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Dr Khalid Al. Qatiti
Chief Editor

Dear Esteemed Readers, Authors, and Reviewers,

By the grace of Almighty Allah, it is with immense pleasure that I present the second issue of the Sohar University Journal of Sustainable Business (SUJSB), Volume 1, Issue 2, for July 2025. Following the successful launch of our inaugural issue, we are delighted to continue fostering scholarly discourse and research that contributes to a deeper understanding of sustainable business practices across various disciplines.

This issue reflects our commitment to promoting high-quality, impactful research from a multidisciplinary perspective. The diverse range of topics covered in this volume showcases the varied facets of sustainable business and management in an ever-evolving global landscape.

In this issue, we are proud to feature insightful articles that span several key areas related to sustainable business. These include explorations of organizational performance and strategic orientations, the transformative impact of technology on financial reporting, consumer behavior towards digital services, conceptual advancements in talent management, the role of digital education for future sustainability, and the critical relationship between service quality and customer loyalty. Each contribution offers valuable insights that contribute to the ongoing dialogue about creating a more sustainable and resilient business environment.

I extend my sincere gratitude to all the authors for their rigorous research and valuable contributions. My heartfelt thanks also go to our dedicated team of reviewers for their meticulous efforts and insightful feedback, which are instrumental in maintaining the high academic standards of SUJSB. Finally, I thank our readers for their continued interest and support.

We hope that this issue serves as a rich resource for academics, practitioners, and policymakers interested in the multifaceted aspects of sustainable business. We look forward to receiving your valuable contributions for future issues.

Sincerely,

Dr Khalid Al. Qatiti

Chief Editor,

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1. Journal Vision

To be a global platform connecting academia and business to drive sustainable business practices.

2. Journal Mission

Sohar University Journal of Sustainable Business fosters collaboration between scholars and practitioners to address real-world business challenges through rigorous research and diverse perspectives, enriching both academic knowledge and practical solutions.

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Sohar University Journal of Sustainable Business aims to become a central forum for academics, researchers, and business professionals. It intends to bridge the gap between scholarly research and the practical aspects of sustainable business, fostering an exchange that enriches both the academic world and the business community.

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8. Ethics and Governance in Sustainable Business (SDG-16, SDG-17): Work on sustainable corporate governance and ethics, including ethical decision-making and stakeholder engagement.
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Once feedback is received from at least two reviewers, the managing editor notifies the authors, prompting them to make the necessary revisions. The Editorial Team then evaluates how well the authors have incorporated the feedback into the revised manuscripts. If the revisions are deemed unsatisfactory, the authors are asked to make further changes and resubmit their work until all reviewers are satisfied. The Editor-inChief makes the final decision.

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The time from manuscript submission to acceptance for publication in SUJSB typically ranges from 8 to 12 weeks. However, this timeframe can vary based on factors such as the author's responsiveness, reviewer availability, and the number of review rounds required. Accepted papers usually undergo an average of two revisions. Authors are notified when the digital versions of their approved papers are published on the journal's website. Each edition of SUJSB is initially released online and is freely accessible to all.

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- **Main Text:** Organize the main text with an introductory section, followed by the main body divided into sections as necessary. Conclude with a section titled "Conclusions." Use a clear and concise writing style to facilitate readability. Ensure that the main document does not contain any identifiable information about the authors or their institutions to maintain the integrity of the doubleblind review process.
- **Implications for Sustainable Business Practices:** Authors are advised to include a section titled "Implications for Sustainable Practices" dedicated to explaining the implications drawn from the study's findings that help managers ensure sustainable business practices.
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7. Author Responsibilities and Ethical Procedures

- Authors are required to verify that the submission to SUJSB is an original piece of work.
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- Authors must explicitly disclose the funding agencies involved and any potential impact they may have on the research.
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- Authors should use inclusive language that respects diversity and avoids excluding any segment of society.
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THE IMPACT OF MARKET, LEARNING, AND ENTREPRENEURIAL ORIENTATIONS ON NIGERIAN SMES' PERFORMANCE

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ABSTRACT

Drawing on the resource-based view theory, the present study investigates the impact of market, learning, and entrepreneurial orientations on Nigerian SMEs' performance. A cross-sectional questionnaire technique was applied to gather data. The surveys were distributed to 551 owners and managers of SMEs in Kano, Nigeria. A total of 271 usable responses were used for the final data analysis. The results showed that learning and entrepreneurial orientations have a significant effect on Nigerian SMEs' performance. However, market orientation was found not significant in influencing the performance of SMEs. Managers could use the finding in formulating strategies of their SMEs, especially by demonstrating learning and entrepreneurial orientations.

Keywords: Strategic Orientations, Market Orientation, Learning Orientation, Entrepreneurial Orientation, SMEs performance, Nigeria.

Paper Type: Research paper

INTRODUCTION

Omonona et al. (2024) defined small and medium enterprises as registered economic activities characterized by size/category, employment, and income or turnover. The enterprises that employ 10-49 employees and have a turnover between 25 and 100 million are considered small, while enterprises that employ 50-199 employees and generate a turnover between 100 and 1000 million are regarded as medium-sized. Additionally, the turnover must be based on Nigerian currency (Sa'id et al., 2019; SMEDAN, 2013). Previous studies reported the contribution of SMEs in providing employment, income distribution, and promoting the economic fortune of the country (Kabir et al., 2025). Specifically in Nigeria, SMEs accounted for more than 96.9% of the total enterprises, provided about 87% of the employment, and contributed a significant proportion to GDP at 46% as well as export earnings at 6.21% (Kabir et al., 2025; Pwc, 2024; Sa'id et al., 2025).

However, due to economic globalization and increased competition among enterprises, for SMEs to survive, strategic orientations are becoming important and most relevant (Hernández-Linares et al., 2018; Jeong et al., 2019). Recent studies revealed that enterprises have focused on multiple strategies to overcome strong competition and globalisation effect (Kabir et al., 2025; Majeed et al., 2025; Yuwono & Lena, 2025). It has been established that for an enterprise to prosper, it must harmonize its processes to establish a market position and depend on its resources or capabilities to fit the internal and external business environment to attain competitive benefits and business efficiency (Rajeh et al., 2024; Irwin et al., 2018). To realise these objectives, enterprises need to concentrate on their strategic orientations. This is because the strategic orientation offers a strategic direction for the organisation to manage its operations to attain better performance (Arzubiaga et al., 2018; Majeed et al., 2025).

SMEs' contribution to sustainable economic development largely depends on their ability to adopt multiple strategic orientations (Hyder & Lussier, 2016; Ullah, 2019; Wang, 2016). However, despite their significant contribution to the socio-economic well-being, they still lack strategic orientation (Marques et al., 2023; Ra'ed et al., 2018). In this regard, much research has been carried out to investigate the factors of SME performance (Distanont & Khongmalai, 2018; Eggers et al., 2018; Samba et al., 2018), including strategic orientation. Specifically, studies have considered the influence of strategic orientation dimensions, such as market, learning, and entrepreneurial orientation, on SMEs' performance (Kajalo & Lindblom, 2015; Ra'ed et al., 2018). However, such studies tended to consider strategic orientation separately (Irwin et al., 2018; Smirnova et al., 2018), limiting our knowledge of how different dimensions could influence SME performance in combination. Also, the integration of various dimensions in a single model has practical implications for SMEs to employ a synergistic view of the market, learning, and entrepreneurial orientation on SMEs' performance (Aloulou, 2019; Lonial & Carter, 2015; Pacheco et al., 2024). Recently, studies have examined the dimensions simultaneously within one framework (Al-Ansaari et al., 2015; Hakala & Kohtamäki, 2011; Ra'ed et al., 2018). However, the number of such studies is small. Hence, this research adds to the current literature on the role of strategic orientation dimensions in enhancing SME performance.

Research on strategic orientation tends to be conducted in large enterprises (Real, Roldán, & Leal, 2014) and developed countries (Pacheco et al., 2024; Smirnova et al., 2018). Such research raises the issue of applicability and generalisability of their findings to SMEs and those located in developing countries because of SMEs resource limitations (Rajeh et al., 2024; Su et al., 2015) and differences in culture and infrastructure that could affect enterprise behaviour and operation (Blazkova & Ondrej, 2018; Kajalo & Lindblom, 2015) in economies at different stages of advancement. Additionally, studies on strategic orientation have ignored many strategically essential countries, such as Brazil and India, as well as Sub-Saharan Africa (Gupta & Batra, 2016; Wales et al., 2013), and the contribution of the integrated effect of strategic orientations on the survival of enterprises in developing countries is yet to be understood. Hence, our knowledge of the role of different contexts in determining SME performance and behaviour can be enhanced, since studies addressing the factors of SMEs' performance in developing countries (Ra'ed et al., 2018) are limited despite most business activities is dominated by SMEs, our research is warranted.

Informed by the theoretical gaps in the existing body of knowledge, our study is conducted to achieve the following: (1) to investigate the impact of market orientation on SME performance, (2) to examine the impact of learning orientation on SME performance, and (3) to examine the influence of entrepreneurial orientation on SME performance. In addition to the theoretical significance, the study findings are expected to assist owners/managers in formulating and implementing different strategic orientations that may help them enhance their organisational performance. Toward this end, the paper is arranged as follows. Next comes a review of the related literature, followed by a depiction of the method and materials employed in this study. Next, the analysis and findings are presented. The discussion on the findings, the research implications, the research limitations, and suggestions for further research are offered next.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Resource-based Theory

The conceptual framework of this study is developed on the resource-based view (RBV) (Barney, 1986, 1991; Penrose, 1959). According to RBV, organisational resources that are valuable, rare, and difficult to duplicate could help enterprises to be competitive (Barney, 1991). Particularly, the advocates of RBV assert that idiosyncratic resources could affect an enterprise's performance if they satisfy two criteria. First, the resources must be valuable to enable the enterprise to have a competitive advantage. Second, not every enterprise in the same competitive environment has resources. The enterprise's ability to combine these strategic resources will put it ahead of its competitors. This research posits that strategic orientations, namely, market, learning, and entrepreneurial orientations, can be regarded as valuable assets for SMEs. Strategic orientation means the main method of identifying the actions that an enterprise takes to attain financial and non-financial performance and competitive benefit (Karami & Tang, 2019; Lonial & Carter, 2015; Ra'ed et al., 2018).

Many SMEs face financial and human resources constraints (Al-Hakimi et al., 2023; Su et al., 2015; Wang, 2016). Those in developing countries must also deal with a turbulent business environment (Engelen et al., 2015). However, the synergistic impact of strategic orientations could help SMEs overcome financial and human resource constraints and the dynamic environment by identifying and exploiting opportunities that could help SMEs achieve superior performance. Applying RBV theory to support this study has concurred with prior studies (Jiang & Liu, 2018; Soltani et al., 2018). Therefore, this study argues that strategic orientations, namely market, learning, and entrepreneurial orientation, are important internal resources that could enhance the performance of SMEs.

Furthermore, RBV philosophy advocated that market-oriented approaches are rare, valuable, and difficult to copy. That's a firm's own skills that make it hard for others to imitate and become a competitive advantage. RBV believes that market orientation increases firm performance (Aklilu & Kero, 2025; Kiessling et al., 2016). Similarly, learning orientation is a set of tools used to introduce new products in response to environmental change (Lonial & Carter, 2015) learning orientation boosts performance and reveals new business ideas (Real et al., 2014). Applying RBV

learning orientation is a valuable, rare, scarce, and non-substitutable resource that gives a competitive benefit to a firm (Barney, 1991).

Equally, entrepreneurial orientation is valuable, rare, inimitable, and non-substitutable. That firm possesses competencies that have given it a competitive benefit. Hence, entrepreneurial orientation improves SME performance through the lens of RBV. Seconding the resource-based view, it gave firms a competitive advantage through the practice of proactive innovation, risk-taking, nature of the enterprises. Aklilu and Kero (2025) asserts that a strategic orientation method helps a firm attain its business objectives, grasp its dream, and gain competitive benefits. Strategic orientation increases performance and upholds competition, according to several studies (Imran et al. 2019).

Studies have either considered each dimension individually or in combination to investigate the impact on SME performance. Scholars argue that combining multiple strategic orientations could have a substantial influence on the performance of enterprises (Gruber-Muecke & Hofer, 2015; Kajalo & Lindblom, 2015). However, past studies have reported mixed results of the effect of individual or multiple strategic orientations on SME performance. Some studies discovered that multiple strategic orientations have a direct impact on performance (Kropp et al., 2006; Ra'ed et al., 2018; Susanto et al., 2023). Meanwhile, some studies found that the combination of strategic orientations has no substantial positive effect on performance (Lonial & Carter, 2015; Voss & Voss, 2000). Instead, each strategic orientation influences performance differently (Sadiku-Dushi et al., 2019).

Furthermore, in this study, market orientation was described as firm intensity to obtain, spread and respond to customers' information through the activities of the customer and competition orientation, as well as inter-functional coordination (Ra'ed et al. (2018). Equally, learning orientation refers to a firm's ability to adapt new knowledge through the activities of commitment to learning, open-mindedness, and shared vision to achieve superior performance (Sinkula, Baker, & Noordewier, 1997). In addition, to focusing on customer needs through monitoring competitors' actions and engaging with customers to learn what an enterprise could effectively offer to the market requires entrepreneurship accordingly, the study viewed entrepreneurial orientation as the approach, practices and decision-making system directed to firms' intensity to identify novel opportunities through activities of innovation proactiveness and risk-taking (Mamun et al., 2018). This study considered that integration of critical strategic variables could improve SMEs' performance.

Market Orientation and SMEs Performance

The basic tenet of market orientation is the belief that the key to business success depends on the enterprise's resolution on its capability to recognise and meet the desires, wants, and aspirations of consumers in the target markets (Zakaria & Abdul-Talib, 2010; Sa'id, Talib, & Hassan 2019). Nakos et al. (2019) stress that market orientation is also a culture in which an enterprise attempts to offer superior value to the market by emphasising buyer needs and lasting profit. Additionally, Ishii and Kikumori (2024), market orientation has directly related to the provision and maintenance of superior value to customers, which, in turn, could achieve better performance.

Market orientation is fundamental to the successful execution of marketing strategies since the present turbulent environment requires that enterprises constantly offer higher quality goods and services to consumers (Kiessling et al., 2016; Sa'id, Talib, & Hassan, 2019a). As such, a market-oriented enterprise could be prosperous since it can outshine competitors because of its capability to quickly identify and react to the buyer's needs via the efficient management of its resources (Creek et al., 2023; Day, 1994). Chuang (2018), posits that the conduit of creating superior value to customers depends on the enterprise's ability to identify unsatisfied customer needs and use available internal resources and skills to create products that will satisfy such needs ahead of opponents. Based on this paradigm, it is considered that market orientation is an organisational resource that could be difficult to duplicate (Hernández-Linares et al., 2018). Similarly, Mamun et al. (2018) suggest that the difficulty of duplicating market orientation explains why many enterprises could not develop and maintain a market-oriented culture. RBV philosophy advocates that market-oriented approaches are rare, valuable, and difficult to copy. That's a firm's own skills that made it hard for others to imitate and become a competitive advantage. RBV believes that market orientation increases firm performance (Aklilu & Kero, 2025; Barney, 1991).

Many empirical studies found that being market-oriented substantially enhances business performance (Abdul Talib, 2005; Al-Hakimi et al., 2023). In summary, market orientation has a significant effect on enterprise performance (Gruber-Muecke & Hofer, 2015; Kirca et al., 2005; Ra'ed et al., 2018). Hence, the following hypothesis is offered.

H1: Market orientation has a significant positive influence on SME performance.

