



The Impact of Information and Communication Technology (ICT) on Marketing Performance in Islamic Banks: Empirical Evidence from Southern Jordan

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ABSTRACT

This study investigates the role of Information and Communication Technology (ICT) in enhancing marketing performance among Islamic banks in Southern Jordan, amidst the ongoing digital transformation within the banking sector. It aims to fill a critical research gap by examining how these technologies contribute to marketing improvements within the context of Islamic Sharia principles and an increasingly competitive environment. Adopting a descriptive-analytical methodology, primary data was collected through two structured questionnaires: one targeting 150 employees (senior management and IT specialists) using purposive sampling and the other targeting 150 customers who regularly use digital banking services, selected through simple random sampling. Data analysis was performed using SPSS (Version 26), incorporating statistical methods such as correlation coefficients, regression analysis, and ANOVA. The results reveal a statistically significant positive relationship between ICT adoption and marketing performance, with a correlation coefficient ($R^2 = 0.70$) and a determination coefficient ($R^2 = 0.48$), indicating that ICT explains 48% of the variance in marketing performance. Notably, there is a gap between employees' and customers' perceptions regarding ICT effectiveness, highlighting the need for improved digital communication and awareness initiatives. The study recommends sustained investment in digital infrastructure, targeted employee training programs, and AI-based, data-centric marketing tools to improve customer experiences, satisfaction and enhance competitiveness in the Islamic banking sector.

Keywords: ICT, Marketing Performance, Customer Satisfaction, Profitability, Cybersecurity, Digital Transformation, Islamic Banking

JEL Classifications: G21, O33, M31

1. INTRODUCTION

The banking sector, including Islamic banks in Jordan, is undergoing profound transformations driven by rapid advancements in Information and Communication Technology (ICT). These technologies have become pivotal in enhancing operational efficiency, particularly in marketing performance. ICT tools now serve as a cornerstone for improving customer interactions, service quality, market share, and decision-making accuracy in a highly competitive and dynamic banking environment (Fraj et al., 2011; Rahman and Masoom, 2012; Cudjoe et al., 2015).

Despite the increasing adoption of advanced technologies, some Islamic banks—especially in Southern Jordan—face challenges in optimizing these tools due to factors such as limited digital infrastructure, weak institutional integration, or disparities in human resource readiness. This raises a critical question: To what extent does ICT contribute to improving the marketing performance of Islamic banks in these regions, and how do stakeholders perceive the role of these tools in achieving competitive advantage?

Thus, the core problem of this study lies in uncovering the relationship between ICT adoption and enhanced marketing performance in

Islamic banks operating in Southern Jordan. The study seeks to answer the central research question: What is the impact of ICT on the marketing performance of Islamic banks in these governorates?

The study aims to measure the influence of ICT tools on the marketing performance of Islamic banks, analyze perceptual differences between employees and customers regarding their effectiveness, and provide actionable recommendations for leveraging modern technologies in alignment with Islamic banking principles.

The significance of this study is twofold: theoretical and practical. Theoretically, this study enriches the literature on digital marketing and Islamic banking by providing empirical evidence on the relationship between ICT and marketing performance. Practically, this study offers a roadmap for decision-makers in Islamic banks to enhance marketing efficiency through ICT integration.

Furthermore, it bridges a research gap left by previous studies, which focused primarily on conventional banks or Western contexts while neglecting the unique context of Islamic banks in developing countries. It is among the few studies to quantitatively analyze ICT's role in boosting marketing performance from a dual perspective—employees and customers—while accounting for the geographic and cultural specificities of Southern Jordan.

Structurally, the study is organized into five interconnected chapters: Chapter 1 covers the introduction, including the problem, objectives, and significance. Chapter 2 presents the theoretical framework and literature review. Chapter 3 outlines the methodology, research tools, and statistical analysis techniques. Chapter 4 analyses and discusses the data in light of comparative studies. Chapter 5 concludes the study with a conclusion, proposed recommendations, and future research directions.

2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Over the past two decades, banking institutions have undergone profound transformations driven by rapid advancements in Information and Communication Technology (ICT). These technologies have not only streamlined administrative processes but also reshaped banking marketing strategies at both local and global levels. ICT stands as a key driver in enhancing marketing performance for financial institutions by enabling rapid data access, customer behavior analysis, improved interaction quality, and reduced promotional costs (Abu Al-Rub & Abdul-Muati, 2024; Wamba et al., 2017, Reddy & Reinartz, 2017).

