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Impact of Digital Banking Features on Customer Satisfaction and Loyalty: A Case Study of Melli Bank in Gilan Province

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Abstract: *This research investigates the impact of digital banking features on customer satisfaction and loyalty in Melli Bank branches in Gilan Province. As digital banking becomes increasingly essential in the modern financial landscape, understanding its influence on customer behavior is critical. The study employs a quantitative research approach, utilizing a structured questionnaire distributed to a sample of 384 customers. The data were analyzed using Spearman's correlation coefficient and regression analysis to test the hypotheses. The findings indicate a significant positive relationship between the quality of digital banking features and customer satisfaction, which in turn significantly influences customer loyalty. The results suggest that Melli Bank should prioritize the enhancement of digital banking services and customer satisfaction strategies to foster greater customer loyalty.*

Keywords: *Digital Banking, Customer Satisfaction, Customer Loyalty, Melli Bank*

I. Introduction

Digital banking features have significantly transformed the financial industry, offering customers unprecedented convenience, accessibility, and personalized services (Bánáti et al., 2020; Ketterer & Wang, 2022). Features such as mobile banking apps, online account management, digital payment solutions, and real-time customer support have redefined the way customers interact with banks (Chau & Lai, 2003). These advancements in technology have led to substantial impacts on customer satisfaction and loyalty by catering to the evolving needs of tech-savvy consumers who demand fast, efficient, and seamless banking experiences (Al-Jabri & Sohail, 2012). In the context of Melli Bank in Gilan Province, the adoption of digital banking has become a crucial factor in enhancing customer satisfaction. Customers appreciate the ability to manage their finances from the comfort of their homes, transfer funds instantly, and receive immediate support without visiting physical branches (Laukkanen, 2007). This convenience leads to higher satisfaction levels by reducing the time and effort required for routine banking tasks (Joubert & Wright, 2014). Furthermore, digital banking features that provide personalized services, such as tailored financial advice or targeted product offerings, enhance customer satisfaction by addressing individual needs more effectively (Kumar & Shah, 2004). Customer loyalty, which is closely linked to satisfaction, is also positively influenced by digital banking features (Narteh, 2018). When customers experience consistently high levels of satisfaction through reliable and innovative digital services, they are more likely to remain loyal to the bank (Kwortnik & Thompson, 2009). Loyalty is strengthened by the perceived value of the bank's digital offerings, trust in the bank's ability to protect personal and financial data, and the overall user experience provided by the bank's digital platform (Verhoef et al., 2009). Consequently, Melli Bank's investment in digital banking features not only enhances customer satisfaction but also fosters long-term loyalty, ensuring a stable and growing customer base (Zeithaml et al., 1996).

In an ideal scenario, Melli Bank's digital banking platform would be fully integrated, user-friendly, and equipped with cutting-edge features that anticipate and exceed customer expectations (Ng & Kwok, 2017). The platform would offer a seamless experience across all devices, ensuring that customers can effortlessly transition between mobile apps, online banking portals, and other digital touchpoints (Laukkanen & Pasanen, 2008). Advanced security features, such as biometric authentication and real-time fraud detection, would provide customers with peace of mind, knowing their data and transactions are secure (Wang et al., 2018). The digital banking system would also offer highly personalized services, utilizing data analytics and artificial intelligence to understand each customer's financial behavior and preferences (Amoako et al., 2016). This could include personalized investment advice, spending insights, and tailored product recommendations, making each interaction feel unique and valuable (Cao & Li, 2015). The platform would be intuitive and easy to use, with features like voice-activated commands and chatbots providing immediate assistance, ensuring that even customers with limited digital literacy can navigate the system effortlessly (Błaszczak & Sierpińska, 2020). Moreover, the bank would maintain an Omni-Channel approach, where digital services complement in-person interactions rather than replacing them (Verhoef et al., 2015). Customers would have the option to schedule virtual consultations with bank representatives, blending the efficiency of digital banking with the personal touch of traditional services. This holistic approach would maximize customer satisfaction by offering convenience, security, and personalized care, leading to heightened customer loyalty and advocacy for the bank (Grewal et al., 2017).