Learning Orientation and SMEs Performance

Learning orientation refers to a commitment to learning shared vision and open-mindedness, which could improve the deployment of important capabilities and resources (Kuivalainen & Cadogan, 2004; Marques et al., 2023; Sinkula et al., 1997). Scholars consider learning orientation an important strategic orientation that SMEs could utilise to attain a competitive market position (Farrell et al., 2008; Salavou et al., 2004; Slater & Narver, 1995). Real et al. (2014) contend that learning orientation drives the performance of SMEs even though past studies tended to suggest the impact of learning on performance among multinational companies. Considering the size of SMEs and their limited financial capacity, they could not invest in R&D activities. SMEs could only generate new knowledge by focusing on commitment to learning shared vision and open-mindedness (Eshlaghy & Maatofi, 2011; Marques et al., 2023).

Learning orientation allows an enterprise to outshine competitors since it is a valuable resource (Barney, 1991). Learning orientation is valuable to the enterprise since it could identify environmental opportunities and challenges by monitoring environmental changes. For instance, a learning-oriented enterprise could effectively comprehend changes in consumer needs ahead of its opponents (Day, 1994; Eris & Ozmen, 2012). This could lead to greater outcomes, such as new product development, higher customer retention, and an increase in growth and profit (Karpacz & Wojcik-Karpacz, 2024; Slater & Narver, 1995). The rareness of learning is another important attribute because most business enterprises are incapable of employing generative

learning, i.e., leaning that creates a new idea. This is because they usually emphasise adaptive learning, i.e., learning within routine organisational activities (Slater & Narver, 1995). In addition, learning orientation could be difficult to imitate because effective enterprise learning has social complexity. Specifically, learning orientation is a conduit of maintaining competitive benefit since it cannot be substituted easily. When competitors might try to imitate the learning-oriented enterprise, the complexity of enterprise learning indicates the hardness of engendering tactically the same valuable assets (Hernández-Linares et al., 2018). Therefore, RBV could be applied to describe learning orientation on firm performance since it is recognized as valuable, rare, scarce, and non-substitutable resources. Similarly, past study stresses that assets or resources that are valuable, rare, and difficult to imitate provide competitive benefits to the enterprise, even if they could be substituted (Barney, 1986, 1991; Hernández-Linares et al., 2018).

Real et al. (2014) and Karpacz and Wojcik-Karpacz (2024), maintains that learning orientation is a strategic resource that could enhance the generation of new knowledge and capabilities within the enterprise. Since SMEs are closely associated with their customers, they could easily learn what customers need and respond to those needs (Eshlaghy & Maatofi, 2011). Therefore, learning orientation is a mechanism to maintain competitive benefits and performance in a turbulent business environment (Eshlaghy & Maatofi, 2011; Nnko et al., 2024). Moreover, it has been found that learning orientation has a direct influence on performance (Frank et al., 2012; Karimi & Ahmadpour Daryani, 2017). Hence, the following hypothesis is formulated:

H2: Learning orientation has a significant positive influence on SMEs' performance

Entrepreneurial Orientation and SME Performance

Entrepreneurial orientation is a strategic orientation that focuses on the decision-making process that gives the enterprise a strategic direction (Hakala & Kohtamäki, 2011). Entrepreneurial orientation refers to the enterprise's strategy, procedures, and practices used to give value to the products and services to satisfy customer demands, which could increase performance (Ferri et al., 2009; Mamun et al., 2018). In entrepreneurial literature, entrepreneurial orientation consists of many elements (Lechner & Gudmundsson, 2012). Innovativeness, proactiveness, and risk-taking are regarded as the key elements (Aloulou, 2019; Mamun et al., 2018). The enterprise's ability to identify and utilise the opportunity is one of the determinants to achieve superior performance (Tang & Tang, 2012) and is usually related to an enterprise through proactiveness, innovativeness, and risk-taking behaviour that SMEs exhibit in the process of operating business activities (Aloulou, 2019). Therefore, SMEs that cannot predict future changes and take responsive actions may not survive in a turbulent business environment. Consistently, a direct and significant association between entrepreneurial orientation and performance has been reported (Brouthers et al., 2015; Gruber-Muecke & Hofer, 2015; Gupta & Batra, 2016; Karami & Tang, 2019). Similarly, past study stresses that entrepreneurial orientation is an asset or resource that is valuable, rare, and difficult to imitate, providing competitive benefits to the enterprise, even if they could be substituted (Barney, 1991; Hernández-Linares et al., 2018; Kabir et al., 2025). Thus, the following hypothesis is formulated.

H3: Entrepreneurial orientation has a significant positive influence on SME performance.

METHODOLOGY

Sample and Procedure

We collected primary data from SMEs operating in Kano State of Nigeria, for the empirical study. The participants' information was obtained from the Small and Medium Enterprises Agency of Nigeria (SMEDAN), which listed around 8,286 firms in Kano. Kano is selected for this study because it is the most commercial centre in the northern region, and in terms of manufacturing and marketing it is also among the top states (PwC, 2024). To ascertain generalizability, the sampling frame covered all categories of firms from several industries (e.g., manufacturing, information and technology, trade and commerce, agriculture and tourism, hotel and restaurant and other firms). A systematic sampling technique is employed to choose respondents based on industry type, and then a respondent is randomly chosen (Saunders et al., 2023). Based on the recommendation by scholars, research assistants were employed to obtain valid, reliable, and high-quality data. The questionnaire was quickly retrieved because we promised to offer a customized report to those respondents who completed and returned timely. This procedure gives a total of 296 completed and returned questionnaires. Twenty-five of these questionnaires were removed due to univariate outliers (Hair et al., 2020) and, therefore, not included in the further analysis. The final analysis, therefore, depends on the respondents from 271 valid data points with a response rate of 49%. Moreover, the non-response bias test between the early responses and late responses (Armstrong & Overton, 1977) showed that the two groups did not differ significantly. Table 1 provides a demographic description of the participants.

Measures

The surveys were adapted from previous literature, with a few amendments where necessary. A total of 13 itemized questions were used from the work of Laukkanen et al. (2013) to gauge market orientation. Moreover, twelve items were adapted from the work of Farrell et al., (2008) with a few rewordings to fit the study scope and measured learning orientation. To measure entrepreneurial orientation, twelve items were adapted from the work of Wolff, Pett, and Ring (2015) with a few alterations to match the study scope. The SMEs' performance is a multidimensional construct, which could be gauged with subjective or objective measures. This study is designed on SMEs across different sectors and is hence based upon adopted subjective indicators of enterprise performance from the study conducted by Spillan and Parnell (2006). Precisely six items were adapted to measure SMEs' performance. The seven-point Likert scale (strongly disagree, disagree, moderately disagree, neutral, moderately agree, agree and strongly agree) was used for the independent and dependent variables.

Table 1: Respondents Profile

Category	Frequency	Percentage	Cumulative Frequency
<i>Gender</i>			
Male	211	77.90	77.90
Female	60	22.10	100
<i>Position</i>			
Owner	66	24.40	24.40
Manager	78	28.80	53.10
Owner/Manager	116	42.80	95.90
Other	11	4.10	100
<i>Duration</i>			
Below 5 years	42	15.50	15.50
6-10 years	78	28.80	44.30
11-15 years	78	28.80	73.10
16 years to above	73	26.90	100
<i>Industry</i>			
Manufacturing	69	25.50	25.50
Trade and Commerce	49	18.10	43.50
ICT	25	9.20	52.80
Agriculture and Tourism	36	13.30	66.10
Transportation	35	12.90	79.00
Film and Multimedia	20	7.40	86.30
Hotels and Restaurants	35	12.90	99.30
Others	2	0.70	100
<i>Workforce</i>			
10-49 employees	147	54.20	54.20
50-199 employees	124	45.80	100

Because self-reported data were gathered from a single source, evaluating common method variance (CMV) is important to ascertain that the variance in the data was not explicated by one single factor (Podsakoff et al., 2003). The present study employed Harman's single-factor test recommended by Podsakoff et al. (2003). In determining CMV, this method indicates that all concerned constructs are subjected to exploratory factor analysis, and the outcome of the unrotated factor solution is then determined to ensure the number of factors that are compulsory to account for the variance in the variables. The rule states that if a significant amount of CMV is present, the outcome of the factor analysis will either be a single factor or that a single factor will account for the majority of the covariance in the predictor and a criterion variable (Podsakoff et al., 2003). The outcome of the unrotated exploratory factor analysis demonstrated 14 factors that explained an aggregate of 68.89% of the variance, with the initial (biggest) determiner explicating 31.11% of the total variance, which was below 50% (c.f. Kumar, 2012). The outcome indicated that no single determiner amounted to the bulk of covariance in the exogenous latent variable and

dependent variables (Podsakoff et al., 2012). Based on the above results, it was deduced that the data were free from CMV.

Evaluation of Measurement Model

The succeeding analysis used the partial least squares technique employing SmartPLS (Ringle et al., 2015) version 3.0 to evaluate the inner model (validity and reliability) and outer model (testing the association among variables). The evaluation of the inner model involved ascertaining the convergent and discriminant validity of the model. Following the suggestion of Hair, Hult, Ringle, and Sarstedt (2017), this study employed factor loading and average variance extracted (AVE) to assess convergent validity. This result is presented in Table 2.

Table 2 shows the item loading, composite reliability (CR), and AVE of the latent constructs. All indicator loadings greater than the suggested value of 0.70 (Hair Jr. et al., 2017) were maintained. Items EO07, EP03, EP05, EP06, LO06, LO08, LO09, MO06, MO07, and MO08 had a value smaller than 0.70. Hair et al. (2017) recommend that item loadings ranging between 0.40 and 0.70 be deleted only when such deletion could increase CR and AVE's value. In the present study, indicator loadings less than the threshold figure were maintained because they supplemented the CR that was greater than 0.70 and the AVE that was greater than 0.50 (Table 2). However, items MO01, MO02, MO03, MO04, MO13, LO01, LO02, LO03, LO04, LO05, LO07, LO10, LO12, EO08, EO10, and EO12 were removed due to lower loading. Furthermore, all four constructs attained the threshold figure for CR and AVE after the following item deletion. As a result, the constructs satisfied the reliability, and convergent validity of the model evaluated.

After the affirmation of convergent validity, we assessed discriminant validity. Discriminant validity specifies that a construct is unique in gauging a construct, so it cannot be similar to other constructs (Hair, Hult, Ringle, & Sarstedt, 2017). We followed Fornell-Larcker's rule of thumb and evaluated the discriminant validity of the latent constructs. Also, HTMT, a measure of the correlation among the variables, parallels the de-attenuated variable value creation used in the study for discriminant validity (Hair et al., 2020). Using the value of 0.9 as a yardstick, we concluded that there was no issue of discriminant validity; hence, all the variables satisfied the above-mentioned criteria rule of thumb. Table 3 shows the discriminant validity of the variable used in this study.

Evaluation of Structural Model

To evaluate the structural model, we followed Hair et al. (2014) and used the reported R^2 , beta value, and the corresponding t-values. The bootstrapping method with a sample of 5,000 was employed to get the t-value. Additionally, Hair et al. (2014) recommend reporting the effect sizes (f^2) and predictive relevance (Q^2). Also, PLS-SEM was employed to check the hypotheses of the present study.

Table 2: Convergent Validity and Reliability

Construct	Items	Loading	CR	AVE
Entrepreneurial Orientation	EO01	0.732	0.905	0.514
	EO02	0.723		
	EO03	0.743		
	EO04	0.730		
	EO05	0.720		
	EO06	0.712		
	EO07	0.681		
	EO09	0.708		
	EO11	0.702		
Enterprise Performance	EP01	0.757	0.863	0.513
	EP02	0.790		
	EP03	0.651		
	EP04	0.722		
	EP05	0.670		
	EP06	0.699		
Learning Orientation	LO06	0.692	0.772	0.511
	LO08	0.698		
	LO09	0.659		
	LO11	0.754		
Market Orientation	MO06	0.676	0.881	0.516
	MO07	0.687		
	MO08	0.697		
	MO09	0.707		
	MO10	0.749		
	MO11	0.790		
	MO12	0.714		

Table 3: Discriminant Validity

Fornell-Larcker criteria					
EO	0.717				
EP	0.629	0.716			
LO	0.405	0.390	0.678		
MO	0.622	0.571	0.372	0.718	
Heterotrait–Monotrait Ratio (HTMT)					
EO	-				
EP	0.733	-			
LO	0.530	0.522	-		
MO	0.845	0.677	0.504		

EO = Entrepreneurial Orientation; EP = Enterprise Performance; LO = Learning Orientation; MO = Market Orientation

Figure 1 and Table 4 present the association between the exogenous variables and the criterion variable based on the PLS-SEM analysis. The structural model revealed no significant direct association between market orientation and performance of SMEs ($\beta = 0.153$; $t = 1.522$; $p = 0.064$). Hence, H1 was not supported. Conversely, learning orientation has a direct significant association with SMEs' performance ($\beta = 0.162$; $t = 2.744$; $p = 0.003$). Similarly, entrepreneurial orientation has a significant positive relationship with SMEs' performance ($\beta = 0.444$; $t = 4.364$; $p = 0.001$). Thus, H2 and H3 were supported.

Table 4: Path Coefficient and Hypotheses Testing

Path	Mean	STDEV	T Stat	P Values	Decision	R ²	F ²	Q ²
MO->EP	0.153	0.097	1.522	0.064	Not supported	0.425	0.012	0.199
LO->EP	0.162	0.057	2.744	0.003	Supported		0.035	
EO->EP	0.444	0.102	4.364	0.000	Supported		0.108	

EO = Entrepreneurial Orientation; EP = Enterprise Performance; LO = Learning Orientation; MO = Market Orientation

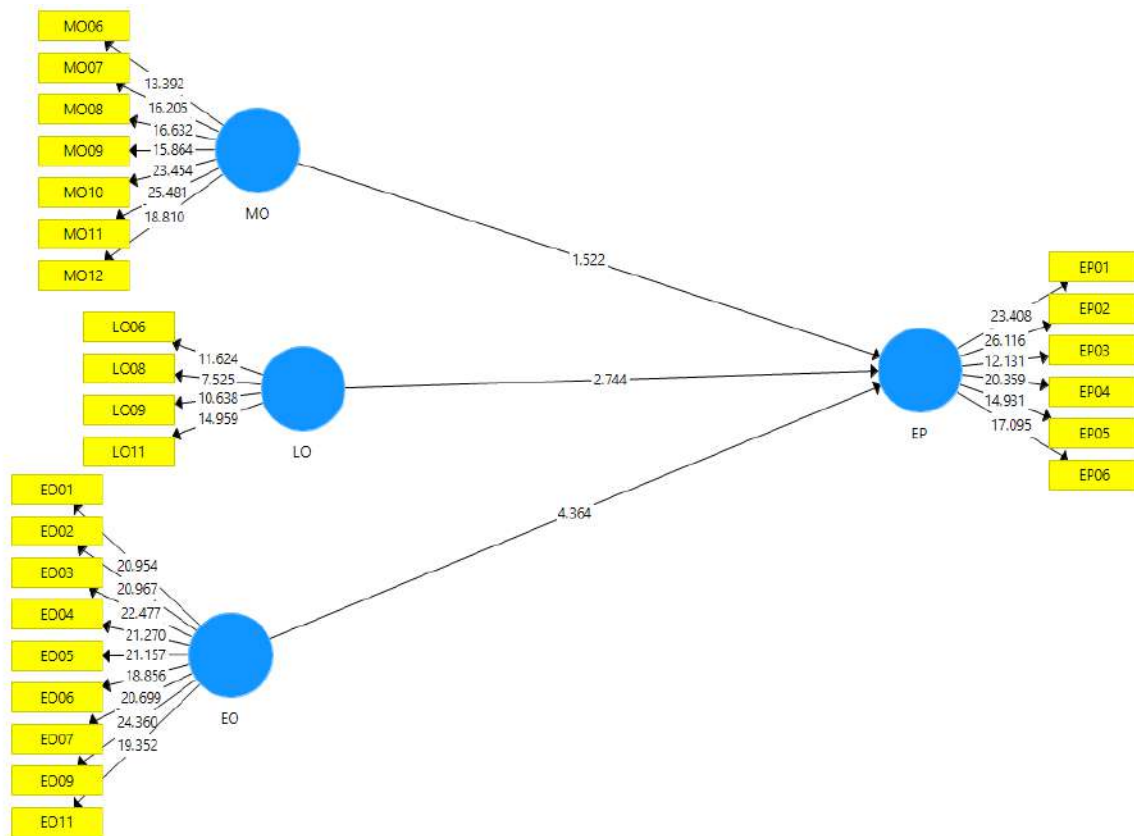


Figure 1: Result of the Path Analysis

DISCUSSION

The aim of the study is to determine the association among the dimensions of strategic orientation and performance of SMEs in Nigeria. Market orientation was found to have no significant

positive influence on the performance of SMEs. Such a finding is contrary to past studies (Al-Ansaari et al., 2015; Kirca et al., 2005; Laukkanen et al., 2013; Ra'ed et al., 2018). Earlier studies considered market orientation as the most valuable dimension of strategic orientation that influences SME performance because market orientation focuses on providing and preserving higher value for customers and being concerned about the interests of stakeholders (Aklilu & Kero, 2025). Our finding also contradicts past research that found a negative connection (Ho et al., 2017). Our findings could be explained as follows: Despite the importance of market orientation for SMEs, it might be difficult to implement because SMEs have resource constraints. For example, most SMEs do not have the resources and technological capabilities to study customer needs, monitor competitor actions, and coordinate activities to achieve the desired performance outcome (Kabir et al., 2025; Su et al., 2015; Wasim et al., 2024).

