Marketing Science & Practice Journal
Volume 01, Issue 01 (2026)
Page No: 61-83

Article

The Effectiveness of Marketing Strategies in Enhancing the Adoption of Intelligent Chatbots in Jordanian Islamic Banking Applications

Omar B. Bani Kinana[1] Amal Salama Al Sarhan[2]

[1] Department of Data Science, School of Architecture, Computing and Engineering, University of East London, London, UK., Email: Omarbk91999@gmail.com

[2] Putra Business School, University Putra Malaysia, Malaysia, Email: pbs25204221@grad.putrabs.edu.my

Citation: Bani Kinana, O. B., & Al Sarhan, A. S. (2026). The effectiveness of marketing strategies in enhancing the adoption of intelligent chatbots in Jordanian Islamic banking applications. Marketing Science & Practice Journal, 1(1), 60–83.

Received: 8 February 2026

Revised: 14 March 2026

Accepted: 24 April 2026

Published: 2 May 2026

JEL classification: M31, M15, G21

Abstract

This research is focused on assessing the impact of marketing tools on increasing the likelihood of using intelligent chatbots in Jordanian Islamic banking applications, combining both the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB). For the purpose of gathering evidence, a quantitative research design was used, with data collected via an online survey among Islamic bank clients (n=348). Structural equation modeling based on SmartPLS was utilized for testing the formulated hypotheses. The analysis found that marketing variables, including marketing campaign attractiveness, credibility of marketing communication, clear benefits perception, and marketing information availability, have a significant positive impact on the customer's intention to use chatbots. The latter variable proved highly predictive of behavioral adoption as well. Particularly, marketing information availability turned out to be the strongest predictor among all other marketing variables. In other words, having sufficient access to relevant information allows reducing the users' uncertainty and increasing their control, thus encouraging the desired behavior. The present paper is a valuable contribution to the existing literature since it expands existing technology adoption theories by adding marketing variables in a TAM-TPB model. Furthermore, it brings some insights into a scarcely researched area of Islamic banking in Jordan.

Keywords: Technology Acceptance Model, Theory of Planned Behavior, Attractiveness of Marketing Campaigns, Perceived Credibility of Marketing Communications, Clarity of Perceived Benefits.

1. Introduction

The development of digital technologies has caused significant changes in the banking sector in recent years. In particular, mobile apps and solutions based on artificial intelligence (AI) are widely used nowadays in order to ensure convenient and fast services. It should be noted that digital banking services are experiencing rapid growth in the Levant region, including Jordan (Matthews et al., 2023). Additionally, Islamic banking institutions have experienced significant development, having achieved high asset growth and a strengthened position in the market (ALRashdan et al., 2025). Thus, they have had to introduce innovative technological products, such as intelligent chatbots, in order to engage customers and increase competitiveness (Al-khawaja et al., 2025; Abubaker et al., 2024).

However, in contrast to conventional banking institutions, Islamic banks operate under specific conditions since they follow certain principles dictated by Sharia (Islam, 2024). These ethical norms can cause complications when introducing novel technologies since customers' expectations may be affected by religious norms, and thus, the process becomes more complicated. Therefore, chatbots used by these organizations should provide high-quality services while being able to adhere to the rules of behavior set forth by the religion. Hence, chatbots need to provide users with appropriate financial advice in line with Islamic ethics (Harun et al., 2024; Khoso & Pathan, 2025).

In general, it can be claimed that chatbots are valuable technological tools because they ensure prompt service delivery and reduced operational expenses (Kumar et al., 2023; Venkata, 2024). The introduction of chatbots allows banks to ensure constant interaction with customers. However, successful implementation of this innovation is possible only through a set of strategic measures, which will help overcome customer resistance and ensure proper communication.

It should be noted that effective marketing activities can serve as a powerful tool in fostering a positive attitude towards new technologies. Indeed, previous studies have found that marketing campaigns can positively impact the customer's intention to use innovations by providing sufficient information about their advantages (Alghizzawi et al., 2024; Shaikh et al., 2023). In addition, marketing campaigns aimed at specific customers can help improve communication and encourage technology adoption (Ok et al., 2024). In the context of Islamic banking, marketing campaigns play an especially important role as they allow building credibility and enhancing customer trust in technological products.

Despite numerous studies dedicated to technology adoption in banking, some knowledge gaps still remain. For instance, most studies are devoted to the role of technological features in technology adoption, whereas very few authors analyze the effects of marketing strategies. Additionally, the current state of research does not provide a complete understanding of the factors affecting user behavior as the majority of researchers employ either TAM or TPB. Moreover, the field of Islamic banking is understudied, especially when it comes to technology adoption.

In this case, the main research gap to be addressed in this study is insufficient knowledge about the role of marketing strategies in chatbot adoption in Islamic banking. Specifically, it is necessary to determine the relationship between marketing-related variables and customers'

intention to use chatbots (ITU) as well as the actual adoption of this technological innovation. To fulfill this objective, the present research is going to integrate TAM and TPB frameworks to explore the effect of attractiveness of marketing campaigns, marketing communications credibility, perception of benefits, and the availability of information on customers' intentions.

Therefore, the present study will address the following research question: To what extent do marketing strategies influence customers' intention to use and adopt intelligent chatbots in Jordanian Islamic banking applications?

This research seeks to provide several contributions to the existing body of literature. First, the present paper will contribute to theoretical frameworks by examining TAM and TPB together and incorporating marketing-related constructs. Second, it will offer empirical insights into the topic of technology adoption in Jordanian Islamic banking. Third, the research findings will be useful for banks seeking effective marketing strategies.

2. Literature Review

2.1 Chatbot Adoption in Financial Services

Integrating AI technologies into various aspects of business operations has become an inevitable trend in many industries. In financial services, intelligent chatbots have emerged as a vital component of digital banking. The ability of chatbots to facilitate natural language processing and employ machine learning techniques has enabled financial organizations to improve customer service and optimize their operations (Hultberg et al., 2024; Ortiz-Garces et al., 2024). Recent industry trends suggest that the rate of chatbot adoption in the banking sector is increasing (Hossain et al., 2025).

In general, chatbot implementation within the banking sector is associated with several important advantages. For example, using chatbots may help to reduce service costs, accelerate response times, and increase financial service availability (Kumar et al., 2023; Venkata, 2024). Moreover, chatbots have the potential to personalize customer experience by generating personalized recommendations based on personal user data (Dewasiri et al., 2024). As a result, chatbots have become an effective tool that may be used to enhance customer satisfaction and increase competitiveness.

As far as Islamic banking is concerned, chatbots can offer additional advantages because customers' behavior within these financial systems depends largely on their value orientation. Therefore, apart from providing useful services, chatbots in the Islamic banking sector should be consistent with certain value principles such as transparency, fairness, and trustworthiness (Arsyad et al., 2025). In other words, chatbots in the Islamic financial environment are to go beyond technological features to align with contextual requirements.

2.2 Technological and Behavioral Models of Chatbot Adoption

Technology adoption in recent decades has attracted considerable academic attention. The primary theoretical models used to explain how people adopt innovative technologies include the Technology Acceptance Model (TAM) that relies on the concepts of perceived usefulness and perceived ease of use (Davis, 1989), and the Theory of Planned Behavior (TPB) that adds such important constructs as attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991).

Empirically, both models prove highly useful in explaining users' behavior and decision-making in terms of adopting innovative technology solutions. For instance, the role of perceived usefulness and perceived ease of use in digital banking was confirmed in studies analyzing the adoption of innovative technologies such as mobile banking (Alalwan et al., 2017). Similarly, empirical research relying on the TPB found that such behavioral aspects as social influence and perceived behavioral control have significant effects on technology adoption (Musa et al., 2024).