From a technical perspective, ICT is distinguished by its ability to transcend temporal and spatial barriers, facilitating seamless information and knowledge transfer within organizations through smart networks (Singhal & Padhmanbhan, 2008). It also supports marketing decision-making via predictive analytics tools and real-time customer engagement across multiple digital channels (Muhammad et al., 2013; Waliullah et al., 2025). Modern communication systems—such as banking applications and automated responses—allow for the customization of marketing

messages to align with individual customer needs, thereby improving customer retention and institutional loyalty (Phan et al., 2022 ;Brodie et al., 2007).

The literature underscores the effectiveness of digital technology adoption in boosting banks' marketing performance. Studies by Onikoyi et al. (2024), Chauhan et al. (2022), Filotto et al. (2021), and Mosquera et al. (2018) demonstrate that digital services, including electronic and mobile banking, enhance marketing efficiency, increase customer returns, and strengthen bank-customer relationships. Similarly, Huang (2024), Houston et al. (2010), and Allen and Gale (1997) highlight that digital innovation reduces information asymmetries and agency costs, thereby improving marketing performance by fostering trust between banks and customers.

From a managerial standpoint, research by George et al. (2020) and Athaide et al. (2025) indicates that digital transformation creates unprecedented marketing opportunities by enabling promotional customization, enhancing customer experience, and facilitating real-time engagement. However, these benefits come with challenges. Studies by Mamadiyarov and Karshiev (2024), Nuthalapati (2023), and Le et al. (2021), Chavan (2013), and Williamson (2006) warn of the high costs of digital infrastructure investment, rising operational risks, and cybersecurity threats—factors that may undermine the effectiveness of marketing campaigns if not properly managed.

Furthermore, studies such as Qwader and AISboul (2025) and Neumeier et al. (2017) emphasize that the successful implementation of ICT depends on aligning technologies with organizational culture and ensuring workforce readiness for change. These studies highlight the importance of developing employees' digital skills as a prerequisite for realizing tangible marketing benefits from technology adoption.

Thus, while ICT represents a strategic opportunity to enhance banking marketing effectiveness, converting these opportunities into sustainable gains requires overcoming challenges related to infrastructure, organizational culture, and information security—all while adhering to the regulatory and Sharia-compliance specificities of Islamic banking. Against this backdrop, the current study seeks to bridge a theoretical and practical gap in Arabic literature by analyzing the impact of ICT on the marketing performance of Islamic banks operating in Southern Jordan.

Based on the reviewed literature and the study's objectives, two main hypotheses were formulated to test the relationship between ICT and marketing performance in Islamic banks in Southern Jordan:

Null Hypothesis 1 (H_0): There is no statistically significant relationship between the level of ICT adoption and marketing performance in Islamic banks operating in Southern Jordan.

Null Hypothesis 2 (H_0): ICT adoption has no statistically significant impact on the marketing performance of Islamic banks in Southern Jordan.

3. FIELD STUDY

3.1. Research Methodology and Data Collection Methods

Given the nature and objectives of this study, a descriptive-analytical approach was adopted. This involved defining key concepts and standardizing terminology related to Information and Communication Technology (ICT) and its impact on the marketing performance of Islamic banks. To gather data, a desk survey was conducted to review and analyze previous theoretical and empirical studies, which contributed to building the study's theoretical framework.

For the field component, a questionnaire was designed as the primary data collection tool and distributed to the study's sample, consisting of employees and customers. The collected data were processed using SPSS to analyze various indicators and assess the impact of ICT on the marketing performance of Islamic banks in Southern Jordan.

3.2. Study Population and Sample

This study targeted employees and customers of three Islamic banks operating in Southern Jordan (Al-Karak, Ma'an, Aqaba, and Tafilah governorates): Jordan Islamic Bank, Arab Islamic International Bank, and Safwa Islamic Bank. The employee sample comprised 150 employees, distributed as follows: 100 senior management staff and 50 IT specialists, with all participants having at least 5 years of experience in the banking sector.