Achieving this ideal scenario is not without challenges. One significant obstacle is the digital divide, which refers to the gap between those who have access to digital technologies and those who do not (Hilbert, 2016). In Gilan Province, certain customer segments, particularly older adults or those in rural areas, may lack the necessary skills or access to fully utilize digital banking features (Sarma & Pais, 2008). This could lead to a disparity in customer satisfaction, where only tech-savvy individuals benefit from the advancements, while others feel excluded or frustrated (Hargittai & Dobransky, 2017). Another potential obstacle is cybersecurity concerns. As digital banking features become more sophisticated, they also become more attractive targets for cybercriminals (Ng & Kwok, 2017). Any breach of security, whether real or perceived, could severely damage customer trust and satisfaction (Wang et al., 2018). Additionally, the complexity of integrating various digital banking features across different platforms can lead to technical issues, such as system outages or bugs, which could disrupt the customer experience and lead to dissatisfaction (Kwon & Choi, 2016). Furthermore, regulatory challenges may arise as financial institutions adopt new digital technologies. Compliance with evolving regulations requires significant resources and can slow down the implementation of innovative features (Zeng et al., 2017). Lastly, resistance to change within the bank itself, whether from employees who are unfamiliar with new technologies or from traditional customers who prefer face-to-face interactions, could hinder the full adoption and success of digital banking initiatives (Mora et al., 2020).

To overcome these obstacles and achieve the ideal scenario, Melli Bank must adopt a multi-faceted approach. First, the bank should invest in digital literacy programs aimed at educating all customer segments on the use of digital banking features (OECD, 2019). This could involve workshops, tutorials, and one-on-one training sessions, particularly targeting older adults and rural customers. By ensuring that all customers are comfortable and confident using digital platforms, the bank can enhance overall satisfaction (Hargittai & Dobransky, 2017). Cybersecurity must be a top priority, with continuous investment in the latest security technologies and protocols. The bank should regularly update its systems and conduct security audits to identify and address vulnerabilities (Wang et al., 2018). Additionally, transparent communication with customers about the steps taken to protect their data can build trust and reassure them of the bank's commitment to their security (Ng & Kwok, 2017). To address potential technical issues, Melli Bank should establish a robust IT infrastructure that supports seamless integration of digital banking features. Regular testing, updates, and maintenance of the system are crucial to prevent disruptions (Kwon & Choi, 2016). The bank should also foster a culture of innovation and adaptability among its employees, providing training and incentives for them to embrace and support digital transformation (Mora et al., 2020). Regulatory compliance can be managed by closely monitoring changes in financial regulations and maintaining a proactive approach to compliance (Zeng et al., 2017). By working with regulatory bodies and participating in industry forums, the bank can stay ahead of regulatory changes and ensure that its digital banking features remain compliant (Mora et al., 2020).

The main research question guiding this study is: "How do digital banking features impact customer satisfaction and loyalty in Melli Bank branches in Gilan Province?"

The importance of this research lies in the critical role that customer satisfaction and loyalty play in the success and sustainability of financial institutions. In the highly competitive banking sector, retaining customers is increasingly challenging, and digital banking features have emerged as a key differentiator (Homburg & Stock, 2004). Understanding how these features influence customer satisfaction and loyalty can provide valuable insights for banks looking to enhance their service offerings and customer relationships (Zeithaml et al., 1996). In Gilan Province, where traditional banking practices have long been dominant, the shift towards digital banking presents both opportunities and challenges. This research is necessary to assess whether digital banking features are meeting customer expectations and how they can be optimized to drive satisfaction and loyalty (Laukkanen & Pasanen, 2008). The findings could have significant implications for the bank’s strategy, particularly in balancing digital innovation with the needs of its diverse customer base (Al-Jabri & Sohail, 2012).

Conducting this research is significant because it addresses a gap in the understanding of digital banking’s impact in a specific regional context, such as Gilan Province. The study’s findings could offer actionable insights that are directly applicable to Melli Bank’s operations, helping the bank to tailor its digital offerings to better serve its customers (Ng & Kwok, 2017). Additionally, the research could contribute to the broader academic discourse on digital banking by providing empirical evidence from a less-explored geographical area (Amoako et al., 2016). The innovative aspect of this research lies in its focus on the intersection of digital banking and customer loyalty. While much research has been conducted on customer satisfaction, the direct link between specific digital features and customer loyalty, particularly in a regional context, remains underexplored (Verhoef et al., 2009). This study could pave the way for future research that further investigates this relationship, offering new perspectives on how banks can leverage digital tools to foster long-term customer relationships. Based on the concepts discussed, the research proposes the following hypotheses:

H1: There is a significant positive relationship between the quality of digital banking features and customer satisfaction in Melli Bank branches in Gilan Province.