Despite the proven effectiveness of TAM and TPB models, there exist some limitations in using these theories to explain users' behavior and adoption decisions. Most previous studies treat these theories separately from each other, thus ignoring the possible interactions between cognitive and behavioral factors (Davis, 1989). Another drawback of current research is related to the focus on system-related characteristics of the technologies and overlooking communication strategies implemented during marketing campaigns.

2.3 Role of Marketing Strategies in Technology Adoption

It is generally accepted that marketing strategies play an important role in technology adoption. When it comes to digital banking environments, it becomes obvious that customers require comprehensive and reliable information about technological innovation before making their adoption decision (Alghizzawi et al., 2024; Shaikh et al., 2023).

Previous research reveals that well-conceived marketing strategies are instrumental in helping customers develop a favorable attitude towards technological products or services (Giannakopoulos et al., 2024). Attractive marketing communication is particularly important because it may affect users' emotions and increase the likelihood that customers choose certain technologies (Royo-Vela et al., 2024). Perceived credibility of marketing communication plays an equally important role in increasing customers' trust in technological systems (Royo-Vela et al., 2024).

Finally, it becomes necessary to take into account the clarity of benefits communicated to customers as a key factor influencing perceived usefulness (Rahi et al., 2019). Ease of access to information about innovative technology is also important because it affects users' perceived ease of use and perceived behavioral control (Rahi et al., 2019).

2.4 Research Gap and Theoretical Contributions

Even though existing literature provides valuable insight into the process of chatbot adoption and explains the underlying mechanisms, there are still some issues that need addressing. Firstly, it is evident that the role of marketing strategies in technology adoption is understated, with researchers focusing mostly on technological determinants. Thus, there exists a research gap associated with understanding how external variables (such as marketing communication) influence the initial phase of technology adoption.

Secondly, the lack of integration of TAM and TPB theories prevents researchers from building a theoretically robust model of technology acceptance that could incorporate all determinants of customers' behavior. In addition, it seems important to conduct empirical studies in specific settings (e.g., the Islamic banking sector in emerging economies) to gain further insight into the nature of technology adoption in those contexts.

Therefore, it seems feasible to combine existing theories (including marketing variables) to explain the phenomenon of chatbot adoption. Specifically, the proposed study aims at building a model that incorporates TAM and TPB theories as well as marketing constructs that have proved effective in explaining customers' adoption decisions.

By building the integrated theoretical model, the researcher attempts to make the following contributions. On the one hand, incorporating marketing variables will increase the explanatory power of the model. On the other hand, it will allow examining chatbot adoption comprehensively. Finally, the researcher aims to gain empirical insights into technology adoption within the Islamic banking context in Jordan.

3. Theoretical Framework and Development of Hypotheses

The existence of a strong theoretical framework for evaluating customer intention to adopt a particular intelligent technology cannot be underestimated. More specifically, it is important to incorporate into the research the relationship between the cognitive processes of evaluation and subsequent behavioral intentions of the users. In this regard, the TAM and TPB serve as a strong background for discussing the process of technology adoption among customers (Sasidharan & Venkatakrishnan, 2024; Wei et al., 2025). Although TAM focuses on the evaluation of certain technology based on users' perceptions of usefulness and ease of use, TPB expands the scope of discussion by adding attitudes, subjective norms, and perceived behavioral control as influential factors.

It can be said that by combining TAM and TPB models, one can create a multidimensional conceptual basis for understanding consumer behavior and predicting future intentions in the context of adopting innovations. TAM allows exploring how consumers evaluate certain technology in terms of its functionalities and ease of use. Simultaneously, TPB sheds light on how these factors and perceived attitudes in general contribute to the formation of intentions and behaviors of the target population (Musa et al., 2024; Yildirim & Ayar, 2024). Thus, through a combination of these frameworks, one can explore consumer intentions not only in relation to his/her cognitive perceptions but also as an outcome of external communication and contextual factors.

In the context of adoption of intelligent chatbots (AIC) by the customers of Islamic banking organizations, the influence on the process of adopting the innovation can come from external stimuli associated with marketing and branding efforts. For this reason, it was decided to extend TAM and TPB models with four new constructs reflecting marketing-related aspects of the process in question: attractiveness of marketing campaigns (AMC), perceived credibility of marketing communications (PCMC), clarity of perceived benefits (CPB), and ease of access to marketing information (EAMI).

As follows from the above explanations, CPB and EAMI correspond to the constructs of perceived usefulness and perceived ease of use from TAM. More specifically, when marketing campaigns manage to inform consumers about the benefits of using chatbots in their daily lives, these technological systems become more useful and relevant. Similarly, when consumers find out information on chatbots from different channels, they become easier for use due to a lower amount of effort to learn the technology itself (Davis, 1989; Alalwan et al., 2017). Both of these components play a critical role in shaping attitudes.

When focusing on the TPB approach, it becomes evident that both AMC and PCMC have impacts on attitude and subjective norms. Namely, attractive marketing campaigns are likely to shape the favorable attitudes of consumers toward chatbots. Furthermore, credible marketing communications help to build trust toward a particular innovation, thus influencing intentions to adopt the technology in question (Dawood et al., 2022; Shaikh et al., 2023). Besides, it is possible that the credibility of marketing communication plays a critical role in forming subjective norms because of the alignment of marketing messages with socially expected behaviors in banking organizations.

Finally, the construct of perceived behavioral control in TPB also finds representation in the concept of EAMI. Specifically, when a person knows that he/she can receive necessary information and instructions on how to use chatbots, he/she perceives this factor as controllable, which contributes to the increased intention of adopting this technology (Rahi et al., 2019).

As mentioned above, despite operating in a value-driven environment and following the principles of Sharia law, the study does not involve the exploration of constructs directly linked to religiosity. However, certain elements of religious life, such as ethical and trust-related factors, might be covered in the context of PCMC. Therefore, any discussions of religiosity in the research should be considered cautiously.

Based on the above theoretical framework, this study seeks to show how marketing activities of organizations shape customers' ITU in banking by changing cognitive perceptions (based on TAM) and behavior-related constructs (based on TPB). Figure 1 shows the study model.

3.1 Attractiveness of Marketing Campaigns

The attractiveness of marketing campaigns targeting Islamic banking customers influences customer intent to use intelligent chatbots in Islamic banking applications (Bhatnagr et al., 2024). When customers are exposed to attractive and professional marketing campaigns, they perceive the value that intelligent chatbots offer in providing quick answers to their questions, which enhances their positive attitude toward these bots (Alt et al., 2021; Marak et al., 2025; Elareshi et al., 2023). This is evident when these campaigns offer innovative content with a clear message based on images, videos, or graphics, which encourages customers to interact with these campaigns (Roman, 2021).

Bhatnagr et al. (2024) found that the perceived embodiment and personalization of marketing campaigns has a positive impact on the online customer experience and influences customers' ITU. Marak et al. (2025) found that enjoyment motives, performance expectations, and social influence positively impact behavioral intentions to adopt chatbots among Generation Z, while Marak et al. (2025) confirmed that social influence influences older age groups in shaping behavioral intentions to adopt chatbots. Another research indicated that promotion campaigns' perceived usefulness obviously affects the AIC in banking industry (Alt et al., 2021). This embodies the characteristics and qualities, which the TAM and TPB reflect, since the two theories inspect the perceived benefits and customers' attitudes toward utilizing the recent technologies (Marak et al., 2025; Bhatnagr et al., 2024; Alt et al., 2021). This means that when the marketing campaigns become positively attractive, the bank clients' perceived benefits can simultaneously thrive. Based on the above, the following hypothesis is surely concluded:

H1: *There is a statistically significant positive relationship between the attractiveness of marketing campaigns and customer intent to use chatbots in Islamic banking applications.*