As expected, entrepreneurial orientation was found to enhance SME performance significantly. This finding concurs with previous studies (Brouthers et al. 2015; Karami & Tang, 2019; Karimi et al. 2017). Entrepreneurial orientation supports innovativeness, proactiveness, and risk-taking of SMEs. It could modify customer behaviours and result in establishing a new marketplace. Entrepreneurial orientation could be a mechanism for survival because the enterprise could use it to attain a competitive position through the creation of innovative goods, resulting in superior performance (Buli, 2017; Rajeh et al., 2024). Hence, entrepreneurial orientation enhances enterprise transformation and renewal and can help cultivate new competencies and establish new businesses within the current venture.

Consistent with our expectation, learning orientation showed a significant positive effect on SME performance, reinforcing past studies (Nkrafar & Momeni, 2017; Wolff et al., 2015). The finding suggests that the SMEs' degree of open-mindedness to accept new ideas, commitment to learning, and shared vision is an important mechanism to increase performance (Lonial & Carter, 2015; Sinkula et al., 1997). Learning-oriented enterprises could sense market changes in customer preferences faster than their competitors (Lonial & Carter, 2015). The finding also supports the RBV theory. Resources that are valuable, rare, and difficult to imitate are critical for SME triumph and economic advantage (Barney, 1991).

Implications for Sustainable Business Practices

This study aimed to comprehend how SMEs can perform better in a competitive business environment, and we did this by explaining the association between three important research variables: market, learning, entrepreneurial orientation, and enterprise performance. All these concepts, and individually, has been an issue of investigative attempt in recent years. Nevertheless, knowing how the variables, market, learning and entrepreneurial orientation relate especially to SME performance is essential for these two reasons. Firstly, SME performance is a major factor in economic growth and development; hence, it is crucial to have a comprehensive understanding of which ways SMEs can perform better. Secondly, from a managerial angle, SME performance could enhance long-term survival by protecting a small enterprise from the unavoidable environmental dynamism that is evident periodically. Therefore, appropriate knowledge of the association of the factors that are antecedents to performance and how they

should be managed effectively and successfully will be of utmost importance for both business managers and academic researchers. We hold that the study outcome contributes to both of these fields.

The key theoretical contribution this study makes to the body of knowledge is to demonstrate and analytically prove the idea that enterprise cultural values through learning orientation and action behaviours by entrepreneurial orientation is significantly related to SME performance. The finding of the study reveals that SMEs operating in Nigeria should avoid depending on one strategic orientation for attaining higher performance. Also, SMEs need to take into cognizance that the method that combines two or more strategic orientations increases performance. The study also contributes practically that the best strategy formulation for improving SMEs' performance in an emerging nation like Nigeria should be an integration of several orientations, since two orientations, learning and entrepreneurial, contributed substantially to SMEs' performance. This concurs with the opinion of Hakala and Kohtamäki (2011) that, depending on a single strategic orientation in the absence of others could lead to the poor performance of a business. Consequently, managers need to decide regarding different strategic orientations and adopt the most appropriate to organizational objectives.

Lastly, owner-manager should note that despite the non-significant effect of market orientation on SMEs' performance, due to their limited resources. These shortcomings could be reduced through owner-managers reserving their spending on more crucial areas of their productions that can offer better customer value, as against to being 'inefficient' in utilization of their limited resources. Owners-managers should also remember that when their customers' need are rapidly changing, this can provide advantages, rather than disadvantages, to display their marketing-oriented behaviors, so that managers or marketers can satisfy, and surpass, such customers' expectations. Therefore, owner-managers should frequently scan their environment for methods to exploit these benefits to enhance their performance for a sustainable business.

CONCLUSION

The study has adequately answered the main research question and empirically tested the relationship between the combined effect of strategic orientations, namely, market, learning, and entrepreneurial orientation, on the performance of SMEs. The main conclusion of the study underscores that entrepreneurial orientation and learning orientation enhance the performance of SMEs. However, the study discovered that market orientation has a non-significant effect on SMEs' performance in Nigeria. Accordingly, the study's findings conclude that managers of SMEs can overcome their shortage of resources by utilizing knowledge and information, or limited available resources, they might have to meet their customer needs.

The interpretation of the study findings needs to be done carefully. The first relates to the issue of generalizability. As the data were collected from Kano, which is one of 36 states in Nigeria, any effort to generalise beyond this scope should be made with care. Another study limitation is that only three types of strategic orientations were employed such as market, learning, and entrepreneurial, to portray the strategic orientations of SMEs. Despite, they are most widely

applied in the available literature, there are many other orientations. Equally, the study is limited to only SMEs, and hence the result cannot be applied to large organisations. Thus, further studies are recommended to use other organisations in order to get a sample from large companies to advance the generalizability of the outcome.

Despite the study limitations, the finding offers several opportunities for advanced research. Further researchers are recommended to go after other strategic variables postulated to affect SME performance, such as alliance, technological, and employee orientation. Hence, our theoretical understanding of a comprehensive strategic orientation could be ascertained. Additionally, future research could be conducted on larger industries, with larger samples, employing dyadic surveys and different geographical areas. A longitudinal study could also be explored to determine the causal association of the variables

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IMPACT OF ACCOUNTING TECHNOLOGIES ON THE QUALITY OF FINANCIAL REPORTS IN OMAN'S PRIVATE SECTOR

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ABSTRACT

Despite global advancements in accounting technologies, their implementation in Oman remains limited due to organizational resistance, insufficient training, and regulatory constraints. This study investigates the impact of advanced accounting technologies, particularly cloud computing and artificial intelligence (AI), on the quality of financial reporting in the Omani private sector. The study adopts a quantitative approach, utilizing a structured questionnaire distributed to accounting professionals across various private sector organizations in Oman. Data analysis involved descriptive statistics and Pearson correlation to assess the relationship between technological adoption and reporting quality. The results indicate a strong positive correlation between the use of cloud and AI technologies and improvements in the quality of financial reporting. Respondents confirmed that these technologies enhance real-time reporting, reduce errors, and support better decision-making. However, several barriers were identified, including high implementation costs, a lack of technical expertise, and concerns over data security. This research provides valuable insights for practitioners, decision-makers, and policymakers, highlighting the need for supportive strategies, targeted training programs, and robust regulatory frameworks to facilitate the effective adoption of accounting technologies.

Keywords: *Artificial intelligence; Financial reporting quality; Accounting technologies; Digital transformation.*

Paper Type: *Research Paper*

INTRODUCTION

Accounting has undergone significant transformation due to technological advancements, with numerous tools available in the market to perform specialized tasks that require high levels of time efficiency, precision, and accuracy (Moll & Yigitbasioglu, 2019). Globally, organizations

have increasingly adopted technologies such as artificial intelligence (AI) and cloud computing to enhance operational efficiency, support informed decision-making, and ensure compliance with regulatory standards. However, in Oman, the adoption of such advanced technologies remains limited.

Despite evidence from developed markets demonstrating how technology improves financial reporting quality, regional studies suggest that cultural barriers, regulatory frameworks, and organizational structures continue to impede the widespread implementation of these tools in Oman (Weerakkody & El-Haddadeh, 2015). There is a global shift toward digital transformation in financial reporting (Rawashdeh et al. 2022; Ahmad et al. 2024; Fraihat et al., 2024). Omani private firms remain hesitant to fully embrace these innovations. This reluctance may stem from a lack of awareness regarding the benefits of modern systems, insufficient training, or resistance to change among employees and management.

Moreover, there is a notable gap in research focusing on the impact of emerging technologies on the accuracy, reliability, and timeliness of financial reporting in the Omani context (Rababah et al., 2024). For instance, traditional auditing practices in Oman have significantly influenced current reporting systems, potentially slowing the adoption of more sophisticated, technology-driven solutions that could enhance efficiency, effectiveness, and credibility (Rehman, 2021).

Studies have shown that technology can improve the quality of financial reports; however, few investigations have explored this relationship within the Omani business environment. Additional challenges such as organizational resistance, inadequate training, and concerns over data security further delay the integration of modern accounting technologies.

Given this context, this study addresses the following research question:

- What is the relationship between the adoption of cloud-based accounting technologies and the quality of financial reporting in Oman's private sector?

Although previous studies have shown that advanced technologies such as AI and cloud computing improve the quality of financial reporting by increasing efficiency, accuracy, and transparency (Moll & Yigitbasioglu, 2019; Rawashdeh et al., 2022; Ahmad et al., 2024), much of this research has focused on developed economies where digital transformation is already well underway. These studies often generalize findings without accounting for the specific socio-economic, regulatory, and organizational contexts of developing countries. In contrast, limited research has examined how such technologies impact financial reporting within the unique environment of the Omani private sector, which faces cultural resistance, insufficient training, and limited regulatory support (Weerakkody & El-Haddadeh, 2015; Rehman, 2021). This study addresses this gap by empirically exploring the relationship between cloud-based accounting technologies and financial reporting quality in Oman's private sector. By focusing on a regionally underrepresented context, our research provides localized insights into the barriers, benefits, and strategic implications of adopting emerging accounting technologies. Thus, the study contributes not only to the academic literature on accounting information systems in developing economies but also offers practical recommendations for enhancing reporting practices and digital readiness among Omani firms, aligning with global standards such as the IFRS (Mahmood et al., 2024).

Omani firms have demonstrated varying degrees of reluctance in adopting advanced accounting technologies, often due to organizational resistance, limited training, and regulatory ambiguity (Rababah et al., 2024). By excluding public sector organizations, this study narrows its focus to the private sector, where decision-making processes and resource constraints differ significantly. This approach allows for a more accurate exploration of the sector's unique challenges, strengths, and opportunities. The findings offer valuable insights into current financial reporting practices and support the integration of emerging technologies in alignment with International Financial Reporting Standards (IFRS). These insights provide both theoretical contributions and practical guidance for enhancing accounting systems and technological readiness within Oman's private sector. The results of this research are valuable to academics, accounting professionals, and policymakers alike, as they provide insights into the application and adoption of innovative technologies in financial reporting within Oman's private sector. Academically, the study fills a critical knowledge gap by examining how these technologies affect financial reporting quality in a developing country context. It also contributes to the broader understanding of how information technology influences accounting practices, particularly in regions where its implementation is relatively recent.

For practitioners, the study provides actionable recommendations for enhancing financial reporting through the strategic use of technology. It highlights how tools such as data analytics, cloud computing services, and automated systems can improve accuracy, usability, and reliability, ultimately supporting better decision-making and operational efficiency (Mahmood et al., 2024). Policymakers can utilize the findings to identify key barriers to technology adoption—such as insufficient training, resistance to change, and cybersecurity concerns—and develop strategies to overcome them, thereby promoting the implementation of best-in-class accounting systems that align with international standards.

Furthermore, the study emphasizes the importance of fostering a supportive IT environment and cultivating a culture of innovation to drive competitiveness and improved financial management practices within Oman's private sector. Overall, this research holds both academic and practical significance. From an academic standpoint, it enriches the existing body of knowledge on the application of emerging technologies in financial reporting within Oman's private sector, addressing a gap in the literature by focusing on sector-specific issues, particularly those related to the adoption of IFRS.

Practically, the study offers valuable insights to financial managers, accountants, and organizational leaders in the Omani private sector. It outlines the benefits and challenges associated with integrating modern technologies into financial reporting systems, providing guidance that can lead to enhanced reporting quality, greater transparency, and stronger regulatory compliance. Ultimately, the findings aim to support organizations in refining their financial practices, making informed decisions about technology adoption, and aligning themselves with global trends in financial reporting.

LITERATURE REVIEW

Technology Acceptance Model (TAM)

The Technology Acceptance Model TAM, developed by Davis (1989), describes determinants of new technologies adoption. Based on the TAM model, perceived usefulness and perceived ease of use govern the probability of technology acceptance in an enterprise (Charness & Boot, 2019). Hence these factors are important indicators in establishing how the advanced accounting technologies are implemented in the Omani private sector. Perceived usefulness is about the extent to which the people in the organization consider the application of a certain technology to improve their performance.

In the accounting area, it is AI and ERP system, and such technologies are viewed as enhancing the quality, efficiency, and effectiveness of financial reporting. For instance, data input, checking as well as, matching can be automated hence freeing a lot of time for the accountants where they can find time to analyse (Kaya, 2019; Skidmore & Smith, 2024). Similarly, Cloud-based accounting solutions allow is managements to get real-time information, thus, better decision making, and reception with the legal requirement in Oman.

Resource-Based View (RBV)

A review of the concepts of the RBV offers insights into the approach taken to analyze the impact of technological capabilities in generating the first-line defenses (Kraaijenbrink et al., 2010). According to Barney (1991), resources that are valuable, rare, inimitable and non-substitutable enable firms to obtain and maintain a competitive advantage. When incorporated into organizational processes, accounting technologies relate to such resources, given that they facilitate precision, promptness, and conformity.

Certainly, for Omani firms within the private business sector cloud-based accounting platforms, AI, and blockchain are being employed more as strategic tools. For instance, cloud solutions have been the key drivers of flexibility and cost reduction since firms can manage them without substantial investments in new infrastructure when market conditions change (Al-Mamari et al., 2021). This is useful mainly for SMEs since they make up the largest part of the private business sector in Oman and are frequently working with restricted budgets. Using AI applications, for example predictive analytics, would also support the application of the RBV because this would ensure that firms are able to get value out of the financial data. In essence, such insights can help in decision making about which areas to invest in as well as where potential risks lie that would in turn may improve organizational performance.

However, the RBV further highlights some of the problems that companies face with regards to implementing, let alone sustaining, the application of sophisticated technologies. Issues of high implementation costs, program technicality, and the constant need for updates are costly for organizations. To Omani firms especially the SMEs, these challenges point to the need for strategic direction and investment on capacity enhancement.