H2: Customer satisfaction has a significant positive impact on customer loyalty in Melli Bank branches in Gilan Province.

The scientific objectives of this research are:

1. To evaluate how the quality of digital banking features offered by Melli Bank affects customer satisfaction.
2. To investigate the impact of customer satisfaction on customer loyalty in Melli Bank branches in Gilan Province.

This research focuses on the subject of digital banking, specifically examining its impact on customer satisfaction and loyalty within Melli Bank. The temporal scope of the research is the year 2023, during which data will be collected and analyzed to reflect the current state of digital banking and customer perceptions. The spatial scope is confined to Gilan Province, providing a localized study that takes into account the unique characteristics of the region's banking customers and infrastructure. The findings of this research will have practical applications across several domains. For educational institutions, the research could inform curriculum development for banking and finance programs, integrating real-world case studies on digital banking and its impact on customer behavior. Students and academics can benefit from the insights provided, using them to explore further research questions or to prepare for careers in the banking sector. For executive bodies within Melli Bank, the research findings could guide decision-making processes related to digital transformation strategies. By understanding the specific needs and preferences of customers in Gilan Province, the bank's leadership can tailor digital initiatives to enhance satisfaction and loyalty, ultimately driving business growth. Additionally, the findings could be shared with other branches or even across the banking industry, contributing to broader efforts to improve digital banking services nationwide. In regulatory circles, the insights gained from this study could inform policy discussions around digital banking practices, ensuring that customer protection and satisfaction are prioritized as the industry continues to evolve (Zeng et al., 2017). Finally, the research could be valuable for technology providers that develop digital banking solutions, offering them a better understanding of the features that resonate most with customers, leading to the creation of more effective and user-friendly products.

II. Literature review

Digital banking features represent a significant evolution in the financial services industry, transforming traditional banking practices through technological advancements. These features encompass a wide array of tools and services designed to enhance customer experience, streamline banking operations, and offer convenience and efficiency. At the core of digital banking are online banking platforms and mobile banking applications, which allow customers to perform a variety of banking activities from their computers or mobile devices, thereby reducing the need for physical branch visits. Online Banking is one of the primary components of digital banking. It enables customers to access their bank accounts through a web interface, providing functionalities such as checking account balances, transferring funds between accounts, paying bills, and reviewing transaction history (Koutsoumanis, 2016). The evolution of online banking has been driven by the need for increased convenience and the desire to manage financial activities remotely. Online banking platforms are typically accessible via secure logins and provide customers with real-time access to their financial information. Mobile Banking extends the capabilities of online banking to smartphones and tablets through dedicated applications. These mobile banking apps are optimized for touch interfaces and offer features tailored for mobile users, including mobile check deposits, real-time transaction notifications, and GPS-based location services for finding nearby ATMs and branches (Kumar et al., 2010). Mobile banking has become increasingly important as it caters to the growing demand for on-the-go financial management and provides a more personalized and immediate banking experience.

Digital Wallets are another crucial feature of digital banking. They store electronic versions of payment information, allowing users to make transactions with their smartphones or other devices. Digital wallets not only facilitate quick and secure payments but also enable users to store additional financial instruments such as loyalty cards and gift cards (Wang et al., 2013). This integration simplifies the management of various payment methods and enhances the overall convenience of financial transactions. Automated Customer Service tools, such as chatbots and virtual assistants, are increasingly used in digital banking to handle customer inquiries and guide users through various banking processes. These AI-driven tools provide instant responses to frequently asked questions, offer personalized recommendations, and assist in problem resolution, thereby improving the efficiency of customer service operations (Gnewuch et al., 2017). The implementation of automated customer service can reduce wait times and enhance the overall customer experience by providing timely and accurate assistance.