3.2 Perceived Credibility of Marketing Communications

According to the TAM and TPB, there are many cognitive and emotive factors affecting the customers' intentions to utilize recent technologies. Those factors are mainly related to the customers' perceptions and attitudes. For example, the marketing communications' perceived credibility is considered an eminent agent, which largely influences the intentions to use the intelligent chatbots in Islamic banks. This is attributed to the perceived benefits, ease of access, normative beliefs, personal motivations, and behavioral control as well. This accentuates that high credibility supports the expected benefits and, consequently, improves the behavioral control (Marak et al., 2025; Shaikh et al., 2023; Dawood et al., 2022). In an elaborate research conducted at Prince Sattam Bin Abdulaziz University, the findings highlighted that safety, convenience, user interface, and content trustworthiness can vividly impact the customers' decision, during experiencing an emerging technology (Shaikh et al., 2023). Another research expressed that performance and effort expectancy and effectiveness, cost value, and hedonic motivation fundamentally affect the behavioral intention to use the digital services (Alalwan et al., 2017; Yaseen et al., 2022). This confirms that perceived credibility, which the performance alignment, effort expectancy, and cost value create, actually influences the clients' intentions to use chatbots. From the above results, the following hypothesis is settled:

H2: *There is a statistically significant positive relationship between the perceived credibility of marketing communications and customer intent to use chatbots in Islamic banking applications.*

3.3 Clarity of Perceived Benefits

The TAM demonstrates that personal attitudes toward adopting an exactly recent technology are related to the individuals' perceptions and opinions on the technology's benefits and ease of use (Marco & Arifin, 2024; Bara & Ali, 2025; Al-Jarrah et al., 2023). This elucidates the impact of perceived benefits' clarity and simplicity on the intentions to utilize intelligent chatbots in Islamic banks. One study found that customers' impressions and feelings toward the digital financial applications are deeply affected by perceived value and social norms, which, in turn, shape the clients' closing decisions (Xie et al., 2021). Another study emphasized that profitable benefits and applications' convenience provoke the positive outcomes that technologies can produce and, consequently, boost trust in technologies themselves, particularly within small and medium-sized enterprises (SMEs) (Saadah & Setiawan, 2024). In addition, the perceived benefits can excellently constitute the customers' behavioral intentions to utilize mobile services in Jordanian banks (Alalwan et al., 2016). This initiates the following hypothesis:

H3*: There is a statistically significant positive relationship between the clarity of perceived benefits and customer intent to use chatbots in Islamic banking applications.*

3.4 Ease of Access to Marketing Information

Information accessibility assesses the availability degree and the extent of ease of use, which marketing campaigns provide, particularly for customers who feel hesitant when experiencing the recent technologies for the first time. As illustrated, it is the role of such campaigns to facilitate using the digital tools and to also define the methods that encourage the clients to easily find the appropriate means, through several intelligible channels, such as social media platforms, instant messages, and e-mail (Alalwan et al., 2017; Rahi et al., 2019; Amin, 2007). It is notable to state that information accessibility resembles the perceived usefulness factor,

regarded as the main principle that shapes the TAM (Alt et al., 2021; Shaikh et al., 2023). This factor is also an almost effective indicator that drives the clients' intentions and perceptions toward technologies (Al-Momani & Al-Assaf, 2020). For instance, social media marketing efforts' perceived usefulness distinctly contributes to enhancing the customer loyalty. In parallel, the subsidiary effect resulting from the perceived ease of use also supports the technology integration (Alt et al., 2021). In addition, the performance expectations and effort expectancy truthfully influence the clients' behavioral intentions to use the mobile applications and fintech services (Xie et al., 2021; Alalwan et al., 2017). This is the main focus that the TAM and TPB build on in order to enhance the ease of access to resources and to also motivate the clients to use the most recent digital applications (Marak et al., 2025; Bhatnagr et al., 2024; Alt et al., 2021). As an anticipated consequence, the following hypothesis is formulated:

H4*: There is a statistically significant positive relationship between the ease of access to marketing information and customer intent to use chatbots in Islamic banking applications.*

3.5 Intention to Use Chatbots in Islamic Banking Applications

The combination of the TAM and TPB emphasizes that personal behavioral intentions to utilize an especially particular technology enhance and strengthen the integration process (Marak et al., 2025; Bhatnagr et al., 2024). The attractive marketing campaigns also offer an exceptionally higher level of credibility, which can fully satisfy the customers' requirements and aspirations. This facilitates shaping the ITU. The TAM considers that perceived benefits and ease of use contribute to establishing the behavioral intention to embrace an extremely recent technology, even if it faces fierce resistance (Marco & Arifin, 2024). The TPB carries an identical ideology, arguing that marketing campaigns stimulate the customer's attitudes, resulting in the technology acceptance (Al-Jarrah et al., 2023). Performance expectancy, effort expectations, positive feelings, motivation, cost value, and credence can additionally guide the personal intentions, which seriously affect the customers' willingness to accept the mobile services (Alalwan et al., 2017). Opinions and perspectives also matter, as they inspire the customers to employ e-governance utilities (Afrizal et al., 2024). Accordingly, the following hypothesis was proposed:

H5: *There is a statistically significant positive relationship between the intention to use and customer adoption of chatbots in Islamic banking applications.*

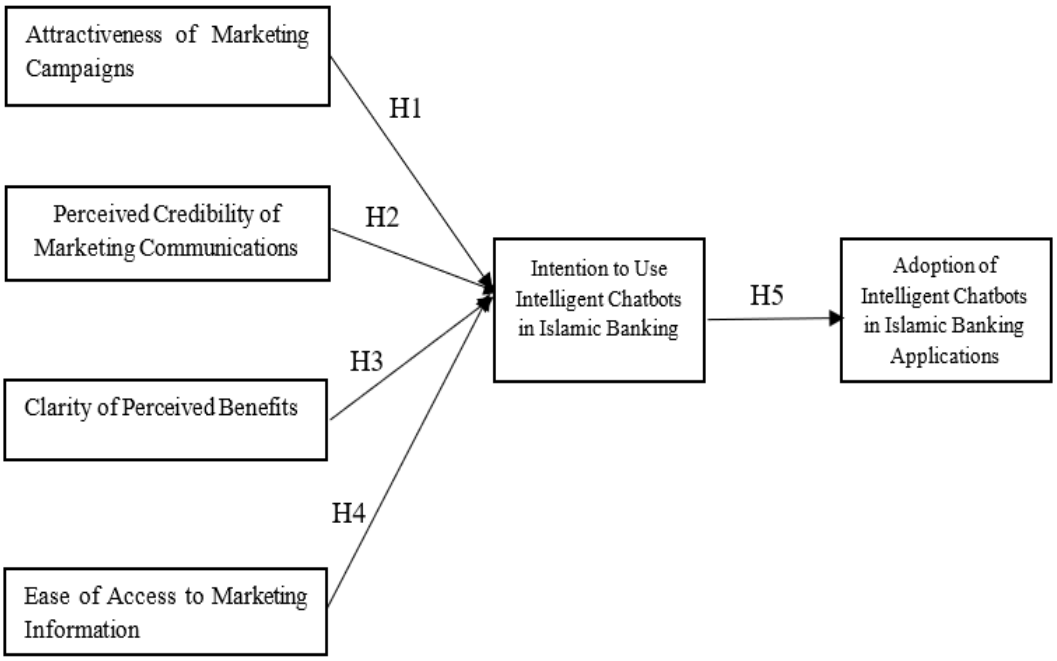

Figure 1 Study model

4. Methodology

This study explores the factors influencing the AIC, with a particular focus on Islamic banking applications in Jordan. To achieve this goal, a quantitative approach was applied, relying on primary data collected through an online questionnaire to test the previously formulated hypotheses.

4.1 Instrument Design

To achieve the research objectives, a questionnaire was used to collect data. It was developed based on previous literature, and some of its items were modified to suit the research context. The questionnaire was constructed using a five-point Likert scale ranging from strongly agree = 5 to strongly disagree = 1. It was also peer-reviewed by five experts to ensure that the questions measured what they were supposed to measure and were appropriate and easy for respondents to understand.