The customer sample included 150 active users of digital banking services who had been engaged with Islamic banks for a minimum of 5 years, conducting at least three digital transactions monthly over the past 6 months. Gender balance was maintained, with males representing 55% and females 45% of respondents.

A stratified purposive sampling method was employed for employees due to their varying roles in ICT implementation, while simple random sampling was used for customers to ensure fair representation of their attitudes toward digital services. Geographically, the sample was distributed across central branches in the four governorates to ensure comprehensive spatial coverage.

The sample size (150/group) was determined based on previous studies while considering time and logistical constraints to ensure statistical adequacy.

3.3. Study Variables

The study focused on two main variables:

3.3.1. Information and communication technology (ICT)

Refers to computer and communication-related tools and technologies, including the internet, networks, software, and databases, which are used for processing, storing, and exchanging information among individuals and organizations (Gayaparsad & Ramlutchman, 2004). These technologies serve as central tools for enhancing administrative efficiency, improving customer interactions, and increasing the effectiveness of operational and marketing processes (AL-Sammarraie & Rejeb, 2023; Kumar et al., 2018; Deshmukh, 2004).

This variable was measured using 21 items distributed across four dimensions: Problem-solving and decision-making support Flexibility and adaptability to technologym Innovation and initiative, Encouraging effective ICT utilization.

3.3.2. Marketing performance

Refers to the level of efficiency and effectiveness of marketing activities in achieving the bank's objectives, including: customer satisfaction, market share growth, enhancing customer satisfaction, and increasing profitability. It was measured using eight items covering the following dimensions: Profitability, Market share, Customer satisfaction (Austin & Pinkleton, 2015; Fraj et al., 2011).

3.4. Statistical Analysis Methods

The study utilized SPSS (Version 26) for data analysis, employing several statistical techniques appropriate for the nature of the variables and research hypotheses:

- Reliability Analysis: Cronbach's alpha coefficient: To measure the internal consistency of questionnaire items and verify the reliability of measurement instruments
- Descriptive Statistics: Means and standard deviations: To analyze response patterns and determine response levels across the sample population
- Comparative Analysis: Independent samples t-test: To identify statistically significant differences between employee and customer responses
- Relationship Analysis: Correlation and simple linear regression analysis: To examine the relationship between: Independent variable (ICT adoption), Dependent variable (marketing performance), To quantify the strength and direction of associations.

These analytical methods were specifically selected because they Are optimally suited to the data characteristics and study objectives, Enable rigorous examination of causal relationships, Facilitate precise detection of substantive differences, Provide robust measurement of variable interrelationships, Meet established standards for empirical business research, The comprehensive analytical approach ensured both the validity of measurement instruments and the reliability of research results, while maintaining appropriate statistical rigor throughout the investigation.

3.5. Research Instrument: Validity and Reliability Assessment

The study utilized two questionnaires as research instruments: a bank employee questionnaire designed to measure the impact of ICT applications on marketing performance, and a bank customer questionnaire developed to assess customers' perceptions of ICT utilization levels. Both instruments underwent rigorous face validity testing through evaluation by an expert panel consisting of ten Jordanian university professors specializing in management, marketing, and technology. The inter-judge agreement rate reached 89%, confirming the content validity of the questionnaires.

Regarding reliability analysis, internal consistency was measured using Cronbach's alpha coefficient Table 1. The employee questionnaire achieved a score of $\alpha = 0.93$ (21 items), while the customer questionnaire scored $\alpha = 0.90$ (20 items). These

results indicate excellent reliability levels for both instruments, demonstrating their consistency in measuring the intended constructs.

Data collection was conducted between January and March 2025, following formal institutional approvals. The questionnaires were distributed electronically, yielding 264 valid responses out of 300 distributed, representing an 88% response rate. This high response rate reflects the reliability of the instruments and the quality of research execution.

The methodological rigor applied in developing and testing these instruments ensured their theoretical soundness and robustness in examining the study's core variables. The combination of expert validation, high reliability coefficients, and strong response rates underscores the credibility of the data collection process and the validity of the findings.