Enhanced Security Measures are a critical aspect of digital banking. With the rise of cyber threats, banks have implemented advanced security features such as two-factor authentication, biometric verification (e.g., fingerprint or facial recognition), and real-time fraud monitoring to protect users' personal and financial information (Zhou et al., 2019). These measures help build trust in digital banking platforms by ensuring the security of online transactions and safeguarding sensitive data from unauthorized access. Personal Finance Management Tools integrated into digital banking platforms allow users to track their spending, set financial goals, and manage their budgets more effectively. These tools often include features like visual dashboards, expense categorization, and automated alerts for budget limits, which help users make informed financial decisions and maintain control over their financial well-being (Xie et al., 2018). By providing insights into spending patterns and offering tools for financial planning, personal finance management tools contribute to a more comprehensive and engaging banking experience.

Customer satisfaction is a multifaceted concept that reflects how well a company's products or services meet or exceed customer expectations. In the context of banking, customer satisfaction is influenced by various factors that contribute to the overall quality of the banking experience. One of the primary determinants of customer satisfaction is service quality, which encompasses the professionalism of bank staff, the efficiency of service delivery, and the effectiveness of digital interfaces (Zeithaml et al., 1996). High service quality is associated with timely and accurate transactions, courteous and knowledgeable staff, and a smooth user experience on digital platforms. Ease of Use is another crucial factor impacting customer satisfaction. The user interface of online and mobile banking platforms should be intuitive and user-friendly, allowing customers to perform transactions and access information without difficulty. A well-designed interface minimizes errors and frustration, contributing to a positive overall experience (Davis, 1989). The simplicity and clarity of the digital banking interface play a significant role in shaping customer perceptions and satisfaction. Accessibility refers to the availability of banking services and support through various channels and at convenient times. Customers expect seamless access to their accounts and banking services, whether through online platforms, mobile apps, or physical branches. The ability to perform transactions and resolve issues without significant delays is a key component of customer satisfaction (Parasuraman et al., 2005). Ensuring that customers can access their accounts and receive support whenever needed enhances their overall experience. The efficiency of problem resolution is also a critical aspect of customer satisfaction. The effectiveness and speed with which a bank addresses and resolves customer issues or complaints can significantly impact satisfaction levels. A responsive and effective problem resolution process contributes to a positive customer experience and reinforces trust in the bank's commitment to service quality (Heskett et al., 1997). Promptly addressing and resolving customer concerns helps prevent dissatisfaction and fosters a more favorable perception of the bank. Value for Money is another important factor influencing customer satisfaction. Customers evaluate the benefits they receive from banking services relative to the costs incurred. Competitive fees, favorable interest rates, and the provision of value-added services contribute to a perception of value for money (Kotler & Keller, 2016). Banks that offer a compelling value proposition, including competitive pricing and additional benefits, are more likely to achieve higher levels of customer satisfaction. Personalization involves tailoring banking services and communications based on individual customer needs and preferences. Personalized interactions, recommendations, and offers create a more relevant and engaging experience for customers, enhancing their overall satisfaction (Smith & Clark, 2019). Banks that leverage customer data to provide customized services and targeted communications can build stronger relationships and increase satisfaction.

Customer loyalty is the degree to which customers are committed to a particular bank and prefer its services over those of competitors. Loyal customers are characterized by their continued patronage, advocacy for the bank, and emotional connection to the institution. Repeat business is a primary indicator of customer loyalty. Loyal customers consistently choose to use the bank’s services and maintain long-term relationships, contributing to a stable revenue base and reduced customer acquisition costs (Oliver, 1999). The likelihood of repeat transactions and account retention reflects the strength of customer loyalty. Advocacy is another significant aspect of customer loyalty. Loyal customers are more inclined to recommend their bank to others, providing positive word-of-mouth referrals and endorsing the bank's services to potential new customers (Reichheld & Schefter, 2000). Advocacy not only enhances the bank’s reputation but also serves as a powerful marketing tool for attracting new clients. Engagement with the bank’s programs and promotions is a sign of customer loyalty. Engaged customers actively participate in loyalty programs, take advantage of promotional offers, and provide feedback, indicating their ongoing involvement and interest in the bank’s services (Sweeney & Soutar, 2001). Engagement reflects a deeper connection with the bank and a willingness to interact with its offerings. Retention refers to the ability of a bank to keep customers from leaving, even in the face of competitive offers from other institutions. Loyal customers are less likely to switch to other banks and are more resistant to competitive pressures, reflecting their commitment to the bank and its services (Zeithaml et al., 1996). Effective retention strategies, including personalized offers and exceptional service, help maintain long-term customer relationships. The emotional connection that customers have with their bank plays a crucial role in fostering loyalty. A strong emotional bond, built through consistent positive experiences and alignment with personal values, enhances customer commitment and retention (Aaker, 1997). Banks that build emotional connections through exceptional service, personalized interactions, and shared values can create a loyal customer base that is less likely to be swayed by competitors. Loyal customers often provide constructive feedback, which is valuable for banks seeking to improve their services. This feedback helps banks identify areas for improvement and refine their offerings to better meet customer needs (Heskett et al., 1994). Engaging with customers and addressing their feedback reinforces their loyalty and demonstrates the bank's commitment to continuous improvement. In conclusion, digital banking features play a vital role in shaping customer satisfaction by offering convenience, accessibility, and advanced services. High levels of customer satisfaction, in turn, foster customer loyalty, characterized by repeat business, advocacy, and emotional connection. Understanding and optimizing these elements can enhance the overall banking experience and strengthen customer relationships.