Four items were used to measure AMC, PCMC, CPB, and ITU, which were taken from the studies of Sholihah et al. (2025), Davis (1989), Alalwan et al. (2017), Al-Nashmi and Almamary (2017), Alam (2019), Hati and Idris (2017), Rahi et al. (2019), and Amin (2007), while three dimensions were used to measure both AIC and EAMI, which were taken from Alalwan et al. (2017), Rahi et al. (2019), Amin (2007), and Davis (1989).

The questionnaire also included six demographic questions: Gender (Male = 1, Female = 2), Age (18–24 = 1, 25–34 = 2, Over 35 = 3), Education Degree (High School/Diploma = 1, Bachelor = 2, Master = 3), Employment Status (Employed (Part-time/Full-time) = 1, Self-employed = 2, Unemployed (Student/Housewife/Retired) = 3), Bank Account Type (Personal account = 1, Corporate/Business account = 2), Frequent use of the banking application (Daily = 1, Weekly = 2, Monthly = 3, Annually = 4).

4.2 Sample

The target population of the current study consists of the clients of Islamic banks in Jordan who use mobile banking apps and are 18 years or older. This population was specifically selected because it is the primary group of people being exposed to banking and marketing practices concerning intelligent chatbots. In accordance with the research goal, purposive sampling was used to select the respondents who had experience using banking apps and services associated with chatbots. This method is suitable for cases where there is a need for subjects meeting particular criteria that are appropriate for the research setting, especially in technology adoption studies (Etikan et al., 2016).

Respondents were expected to be familiar with either marketing strategies or chatbot services within Islamic banks. This selection criterion was critical since it ensured that participants' answers were based on their real-life experiences with the topic at hand and not assumptions. A total of 460 questionnaires were administered during data collection, out of which only 348 surveys were eligible for analysis, translating to a response rate of 75.65%. This number of survey participants is sufficient for structural equation modeling (SEM) analysis (Hair et al., 2017).

4.3 Data Collection Methods

The data for this research study were collected using an electronic questionnaire. Two major mediums for this were used to maximize the response rate and respondent diversity. Firstly, the survey was posted online using social networking sites such as LinkedIn for those involved in banking services. Secondly, a face-to-face distribution was used by conducting field visits to increase respondents who do not use internet.

The survey was written in both languages – English and Arabic. Firstly, each question was composed in English language and then translated into Arabic. In order to verify whether all the questions have been translated accurately, back translation was performed with the help of professional translators.

As a preparatory phase before carrying out the major data collection, a pilot study was undertaken for testing the reliability and clarity of survey. As revealed by Cronbach's Alpha statistics, the reliability coefficient varied between 0.78 and 0.93, indicating a very high level of consistency among the measurement scales (Nunnally, 1978).

The ethical aspects of conducting this research study were considered in every step. Ethical clearance was obtained from the institute before beginning the survey. It was completely voluntary for respondents to take part in the study. They were fully briefed about the purpose of the study and its confidentiality nature. They had the right to withdraw from the study anytime if they wished to do so.

4.4 Measurement of Variables

The measures used for the current analysis were adopted from the previous studies that have tested the reliability and validity of these scales. The constructs under investigation include the AMC, PCMC, CPB, EAMI, ITU, AIC. To measure each construct, different measures were selected from the previous literature, such as Davis (1989), Alalwan et al. (2017), Rahi et al. (2019), Amin (2007), among others. All selected items were slightly changed in terms of the wording but not in terms of conceptualization to adjust them to the topic of research (Islamic

banking and chatbots). The adjustment of the items based on the previous studies is recommended as the best practice in conducting quantitative analysis.

All items were measured on the five-point Likert scale, ranging from one (strongly disagree) to five (strongly agree). This type of scale is frequently used in behavioral studies as it allows capturing differences in perceptions and attitudes of participants. The choice of measures is appropriate considering the theoretical model presented by authors, where marketing-related constructs represent external variables influencing the users' perceptions and intentions.

5. Results

A total of 348 responses were used to test the hypothesized model. Table 1 shows the respondents' characteristics and attributes.

Table 1: Profiles of respondents

Questions	Answers	Frequency	Percent	Cumulative Percent
Gender	Male	127	36.5	36.5
	Female	221	63.5	100.0
	Total	348	100.0	
Age	18-24	74	21.3	21.3
	25-34	198	56.9	78.2
	More than 35	76	21.8	100.0
	Total	348	100.0	
Education Degree	High School/Diploma	42	12.1	12.1
	Bachelor	170	48.9	60.9
	Master	136	39.1	100.0
	Total	348	100.0	
Employment Status	Employed (Part-time/Full-time)	167	48.0	48.0
	Self-employed	58	16.7	64.7
	Unemployed (Student/Housewife/Retired)	123	35.3	100.0
	Total	348	100.0	
Bank Account Type	Personal account	301	86.5	86.5
	Corporate/Business account	47	13.5	100.0
	Total	348	100.0	
Frequent Use of the Banking Application	Daily	185	53.2	53.2
	Weekly	80	23.0	76.1
	Monthly	55	15.8	92.0
	Annually	28	8.0	100.0
	Total	348	100.0	

Table 2 provides valuable information about the effectiveness of marketing strategies in adopting chatbots in Islamic banking applications. Islamic bank customers expressed that the marketing campaigns for these bots are attractive (mean = 4.1731), in addition to their belief in the credibility of these campaigns and their confidence in the bank's commitment to transparency and honesty (mean = 3.9655). Customers also explained that the marketing campaigns clearly express the benefits that they can obtain if they adopt chatbots (mean = 3.7859). Moreover, customers expressed admiration for the ease of accessing information about chatbots through marketing campaigns (mean = 3.8956). Accordingly, Islamic bank customers

confirmed their strong intention to use the chatbot provided by Islamic banks in their banking transactions (mean = 4.0704). Islamic bank customers also confirmed their adoption and intention to continue using these bots (mean = 4.2021), which indicates that AMC, PCMC, CPB, and EAMI influence bank customers' intentions to use chatbots, and these intentions in turn influence the actual adoption of these bots.

Table 2: Descriptive analysis of variables

Descriptive Statistics	N	Min	Max	Mean	Std. Dev	Skewness	Kurtosis
AMC	348	1.00	5.00	4.1731	0.67239	-1.051	1.745
PCMC	348	1.00	5.00	3.9655	0.71135	-1.028	2.099
CPB	348	1.00	5.00	3.7859	0.79498	-0.581	0.430
EAMI	348	1.00	5.00	3.8956	0.76567	-0.766	0.956
ITU	348	1.00	5.00	4.0704	0.61478	-1.130	3.692
AIC	348	1.00	5.00	4.2021	0.68305	-1.107	2.610
Valid N (list-wise)	348						

Table 3 illustrates the evaluation of the measurement model through examining reliability, convergent validity, and discriminant validity according to Hair et al. (2017). Composite reliability (CR), Cronbach's alpha, outer loadings, and average variance extracted (AVE) values were used. CR values ranged between 0.858 and 0.917, indicating that all variables exceeded the proposed threshold of 0.80 according to Chin and Gopal (1995). Cronbach's alpha confirmed the reliability of the internal consistency of the variables, with values ranging between 0.781 and 0.864, exceeding the proposed threshold of 0.70 according to Nunnally (1978). Accordingly, the scales demonstrated acceptable internal consistency. Convergent validity was then assessed using two methods, starting with outer loadings to verify the correlation between the relevant constructs and confirming the significance of the item loadings, with values ranging between 0.730 and 0.905, exceeding the proposed threshold of 0.70 according to Hair et al. (2017), indicating that the indicators contribute significantly to measuring their latent variables. The AVE values for each construct were then verified, with values ranging between 0.602 and 0.786, all of which are higher than the proposed threshold of 0.50 according to Chin (2010), indicating that the scale has achieved concurrent validity.

