 billion scale of the Indian fintech market by 2030 which will start at $9.2 billion in 2022 thus demonstrating why app optimization should be made a strategic focus to achieve market differentiation. The study pins down the requirement to study how emerging platforms like advanced AI personalization together with blockchain can boost CX and loyalty because these areas remain uncovered in stock trading applications.

AUTHOR DECLARATIONS

CRediT author statement / Author contributions

Syed Shaamikh Ahsan: Conceptualization, Supervision; Project Administration; Writing – Review & Editing; Resources.

Prashant Ranjan: Conceptualization; Methodology; Software; Validation; Formal Analysis; Investigation; Data Curation; Writing – Original Draft; Visualization.

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