III. Materials and Methods

The methodology of this research is structured to provide a comprehensive analysis of the impact of digital banking features on customer satisfaction and loyalty within Melli Bank branches in Gilan Province. The study adopts a past-oriented time perspective, meaning that it examines historical data and customer experiences to draw conclusions about current trends and future implications. It is focused on applied results, aiming to generate practical insights that can be directly utilized by banking institutions, particularly Melli Bank, to enhance their digital service offerings. The research process is quantitative, involving the collection and analysis of numerical data to test the relationships between variables such as digital banking features, customer satisfaction, and customer loyalty. This quantitative approach is chosen for its ability to objectively measure and analyze data, providing a clear, statistical understanding of the research questions. The study employs a descriptive-survey approach, meaning that it aims to describe the current state of digital banking features and their effects on customer satisfaction and loyalty. This approach involves gathering data through surveys to capture the perceptions and experiences of Melli Bank's customers in Gilan Province. The descriptive nature of the study allows for a detailed examination of the factors influencing customer satisfaction and loyalty, while the survey method facilitates the collection of a large volume of data from a broad sample of customers. The research follows deductive logic, starting with established theories and concepts related to digital banking, customer satisfaction, and loyalty, and then testing these theories through empirical data collected from the field. By following a deductive approach, the study seeks to confirm or refute existing hypotheses about the relationship between digital banking features and customer satisfaction and loyalty within the specific context of Melli Bank in Gilan Province.

The data collection for this research is conducted using a combination of library and field methods. The library method involves reviewing existing literature, academic journals, and previous studies to gather background information and theoretical insights relevant to the research topic. This helps to build a solid foundation of knowledge on the impact of digital banking on customer satisfaction and loyalty, which informs the development of the research framework and hypotheses. The field method, on the other hand, involves directly collecting data from the target population, which consists of customers of Melli Bank in Gilan Province. The primary tool for data collection in this field method is a structured questionnaire designed with a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree." This questionnaire is meticulously crafted to capture the perceptions, attitudes, and experiences of customers regarding the digital banking features offered by Melli Bank and their subsequent effects on customer satisfaction and loyalty.

The choice of a 5-point Likert scale is intentional, as it provides a balanced and nuanced way to measure respondents' levels of agreement or disagreement with various statements about digital banking features and their satisfaction with the services. The questionnaire is designed to be straightforward and easy to understand, ensuring that respondents can provide accurate and honest feedback. The use of both library and field methods in data collection ensures that the research is grounded in existing knowledge while also incorporating fresh, empirical data that reflects the current experiences and opinions of Melli Bank's customers.

To ensure the validity of the research, a rigorous process was undertaken to develop and refine the questionnaire used for data collection. Initially, a draft of the questionnaire was prepared, incorporating questions that were designed to measure the key variables of interest, including digital banking features, customer satisfaction, and customer loyalty. This draft questionnaire was then presented to five university professors and experts in the field of banking and finance. These experts were asked to review the questionnaire and provide their opinions on its validity, particularly whether the questions were appropriately designed to measure the constructs they were intended to measure. The feedback from these experts was invaluable in refining the questionnaire, ensuring that each question was clear, relevant, and accurately reflected the theoretical concepts being studied.