Table 3: Standardized factor loadings, AVE and CR

Cronbach's α	Indicators	Outer loadings	CR	AVE
0.848	**AMC1**	0.846	0.897	0.686
	AMC2	0.878		
	AMC3	0.820		
	AMC4	0.767		
0.815	**PCMC1**	0.770	0.879	0.645
	PCMC2	0.843		
	PCMC3	0.846		
	PCMC4	0.750		
0.829	**CPB1**	0.761	0.886	0.660

	CPB2	0.775		
	CPB3	0.850		
	CPB4	0.859		
0.864	**EAMI2**	0.905	0.917	0.786
	EAMI3	0.889		
	EAMI4	0.865		
0.781	**ITU1**	0.819	0.858	0.602
	ITU2	0.785		
	ITU3	0.730		
	ITU4	0.767		
0.818	**AIC2**	0.812	0.891	0.733
	AIC3	0.866		
	AIC4	0.888		

The correlation matrix indicates that there are significant correlations between the factors influencing the adoption of chatbots in Jordanian Islamic banking applications as shown in Table 4. ITU shows the strongest correlation with EAMI (0.707**), which indicates the importance of accessing information about chatbots through marketing strategies. In addition, ITU showed a positive correlation with CPB (0.608**), PCMC (0.565**), and AMC (0.562**), indicating that the attractiveness of marketing strategies, the expected benefits from them, and the ease of access to marketing information lead to shaping the intentions of bank customers to use chatbots. While the AIC showed the strongest correlation with AMC (0.633**), indicating that attractive marketing campaigns contribute to customer adoption of chatbots, the results also showed a good correlation between the AIC and PCMC (0.509**) and ITU (0.543**), indicating that the perceived benefits of marketing campaigns contribute to building the intention to use chatbots, and this intention, in turn, contributes to customer adoption.

Linear correlation tests were conducted using VIF analysis. The results, which ranged from 1.000 to 1.995 (mean = 1.616), showed the absence of multicollinearity and were below the minimum threshold of 10 (Groß, 2003) or 5 (Imdadullah et al., 2016). This indicates that the predictor variables are independent, enhancing the flexibility of the model.

Table 4: Correlation and collinearity analysis

Correlations							
	AMC	**PCMC**	**CPB**	**EAMI**	**ITU**	**AIC**	**VIF**
AMC	1						1.818
PCMC	0.588**	1					1.995
CPB	0.388**	0.599**	1				1.897
EAMI	0.338**	0.534**	0.632**	1			1.368
ITU	0.562**	0.565**	0.608**	0.707**	1		1.000
AIC	0.633**	0.509**	0.378**	0.369**	0.543**	1	
**. Correlation is significant at the 0.01 level (2-tailed).							

The heterogeneous trait-to-monotypic ratio (HTMT) and the Fornell-Larcker criterion were used to assess the discriminant validity of the constructs. As shown in Table 5, the HTMT values

ranged from 0.388 to 0.878, which is below the critical threshold of 0.9, indicating that discriminant validity was established (Henseler et al., 2015). The results of the Fornell-Larcker criterion showed that the square roots of all AVE values were higher than the estimated correlation between the constructs. Therefore, the results met all the necessary conditions for determining the reliability and validity of the measurement model.

Table 5: Measurement model and discriminant validity

Heterotrait-monotrait ratio (HTMT)							Fornell-Larcker criterion					
	AIC	AMC	CPB	EAMI	ITU	PCMC	AIC	AMC	CPB	EAMI	ITU	PCMC
AIC							**0.856**					
AMC	0.464						0.393	**0.829**				
CPB	0.645	0.619					0.526	0.521	**0.813**			
EAMI	0.721	0.388	0.596				0.603	0.339	0.512	**0.886**		
ITU	0.878	0.718	0.704	0.692			0.726	0.581	0.569	0.582	**0.776**	
PCMC	0.414	0.781	0.716	0.394	0.709		0.337	0.643	0.584	0.332	0.557	**0.803**

5.1 Structural model

The SEM analysis in Table 7 shows a statistically significant relationship between the factors influencing effective marketing strategies (AMC, PCMC, CPB, and EAMI) and the ITU in Jordanian Islamic banks. Furthermore, a statistically significant relationship was found between ITU and AIC. The results showed a positive effect of ITU on AIC ($\beta = 0.726$, $t = 21.461$, $p = 0.000$), indicating the ability of intention to use in shaping the adoption of chatbots. This is followed by the effect of EAMI on ITU ($\beta = 0.359$, $t = 7.704$, $p = 0.000$), indicating the ability of customers' easy access to information related to chatbots through marketing campaigns to shape the intention to use chatbots in Jordanian Islamic banks. This is followed by the effect of AMC on ITU ($\beta = 0.270$, $t = 4.203$, $p = 0.000$), indicating that marketing campaigns with engaging content entice customers to learn about chatbots, which increases their intention to use them. This is followed by the effect of PCMC on ITU ($\beta = 0.184$, $t = 2.611$, $p = 0.009$), indicating that the perceived credibility of marketing campaigns among bank customers leads to increased intention to use these bots. This is followed by the effect of CPB on ITU ($\beta = 0.137$, $t = 2.268$, $p = 0.023$), indicating that marketing campaigns that offer clear, perceived benefits influence the intention to use chatbots. Figure 2 shows the results of the study model.

Table 6: Hypotheses assessment

Hypotheses	Standardized coefficient (β)	T-statistics (t-value)	Standard errors	P values	Decision
AMC → ITU	0.270	4.203	0.064	0.000	Supported
PCMC → ITU	0.184	2.611	0.071	0.009	Supported
CPB → ITU	0.137	2.268	0.061	0.023	Supported
EAMI → ITU	0.359	7.704	0.047	0.000	Supported
ITU → AIC	0.726	21.461	0.034	0.000	Supported

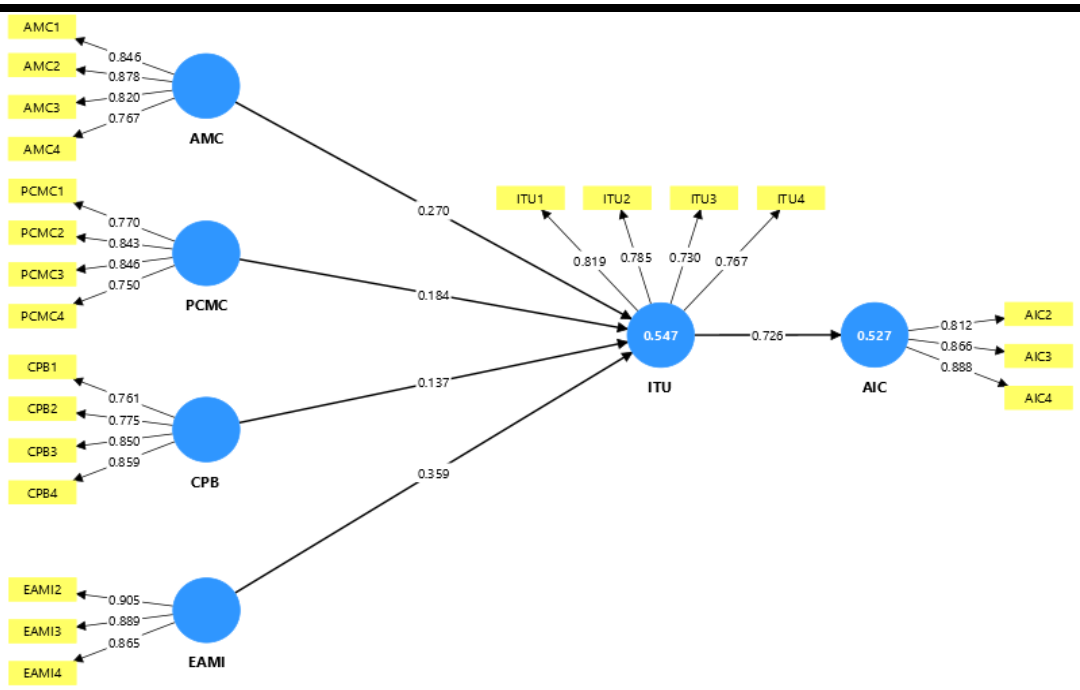

Figure 2: Results of the research model

6. Discussion

The findings obtained through this study will provide valuable insights into the mechanisms through which marketing strategies affect the adoption of intelligent chatbots in Jordanian Islamic banking applications. Contrary to merely supporting preexisting hypotheses, the current findings identify the relative strength of specific marketing-related constructs and explain how they impact user perception and behavioral intentions in the context of technological advancement and value-oriented considerations.