HYPOTHESES DEVELOPMENT

Global Perspective

Across the world, there has been a real change in the advanced accounting technologies that have characterized financial reporting. According to Skidmore and Smith (2024) the use of AI tools in entering data has been found to cut errors by about half; and thus, financial statements are usually free from mistakes. This can be done through machine learning algorithms which are capable of identifying and eradicating errors more independently with little interferences from human input. Blockchain technology has also found new applications as a reliable method of preserving financial information. The decentralized system partnered with an immutable ledger diminishes cases of tampering hence fraud. Yermack, in his study in 2017, noted that businesses that implemented blockchain solutions recorded impressive reduction in fraudulent cases because the database was transparent and could not be altered. There it is important to note that with the emergence of cloud-based systems financial reporting has become timelier and more accessible. Wang et al. (2019) add that cloud platforms permit the processing of data in real time, thus helping organisations to meet severe reporting schedules. These systems afford scalability and remote access, a feature that was beneficial when the COVID-19 pandemic forced many organizations to go online.

Regional Perspective (Middle East and GCC)

Advanced technologies in accounting have taken root in the Middle East and the GCC region, following the advancement of digital transformation programmes. Al-Busaidi et al. (2021) found that improvement in the accuracy of financial reporting by firms in the GCC was enhanced by 35% once they adopted ERP systems.

These systems combined various aspects of accounting by consolidating report production, thus eliminating the duplication of work. Most of the adoption of blockchain technology is prevalent in countries such as Saudi Arabia as well as in the UAE, which improves IFRS compliance outlay. According to El-Sayed and Al-Mahrouqi (2020), the studies highlights that the blockchain enhances the data security & audit in these nations positively, and thus, improving the investor confidence.

Challenges of the new technologies adopting in Oman

significant obstacles. One of the primary challenges is the high cost of implementation. Advanced systems such as artificial intelligence and blockchain require substantial financial investment, which many small and medium-sized enterprises (SMEs) cannot afford. As noted by Ahmed and Al-Harthy (2022), a considerable number of SMEs in Oman lack both the financial resources and the capability to adopt such advanced systems. Another barrier is the shortage of technical competency within the workforce. The effective utilization of these technologies demands skilled professionals who can navigate and manage complex digital systems. However, as highlighted by Al-Busaidi et al. (2021), many employees, particularly in

smaller firms, lack the necessary technical expertise, which severely limits the potential benefits of these innovations.

Resistance to change also poses a major hurdle. Cultural and organizational inertia, especially among individuals accustomed to traditional methods, leads to reluctance in embracing digital tools. This resistance slows down the overall rate of technology adoption (Ahmed & Al-Harthy, 2022). Furthermore, regulatory requirements add another layer of complexity. Legal frameworks in Oman significantly impact the adoption process, particularly in the private sector. The Oman Tax Authority's recent regulations on digital record-keeping have prompted companies to shift toward Enterprise Resource Planning (ERP) systems and cloud-based solutions. Al-Busaidi et al. (2021) note that these requirements now demand real-time updates of financial records for taxation purposes, necessitating sophisticated digital infrastructure. However, many firms, especially SMEs, face substantial challenges in making this transition due to limited access to capital and technology. These limitations make it difficult for such organizations to comply with legal requirements, emphasizing the need for comprehensive support mechanisms.

To address these issues, strategic interventions such as subsidizing technology costs for smaller firms and offering targeted training programs are essential. These measures would not only bridge the current capability gap but also facilitate a smoother and more inclusive digital transformation across the sector. Based on this, the following hypotheses are developed.

H1: There is a significant relationship between cloud-based accounting technology and the quality of financial reports in the Omani private sector.

H2: There is a significant relationship between AI-based accounting technology and the quality of financial reports in the Omani private sector.

RESEARCH FRAMEWORK

The research framework in Figure 1 illustrates the independent variables — cloud-based accounting technology and AI-based accounting technology — and the dependent variable, which is the quality of financial reports.

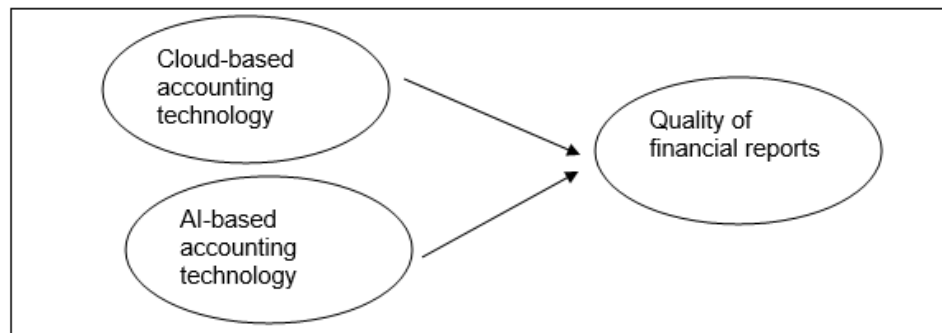


Figure 1. Conceptual Framework

METHODOLOGY

To explore the relationship between accounting technologies and financial reporting quality (FRQ), this study employs a quantitative research method. The sample includes professionals from diverse roles and industries. Primary data was gathered through an online survey distributed via email to accounting and finance professionals in Oman. Participants were identified through professional networks, LinkedIn groups, and industry associations. The online mode was chosen for its accessibility and cost-effectiveness, particularly given the dispersed nature of the target population.

Participants were given a total of eight weeks to complete the survey, with reminder emails sent every two weeks to encourage response rates. Anonymity was assured to promote honest and unbiased responses. As an incentive, participants received a summary of the study's findings upon completion. In addition to primary data, secondary sources were utilized to enrich the contextual background of the study. These included peer-reviewed journals, government publications, and industry reports. For instance, data from Oman's Ministry of Commerce and Industry provided insights into the current state of technology adoption in the country, while academic articles offered regional and global perspectives on the integration of technology in accounting practices (Al-Busaidi et al., 2021). This dual-source approach strengthens the study's objectivity and contextual relevance, providing a robust foundation for both theoretical and practical implications. This quantitative approach has been widely adopted in previous studies conducted in the Arab region (e.g., Bataineh & Rababah, 2016; Hasan, 2017; Kasasbeh, 2018; Rababah et al., 2020, 2021; Rawashdeh et al., 2022; Rababah, AlKasasbeh, & Khan, 2024), thereby supporting methodological consistency and reinforcing academic rigor.

Validity and Reliability

Validity ensures that the questionnaire accurately measures the intended constructs. To establish validity, we shared the questionnaire with several faculty members, who confirmed its relevance and appropriateness. We also conducted a pilot test with 30 participants to assess the clarity and format of the questionnaire. Based on their feedback, we made necessary refinements to improve understanding and usability.

Reliability refers to the consistency of the measurement tool. It was assessed using Cronbach's alpha, and the results showed a value greater than 0.7, indicating that the survey items yield stable and consistent responses across participants.

DATA ANALYSIS

There is a significant relationship between cloud-based accounting technology and the quality of financial reports in the Omani private sector.

Statistical findings indicate a strong positive correlation between cloud-based accounting technology and financial reporting quality ($r = 0.8$, $p = 0.01$). The significance value ($p = 0.01$) is below the conventional threshold of 0.05, which confirms that the observed relationship is

statistically significant and unlikely to have occurred by chance. Additional correlations revealed mixed but meaningful relationships. Positive associations were observed between cloud implementation and financial reporting quality ($r = 0.618$, $p = 0.01$), as well as general trends ($r = 0.266$, $p = 0.01$). On the other hand, negative correlations were found between cost barriers and reporting quality ($r = -0.609$, $p = 0.01$), and between data security concerns and audit transparency ($r = -0.617$, $p = 0.01$).

A survey of accounting professionals revealed that over 76% agreed or strongly agreed that cloud technology enhances real-time reporting, accuracy, compliance, and audit transparency. However, 57.6% of respondents identified high implementation costs as a major barrier to adoption. Despite this, the majority acknowledged several benefits, including reduced risk of data loss (70.9%), improved accessibility (78.6%), and simplified compliance (71%). The findings support H1, confirming a positive and significant relationship between the use of cloud-based accounting systems and improved financial reporting quality in Oman's private sector. While enthusiasm for cloud technology is evident, cost remains a critical challenge affecting adoption rates.

There is a significant relationship between AI-based accounting technology and the quality of financial reports in the Omani private sector.

Statistical findings indicate a strong positive correlation between AI-based accounting technology and financial reporting quality ($r = 0.75$, $p = 0.000$). Further analysis revealed a perfect correlation between AI and fraud detection/security ($r = 1.0$, $p = 0.000$). However, mixed outcomes were observed with other factors. Weak or negative correlations were found between AI and financial forecasting ($r = -0.033$), reporting speed ($r = -0.047$), tax compliance ($r = 0.011$), and report accuracy ($r = 0.099$).

Key insights from the survey include that over 75% of participants agreed or strongly agreed that AI improves accuracy, reduces errors, speeds up reporting, and enhances fraud detection. However, high implementation costs and a lack of skilled personnel were identified as major barriers to AI adoption by 72.3% and 77.6% of respondents, respectively. Concerns about job displacement were also evident, with 75.7% of participants agreeing or strongly agreeing that resistance to AI stems from fears of automation replacing traditional roles. Additionally, a significant portion of respondents (76.1%) emphasized the need for specialized training to successfully implement AI. These findings support H2, demonstrating a statistically significant and positive impact of AI-based accounting technologies on financial reporting quality. While there is clear optimism regarding AI's potential to improve efficiency and accuracy, challenges such as high costs, skill shortages, and resistance to change remain substantial obstacles to widespread adoption in Oman's private sector.

DISCUSSION OF FINDINGS

Cloud-Based Accounting and Financial Reporting Quality (H1):

The study confirms that cloud-based accounting significantly improves financial reporting quality in Oman's private sector, with a Pearson correlation coefficient of 0.999 indicating an

extremely strong positive relationship. This aligns with previous research highlighting cloud accounting's role in enhancing transparency, accessibility, and compliance (Daniel et al., 2024). Real-time data updates reduce errors and improve auditability, enabling firms to meet evolving regulatory requirements more efficiently. Survey results show that 92% of respondents recognize its value in increasing transparency, while 85% report improved compliance and timeliness. However, challenges such as high initial costs (81%), cybersecurity concerns like hacking and data breaches (72%), and integration issues with existing systems (65%) remain key barriers to adoption (Prasead, 2017). To support sustained cloud adoption, organizations should invest in cybersecurity infrastructure and employee training, while policymakers should establish clear regulatory frameworks for cloud-based accounting. These findings are consistent with Moll & Yigitbasioglu (2019), who argue that digital technologies play a critical role in transforming accounting practices and improving the quality of financial information.

AI-Based Accounting and Financial Reporting Quality (H2):

Findings also reveal a very strong and positive correlation ($r = 0.999$) between AI-driven accounting and improved financial reporting quality. AI enhances accuracy, automates repetitive tasks (e.g., ledger reconciliation and tax calculations), and improves fraud detection through anomaly recognition algorithms. A majority of respondents reported benefits such as improved forecasting (91%) and reduced manual input (87%). Despite these advantages, AI adoption faces significant obstacles in Oman, including high software costs (89%), lack of skilled personnel (74%), and resistance due to fears of job displacement. These findings echo earlier observations about knowledge gaps and workforce readiness affecting AI adoption (Saba & Nara, 2025). To address these challenges, collaboration between businesses and educational institutions is recommended to develop specialized AI training programs. Additionally, short-to-medium-term policy interventions—such as tax incentives or subsidies—could help SMEs adopt AI technologies more effectively.

IMPLICATIONS

The findings highlight important implications for accounting practitioners, firms, and policymakers. Accountants must enhance their technical knowledge and skills in AI and cloud-based systems, as the continued advancement of these technologies will automate many accounting functions. To remain competitive, practitioners need more than just traditional accounting expertise—they must also be proficient in data analytics, AI applications, and cloud platforms. Accounting firms, in turn, should invest in ongoing training programs to enable staff to effectively utilize these technologies. For organizations, AI and cloud systems offer significant advantages, such as increased productivity, reduced errors, and enhanced data management capabilities. However, the initial investment may be burdensome, particularly for smaller firms, necessitating a well-thought-out strategy that balances short-term costs with long-term benefits. As more companies shift to cloud-based systems, adopting AI becomes essential to maintain competitiveness. Finally, these developments present new challenges for regulators and policymakers, who must create clear regulatory frameworks to address concerns

around security, privacy, compliance, and algorithmic bias. To foster innovation while maintaining trust and accountability, governments should ensure that the use of AI and cloud technology in accounting aligns with both national and international ethical standards.

LIMITATIONS AND RECOMMENDATIONS

This study is subject to several limitations. Firstly, the focus is confined to the application of AI and cloud computing in the private sector within Oman, limiting the generalizability of the findings. The use of a relatively small and region-specific survey sample may not fully reflect the experiences of firms in other sectors or countries, particularly governmental entities. Additionally, given the rapid pace of technological innovation, some conclusions drawn from this research may become outdated in the near future. Future studies should address these limitations by including a wider range of technologies and larger, more diverse participant samples.

To maximize the benefits of AI and cloud technologies in accounting, it is recommended that practitioners pursue specialized certifications and engage in professional development activities. These efforts will strengthen their ability to interpret complex financial data and support strategic decision-making. Firms are encouraged to invest in automated systems for financial reporting, fraud detection, and risk management, as such tools can significantly improve accuracy and operational efficiency. Moreover, continuous staff training is essential for ensuring a smooth technological transition. Collaborations with technology providers can also help firms stay informed about the latest innovations.

From a policy perspective, regulators should develop comprehensive frameworks that address the use of AI and cloud computing in accounting. These should cover critical areas such as data privacy, transparency, and consumer protection. Incentivizing technology adoption—such as through financial subsidies or tax credits—can further support small businesses in overcoming cost-related barriers.

Further research is needed to explore the adoption and impact of additional emerging technologies, such as blockchain and machine learning, in financial reporting and auditing. Studies should also investigate the specific challenges faced by small and medium enterprises (SMEs) in integrating these advanced tools. Additionally, ethical considerations surrounding AI use in accounting—such as data security, algorithmic bias, and transparency—deserve thorough examination to ensure responsible and equitable technology adoption. Finally, this study employed a quantitative approach for data collection. Future researchers are encouraged to conduct in-depth qualitative studies, such as interviews, to gain richer insights into customer perceptions and experiences especially when we study the new accounting innovations. This approach has been successfully used in previous studies in the Arab region (Rababah, 2012; 2014; Hasan, 2017; Faudziah & Rababah, 2011; Fadzil & Rababah, 2012; Nassar & Rababah, 2020).

CONCLUSION

The research indicated that both AI-oriented accounting technologies and cloud-based technologies are fundamentally important in improving the quality of financial reporting in the private sector of Oman. Data analysis and statistical assessment led the study to conclude that advanced technologies promote enhancement in financial reporting accuracy, efficiency and compliance with international standards.

AI-Powered Accounting Technologies and Financial Reporting Accuracy: One of the primary findings of the research was that accounting technologies powered by algorithms enhance the accuracy of financial statements by automating data analysis and anomaly detection and lessening human error in financial reporting. For example, machine learning and predictive analytics amazed executives with their relevancy to improve decision-making through predictive forecasts and real-time access to financial data (malhotra). Organizations also use AI-powered accounting technologies to detect financial fraud and non-compliance easier and more effectively than they did without the use of AI, leading to more reliable financial statements and legitimized investor confidence.

Cloud-based Accounting Systems and Reporting Efficiency: Cloud accounting technology was noted for its ability to facilitate accounting processes by allowing users to access the financial data, reporting and documentation from their devices, and ultimately allowing them to work in different physical locations.

The ability for all users to access data in real-time contributes to faster and more correct reporting and diminishes the time it takes to complete the financial closing cycle while also improving reporting quality and timeliness of disclosures (Kosh.ai, 2024). Cloud-based accounting technology has also simplified data management and eliminated the burdens of paperwork while keeping financial information always up-to-date. This is important for many organizations as regulatory environments are changing so rapidly.