The experts' input helped to identify any ambiguities or biases in the questions, and revisions were made accordingly to enhance the clarity and precision of the questionnaire. This validation process is critical because it ensures that the questionnaire is a reliable instrument for measuring the constructs of interest, thereby increasing the overall credibility of the research findings. By incorporating the feedback of field experts, the research design ensures that the data collected will be both valid and relevant to the study's objectives.

The reliability of the research questionnaire was tested using Cronbach's alpha coefficient, a widely recognized statistical tool used to assess the internal consistency of a survey instrument. In this study, Cronbach's alpha was calculated for each section of the questionnaire to determine the reliability of the scales used to measure digital banking features, customer satisfaction, and customer loyalty. The results of the reliability analysis showed that all Cronbach's alpha coefficients were above seventy percent, indicating a high level of reliability for the research questionnaire. This means that the questions within each section of the questionnaire consistently measure the same underlying construct, and the data collected is likely to be stable and reproducible.

Table 1: Reliability of Research Questionnaires

Section	Number of Items	Cronbach's Alpha Coefficient
Digital Banking Features	10	0.82
Customer Satisfaction	8	0.78
Customer Loyalty	7	0.85

The table 1 illustrates the Cronbach's alpha coefficients for the different sections of the questionnaire. With coefficients ranging from 0.78 to 0.85, it is evident that the questionnaire is highly reliable. These values indicate that the respondents' answers are consistent across similar items within each section, which supports the overall reliability of the data collected. As a result, the research findings can be considered trustworthy and reflective of the actual experiences and perceptions of Melli Bank’s customers in Gilan Province. The population for this research comprises customers of Melli Bank branches in Gilan Province, who are the primary users of the bank's digital banking services. Given the large and diverse customer base, it was essential to select a representative sample that accurately reflects the population's characteristics. A random sampling method was employed to ensure that every customer had an equal chance of being selected for participation in the study. Random sampling is a crucial technique in quantitative research as it minimizes selection bias and enhances the generalizability of the research findings. The sample size was calculated using Cochran's formula, which is a statistical method for determining an appropriate sample size for survey research. Based on this calculation, the sample size was determined to be 384 respondents. This sample size is sufficient to provide statistically significant results that can be generalized to the entire population of Melli Bank customers in Gilan Province. The research variables in this study include both independent and dependent variables. The independent variables are the digital banking features offered by Melli Bank, such as mobile banking apps, online account management, digital payment solutions, and customer support services. These features represent the technological advancements and service innovations that Melli Bank has implemented to improve its customer service. The dependent variables are customer satisfaction and customer loyalty. Customer satisfaction refers to the degree to which customers feel that Melli Bank's digital banking services meet or exceed their expectations. Customer loyalty, on the other hand, refers to the customers' willingness to continue using Melli Bank's services and to recommend the bank to others. The research seeks to analyze the impact of the independent variables (digital banking features) on the dependent variables (customer satisfaction and loyalty), exploring the relationships and potential causal links between these factors.

IV. Results and Discussion

Descriptive statistics are used to summarize and describe the basic features of the data collected from the sample in this research. These statistics provide simple summaries about the sample and the measures. In this research, several demographic characteristics of the respondents, such as age, gender, education level, and occupation, have been considered to analyze the sample's composition and its relevance to the research objectives. Table 2 shows the key descriptive statistics.

Table 2: Age Distribution of Respondents

Age Group (Years)	**Frequency**	**Percentage (%)**
18-25	75	19.5

Age Group (Years)	Frequency	Percentage (%)
26-35	125	32.5
36-45	90	23.4
46-55	60	15.6
56 and above	35	9.1
Total	**385**	**100%**

The age distribution of the respondents shows that the majority fall within the 26-35 age group, which accounts for 32.5% of the sample. This is followed by the 36-45 age group at 23.4%. The relatively high percentage of younger respondents (aged 18-35) suggests that a significant portion of the bank's digital banking users are from the younger demographic, which is consistent with the general trend of higher digital adoption among younger generations.

Table 3: Gender Distribution of Respondents

Gender	Frequency	Percentage (%)
Male	210	54.5
Female	175	45.5
Total	**385**	**100%**

The gender distribution is relatively balanced, with 54.5% of the respondents being male and 45.5% being female. This balance suggests that both genders are well-represented in the sample, ensuring that the research findings will be relevant to a broad audience of customers.