A major finding of this study is that all investigated marketing constructs – specifically AMC, PCMC, CPB, and EAMI – significantly affect customers' intention to adopt chatbots. Most notably, however, EAMI proved to exert the strongest effect out of those four variables, which means that information availability plays a more crucial role in determining the success of chatbot adoption than the persuasive or aesthetical quality of marketing campaigns.

This can be explained from two different theoretical perspectives: TAM and TPB. According to TAM, the availability of easily accessible information decreases users' perception of using chatbots as complicated or difficult to understand. Therefore, when customers have convenient access to all the necessary information about a chatbot's functions and purposes, they will find it easier to operate the service. Prior research supports this conclusion by pointing to perceived ease of use as one of the main predictors of technology adoption in digital banking environments (Davis, 1989; Alalwan et al., 2017).

On the other hand, according to TPB, EAMI signifies users' perceptions of having sufficient behavioral control over chatbot use. In other words, once clients have enough access to information regarding chatbots' potential uses, they feel confident enough to implement the technology in practice. Thus, this construct should have the greatest influence on behavioral intention, which has been shown to support similar findings in the field (Rahi et al., 2019).

Another possible explanation for the dominance of EAMI as a determinant of adoption intention lies in the very nature of chatbots. Namely, since they represent a new interactive approach in the digitalized banking sphere, customers may experience uncertainty in the process of using them. Hence, the need for information becomes paramount here. As a result, users pay more attention to obtaining clear information about chatbots' capabilities than to being attracted to them. Although marketing campaigns can be visually engaging (thus increasing AMC), they alone cannot facilitate chatbot adoption without sufficient information provision.

The current findings also show that ITU has a great influence on the adoption of chatbots and that this effect is significant. Therefore, in accordance with the hypotheses of the current paper, behavioral intention can be considered an influential determinant of users' actual adoption of technology. Moreover, since ITU proves to be such a powerful predictor, once a user forms a certain intention towards chatbot adoption, he/she is very likely to follow it.

The high explanatory power of ITU can be interpreted through the lens of both cognitive and behavioral aspects of technology adoption. On the one hand, according to TAM, ITU reflects users' perceived usefulness and ease of use of a technology. Hence, if a user finds chatbots useful and easy to manage, he/she will intend to adopt the technology in practice. On the other hand, according to TPB, ITU includes all three determinants of behavioral intention (Musa et al., 2024). This explains the strength of its impact.

Prior research on digital banking shows that behavioral intentions are among the most important drivers of adoption rates in this sphere (Dhanya & Ramya, 2025). At the same time, however, the strength of the observed correlation in the current study indicates that, within the context of Islamic banking, the intentionality of technology use may become a critical factor. Once the user perceives the technology as useful and safe, he/she is willing to use it regardless of additional efforts that may be required.

The results of this analysis prove that PCMC has a significant influence on users' adoption of chatbots. Such a conclusion supports prior literature findings showing that, within the scope of digital banking, trust in the source of information matters greatly. Customers' perceptions of credibility and transparency in marketing communications are directly related to their confidence and willingness to adopt the offered technology (Dawood et al., 2022; Shaikh et al., 2023).

Furthermore, the same applies to the CPB, which was found to positively affect ITU in this study. The necessity to inform users about the advantages of adopting intelligent technology has been recognized by numerous scholars as an essential precondition for successful promotion of such innovations (Alt et al., 2021). Therefore, when marketing campaigns effectively convey the practical benefits of chatbot use, customers are likely to find them useful.

At last, although AMC has been found to positively impact users' ITU to some degree, this relationship is not as strong as those involving other constructs. In other words, the visual attractiveness of marketing campaigns has a limited influence on customers' adoption decisions compared to other factors. Such a conclusion contradicts prior research on the influence of engaging marketing campaigns on technology adoption (Giannakopoulos et al., 2024). Nevertheless, it supports the claim that, within the scope of banking, information provision is more important than entertaining content.

Thus, the current findings show that marketing activities are capable of influencing the adoption of chatbots through several mechanisms at once. These mechanisms include, but are not limited to, users' assessments of perceived information, credibility, and usefulness of technology. Hence, TAM and TPB offer a convenient framework for interpreting the identified phenomena.

Finally, despite the fact that this study focuses on Islamic banking, it is evident that the identified influence is determined by common factors such as credibility and information availability. Ethical concerns and contextual issues might affect customer expectations indirectly through such constructs as credibility and trust.

7. Implications

7.1 Theoretical Implication

The theoretical implications linking the effectiveness of marketing strategies and the adoption of chatbots in Islamic banking applications play an important role in bridging the knowledge gap. This integration of TAM and TPB helps explain customer adoption of smart technologies in Islamic banks. This integration is rare in the Islamic literature, as the literature often uses each model separately. Furthermore, marketing variables (AMC, PCMC, CPB, and EAMI) commonly used in marketing research in another context, technology adoption, are added and combined with TAM and TPB, with a focus on religious values, providing an important theoretical contribution. Furthermore, PCMC is highlighted as derived from Islamic Sharia principles such as honesty, transparency, and trustworthiness, which in turn links the religious value aspect of Muslim consumer behavior. Combining these variables with TPB adds further theoretical depth. In addition, the study expands the literature on consumer behavior in the Islamic context by clarifying how Muslim consumers are influenced by marketing strategies and how this is reflected in their adoption of technology when the marketing message is based on religious values.

7.2 Practical Implications

The practical implications associated with the effectiveness of marketing strategies and their impact on the intention to use and adopt chatbots in Islamic banking applications play a pivotal role in improving many practical aspects. The study results indicate a positive influence between AMC, PCMC, CPB, and EAMI on the adoption of chatbots in Islamic banking applications, and that the ITU also positively influences the adoption of chatbots in Islamic banking applications. Based on these findings, marketing managers in Islamic banks can focus on the appeal of marketing campaigns through attractive visual content (videos, images, and graphics), simplifying advertising language, and highlighting religious values in these campaigns. Furthermore, managers can focus on building user trust by emphasizing the credibility of marketing campaigns, ensuring that these campaigns are free of exaggeration and explicit references to Sharia compliance. Furthermore, marketing managers should also ensure that marketing campaigns explain in simple language how chatbots can actually help customers (e.g., saving time through quick responses and Sharia-compliant security). Furthermore, managers and marketers should ensure that effective and accessible communication channels are available, such as websites, social media, messaging, and in-app guidance. Marketing campaigns should address these channels, as this factor has the strongest influence on intent. Furthermore, decision-makers in Islamic banks should leverage the research findings to design digital transformation strategies for Islamic banks by integrating AI in accordance with Sharia

principles, such as creating an AI chatbot to provide simple financial fatwas. This contributes to a long-term shift in consumer behavior toward the continued adoption of technology-based banking services, which in turn leads to improved customer service and builds loyalty.

8. Conclusion

This study attempts to examine the impact of marketing strategies on customers' intention to use smart chatbots in Islamic banking applications. Through the integration of TAM and TPB theories, it seeks to understand better how marketing-related factors affect the customers' decision-making process and cognitive perceptions of the new technology.