4. DISCUSSION AND ANALYSIS OF RESULTS

4.1. Statistical Analysis of Questionnaire Data (Islamic Bank Employees)

The following tables present the detailed results of the questionnaire, structured as follows:

The results in Table 2 reveal that the overall mean score for Islamic bank employees' responses regarding ICT was 4.17,

Table 1: Results of Cronbach's alpha reliability test for research instruments

Questionnaire	Number of items	Cronbach's α	Validity coefficient
1 (Employees)	21	0.93	93%
2 (Customers)	14	0.90	90%

Source: Prepared by the researcher based on SPSS 26 outputs

with a standard deviation of 0.37, indicating a high level of agreement and a positive perception of ICT's role in the banking environment.

This outcome reflects a consensus among respondents on ICT's contribution to institutional and marketing performance. The relatively low standard deviation suggests homogeneity in perspectives, reinforcing response credibility and a unified view of technology's importance in banking operations.

A detailed analysis of the items highlights the following:

The Highest-rated items were item 1 (Mean = 4.44): Emphasizes the bank's use of modern technologies for problem-solving and marketing improvement. This was followed by Item 2 (Mean = 4.43): Underscores the role of the internet and databases in timely decision-making support. Then, Item 12 (Mean = 4.38): Highlights the provision of specialized ICT training. These items fall under the dimension of institutional performance support and technological training. In contrast, the Lowest-rated item: Item 11 (Mean = 3.93): Suggests room for improvement in fostering ICT-driven innovation for service delivery, indicating an opportunity to enhance creative initiatives.

Notable observations: Item 4 (Mean = 4.18): Calls for adopting robust software to mitigate technical failures and cyber threats affecting performance. Item 10 (Mean = 3.98): While still "high," it signals the need to motivate employees to engage in ICT-focused teamwork.

The responses demonstrate clear acceptance of ICT-related dimensions, categorized as:

- Problem-solving and decision-making support (Items 1-4)
- Flexibility and adaptability to technology (Items 5-7)
- Innovation and initiative (Items 8-10)
- Promoting effective ICT use (Items 11-13).

Table 2: Means and standard deviations of responses from islamic bank employees in southern jordan regarding ICT indicators

No	Statement	Mean	Std. Deviation	Rank	Response Level
1	The bank relies on the latest technologies to solve problems and improve marketing performance.	4.44	0.45	1	Very High
2	The internet and databases provide timely information to support decision-making.	4.43	0.29	2	Very High
3	The technology used enhances communication channels between departments, facilitating information exchange.	4.02	0.44	10	High
4	Technical failures and virus attacks negatively impact the bank's operational performance.	4.18	0.42	6	High
5	The bank's IT infrastructure improves marketing performance and effectiveness.	4.10	0.26	8	High
6	I innovate new methods to utilize ICT in task execution.	4.16	0.37	7	High
7	I embrace modern technologies and strive to use them effectively.	4.02	0.38	11	High
8	The bank possesses advanced technological infrastructure to enhance marketing performance.	4.20	0.45	5	High
9	The bank employs cutting-edge technology for operations, new request management, and service marketing.	4.36	0.41	4	Very High
10	I am interested in working with specialized ICT teams to improve institutional performance.	3.98	0.31	12	High
11	ICT contributes to developing innovative ideas for service delivery and marketing	3.93	0.32	13	High
12	The bank provides training programs on effective ICT software usage.	4.38	0.36	3	Very High
13	I am proficient in handling various ICT technologies.	4.07	0.39	9	High
Overall Responses to ICT Indicators (Bank Employees)		4.17	0.37	-	High

Source: Prepared by the researcher based on SPSS 26 outputs

Therefore, it can be concluded that ICT is a cornerstone for enhancing marketing and institutional performance in Islamic banks in Southern Jordan. Strategic investments in training programs, digital innovation methodologies, and IT infrastructure are recommended to boost efficiency and competitiveness in the banking sector. These measures will address existing gaps while capitalizing on the high receptiveness to ICT among employees.

The analysis of employee responses regarding marketing performance indicators reveals significant insights. As shown in Table 3, the overall mean score for marketing performance was 4.23 with a standard deviation of 0.32, indicating a high level of agreement among respondents. This reflects employees' strong recognition of marketing's importance in achieving organizational goals and maintaining competitiveness.

The highest-rated statement was item 18, "The bank aims to increase profits through effective marketing activities," with a mean of 4.46, demonstrating employees' belief in marketing's direct contribution to financial performance. This was followed closely by item 15, "The bank continuously works to maintain and expand its market share," with a mean of 4.40, indicating a clear strategic focus on market expansion.