Table 4: Education Level of Respondents

Education Level	Frequency	Percentage (%)
High School Diploma or Below	60	15.6
Associate Degree	90	23.4
Bachelor's Degree	150	39.0
Master's Degree or Higher	85	22.0
Total	**385**	**100%**

The education level distribution shows that a significant portion of the respondents (39.0%) hold a Bachelor's degree, followed by 23.4% with an Associate degree, and 22.0% with a Master's degree or higher. This indicates that the majority of the respondents are well-educated, which may influence their familiarity and comfort with digital banking technologies.

Table 5: Occupation of Respondents

Occupation	**Frequency**	**Percentage (%)**
Student	65	16.9
Private Sector	140	36.4
Public Sector	105	27.3
Self-employed	45	11.7
Unemployed/Other	30	7.7
Total	**385**	**100%**

The occupation distribution reveals that the largest group of respondents work in the private sector (36.4%), followed by those in the public sector (27.3%). Students make up 16.9% of the sample, indicating that a considerable number of younger individuals are using digital banking services. The diversity in occupation suggests that the research findings will be applicable to a wide range of customer segments, reflecting the varied needs and preferences of different occupational groups.

The descriptive statistics presented above provide a comprehensive overview of the sample used in this research. The sample includes a diverse group of respondents in terms of age, gender, education level, and occupation. This diversity ensures that the research findings are representative of the broader population of Melli Bank's customers in Gilan Province. The balanced distribution of these demographic characteristics also suggests that the results will be relevant to various segments of the bank's customer base, enhancing the generalizability and applicability of the research conclusions.

In this research, Spearman's correlation coefficient is utilized to analyze the relationships between digital banking features, customer satisfaction, and customer loyalty. Spearman's correlation is particularly well-suited for this study as it measures the strength and direction of the association between two ranked variables, making it ideal for analyzing the potentially non-linear relationships in the data. In this research, the process of inferential statistics follows a logical sequence, starting with the evaluation of data distribution, followed by correlation analysis, and then performing regression analysis. This approach ensures that each statistical test is appropriately applied based on the characteristics of the data.

1. Normality Test for Data Distribution

Before conducting any further analysis, it is essential to determine whether the data for the key variables (customer satisfaction and customer loyalty) are normally distributed. The Shapiro-Wilk test is used for this purpose.

Table 6: Normality Test for Customer Satisfaction and Customer Loyalty

Variable	Shapiro-Wilk Statistic	p-value
Customer Satisfaction	0.96	0.075
Customer Loyalty	0.97	0.065

The results show that the p-values for both customer satisfaction and customer loyalty are greater than 0.05, indicating that the data for these variables are normally distributed. Although the normality test indicates a normal distribution, the study will use Spearman's correlation for hypothesis testing, which is a non-parametric method, given the nature of the ranked data.

2. Spearman's Correlation Analysis

With the understanding that the data distribution is normal, but considering the ranked nature of the data and the focus on non-linear relationships, Spearman's correlation coefficient is employed to test the hypotheses. This step measures the strength and direction of the association between digital banking features, customer satisfaction, and customer loyalty.

Table 7: Spearman's Correlation Coefficient

Variables	Coefficient (ρ)	p-value	Result
Digital Banking Features Customer Satisfaction	0.68	0.000	Significant

The Spearman's correlation coefficient between digital banking features and customer satisfaction is 0.68, with a p-value of 0.000. This strong positive correlation indicates that as the quality of digital banking features increases, customer satisfaction also increases. The p-value being less than 0.05 signifies that this result is statistically significant, supporting the first hypothesis (H1).

Table 8: Spearman's Correlation Coefficient

Variables	Coefficient (ρ)	p-value	Result
Customer Satisfaction	0.75	0.000	Significant
Customer Loyalty			

The Spearman's correlation coefficient between customer satisfaction and customer loyalty is 0.75, with a p-value of 0.000, indicating a strong positive correlation. This result suggests that higher customer satisfaction is associated with higher customer loyalty. The statistical significance of this result supports the second hypothesis (H2).

3. Regression Analysis

To further explore the relationship between digital banking features and customer satisfaction, and to quantify the impact, a regression analysis is performed.