Enhancement of transparency and compliance: AI systems and cloud systems have fundamental effects on transparency in financial reporting (Thanasas et al., 2025). The automation of some critical tasks in financial workflows like reconciliations, audit trails and regulatory reporting means financial reporting is both accurate and compliant with relevant international financial reporting standards (IFRS). The study identifies that the private sector in Oman has begun to see increased transparency within its financial reporting practices due to improved transparency from these systems.

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FACTORS INFLUENCING MALAYSIAN ADOPTERS' PERCEIVED USEFULNESS TOWARDS PAYMENTS AND E-WALLET SERVICES

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ABSTRACT

Based on the Technology Acceptance Model, this study examines the influence of several external variables on the perceived usefulness (PU) of payment and e-Wallet services among users in Malaysia, namely perceived ease of use (PEU), perceived enjoyment (PE), perceived information (PI), personal innovativeness (PI), social influence (SI), and security concerns (SC). Data were collected from 204 respondents. The results show that only PEU and PE positively and significantly influence PU. This demonstrates that even though Malaysians are aware of and frequently use digital payment and e-Wallet services, service providers must focus on improvements related to usability, enjoyment, and innovativeness. It will strengthen the service providers' image and give users a more favorable perception of utility, leading to a higher adoption rate of these services.

Keywords: *E-wallet, digital payment, perceived usefulness, Malaysia*

Paper Type: *Research Paper*

INTRODUCTION

During the Covid-19 crisis, there has been a sharp reduction in the use of cash (McCaughey & O'Shea, 2020). As many businesses were feared that the virus could be transmitted through banknotes and coins, this led to many of them only accepting contactless payments, further sparking the start of a cashless society (Cullinane, 2020). When Malaysia's movement control order (MCO) began, the online food delivery service - Foodpanda - announced that they would begin a contactless delivery service as part of the measures to curb the spread of Covid-19 (Yeoh, 2020). Touch 'n Go e-Wallet has also offered cashbacks and free delivery for food orders (Hassan, 2020). These measures are being taken to encourage customers to switch to cashless payment methods to minimise contact (Yeoh, 2020). In just one month of implementing the MCO, some e-Wallet players reported that their number of subscribers has doubled (Hassan, 2020). For instance, GrabPay Malaysia's cashless transactions have increased about 1.7 times; while sign-up rates for the Maybank e-Wallet have more than doubled (Hassan, 2020). This

situation alone demonstrates how crucial digital payment and e-Wallet services are becoming, since cashless transactions became the "new normal" for the entire nation. Furthermore, Malaysia has at least 40 FinTech businesses in the payment subsector (FintechNews Malaysia, 2019) and around 50 e-Wallet providers (Tan, 2020). While payment and e-Wallet technologies have the potential to revolutionise financial services, widespread adoption remains a barrier. Many consumers still prefer traditional banking methods due to concerns related to security, lack of awareness, and unfamiliarity with new technologies. To overcome adoption barriers, it is necessary to understand the underlying factors that influence consumers' perceptions of usefulness towards these services.

This study investigates the adoption of payment and e-Wallet services in Malaysia as an emerging and potential FinTech hub in Asia. It identifies the determinants of perceived usefulness (PU) that would influence the adoption towards these two services among Malaysian adopters. PU refers to the degree to which an individual believes that using a particular system would enhance their job performance or daily life activities (Davis, 1989). In the context of payment and e-Wallet services, PU reflects users' beliefs about how these technologies can improve their financial management, transaction speed, and overall convenience. Moreover, according to Davis, Bagozzi & Warshaw (1989), PU directly affects the attitude to adopt a system and can be affected by various external variables. It was also mentioned that by looking into these external variables, more effective strategies for influencing the adoption of a system could be developed (Davis, Bagozzi & Warshaw, 1989).

To better understand what drives PU in the context of payments and e-Wallet services, this study will examine six key factors: Perceived Ease of Use (PEU), Perceived Enjoyment (PE), Perceived Information (PF), Personal Innovativeness (PI), Social Influence (SI), and Security Concerns (SC). Based on previous research, most of these factors were found to positively influence people's intention to adopt payment and e-Wallet services. For example, studies by Chua et al. (2019), Krishnan et al. (2016), and Prompattanakdee (2009) have shown that PEU plays a significant role in shaping adoption behaviour. Similarly, PE has also been linked to higher adoption rates, as seen in findings by Chong et al. (2019) and Lai & Zainal Ariffin Ahmad (2015). PF was found to be influential by Cho and Sagnov (2015) and Wen (2016), while the significance of PI and SI was supported by Hu et al. (2019), Chong et al. (2019), and others. On the other hand, SC—particularly as highlighted in Wen's (2016) study—was found to have a negative impact, suggesting that concerns about security can discourage users from adopting payment and e-Wallet services.

Several studies show different results for some of these factors. In Wen's study (2016), PI, SI and PEU were not shown to have a direct positive relationship with consumer acceptance. Moreover, SC has a positive relationship with consumer acceptance (Chong et al., 2019), due to a different definition of SC. In another study, it concluded that SC has no significant relationship with consumer acceptance (Chua et al., 2019). These variations in results may occur due to the different locations where these studies are conducted. Hence, these factors are selected to test if they are still relevant when brought into the context of Malaysia. They would also be evaluated to see if they are external variables of PU instead of having a direct influence on the intention to adopt these Fintech services.

Although previous studies have explored various aspects of payment and e-Wallet services adoption, few have specifically examined how PU is shaped by multiple determinants simultaneously. Moreover, most studies have been conducted in developed economies, leaving a gap in understanding the dynamics in emerging markets like Malaysia. This study holds significant value both in academic and practical contexts. Academically, it extends the applicability of the TAM by integrating additional determinants that are particularly relevant to payment and e-Wallet services adoption, thereby enriching the theoretical framework used to understand user behaviour in digital financial services. It also contributes to regional research by providing empirical evidence specific to the Malaysian market, an emerging economy with growing potential in the payment and e-Wallet services sector. Practically, the findings offer valuable insights for FinTech developers and financial institutions, guiding them in enhancing user experience, improving service design, and building consumer trust through factors such as perceived ease of use and enjoyment. Furthermore, the study supports policymakers in crafting targeted strategies and interventions aimed at promoting financial inclusion, increasing digital literacy, and fostering a more inclusive and technologically advanced financial ecosystem in Malaysia.

The remainder of this paper is structured as follows. Section 2 presents the literature review. Section 3 describes the data and methodology employed in this study, and Section 4 presents and discusses the results. Section 5 concludes the paper and offers some policy implications of the study.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Adoption of FinTech Payments and E-Wallets

The transition from cash to digital payments has increased payment revenues all over the world (Malhotra, 2019). Global non-cash transaction volumes grew at 12% between 2016 and 2017 to reach the highest in the past twenty years - 539 billion (Capgemini, 2019). The growing adoption of mobile payments, contactless technology and digital innovations from technology players contributes to this significant growth (Capgemini, 2019). Digital wallets (e-Wallets) are also a driver behind payments revenue growth (Malhotra, 2019). As advancing technologies make cashless transactions more convenient for buyers and sellers alike, the adoption of these services will grow inevitably (Malhotra, 2019). In fact, this growth would not just be limited to some countries but worldwide.

Both the transaction value of mobile banking and e-money have grown significantly over the past 5 years, indicating that Malaysian adopters of payment and e-Wallet services have been increasing (FintechNews Malaysia, 2019). In 2018, it was observed that Malaysians use e-money more frequently to pay for small transactions, while larger payments, for cars, home or insurance, were done through internet banking (Pikri, 2019). Just in e-money transactions alone, transaction volume amounted to 1.4 million and RM10.6 billion in value as of January to August 2019, according to BNM (Birruntha, 2019). Up to the end of 2019, 48 e-money licenses have been granted by BNM, including five for banks (Tan, 2019). It has also been observed that almost

every major merchant in Klang Valley accepts at least one e-Wallet for payment (Ng, 2019). In fact, most shops now accept multiple e-Wallets (Ng, 2019). Major e-Wallet players like Boost and Touch 'n Go are said to each have more than 5 million subscribers, while it is claimed that two out of three Malaysians use GrabPay (WARC, 2019).

However, this crowded e-Wallet scene in Malaysia is not expected to sustain much longer with a population of only 32.6 million (Tan, 2019). In late 2019, DiGi.com Bhd's vCash - one of the pioneers in Malaysia's e-Wallet scene - was forced out of the game (Wong & Tay, 2020). According to TNG Digital Sdn Bhd's chief executive officer (CEO), Ignatius Ong, some e-Wallets would not be able to survive this competition, and consolidation would be inevitable (Wong & Tay, 2020). Ong also told The Edge Financial Daily in an interview that two e-Wallets in Malaysia are the maximum (Wong & Tay, 2020). This statement is concluded based on the e-Wallet scene in China, where there are only two main e-Wallets while having a population of around 1.4 billion (Tan, 2019). As mentioned by Boost's CEO, Mohd Hairil Abdullah, competition would be expected to get more intense as some banks have expressed interest in launching their own e-Wallets (Wong & Tay, 2020). Currently, Malaysians are inclined to use e-Wallets because of the discounts, promotions and cashbacks (Birruntha, 2019). As this industry matures and stabilises, these rewards will no longer be sustainable (Tan, 2019). As mentioned by Maybank's head of community financial services in Malaysia, Datuk Hamirullah Boorhan, businesses should focus on enhancing user experience instead of just relying on incentives to attract customers, as it would be more sustainable (Wong & Tay, 2020).

This study hence aims to identify these factors that influence adoption towards these services. It would benefit FinTech companies by giving them insights into how to enhance users' experience by making appropriate improvements to their services.

Technological Acceptance Model

The TAM provides a frame of reference for understanding consumer technology acceptance (Davis, 1989). The TAM model proposes that PU and PEU are two leading factors that affect consumers' attitudes toward technology and verify their intention to use or adopt innovative technology. To improve its explanatory power in the e-wallet context, TAM has been extended with other models such as Theory of Reasoned Action (Damayanti et al., 2021), Theory of Planned Behaviour (Aisyah and Sesunan, 2023; Tian et al., 2023; Astari et al., 2022), Health Belief Model (Hiew et al., 2022), and Diffusion of Innovation (Gunawan et al., 2020; Puspitasari et al., 2021). This indicates TAM has a critical role in understanding e-wallet adoption and continued usage intention in different contexts. PU positively impacts satisfaction, and continuance intention on e-wallets (Puspitasari et al., 2021). Furthermore, PU has a strong predictor of intention to continue the use of e-wallets (Tian et al., 2023). Hence, in this study, TAM is extended with two motivation factors (i.e., PEJ and RW) to understand consumer intention to continue the use of e-wallets.

Perceived Usefulness (PU)

PU refers to the extent to which an individual believes that using a particular system will enhance their performance or efficiency (Davis, 1989). In the context of FinTech, PU reflects users' beliefs about whether adopting a digital financial service improves their ability to manage money, conduct transactions, and access financial products conveniently. Studies consistently show that PU is a strong predictor of behavioural intention to adopt FinTech services. For instance, Yeow et al. (2017) found that PU significantly influences the intention to use mobile banking applications among Malaysian users. Similarly, Krishanan et al. (2016) concluded that PU plays a vital role in determining consumers' acceptance of mobile payment systems. Given its centrality in predicting adoption behaviour, this study selects PU as the dependent variable. Understanding what drives PU can provide actionable insights for FinTech providers aiming to improve user engagement and retention.

Perceived Ease of Use (PEU)

PEU refers to the degree to which an individual finds it effortless to use a system (Davis, 1989). According to TAM, PEU positively affects PU because users are more likely to perceive a system as useful if it is easy to use. Several studies support this relationship in the FinTech domain. Chua et al. (2019) found that PEU significantly influences PU in the context of mobile wallet adoption. Prompattanakdee (2009) also confirmed that ease of use enhances perceived usefulness in online banking systems. Moreover, Balog and Pribeanu (2010) highlighted that PEU not only affects PU but also mediates the relationship between other external factors (e.g., interface design, system features) and PU.

H1: PEU has a positive relationship with PU for payment and e-Wallet services.

Perceived Enjoyment (PE)

PE refers to the pleasure derived from using a system (Davis, 1992). Unlike PEU and PU, which are task-oriented, PE captures the emotional and hedonic aspects of technology use. Research suggests that PE plays a significant role in shaping PU, particularly in contexts where users engage with technology voluntarily rather than out of necessity. Lai and Zainal Ariffin Ahmad (2015) found that PE has a direct positive effect on PU in e-payment systems. Mun and Hwang (2003) further supported this finding, noting that PE can sometimes be a stronger determinant of PU than PEU itself. In the FinTech context, enjoyment could come from intuitive interfaces, gamified experiences, or real-time feedback mechanisms that make managing finances engaging. Chong et al. (2019) observed that users who enjoy interacting with FinTech platforms report higher levels of perceived usefulness.

H2: PE has a positive relationship with PU for payment and e-Wallet services.

Perceived Information (PF)

PF is about how well people feel they understand a product or service before using the service (Pikkarainen et al., 2004). In the world of FinTech, this means users need to be aware of what the service does, its benefits, any risks involved, and how to use it properly. Soutar and Sweeney (2001) pointed out that people do not just judge a product based on how useful it seems; they also rely heavily on the information they receive. Wen (2016) found that when users feel they truly understand a FinTech service, they are more likely to believe it is useful. A study by Cho and Sagynov (2015) supports this, showing that PF has a strong effect on perceived usefulness, especially when users are given clear explanations and helpful educational materials. This makes sense because when information is easy to access and understand, it helps reduce doubts and builds trust in the service.

H3: PF has a positive relationship with PU for payment and e-Wallet services.

Personal Innovativeness (PI)

PI refers to an individual's openness to trying innovative technologies (Agarwal & Prasad, 1998). Innovators are typically early adopters who actively seek out and experiment with novel solutions. Lu et al. (2005) demonstrated that PI significantly influences PU, suggesting that individuals who are technologically curious tend to find new systems more useful and easier to use. Parveen and Sulaiman (2008) reinforced this by showing that personal innovativeness enhances PU in mobile internet usage among Malaysians. Although some studies suggest that PI may only indirectly affect PU through PEU (Lu, 2014), others indicate a direct link. For example, Lewis et al. (2003) found that innovative users derive greater value from technology due to their initiative-taking learning behaviours.

H4: PI has a positive relationship with PU for payment and e-Wallet services.

Social Influence (SI)

SI pertains to the extent to which an individual perceives that important people in their life (e.g., friends, family, colleagues) believe they should use a particular system (Davis, 1989). Wen (2016) noted that users often rely on social networks to reduce uncertainty about unfamiliar technologies, especially in high-risk domains like finance. Chong et al. (2019) confirmed that SI has a significant positive effect on FinTech adoption intentions, while Chua et al. (2019) found that SI influences behavioural intention to use mobile wallets. In Malaysia, where collectivist values are prevalent, peer recommendations and social validation play a critical role in shaping perceptions of usefulness. Users are more likely to adopt a FinTech service if they observe others benefiting from it.

H5: SI has a positive relationship with PU for payment and e-Wallet services.

Security Concerns (SC)

SC refer to users' worries about the safety of their personal and financial data when using a system (Gupta et al., 2010). In payment and e-Wallet services, SC is a major barrier to adoption due to the sensitive nature of financial transactions. While most studies treat SC as a negative influencer, results vary depending on the definition and measurement approach. Wen (2016) found that SC negatively impacts PU, indicating that users who fear fraud or data breaches are less likely to perceive FinTech services as useful. However, Chong et al. (2019) reported a contradictory result, suggesting that heightened security awareness might increase trust and PU. Chua et al. (2019) found no significant relationship between perceived security and adoption intention, highlighting the need for clearer conceptualisation, given that most evidence points to a negative association.