It was established that marketing strategies exert a great influence on the customers' intentions and decisions regarding adopting smart chatbots. The factors affecting the intention include the AMC, PCMC, CPB, and EAMI. Importantly, among all the listed factors, EAMI was demonstrated to be the most impactful driver, thus emphasizing its central importance.

Interestingly, it seems that the customers pay particular attention to the factors associated with marketing communication and information accessibility. In particular, compared to the attractiveness and perceived usefulness, the availability of credible information appears to be more influential.

Another finding of this study is the fact that the ITU is a strong predictor of the actual adoption rate. Since the core idea of both models under consideration involves intention being the main driver of usage, the positive correlation is quite logical. Therefore, in case customers have developed a good perception of the discussed technology due to marketing communication, its usefulness, and convenience, there are high chances for them to turn intentions into behavior.

From the theoretical point of view, the current study can be viewed as an important contribution to the body of knowledge, particularly concerning technology adoption theory. Although most of the research in this field considers only system-related factors, in fact, external communications can also greatly affect people's opinions and subsequent decisions. Moreover, this paper integrates TAM and TPB models and includes some marketing factors as external drivers.

An interesting aspect associated with the current research is the contextual factor involved. Indeed, unlike most other papers addressing technology adoption, this one deals specifically with Islamic banking. However, in the course of analysis, no religion-specific construct has been used explicitly, as the relevant impact is considered indirectly – through marketing credibility.

Finally, the paper can be viewed as a valuable contribution from the practical standpoint. According to the findings presented, banking professionals should pay close attention to marketing communication, as its quality and credibility seem to matter the most. Attractive marketing campaigns alone cannot guarantee success but should provide information to customers on how to actually use the service.

In conclusion, the results obtained in the course of the current study can be summarized as follows: Marketing communication is crucial in shaping the customers' perceptions of technology. Information accessibility becomes increasingly significant for consumers. The intention to use a product is a good predictor of behavior. Combining models can help explain various aspects of technology adoption. Islamic banking context adds value to the analysis.

9. Limitations and Future Research

This study offers recommendations for future research based on its limitations. This study focused on the dimensions of marketing, TAM, and TPB without incorporating independent or mediating variables that reflect religious aspects, such as Perceived Sharia Compliance, Islamic Ethical Trust, and Religiosity Level. Therefore, we recommend that future studies employ these factors as independent or mediating variables in the model adopted in this study. Furthermore, the study relied on a quantitative approach using a questionnaire, while future studies could adopt a qualitative approach through interviews or a mixed approach through interviews, focus groups, and questionnaires to reach more in-depth results. Furthermore, the current study focused on the Jordanian context only. Therefore, future studies could expand the study to include different Arab and Islamic countries to identify and compare cultural differences.

References

Abubaker, J. Y., Almajali, R. A., Alomari, K. F., & Eldabet, M. M. (2024). The Impact of Technology and Digital Applications on Organizational Performance in Jordanian Commercial Banks. *Pakistan Journal of Life & Social Sciences*, *22*(2). https://doi.org/10.57239/PJLSS-2024-22.2.00731

Afrizal, D., Luthfi, A., Wallang, M. B., Hildawati, H., & Ekareesakul, K. (2024). Citizens' Intention to Use E-Government Services in Local Government by Integrating UTAUT, TPB, and TAM Model. *Journal of Local Government Issues*, *7*(2), 129-143. https://doi.org/10.22219/logos.v7i2.32437

Alalwan, A. A., Dwivedi, Y. K., & Rana, N. P. (2017). Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. International journal of information management, 37(3), 99-110. https://doi.org/10.1016/j.ijinfomgt.2017.01.002

Alam, I. (2019). Interacting with Muslim customers for new service development in a non-Muslim majority country. Journal of Islamic Marketing, 10(4), 1017-1036. https://doi.org/10.1108/JIMA-06-2018-0111

Alghizzawi, M., Ahmed, E., Albanna, H., Alkhlaifat, B. I., & Jadu, K. (2024). The relationship between business intelligence and digital banking services in Jordanian Islamic banks. In *Islamic finance: New trends in law and regulation* (pp. 39-50). Cham: Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-48770-5_5

Al-Jarrah, M. F. M., khalaf Al Badarin, A. M., & Najeeb, N. S. (2023). Motives of Customer Adoption to Dealing with Jordanian Islamic Banks.

Al-khawaja, H., AbuBaker, S., & AlZu'bi, S. (2025). Financial Technology and its Role in Enhancing Digital Services in the Jordanian Commercial Banks. *Al-Basaer Journal of Business Research*, *1*(1). https://doi.org/10.71202/paper18

Al-Momani, M. M., & Al Assaf, K. T. (2020). The impact of marketing information systems on decision-making systems at Islamic international Arab bank in Jordan. Journal of Management Information & Decision Sciences, 23.

Al-Nashmi, M. M., & Almamary, A. A. (2017). The relationship between Islamic marketing ethics and brand credibility: A case of pharmaceutical industry in Yemen. Journal of Islamic Marketing, 8(2), 261-288. https://doi.org/10.1108/JIMA-03-2015-0024

ALRashdan, M. T., AlJabali, A. M. A., Alqudah, M. M., Akram, B., Jarah, F., & Alzoubi, M. E. M. (2025). The impact of financial technology applications on the expansion of Islamic banking services in Jordan. *Perinatal Journal*, *33*(1), 293-300. https://doi.org/10.57239/prn.25.03310035

Alt, M. A., Vizeli, I., & Săplăcan, Z. (2021). BANKING WITH A CHATBOT-A STUDY ON TECHNOLOGY ACCEPTANCE. Studia Universitatis Babes-Bolyai, Oeconomica, 66(1).

Amin, H. (2007). An analysis of mobile credit card usage intentions. Information Management & Computer Security, 15(4), 260-269. https://doi.org/10.1108/09685220710817789

Arsyad, I., Kharisma, D. B., & Wiwoho, J. (2025). Artificial intelligence and Islamic finance industry: problems and oversight. *International Journal of Law and Management*. https://doi.org/10.1108/IJLMA-07-2024-0236

Bara, W. R., & Ali, A. (2025). Understanding mobile banking adoption via the technology acceptance model: Evidence from Jordan. Banks and Bank Systems, 20(1), 23. doi:10.21511/bbs.20(1).2025.03

Bhatnagr, P., Rajesh, A., & Misra, R. (2024). Study of AI-enabled chatbots driving customer experience and intention to recommend. International Journal of System Assurance Engineering and Management, 1-16. https://doi.org/10.1007/s13198-024-02532-3

Chin, W.W. (2010), "How to write up and report PLS analyses", in Esposito Vinzi, V., Chin, W.W., Henseler, J. and Wang, H. (Eds), Handbook of Partial Least Squares: Concepts, Methods and Applications, Springer, Heidelberg, Dordrecht, London, New York, pp. 655-690, doi: https://doi.org/10.1007/978-3-540-32827-8_29.