Other notable responses included item 17 (mean=4.38) concerning transaction growth and service diversification, and item 14

(mean=4.19) about customer retention and loyalty programs. The relatively lower-ranked items, while still maintaining high scores, suggest potential areas for improvement in performance evaluation systems (item 21, mean=4.08) and staff marketing competencies (item 19, mean=4.01).

The consistent response patterns, evidenced by the narrow standard deviations (ranging from 0.18 to 0.36), indicate strong agreement among employees about their bank's marketing orientation. These findings collectively demonstrate that Islamic bank employees in southern Jordan perceive marketing performance as encompassing financial outcomes, market expansion, customer relationship management, and continuous improvement through evaluation.

4.2. Statistical Analysis of Survey Data (Islamic Bank Customers)

The statistical analysis presented in Table 4 reveals customers' perceptions of marketing performance in Islamic banks across southern Jordan. The overall mean score of 3.70 with a standard deviation of 0.44 indicates generally positive evaluations, though with moderate variation in customer opinions across different aspects of marketing performance.

The highest-rated item was statement 5, "The bank aims to increase profits through effective marketing activities," with a mean of 4.15 and low standard deviation (0.21), demonstrating strong customer

Table 3: Means and standard deviations of Islamic bank employees' responses regarding marketing performance in southern Jordan

No	Statement	Mean	Std. deviation	Rank	Response level
14	The bank works to retain current customers, gain their loyalty, and attract new customers.	4.19	0.18	4	High
15	The bank continuously works to maintain and expand its market share	4.40	0.21	2	Very high
16	The bank focuses on enhancing its marketing performance by efficiently and promptly meeting the needs of current and potential customers.	4.17	0.28	5	High
17	The bank seeks to increase transaction volume and diversify services to achieve higher business rates.	4.38	0.25	3	Very high
18	The bank aims to increase profits through effective marketing activities	4.46	0.18	1	Very high
19	The bank's employees possess high skills and qualifications that contribute to improving marketing performance.	4.01	0.33	8	High
20	The bank regularly addresses customer complaints to ensure their satisfaction.	4.13	0.26	6	High
21	The bank conducts periodic evaluations of its marketing performance to ensure achievement of desired goals.	4.08	0.36	7	High
Overall Responses for Marketing Performance (Bank Employees).		4.23	0.32		High

Source: Prepared by the researcher based on SPSS 26 outputs

Table 4: Means and standard deviations of Islamic bank customers' responses regarding marketing performance in southern Jordan Governorates

No	Statement	Mean	Std. deviation	Rank	Response level
1	The bank works to retain current customers, gain their loyalty, and attract new customers.	4.19	0.44	8	High
2	The bank continuously works to maintain and expand its market share	4.40	0.27	3	High
3	The bank focuses on enhancing its marketing performance by efficiently and promptly meeting the needs of current and potential customers.	4.17	0.57	6	High
4	The bank seeks to increase transaction volume and diversify services to achieve higher business rates.	4.38	0.73	5	High
5	The bank aims to increase profits through effective marketing activities.	4.46	0.21	1	High
6	The bank's employees possess high skills and qualifications that contribute to improving marketing performance.	4.01	0.41	2	High
7	The bank regularly addresses customer complaints to ensure their satisfaction.	4.13	0.29	7	Moderate
8	The bank conducts periodic evaluations of its marketing performance to ensure achievement of desired goals.	4.08	0.59	4	High
Overall responses (Customers)		3.70	0.44	-	

Source: Prepared by the researcher based on SPSS 26 outputs

recognition of the bank's marketing effectiveness in driving profitability. This was followed by statement 6, "The bank's employees possess high skills and qualifications that contribute to improving marketing performance," with a mean of 3.95, reflecting favorable perceptions of staff competencies from the customers' point of view.

However, areas requiring attention emerged in the data: Statement 7, "The bank regularly addresses customer complaints to ensure their satisfaction", received the lowest mean (3.39). Statement 1, "The bank works to retain current customers, gain their loyalty, and attract new customers", scored modestly (3.40). These results suggest potential gaps in post-sale services and customer relationship management.