H6: SC has a negative relationship with PU for payment and e-Wallet services.

Table 1: Study Hypothesis

Hypothesis	Construct	Direction	Source
H1	PEU → PU	Positive	Davis (1989); Chua et al. (2019)
H2	PE → PU	Positive	Davis (1992); Lai & Ahmad (2015)
H3	PF → PU	Positive	Wen (2016); Cho & Sagynov (2015)
H4	PI → PU	Positive	Lu et al. (2005); Parveen & Sulaiman (2008)
H5	SI → PU	Positive	Wen (2016); Chong et al. (2019)
H6	SC → PU	Negative	Wen (2016); Gupta et al. (2010)

Conceptual Framework

Referring to the previous models developed by Chong et al. (2019) and Wen (2016), the present conceptual framework includes factors that will be examined in this study include perceived ease of use, perceived enjoyment, perceived information, personal innovativeness, social influence and security concern. Figure 1 represents the conceptual framework of the study.

STUDY SAMPLE AND METHODOLOGY

Research Design

This study adopts a quantitative research design using an online survey method to collect data from Malaysian users who have prior experience with FinTech services. The primary objective is to examine the factors influencing PU of FinTech services using an extended TAM. The study tests six hypotheses that link PU to PEU, PE, PF, PI, SI, and SC.

Population and Sampling

The target population consists of Malaysian citizens aged 18 years and above who have used or are currently using any form of FinTech service. Given the rapid digitalisation in Malaysia, this

group represents a massive portion of potential FinTech adopters. A convenience sampling technique was employed due to the accessibility of respondents through social media platforms such as Facebook, Instagram, and WhatsApp. These platforms were selected based on their high engagement rates among Malaysian internet users. The sample size was determined using Cohen's formula for medium effect size ($f^2 = 0.15$), $\alpha = 0.05$, power = 0.80, and six predictors. The required minimum sample size was calculated to be approximately 114 respondents. A total of 204 valid responses were collected, exceeding the minimum requirement and ensuring sufficient statistical power. The source of questions used to measure each variable is presented in Table 2.

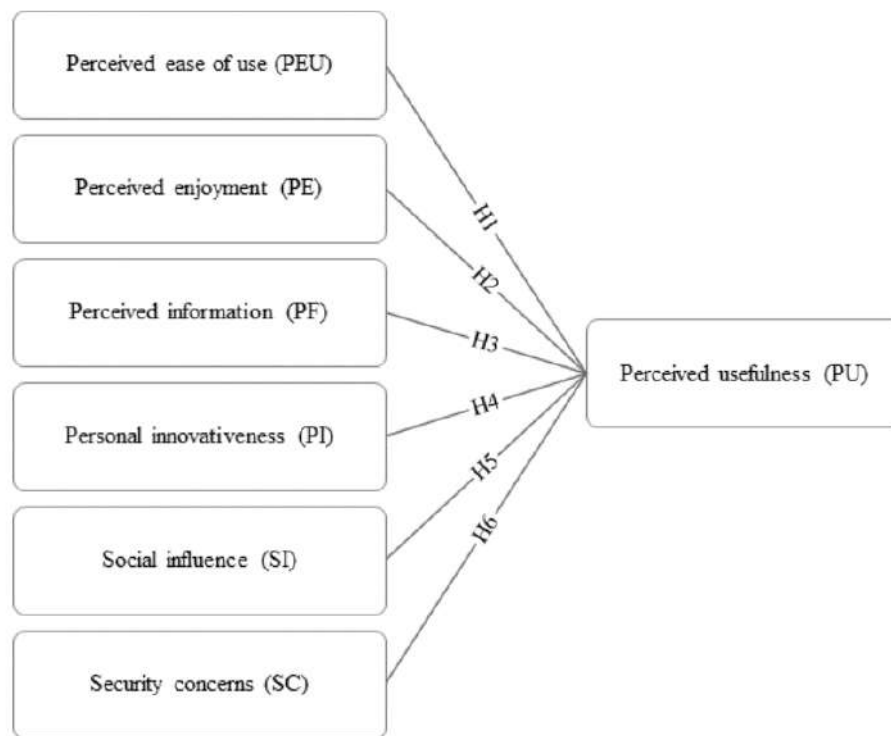


Figure 1: Conceptual Framework

Table 2: Measurement Instruments

Construct	Measurement Source
Perceived Usefulness	Davis (1989)
Perceived Ease of Use	Davis (1989)
Perceived Enjoyment	Davis (1992)
Perceived Information	Pikkarainen et al. (2004)
Personal Innovativeness	Agarwal & Prasad (1998)
Social Influence	Lu et al. (2005)
Security Concerns	Wen (2016); Gupta et al. (2010)

Study Model

The study model is presented by Equation 1.

$$PU = \beta_1 + \beta_2 PEU + \beta_3 PE + \beta_4 PF + \beta_5 PI + \beta_6 SI + \beta_7 SC + \varepsilon \quad (1)$$

Where:

- PU = Perceived Usefulness
- β_1 = Constant (intercept)
- β_2 to β_7 = Regression coefficients (beta weights) for each independent variable
- PEU = Perceived Ease of Use
- PE = Perceived Enjoyment
- PF = Perceived Information
- PI = Personal Innovativeness
- SI = Social Influence
- SC = Security Concerns
- ε = Error term (residual)

RESULTS AND DISCUSSION

The sample consisted of 204 respondents. The demographic distribution is presented in Table 3. Most respondents were young adults aged between 18 and 24 (58.82%), reflecting the high engagement of this age group with digital financial services. The majority reported frequent internet access (93.63%) and regular usage of FinTech services (87.75%).

Table 3: Descriptive Statistics and Demographic Profile

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	79	38.73
	Female	125	61.27
Age Group	18–24	120	58.82
	25–39	21	10.29
	40–54	54	26.47
	55+	9	4.41
Internet Access	Often	191	93.63
	Sometimes	13	6.37
FinTech Usage	Often	86	42.16
	Sometimes	93	45.59
	Seldom	25	12.25

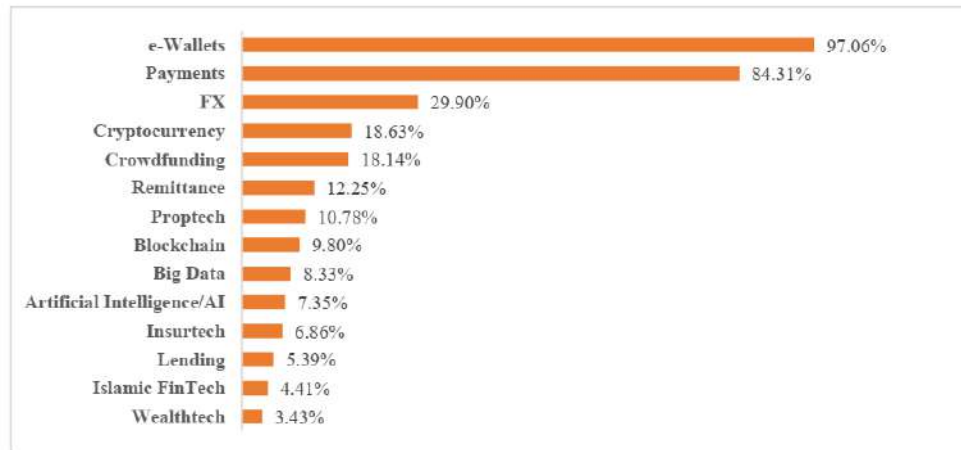


Figure 2: Percentage of Respondents Who Know of the Mentioned FinTech Services

Figure 2 illustrates the awareness level among Malaysian respondents regarding various FinTech services. The data indicates that payment and e-Wallet services are the most recognised FinTech services, with over 80% awareness among respondents. In contrast, other services such as Wealthtech, Islamic FinTech, and Artificial Intelligence (AI) have significantly lower awareness levels, with less than 10% of respondents reporting knowledge of these services.

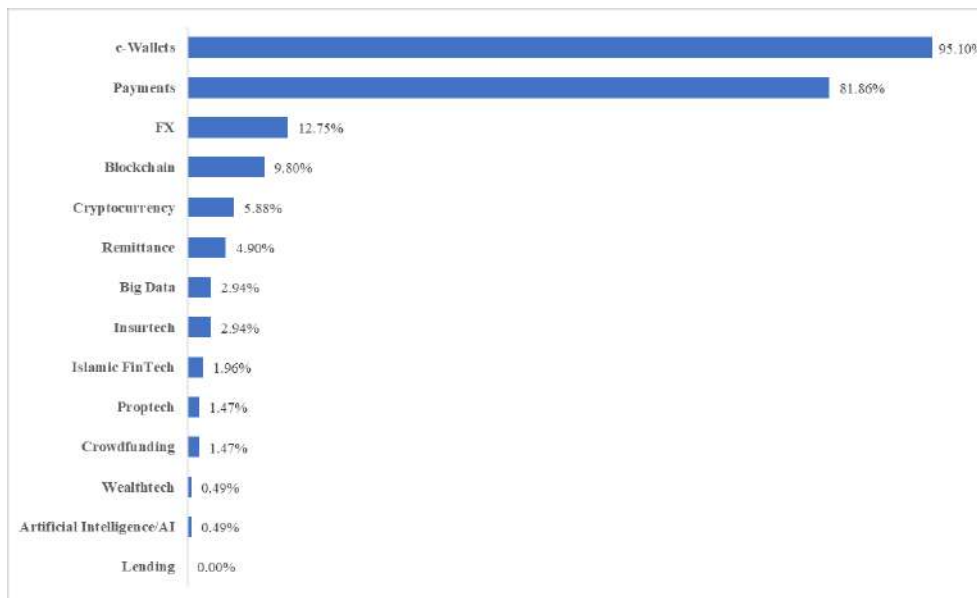


Figure 3. Percentage of Respondents Who Have Used the Mentioned FinTech Services

Figure 3 shows that e-Wallets (95.10%) and Payments (81.86%) are used by most respondents as compared to the other FinTech services. As for the remaining 12 FinTech services, a range of 0 to 13% of the total respondents use them. From the two figures (2 and 3) above, it can be observed that e-Wallets and Payments are more well known and used than the remaining 12 FinTech services. This phenomenon may arise as the players that provide these 12 FinTech services only take up less than 10% of all the players respectively (FintechNews Malaysia, 2019). Fewer players would mean fewer of these types of services in the market. Unlike the “e-

Wallets” and “Payments” players who account for 19% each, these two FinTech services are likely to be more abundant. Hence, e-Wallets and Payments are naturally more well-known and used in the FinTech scene of Malaysia.

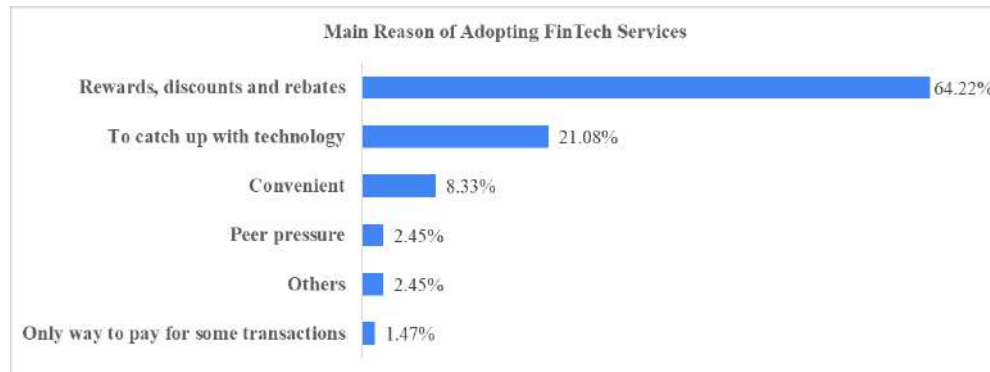


Figure 4: Main Reason of Adopting FinTech Services

Respondents were also asked what their main reason was for adopting any of the 14 FinTech services mentioned in the questionnaire. This question was designed to explore the possibilities of other significant factors that could contribute to the adoption of the payment and e-Wallet services. As shown in Figure 4, 64.22% of the respondents mentioned that their main reason for adoption is due to “Rewards, discounts and rebates”. Other reasons that the respondents had given include “To catch up with technology” (21.08%), “Convenient” (21.08%), “Peer pressure” (2.45%), “Others” (2.45%) and “Only way to pay for some transactions” (1.47%).

Table 4 shows the correlation analysis between the study variables. The correlation coefficients ranged from 0.3102 to 0.7545. In fact, they are all significantly positive correlations between PU and the independent variables (PEU, PE, PF, PI, SI and SC) at the confidence level of 0.01(2-tailed). To avoid multicollinearity, it has been suggested in previous studies that the correlation coefficients should not be more than 0.80 (Yeow et al., 2017). Since the correlation coefficients observed in this study are all less than 0.80, it can be concluded from the correlation analysis that there is no multicollinearity. This can also be confirmed by the Variance Inflation Factor (VIF) results represented in Table 5, where none of the VIF values exceeded 5, which is a good indication of no multicollinearity.

Table 4: Correlation Analysis

Variable	PU	PEU	PE	PF	PI	SI	SC
PU	1	0.7545*	0.6517*	0.5726*	0.4061*	0.3792*	0.3535*
PEU		1	0.6437*	0.6002*	0.3312*	0.3339*	0.3798*
PE			1	0.5991*	0.4692*	0.4555*	0.3690*
PF				1	0.4918*	0.4207*	0.4293*
PI					1	0.3496*	0.3703*
SI						1	0.3102*
SC							1

Table 5: Cronbach's Alpha

Construct	Items	Cronbach's Alpha
Perceived Usefulness	3	0.93
Perceived Ease of Use	3	0.93
Perceived Enjoyment	2	0.93
Perceived Information	3	0.87
Personal Innovativeness	3	0.88
Social Influence	3	0.72
Security Concerns	2	0.70

Table 6 shows the results of the OLS multiple regression analysis to assess the relationship between the independent variables and PU.

Table 5: OLS results

Variable	Hypothesis	Construct Relationship	β Coefficient	t-value	p-value	Significance	VIF
PEU	H1	PEU $\rightarrow$ PU	0.551	5.68	0	Significant	2.19
PE	H2	PE $\rightarrow$ PU	0.215	2.04	0.043	Significant	2.05
PF	H3	PF $\rightarrow$ PU	0.069	0.89	0.372	Not Significant	1.99
PI	H4	PI $\rightarrow$ PU	0.069	1.23	0.218	Not Significant	1.48
SI	H5	SI $\rightarrow$ PU	0.051	0.76	0.446	Not Significant	1.35
SC	H6	SC $\rightarrow$ PU	-0.001	-0.02	0.987	Not Significant	1.33
Model Fit Indicators				Value			
R				0.791			
R Square				0.625			
Adjusted R Square				0.62			
Standard Error				0.583			
F-statistic				88.2			
Significance of F				0.001			

From the results of the stepwise regression analysis, it is evident that PEU demonstrates a statistically significant and positive relationship with PU, with a beta coefficient of $\beta = 0.578$ ($p = 0.000$). This finding aligns with the outcomes of several prior studies (Wen, 2016; Hu et al., 2019; Cho & Sagnov, 2015; Lee, Park & Ahn, 2001; Venkatesh & Davis, 2000), reinforcing the theoretical foundation that ease of use significantly enhances users' belief in the utility of a system.