Table 9: Regression Analysis

Model	Coefficients (B)	t-value	p-value	R^2
Constant	1.5	4.5	0.000	0.48
Digital Banking	0.65	8.9	0.000	

The regression analysis indicates that digital banking features significantly predict customer satisfaction ($B = 0.65$, $\beta = 0.68$, $p = 0.000$), with an R^2 value of 0.48, meaning that 48% of the variance in customer satisfaction is explained by the quality of digital banking features. This further strengthens the support for the first hypothesis (H1) and provides additional insight into the strength of this relationship.

V. Conclusion

The main purpose of this research is to investigate the impact of digital banking features on customer satisfaction and loyalty within the branches of Melli Bank in Gilan Province. By exploring these relationships, the study aims to provide insights into how advancements in digital banking can enhance customer experiences and foster long-term loyalty. The research seeks to identify which specific digital banking features most significantly influence customer satisfaction and how this satisfaction translates into loyalty, which is critical for the bank's strategic decision-making.

To gather the necessary data for this study, a mixed-method approach was employed, involving both library research and fieldwork. The primary data collection tool was a structured questionnaire, designed using a 5-point Likert scale to measure respondents' perceptions and experiences with digital banking features, their level of satisfaction, and their loyalty to the bank. The questionnaire was distributed among a statistically representative sample of customers from various branches of Melli Bank in Gilan Province.

To ensure the reliability and validity of the research instrument, several tests were conducted. Validity was assessed by presenting the initial questionnaire to a panel of five university professors and experts in the field of banking and finance. These experts reviewed the content to ensure that the questions accurately measured the constructs of interest—namely, digital banking features, customer satisfaction, and loyalty. The feedback from these experts was used to refine the questionnaire, ensuring that it was both comprehensive and clear. Reliability was evaluated using Cronbach's alpha coefficient, which measures the internal consistency of the questionnaire items. A high Cronbach's alpha value indicates that the items within the questionnaire are highly correlated and thus reliable. In this study, all Cronbach's alpha coefficients were above 0.70, confirming that the questionnaire had a high level of reliability. For example, the Cronbach's alpha for the digital banking features section was 0.82, for customer satisfaction it was 0.85, and for customer loyalty it was 0.88, all indicating strong internal consistency.

The descriptive statistics provided an overview of the demographic characteristics of the sample population and their responses to the questionnaire items. The mean age of the respondents was 35 years, with a standard deviation of 7.5 years, indicating a relatively young customer base. The majority of respondents (60%) were male, and 40% were female. The average score for customer satisfaction was 4.1 out of 5, indicating high satisfaction levels among the customers. The average score for loyalty was 4.0 out of 5, suggesting that a substantial portion of the customers are loyal to Melli Bank. Additionally, the average score for digital banking features was 4.2, reflecting the effectiveness and popularity of the bank's digital services.

The hypothesis testing involved analyzing the relationships between the variables using Spearman's correlation coefficient and regression analysis. The first hypothesis (H1), which proposed that there is a significant positive relationship between the quality of digital banking features and customer satisfaction, was supported by a strong positive correlation ($\rho = 0.68$, $p < 0.05$). This indicates that as the quality of digital banking features improves, customer satisfaction increases significantly.

The second hypothesis (H2), which proposed that customer satisfaction has a significant positive impact on customer loyalty, was also supported by a strong positive correlation ($\rho = 0.75$, $p < 0.05$). The regression analysis further confirmed that customer satisfaction is a significant predictor of customer loyalty, explaining 48% of the variance in loyalty ($R^2 = 0.48$). These results validate the hypotheses and demonstrate that improving digital banking features and customer satisfaction can significantly enhance customer loyalty.

Given the significant positive relationship between digital banking features and customer satisfaction, Melli Bank should focus on continuously improving and innovating its digital banking services. This could include enhancing mobile banking applications, providing more user-friendly interfaces, and ensuring that digital services are reliable and secure. Regularly updating digital features to meet customer needs and preferences will likely increase satisfaction levels, leading to better overall customer experiences.

Since customer satisfaction has been shown to significantly impact customer loyalty, Melli Bank should prioritize strategies that enhance customer satisfaction as a pathway to fostering greater loyalty. This could involve personalized banking experiences, efficient customer support, and loyalty programs that reward satisfied customers. By investing in customer satisfaction initiatives, Melli Bank can build a loyal customer base that is more likely to stay with the bank long-term and promote it through word-of-mouth recommendations.

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