Chin, W.W. and Gopal, A. (1995), "Adoption intention in GSS", ACM SIGMIS Database: The DATABASE for Advances in Information Systems, Vol. 26 Nos 2-3, pp. 42-64, doi: https://doi.org/10.1145/217278.217285.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS quarterly, 319-340. https://doi.org/10.2307/249008

Dawood, H. M., Liew, C. Y., & Lau, T. C. (2022). Mobile perceived trust mediation on the intention and adoption of FinTech innovations using mobile technology: A systematic literature review. F1000Research, 10, 1252. https://doi.org/10.12688/f1000research.74656.2

Dewasiri, N. J., Karunarathna, K. S. S. N., Rathnasiri, M. S. H., Dharmarathne, D. G., & Sood, K. (2024). Unleashing the challenges of chatbots and ChatGPT in the banking industry: Evidence from an emerging economy. In *The Framework for Resilient Industry: A Holistic Approach for Developing Economies* (pp. 23-37). Emerald Publishing Limited. https://doi.org/10.1108/978-1-83753-734-120241002

Dhanya, C., & Ramya, K. (2025). Unlocking Banking Chatbot Adoption: A Unified Approach through Extended TAM and UTAUT Model. *SDMIMD Journal of Management*, *16*(1). DOI:10.18311/sdmimd/2025/48908

Elareshi, M., Habes, M., Safori, A., Attar, R. W., Noor Al adwan, M., & Al-Rahmi, W. M. (2023). Understanding the effects of social media marketing on customers' bank loyalty: a SEM approach. Electronics, 12(8), 1822. https://doi.org/10.3390/electronics12081822

Giannakopoulos, N. T., Reklitis, D. P., Terzi, M. C., Sakas, D. P., & Kanellos, N. (2024). Video marketing for decentralized finance platforms' services. *Journal of Financial Services Marketing*, *29*(4), 1225-1259. https://doi.org/10.1057/s41264-024-00288-2

Groß, J. (2003). Variance inflation factors. R news, 3(1), 13-15.

Hair, J.F., Jr, Matthews, L.M., Matthews, R.L. and Sarstedt, M. (2017), "PLS-SEM or CB-SEM: updated guidelines on which method to use", International Journal of Multivariate Data Analysis, Vol. 1 No. 2, p. 107, doi: https://doi.org/10.1504/ijmda.2017.10008574.

Harun, M. S., Ab Aziz, M. R., Nazri, M. A., Ananda, R. F., & Rahmadhani, S. N. (2024). ARTIFICIAL INTELLIGENCE IMPLICATIONS IN ISLAMIC BANKS: POTENTIAL AND CHALLENGES. *iBAF e-Proceedings*, *11*(1), 471-483.

Hati, S. R. H., & Idris, A. (2017). Journal of Islamic Marketing. JIMA, 0018.

Hossain, K. S., Ahmed, F., & Rahman, M. H. (2025). THE ROLE OF ARTIFICIAL INTELLIGENCE-POWERED CHATBOTS AS A MARKETING TOOL IN US BANKING: ENHANCING CUSTOMER SATISFACTION AND SERVICE EFFICIENCY. *Review of Applied Science and Technology*, *4*(02), 501-526. https://doi.org/10.63125/2hp9jw50

Hultberg, P. T., Santandreu Calonge, D., Kamalov, F., & Smail, L. (2024). Comparing and assessing four AI chatbots' competence in economics. *Plos one*, *19*(5), e0297804. https://doi.org/10.1371/journal.pone.0297804

Imdadullah, M., Aslam, M., & Altaf, S. (2016). mctest: An R package for detection of collinearity among regressors.

Khoso, A. A., & Pathan, M. S. K. (2025). Harnessing Artificial Intelligence in Islamic Banking: Transforming Financial Services Through Shariah-Compliant Innovations. *Al Khadim Research Journal of Islamic Culture and Civilization*, *6*(1), 36-47.

Kumar, M. P., Chandel, A., Dua, A., & Giri, A. (2023). Revolutionizing Customer Service: The Power of Web ChatBot. *IRSD2024*, *129*.

Marak, Z. R., Pahari, S., Shekhar, R., & Tiwari, A. (2025). Factors affecting chatbots in banking services: the UTAUT2 and innovation resistance theory perspective. Journal of Innovation and Entrepreneurship, 14(1), 47. https://doi.org/10.1186/s13731-025-00514-8

Marco, M., & Arifin, A. Z. (2024). Perceived Benefits And Perceived Behavioral Control Toward Fintech Adoption Intention In Banking Products. JPS (Jurnal Perbankan Syariah), 5(2), 229-246.

Matthews, K., Thompson, J., & Zhang, T. (2023). *Economics Of Banking, The*. World Scientific.

Musa, H., Ahmad, N. H. B., & Nor, A. M. (2024). Extending the Theory of Planned Behavior in financial inclusion participation model–evidence from an emerging economy. *Cogent Economics & Finance*, *12*(1), 2306536. https://doi.org/10.1080/23322039.2024.2306536

Ok, E., Eniola, J., Islands, C., & Islands, C. (2024). Enhancing Customer Segmentation Strategies for Improved Personalization in the Banking Industry.

Ortiz-Garces, I., Govea, J., Andrade, R. O., & Villegas-Ch, W. (2024). Optimizing chatbot effectiveness through advanced syntactic analysis: A comprehensive study in natural language processing. *Applied Sciences*, *14*(5), 1737. https://doi.org/10.3390/app14051737

Rahi, S., Ghani, M. A., & Ngah, A. H. (2019). Integration of unified theory of acceptance and use of technology in internet banking adoption setting: Evidence from Pakistan. Technology in society, 58, 101120. https://doi.org/10.1016/j.techsoc.2019.03.003

Roman, N. A. (2021). Banking Services Marketing via Social Media Platforms and Its Impact on Consumer Behavior During COVID-19 Pandemic in Jordanian Banks: Mediating Role of

Innovation Marketing. In International Journal of Financial Research (Vol. 12, No. 4). Sciedu Press.

Royo-Vela, M., Frau, M., & Ferrer, A. (2024). The role of value co-creation in building trust and reputation in the digital banking era. *Cogent Business & Management*, *11*(1), 2375405. https://doi.org/10.1080/23311975.2024.2375405

Saadah, K., & Setiawan, D. (2024). Determinants of fintech adoption: evidence from SMEs in Indonesia. LBS Journal of Management & Research, 22(1), 55-65. https://doi.org/10.1108/LBSJMR-11-2022-0076

Sasidharan, A., & Venkatakrishnan, S. (2024). Intension to use mobile banking: an integration of theory of planned behaviour (TPB) and technology acceptance model (TAM). *KSII Transactions on Internet and Information Systems*, *18*(4), 1059-1074. http://doi.org/10.3837/tiis.2024.04.013

Shaikh, I. A. K., Khan, S., & Faisal, S. (2023). Determinants affecting customer intention to use chatbots in the banking sector. Innovative Marketing, 19(4), 257-268. http://dx.doi.org/10.21511/im.19(4).2023.21

Sholihah, D. R., Fathoni, M. A., Wulansari, A. S., Ananda, M. M., & Amalina, S. N. (2025). Understanding how intrinsic motivation influences female modest fashion online impulse buying: the mediating role of trust and attitude. *Journal of Islamic Marketing*. https://doi.org/10.1108/JIMA-08-2024-0332

Venkata, B. (2024). AI-Powered Chatbots in Banking: Developer Best Practices for Enhancing Efficiency and Security.

Wei, W., Prasetyo, Y. T., Belmonte, Z. J. A., Cahigas, M. M. L., Nadlifatin, R., & Gumasing, M. J. J. (2025). Applying the technology acceptance model–Theory of planned behavior (TAM-TPB) model to study the acceptance of building information modeling (BIM) in green building in China. *Acta Psychologica*, *254*, 104790. https://doi.org/10.1016/j.actpsy.2025.104790

Xie, J., Ye, L., Huang, W., & Ye, M. (2021). Understanding FinTech platform adoption: impacts of perceived value and perceived risk. Journal of Theoretical and Applied Electronic Commerce Research, 16(5), 1893-1911. https://doi.org/10.3390/jtaer16050106

Yaseen, S. G., El Qirem, I. A., & Dajani, D. (2022). Islamic mobile banking smart services adoption and use in Jordan. ISRA International Journal of Islamic Finance, 14(3), 349-362. https://doi.org/10.1108/IJIF-04-2021-0065

Yildirim, İ., & Ayar, İ. (2024). Consumers 'intention to use mobile banking applications as a marketing tool, an integrated tpb and tam model. *International Journal of Eurasia Social Sciences/Uluslararasi Avrasya Sosyal Bilimler Dergisi*, *14*(55). http://dx.doi.org/10.35826/ijoess.4415