If people find a new technology useful, they will continue to utilize it. Therefore, PEU is crucial in the current study to persuade a person to adopt new technology. According to Liao et al. (2009), PEU is the extent to which a potential user anticipates the targeted product to be simple. The traits, features, and style of the product make it simple for a user to utilize. Users are more likely to stick with a product if the levels of satisfaction meet their needs. However, if the user

finds the product difficult to use, they either quit using it altogether or limit their use. The insights of users contribute positive or negative feelings about the product, which in turn affect users' intention to continue use (Daragmeh et al., 2021; Malik and Annuar, 2021). Intention to continue use refers to "an individual's intention to use or reuse a particular system continuously" (Bhattacharjee, 2001). Further, PEU has been claimed to be a decisive factor of perceived usefulness in online businesses, which plays a significant part in user willingness to continuous usage of e-wallets (Abdul-Halim et al., 2022). PU is a measure of an individual's belief that a specific system would improve their ability to complete a task (Davis, 1989, p. 320). Users' opinions about the product influence their intention to keep using it, whether those opinions are favourable or unfavourable (Daragmeh et al., 2021; Malik and Annuar, 2021). According to Bhattacharjee (2001), "an individual's intention to use or reuse a given system continually" is referred to as intention to continue use. Furthermore, it has been asserted that PEU is a key component of perceived utility in online businesses, which influences users' propensity to use e-wallets continuously (Abdul-Halim et al., 2022). A person's opinion that a particular system would enhance their capacity to finish a task is measured by their PU (Davis, 1989, p. 320). The association between perceived usefulness and intention to use (KoenigLewis et al., 2015) and perceived ease of use and perceived usefulness (Abdul-Halim et al., 2022) is found to be significant when analysing the adoption of mobile payments.

In addition, PE also exhibited a statistically significant positive relationship with PU, with a beta coefficient of $\beta = 0.250$ ($p = 0.000$). This result corroborates findings from multiple existing studies (Lai & Zainal Ariffin Ahmad, 2015; Mun & Hwang, 2003). Interestingly, Mun and Hwang (2003) discovered that PE can be a more powerful predictor of PU, especially when the user experience is naturally pleasurable. In the expanded TAM model, PE influences both intentions to use (Alfany et al., 2019) and PU (To and Trinh, 2021). Because e-wallets take less time to complete money transfers, people considered using them to be fun (Chen et al., 2018). Furthermore, the extended UTAUT model indicates that PE is a substantial contributor (Fagan, 2019). Thus, in the present study, perceived enjoyment focuses on individuals' hedonic motivation; one will continue to use e-wallets if he/she finds it exciting or likeable. Based on prior research, this study has adopted PEJ as an inhibitor affecting PU and ICU e-wallet respectively.

CONCLUSION

The study explored the antecedents associated with Malaysian adopters' perception of the usefulness (PU) of payment and e-Wallets by building on the Technology Acceptance Model (TAM). This study consists of six main constructs: Perceived Ease of Use (PEU), Perceived Enjoyment (PE), Perceived Information (PF), Personal Innovativeness (PI), Social Influence (SI), and Security Concerns (SC). The analyses revealed that PEU and PE positively influence PU. The findings demonstrate that the adoption of FinTech in Malaysia is multifaceted as users' perceptions of value are captured through utilitarian dimensions (ease of use and information) and hedonic elements (enjoyment), each shaped by personal and social factors. Notably, SC

appears to serve as a major impediment—even if a service performs well, perceived risks associated with adoption can deter usage.

For FinTech providers in Malaysia, the implications of the study present actionable insights for enhancing PU through user-centered design, maximizing user engagement and experience, communicating product benefits, leveraging social networks, and prioritizing security. The findings emphasize a need for FinTech providers to create user preferences in positional value that rely on actual user value, rather than short-term incentives like rebates and discounts.

This study has limitations, and these limitations should be considered. First, while mathematical modeling and consumer research studies have emerged in growing dismissing towards behavioral intention as the dependent outcome, this study was the reverse and treated PU as the dependent outcome, therefore limiting the scope of the study and insights regarding the direct drivers of actual adoption behavior. Second, although the theoretical model included six external variables, it is possible that other influential variables such as trust, brand image, price value, and regulatory influence may also be relevant. Third, it must be noted that the study relied on convenience sampling which may limit the generalizability of the findings since the convenience sample was likely not sufficiently phenomenologically representative of all FinTech users in Malaysia. Fourth, there is a unique restriction around cross-sectional data - and in this example, it limits understanding of how users' perceptions evolve with other potential changes in technology and growth within the market. Lastly, while studying FinTech payment and e-Wallets services is feasible - alternative FinTech subsectors, and contexts in other parts of the world may not be appropriately represented with service delivery considerations perhaps saliently diverging due to (potential) cultural, economic, or regulatory issues.

Building on these findings, several avenues for future research are recommended. The conceptual model in this study could be extended to include other variables - for example, trust, perceived risk, government policy, and cultural dimensions. This could develop a more comprehensive picture of FinTech adoption. Longitudinal studies could provide research efforts to measure how users' perceptions and behaviors change over time, and thus, to develop insights into the sustainability of FinTech adoption. In addition, comparative studies between different FinTech sectors within Malaysia, or between similar FinTech sectors in Malaysia and other ASEAN countries, could identify regional patterns or contextual differences. While quantitative methods are provided, using qualitative approaches such as interviews or focus groups could facilitate a deeper understanding of what users' motivations are and what their concerns are (e.g., security, social influence). In addition, studies of companies that are regulated by Bank Negara Malaysia and other government bodies, and how those regulate policies provided by universities or other outlets could lead to policy documents to grow the Fintech ecosystem. Finally, research examining specific user segments (e.g., rural segments, older users, SMEs), could uncover specific challenges and opportunities to expand inclusive access to digital financial services targeting those populations. These research opportunities, together, would build a more collective, nuanced understanding of FinTech developments in Malaysia and beyond.

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EXCLUSIVE, INCLUSIVE, AND HYBRID APPROACHES TO TALENT MANAGEMENT: A CONCEPTUAL MODEL

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ABSTRACT

In today's world, where human capital plays a crucial role in organizational success, talent management has become a vital strategic priority. This conceptual paper explores the evolving landscape of talent management by contrasting two dominant philosophies: exclusive and inclusive approaches. The exclusive approach emphasizes investment in a select group of high-potential individuals, whereas the inclusive model promotes development opportunities for all, grounded in equity and capacity building. Recognizing the strengths and limitations of both, the paper advocates for hybrid talent management practices as a balanced and context-sensitive alternative. This conceptual effort offers actionable insights for organizations seeking to align fairness, effectiveness, and strategic objectives in their talent strategies.

Keywords: *Talent Management, Exclusive Approaches, Inclusive Approaches, Hybrid Approaches.*

Paper Type: *Conceptual*

INTRODUCTION

Modern work life has become increasingly flexible, dynamic, and unpredictable. In response, organizations across sectors have intensified their focus on human capital, recognizing employees as central to sustaining growth and navigating market complexities (Mousa & Ayoubi, 2019). As per the resource-based view, a firm's distinctive, valuable, and irreplaceable human capital is considered one of the key drivers of its long-term competitive advantage (Yildiz & Esmer, 2023). McKinsey's seminal work on the "war for talent" further emphasized that success hinges not merely on acquiring talent, but on managing it strategically to enhance business performance (Axelrod et al., 2002; Barney & Clark, 2007). Consequently, talent management has emerged as a strategic priority for HR professionals aiming to secure and develop a strong leadership pipeline in an increasingly competitive environment (Collings et al., 2019; Volini et al., 2019). The extant literature has explored multiple talent management approaches, notably inclusive and exclusive models (Bhatia & Baruah, 2020; Cross Walker, 2020; Roy & Devi, 2017; Savanevičienė & Vilčiauskaitė, 2017). However, the hybrid approach has received comparatively

limited scholarly attention. This conceptual paper integrates inclusive, exclusive, and hybrid approaches to offer a comprehensive perspective on talent management. Furthermore, it presents a practical framework to assist practitioners in effectively applying these approaches across varied organizational settings.

TALENT MANAGEMENT

The concept of "talent management" was first introduced by the American consulting firm McKinsey & Company in their publication titled *"The War for Talent"* (1998). Between 2002 and 2007, during a period of economic growth, business leaders and HR professionals became increasingly aware of the consequences of failing to hire the right talent or relying on "below-average" individuals who merely occupied roles without adding significant value (Dewhurst et al., 2012). The emphasis on talent management marks a transition from traditional human resource practices to a more strategic approach, where talent management is guided by corporate strategy and integrated with other organizational processes (Savanevičienė & Vilčiauskaitė, 2017). The core idea of talent management is that organizations can enhance their efficiency and effectiveness by successfully attracting, nurturing, and retaining skilled employees (Berger & Berger, 2004). Talent management is therefore seen as a interrelated set of organizational practices aimed at attracting, retaining, motivating, and enhancing the skills and capabilities of talented individuals essential for fulfilling the organization's roles and objectives (Graham et al., 2024).

But the question arises is who is a talent and what talent management philosophy companies should adopt? An organization's perception of what constitutes talent significantly influences how it manages, develops, and retains that talent. Therefore, having a clear and well-defined talent management philosophy is essential for guiding these practices effectively. Many scholars agree that the discussion around the concept of talent is largely shaped by two main, yet contrasting, philosophies: the exclusive and inclusive approaches (Anlesinya & Amponsah-Tawiah, 2020). Some argue that talent is a rare capability found only in a limited group of employees (O'Connor & Crowley-Henry, 2019). Others contend that talent is inclusive, suggesting that everyone possesses potential or has access to the ability to develop it (Meyers & Van Woerkom, 2014). This ongoing debate highlights the importance of clearly defining the organization's approach to talent management, as the chosen philosophy will ultimately shape talent strategies, employee experiences, and overall organizational effectiveness.

Exclusive talent management

The exclusive approach to talent management based on the "war for talent" concept put forth by McKinsey in the 1990s, has been the most historically prevalent model (Michaels et al., 2001). This approach is based on the idea that genuine talent is scarce and that the success of an organization relies on attracting and retaining a select few individuals with exceptional capabilities (Lewis & Heckman, 2006). This viewpoint is significantly shaped by the Resource-Based View (RBV) theory, which regards talent as a rare, valuable, and inimitable form of human capital that can lead to a lasting competitive advantage (Gallardo-Gallardo et al., 2015). Employees identified

as "talent" in this model are assumed to receive both tangible advantages, like expedited promotions and training opportunities, as well as psychological affirmation, which includes feeling valued and appreciated (De Boeck et al., 2018; Wikhamn et al., 2021). The exclusive approach also assigns symbolic status to the talent label, making it more prestigious as it becomes rarer among employees (Swailes et al., 2014).

Drawing on the resource-based view and human capital theory, the exclusive approach promotes the idea of distributing organizational resources according to employees' perceived talent and their potential contributions to value, instead of distributing them equally or based on need (Collings & Mellahi, 2009). This logic is supported by concepts like workforce differentiation and the differentiated HR architecture, which recommend tailored HR practices for employees with unique and high-value skills (Huselid & Becker, 2011; Lepak & Snell, 1999). The underlying principle is that investing more in high-potential employees yields greater returns, and therefore, not all employees should be treated the same (Meyers & Van Woerkom, 2014; Swailes, 2020). Additionally, being designated as "talent" serves not only as a functional role but also as a symbol of organizational recognition and strategic investment. Thus, exclusive talent management is both a tool for resource optimization and a means of shaping employee identity and motivation through status and recognition.

Inclusive talent management

The inclusive talent management philosophy views the majority of employees as talented or capable of developing talent (Swailes et al., 2014). Unlike the exclusive approach, which focuses only on a select group of high performers, the inclusive perspective adopts a broader and more developmental outlook. It emphasizes the organization's role in identifying individual strengths and aligning them with meaningful opportunities available within the organization (Graham et al., 2024). Rather than focusing solely on performance, this approach prioritizes learning and development to help employees grow (Swailes et al., 2014). This approach encourages organizations to look beyond immediate performance metrics and invest in learning and development as a means to cultivate talent across all levels of the workforce. At its core, inclusive talent management is grounded in the belief that talent is not limited to a few individuals but exists in various forms throughout the organization (Anlesinya & Amponsah-Tawiah, 2020).

In this approach, talent is not measured by comparison with others, but by an individual's ability to grow and improve based on their own potential and personal best (Swailes et al., 2014). The main principles underlying this approach emphasize the importance of employee wellbeing and dignity, placing them above the sole pursuit of competitive advantage (Swailes, 2013). Therefore, it is essential for organizations to create a supportive environment in which all employees are given equal access to growth opportunities, skill enhancement, and career advancement (Cappelli & Keller, 2014). Fostering this inclusive mindset not only helps individuals reach their full potential but

also strengthens the organization by building a more engaged, capable, and adaptable workforce.

Inclusive vs. Exclusive talent management: which approach fits best?

Organizations can gain and sustain competitive advantage by strategically investing in individuals who demonstrate exceptional potential, ambition, or intelligence (Michaels et al., 2001). Grounded in the workforce differentiation perspective, this approach channels greater resources toward high-value roles or performers, enhancing performance and profitability (Gelens et al., 2013). Targeted investments in high-potential employees not only boost motivation and commitment—key factors in talent retention and productivity—but also reduce the risk of turnover, thereby maximizing return on human capital (Becker et al., 2009).

However, research also highlights that inclusive talent management—offering development opportunities to all employees—is linked to higher job satisfaction, improved performance, and lower turnover intentions (Graham et al., 2024). In contrast, exclusive approaches may unintentionally foster feelings of exclusion among those not identified as “talent,” leading to disengagement (O’Connor & Crowley-Henry, 2019). While these positive perceptions of inclusivity are often interpreted as evidence of fairness, they may be partially shaped by employee self-interest. According to self-interest theory, individuals tend to judge practices as fair when they stand to benefit personally (Lois & Riedl, 2022).

This dynamic creates polarized views: employees granted “talent” status may view exclusive practices as fair and deserved, while others may perceive the same practices as biased or inequitable (Dries, 2013; Swailes et al., 2014). These perceptions often reflect a deeper psychological tendency to interpret fairness through subjective lenses, particularly when resource distribution is at stake (Gelens et al., 2013; Smith, 2000).

In addition to situational self-interest, individual values also shape fairness preferences. Some people are inclined toward equality—favoring equal treatment for all—while others adhere to the merit principle, which emphasizes rewards based on contribution and effort. The merit principle reflects a belief that those who contribute more should receive more (Cropanzano et al., 2001; Davey et al., 1999). These differing orientations help explain why inclusive models are generally perceived as fairer in settings where performance is not always transparent (Barber & Simmering, 2002; Jacobs et al., 2022), and why merit-based allocation continues to appeal to employees who value equity over uniformity (Colquitt et al., 2012).

Given this complexity, it becomes clear that neither the inclusive nor exclusive model alone offers a universally effective solution. Talent management should not follow a “best practice” model but should instead align with an organization’s specific goals, values, structure, and cultural environment (Boudreau & Ramstad, 2005; Garrow & Hirsh, 2008). A hybrid or context-sensitive approach allows organizations to balance the performance-oriented precision of exclusive

practices with the fairness and engagement benefits of inclusivity, resulting in a more adaptive and equitable talent strategy.

Table 1: Talent Management Approaches and their dimensions

Dimension	Inclusive TM	Exclusive TM	Hybrid TM (integrated)
Philosophy	Talent in all	Talent in few	Talent exists at all levels, but differentiated
Resource Allocation	Equal for all	Concentrated on a few	Equitable + strategic
Fairness Perception	Equality-based	Merit-based	Contextual balance (merit + access)

HYBRID TALENT MANAGEMENT PRACTICES: EXAMPLES OF INTEGRATION

To reconcile the fairness emphasized in inclusive talent management with the performance-oriented focus of exclusive strategies, organizations can implement hybrid practices that blend elements of both approaches. These practices are designed to maintain equity while strategically investing in high-potential talent.

One such practice is the implementation of dual career pathways. The inclusive element lies in offering all employees access to learning and development opportunities tailored to their job roles and interests. This ensures that everyone, regardless of their current status, can grow professionally. The exclusive element is the creation of a parallel leadership track reserved for high-potential individuals, who receive accelerated development, executive mentoring, and fast-tracked promotions. For example, while most employees undergo regular skill-building workshops, a select few are placed in a high-impact executive development program with senior leadership exposure.