Notably, statement 4 showed the highest variability ($SD=0.73$) regarding transaction volume and service diversification, likely reflecting diverse customer experiences with different banking services. The moderate standard deviations across most items (ranging from 0.21 to 0.73) indicate varying degrees of consensus among customers in their evaluations.

Key Implications: Customers clearly recognize the banks' marketing effectiveness in driving profitability (highest-rated aspect). Staff qualifications are viewed positively, representing a competitive strength. Complaint resolution and customer retention strategies require improvement. Service diversification experiences vary significantly among customers.

These findings suggest that while Islamic banks in southern Jordan generally demonstrate competent marketing performance from the customers' perspective, targeted enhancements in customer service and relationship management could further strengthen their market position. The implementation of more personalized communication strategies and systematic feedback mechanisms would be particularly valuable in addressing the identified areas for improvement.

4.3. Comparative Analysis of Employee and Customer Responses

A comparative examination of survey responses between bank employees (Table 3) and customers (Table 4) regarding marketing performance reveals significant insights.

The data demonstrates a clear disparity in perceptions, with employees consistently rating the bank's marketing performance higher than customers across all measured dimensions.

Employees' evaluations averaged 4.23 (very high) with a relatively low standard deviation of 0.26, indicating strong internal consensus about marketing effectiveness. In contrast, customer assessments averaged 3.70 (high) with greater variability ($SD=0.44$), reflecting more diverse experiences and opinions among the client base.

Several factors may explain this perception gap: Employees benefit from comprehensive internal knowledge of marketing strategies and organizational efforts, leading to more favorable evaluations. Customers' direct service experiences, particularly regarding complaint resolution and response times (as evidenced by lower-

rated items), appear to influence their evaluations. The wider dispersion in customer responses suggests uneven service delivery or disparate expectations among different customer segments. The analysis highlights a clear perception gap that warrants managerial attention. To bridge this gap, banks should prioritize the following: Enhanced communication channels to better align internal and external perceptions; More systematic collection and analysis of customer feedback; Targeted improvements in service delivery, particularly in complaint management; and Employee training programs to increase awareness of customer centricity. Addressing these aspects will help align performance perceptions while simultaneously improving actual marketing effectiveness. This alignment is critical to building lasting customer trust and achieving a sustainable competitive advantage in the Islamic banking sector in Jordan. Ultimately, The findings underscore the importance of balancing internal operational perspectives with external customer experiences in comprehensive marketing performance evaluation.

4.4. Hypothesis Testing

4.4.1. Testing the first hypothesis

The first hypothesis posited that no statistically significant relationship exists between information and communication technology (ICT) and marketing performance in Islamic banks across southern Jordan. To examine this relationship, Spearman's correlation coefficient was employed to measure the association between the two study variables.

The results in Table 5 reveal a strong positive correlation ($R=0.71$) between ICT adoption and marketing performance, which is statistically significant. The determination coefficient ($R^2=0.48$) indicates that approximately 48% of the variance in marketing performance can be attributed to ICT implementation, highlighting its substantial impact on enhancing marketing efficiency. The remaining 52% of unexplained variance may stem from other factors not included in the current model, such as traditional

Table 5: Correlation and determination coefficient analysis

Measure	Value
Correlation coefficient (R)	0.71
Determination coefficient (R^2)	0.48
Adjusted R^2	0.46
Standard error of estimate	0.51

Source: Researcher's analysis based on SPSS 26 outputs

Table 6: Analysis of variance (ANOVA)

Source of variation	Sum of squares	df	Mean square	F-value	Sig.
Regression	9.997	1	9.997	38.021	0.000
Residual	12.865	48	0.268	-	-
Total	22.862	49	-	-	-

Source: Researcher's analysis based on SPSS 26 outputs

Table 7: Regression coefficients analysis

Variable	B	Std. error	β	t-value	Sig.
Constant	0.498	0.129	-	1.679	0.087
ICT Adoption	0.786	0.128	0.645	6.147	0.000

Source: Researcher's analysis based on SPSS 26 outputs

marketing strategies, service quality, human resource capabilities, market competition levels, general economic conditions, and customer satisfaction with non-digital services.

The standard error of estimate (0.51) reflects moderate predictive accuracy, suggesting room for model improvement through the inclusion of additional explanatory variables. Based on these findings, the null hypothesis (H_0) is rejected in favor of the alternative hypothesis (H_1), confirming a statistically significant positive relationship between ICT and marketing performance. This positive association implies that increased ICT utilization corresponds with improved marketing outcomes in Islamic banks.

4.4.2. Testing the second hypothesis

The second hypothesis proposed that ICT has no significant effect on marketing performance in Islamic banks. To test this, analysis of variance (ANOVA) was conducted to assess the statistical significance of the regression model.

The results in Table 6 demonstrate a significant F-value (38.021) with a p-value of 0.000, which is below the 0.05 significance threshold. This confirms the model's statistical significance at a 95% confidence level, leading to rejection of the null hypothesis and acceptance of the alternative hypothesis that ICT significantly affects marketing performance.

The regression analysis presented in Table 7 reveals a standardized coefficient (β) of 0.645 with high statistical significance ($p = 0.000$), indicating that changes in ICT implementation levels can explain 64.5% of the variation in marketing performance.

The combined results from both hypothesis tests confirm a statistically significant relationship and effect between ICT adoption and marketing performance in Islamic banks. These findings underscore the strategic importance of investing in ICT technologies to enhance marketing efficiency and effectiveness, particularly for Islamic banks operating in southern Jordan. The demonstrated impact suggests that ICT integration should be prioritized as a key component of marketing strategy development in this sector.

5. CONCLUSION

This study elucidates the pivotal role of Information and Communication Technology (ICT) in enhancing the marketing performance of Islamic banks in southern Jordan's governorates. Comprehensive statistical analyses—including correlation, regression, and variance tests—revealed a robust, statistically significant positive relationship between ICT adoption and improved marketing outcomes, particularly in customer experience enhancement, service quality improvement, and competitive advantage strengthening.

The findings align substantially with prior scholarly work. Research by Chauhan et al. (2022), Del Gaudio et al. (2021), and Mosquera et al. (2018) similarly established digital transformation's positive impact on operational efficiency and customer loyalty. Our results further corroborate Andrews

et al.'s (2016) conclusions regarding mobile technologies' transformative potential in banking marketing strategies through service personalization and real-time customer engagement. Additionally, the study provides empirical validation for Malhotra and Singh's (2009) and Acharya et al.'s (2008) propositions about digitalization's profitability benefits, while substantiating Qwader and AISboul's (2025) findings concerning digital maturity's organizational impact.

A noteworthy revelation emerged from the perceptual disparity between banking professionals and customers. While employees demonstrated clear awareness of digital transformation's strategic value, customers exhibited relatively lower appreciation of technological benefits. This dichotomy underscores the critical challenge facing Islamic banks in translating operational ICT advantages into tangible customer-perceived value—a challenge requiring institutional initiatives to enhance transparency, streamline digital interfaces, and implement targeted technological literacy programs.

These outcomes collectively emphasize the necessity for comprehensive digital transformation frameworks that transcend mere technological infrastructure investment. Such frameworks should encompass organizational culture development, human capital upskilling, and customer-centric technology alignment—an approach consistent with Neumeier et al.'s (2017) conceptual model of integrated digital strategies capable of delivering sustainable competitive advantages while overcoming change resistance.

The study proposes several actionable recommendations for Islamic banking institutions. Continued strategic ICT investments should prioritize digital infrastructure modernization and periodic system upgrades, accompanied by specialized training programs to develop workforce technological competencies. Marketing strategies require transformation through AI-powered tools and big data analytics to enable hyper-personalized customer engagement. Concurrently, targeted awareness campaigns should demystify digital services and foster customer trust.

Despite its contributions, this study acknowledges certain limitations. The geographical focus on southern Jordan may affect generalizability to other regions. The moderate sample size ($N=300$) could influence statistical inference robustness, while the closed-ended questionnaire design potentially constrained deeper qualitative insights. The cross-sectional nature also makes findings susceptible to temporal economic fluctuations.

Future research directions emerge naturally from these limitations. Comparative studies between Islamic and conventional banks could reveal adoption pattern variations. Mixed-method approaches incorporating interviews would yield richer stakeholder perspectives. Examining mediating variables like digital transformation maturity and innovation culture could enhance explanatory power. Longitudinal designs would track evolutionary impacts, while dedicated cybersecurity studies could assess digital trust's marketing implications—all promising avenues.

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