Another integrated approach is blended succession planning. Here, the inclusive component involves conducting regular talent reviews and offering all employees developmental conversations and visibility into internal opportunities. In contrast, the exclusive component links succession planning to a smaller group of identified high-potential employees who are assigned strategic roles and evaluated for readiness through structured processes. For instance, while every employee might participate in an annual growth dialogue, only the top 10% are given customized succession paths for key leadership positions.

Transparent talent identification with opt-in features further reflects hybrid thinking. The inclusive aspect enables all employees to self-nominate or express interest in advancement opportunities, promoting fairness and openness. The exclusive dimension enters during the final selection phase, where choices are made based on objective criteria such as performance reviews, assessment center outcomes, or leadership potential. A company may, for example, encourage everyone to apply for a global mobility program, but only those meeting set benchmarks are selected for advancement.

Organizations also implement learning ecosystems with tiered access as a hybrid model. The inclusive side offers everyone access to online learning platforms, internal courses, or certifications, fostering a culture of continuous learning. Simultaneously, the exclusive side allocates advanced training opportunities—such as external certifications, international workshops, or specialized leadership programs—to top performers or business-critical roles. For instance, while all employees may use an internal e-learning system, only top achievers receive sponsorship for prestigious external courses.

Internal talent marketplaces with priority matching also blend the two philosophies. The inclusive feature allows all employees to view and apply for new roles and projects through an open-access system. Meanwhile, the exclusive feature ensures that individuals marked as high-potential receive prioritized placement in challenging, high-visibility assignments. As an example, while anyone can apply for a cross-functional project, strategic roles may be pre-matched to those within the leadership pipeline.

In mixed mentoring programs, the inclusive practice involves offering mentoring opportunities to all employees who wish to participate—through peer mentorship or career coaching. The exclusive component takes shape in targeted sponsorship initiatives for high-potential employees, connecting them with senior executives for intensive guidance. For example, while general mentorship might be available to all, a select group may be invited into a “CEO Circle” for direct coaching from the executive team.

Finally, performance management systems with exclusive calibration represent another hybrid model. The inclusive side ensures that all employees receive comprehensive performance feedback and individualized development plans. However, the exclusive side includes a separate calibration process where only top-performing employees are reviewed by a talent committee for succession planning and strategic investments. In practice, this means while all employees get 360° evaluations, only the top quartile are discussed in depth during talent reviews for leadership advancement.

These hybrid practices offer organizations the flexibility to uphold fairness and inclusivity while still making strategic, high-impact investments in top talent. By balancing broad-based development with targeted recognition, such models help align employee engagement with organizational performance and long-term competitiveness.

CONTEXTUAL HYBRID TALENT MANAGEMENT MODEL

To strengthen the theoretical rationale behind hybrid talent management, this paper proposes a *Contextual Hybrid Talent Management Model* (see Figure 1). This model conceptualizes hybrid talent strategies as a tiered system designed to balance inclusivity, strategic investment, and contextual sensitivity. The base layer comprises universal talent practices—such as accessible learning, internal job mobility, and open development programs—which reflect inclusive values. The middle layer serves as a developmental interface, where employees can opt into growth pathways and be evaluated using transparent, merit-based criteria. The top layer focuses on strategic talent investments, where resources are concentrated on high-potential individuals or

critical roles in alignment with exclusive logic. Importantly, the model recognizes that hybrid approaches are most effective when tailored to the organizational context. Factors such as organizational size (which affects scalability), strategic goals (e.g., innovation-oriented firms may benefit more from exclusivity, while stability-focused ones may emphasize inclusivity), workforce diversity (which calls for equitable and broad access), and market volatility (which demands flexible, adaptive systems) all influence how hybrid practices should be designed. Moreover, employee perceptions of fairness—shaped by self-interest, equity preferences, or inclusion values—can either support or undermine these systems. By integrating these contextual and psychological dynamics, the model illustrates not only how hybrid systems work, but also when they are most beneficial. It provides a flexible framework that organizations can adapt to promote both engagement and performance while managing talent in a balanced, strategic manner.

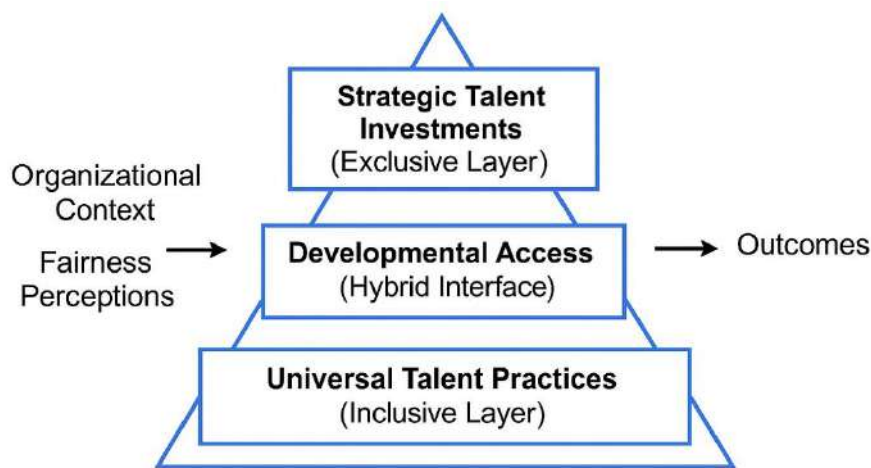


Figure 1: Contextual Hybrid Talent Management Model

CONCLUSION

Talent management continues to evolve as organizations seek to balance the merits of exclusive and inclusive philosophies. While exclusive approaches prioritize high-potential individuals for strategic roles, inclusive models focus on developing the broader workforce. This paper advocates for a hybrid approach—one that blends fairness with strategic differentiation—offering a flexible framework to meet diverse organizational goals and adapt to changing business contexts.

For practitioners, adopting a hybrid approach involves designing systems that provide developmental access to all employees, while still identifying and investing in individuals with high potential. Practical implementation may include dual career pathways, transparent and opt-in talent identification processes, tiered learning access, and mixed mentoring models. To ensure effectiveness, organizations should establish clear criteria, promote open communication, and align talent strategies with values such as equity, trust, and performance orientation.

Future research should explore the long-term impact of hybrid talent management strategies on key outcomes like employee engagement, leadership pipeline strength, and organizational resilience. Comparative studies across industries, cultures, and organizational sizes would deepen understanding of how contextual factors shape the success of hybrid models. Furthermore, examining employee perceptions of fairness and inclusion under hybrid systems can reveal how these influence trust, motivation, and retention—critical components of a sustainable talent strategy.

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EARLY CHILDHOOD DIGITAL EDUCATION FOR A SUSTAINABLE FUTURE

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ABSTRACT

This conceptual paper aims to explore the potential of introducing computer science education in early childhood as a means to build a technologically capable generation aligned with Oman's Vision 2040. Oman's national strategy emphasizes economic diversification, innovation, and technological advancement as key sustainable development goals. Achieving these goals requires a workforce equipped with skills in science, technology, engineering, and mathematics (STEM). Learning computer science and technology at an early age can contribute to the development of a technologically literate society and enable children to participate meaningfully in Oman's digital transformation. Early exposure to computer science for preschool and kindergarten students supports the creation of a future workforce that is well-prepared for the demands of a changing economy. This paper is based on a review of existing literature related to early technology exposure and its relevance to workforce readiness and national development priorities.

Keywords: *Early childhood technology education, digital literacy, sustainable development, Oman sustainability goals*

Paper Type: *Conceptual*

INTRODUCTION

Oman's Vision 2040 outlines a strategic shift toward economic diversification by promoting growth in non-oil sectors such as tourism, manufacturing, logistics, agriculture, technology, and innovation (Al-Sarihi, 2020). This forward-looking vision presents a comprehensive roadmap aimed at transforming the nation's economy, society, and governance in response to global challenges and emerging opportunities (Valeri, 2020). Central to this transformation is Oman's transition from a historically oil-dependent economy to a knowledge-based one—a shift essential for achieving sustainable development, fostering technological innovation, and expanding economic opportunities (Al-Sarihi, 2020; Valeri, 2020). By encouraging more diverse economic activities, Vision 2040 seeks to create sustainable employment opportunities for the

growing Omani population. A key component of this strategy is the development of technological capabilities across all levels of education, beginning with early childhood and extending to advanced research and development (R&D) initiatives. This paper explores how Oman can adapt Finland's play-based tech integration model to foster future innovators.

To foster innovation and enhance the efficiency of both public and private sectors, Oman is actively investing in its digital infrastructure. Key initiatives include expanding broadband connectivity, implementing e-governance systems, and developing smart city projects (Al Haziazi et al., 2018). These efforts align with the digital transformation and technological innovation priorities outlined in Vision 2040, which emphasize the need to prepare Omani citizens for future industries (Louis & Saleh 2024). Achieving these goals requires significant investment in human capital, particularly through education in science, technology, engineering, and mathematics (STEM) fields (Sutrisno et al., 2023). Introducing technology at an early age plays a vital role in this process by nurturing creativity and providing children with new tools for self-expression. When technology is used as a medium for creative exploration, it helps children see themselves as active creators and not as mere consumers —developing an early mindset oriented toward innovation and problem-solving (Louis & Saleh 2024).

LITERATURE REVIEW

Oman Strategic Vision 2024

Technology and innovation are critical enablers of a competitive workforce, economic diversification, and environmental sustainability in Oman (Alrawahi, et.al, 2023). Vision 2040 serves as the nation's strategic roadmap toward building a sustainable, diversified, and innovation-driven economy (Tippett et al., 2017). Central to this vision is the commitment to investing in education and digital infrastructure, while fostering a culture of innovation that supports long-term national development in an increasingly dynamic global environment.

Sustainable development is a core pillar of Vision 2040, with an emphasis on integrating environmentally responsible practices across sectors. This includes conserving natural resources, advancing renewable energy, promoting sustainable agriculture, and encouraging the adoption of green technologies (Al-Yahyai, 2023). Education, particularly in science, technology, engineering, and mathematics (STEM), is seen as a vital tool for preparing future leaders equipped with digital literacy and problem-solving skills, capable of driving innovation in fields such as engineering, data science, and information technology (Lillemyr, 2009).

Vision 2040 also supports the integration of technology and innovation within the education system starting from early childhood. This aligns with global research indicating that early exposure to technology fosters cognitive development and better prepares children for advanced learning and innovation (Louis, et.al). Beyond formal education, the vision promotes lifelong learning through technical training, digital literacy programs, and professional development initiatives to ensure that Omani citizens remain adaptable and competitive in the global workforce (Alrawahi et al., 2023).

Another key objective of Vision 2040 is positioning Oman as an attractive destination for foreign direct investment (FDI) in strategic sectors such as technology, logistics, and tourism (Manas, 2020). To achieve this, the country aims to enhance the business environment by strengthening intellectual property laws and cultivating a climate of innovation. Collaborating with leading global technology firms, research institutions, and international partners will facilitate knowledge transfer, support local capacity building, and accelerate technological advancement in Oman.

Importance of Early Childhood Education

Early childhood, spanning from birth to approximately eight years of age, represents a critical period of rapid growth and development that lays the foundation for lifelong well-being, education, and success (Chesloff, 2013). During this time, the brain undergoes its most intense development, forming neural connections at an extraordinary rate. By the age of three, a child's brain reaches approximately 80–90% of its adult size. This period is essential for developing core cognitive skills such as language acquisition, memory, attention, and problem-solving. Research indicates that early cognitive stimulation—through exposure to language, books, and play—significantly enhances literacy and numeracy skills, which are crucial for later academic achievement (Gimbert & Cristol, 2004). Moreover, high-quality early childhood experiences are associated with improved academic performance, higher graduation rates, and increased employment opportunities in adulthood.

Recent research highlights the benefits of introducing technology to young children in structured, age-appropriate ways. When implemented thoughtfully, early exposure to digital tools can enhance children's creativity, problem-solving skills, and adaptability—critical abilities for success in the 21st century (Wan, Jiang & Zhan, 2021). Technology integration during early childhood supports cognitive development by equipping children with the foundational skills needed to thrive in a rapidly evolving digital world.

Play remains a cornerstone of early childhood education, contributing significantly to children's cognitive, social, and emotional development. Through play, children cultivate creativity, collaboration, and a sense of agency—skills that are essential for meaningful learning and well-being (Fielding & Murcia, 2022; Bers, 2018). Scholars and educators increasingly advocate for recognizing play not as a recreational activity but as a vital educational process. Research supports integrating play into the curriculum in purposeful ways that honor and enhance children's natural instincts to explore and create (Bers, 2021).

Combining play with digital learning tools has proven especially effective. Bers (2018), in *Coding as a Playground*, emphasizes that children develop computational thinking skills through play-based coding activities, which teach them to break down complex problems into manageable steps, a foundational skill for real-world problem-solving (Vieira, Chiu & Velasquez, 2023). Technologies such as programmable robots (e.g., Bee-Bots) and coding applications (e.g., ScratchJr) help young learners grasp concepts like sequencing, cause-and-effect, and pattern recognition. These hands-on, trial-and-error experiences promote experimentation, creativity, and cognitive flexibility (Orcos, Arís & Magreñán, 2019).

Adaptability, a key 21st-century competency, is also nurtured through early interactions with technology. When children engage with digital tools and programmable devices, they learn to navigate unfamiliar systems, solve problems independently, and respond effectively to change (Sutrisno et al., 2023). These early experiences help cultivate a mindset of lifelong learning, essential for staying relevant in a fast-changing technological landscape (Krauss, 2021). As technology continues to evolve, individuals must be capable of quickly acquiring new skills. Introducing digital tools in early childhood helps children become comfortable with this constant evolution, better preparing them for future innovations and workforce demands (Kumpulainen, 2018).

Global Experiences: Integrating Technology into Early Childhood Education

As the world becomes increasingly digital and interconnected, introducing technology in preschool and kindergarten has become essential. Developing digital literacy from an early age is critical to preparing children for future educational and professional environments. Early exposure helps children acquire foundational skills such as navigating digital devices, understanding basic technical terminology, and responsibly accessing and evaluating online information (Sutrisno, et.al). These competencies not only support academic success but also foster confidence, curiosity, and adaptability in a technology-rich world (Jahnukainen et al., 2023). As technology continues to shape communication and learning, early digital literacy becomes a cornerstone for future readiness (Goodill, 2017).

Globally, several countries have integrated technology into early childhood education, but a few—such as Finland, South Korea, and Singapore—stand out for their innovative and balanced approaches (Rusitoru, 2020; Sahlberg, 2021). These nations leverage technology to promote creativity, collaboration, and real-world problem-solving while maintaining a strong emphasis on hands-on learning experiences crucial for young children's development (Rezaei et al., 2022). A key to their success lies in aligning technology use with broader curricular goals, ensuring it serves as a tool for enhancing learning rather than an isolated or distracting component (Voogt et al., 2013).

Finland, frequently recognized for its high performance in international education assessments such as PISA, has emerged as a global leader in integrating technology into early childhood education (Rusitoru, 2020). Its approach is grounded in the principles of equality, innovation, and child-centered pedagogy. Finnish early education emphasizes experiential, play-based learning, where technology is selectively and purposefully used to support creativity, social interaction, and critical thinking (Rezaei et al., 2022).

Digital tools in Finland's early learning environments include storytelling applications, interactive nature exploration, digital art, and simple coding games that introduce children to logical sequencing and problem-solving in an engaging, age-appropriate manner (Voogt et al., 2018). This balanced strategy ensures that digital learning complements—rather than replaces—traditional developmental activities.

Educators play a central role in Finland's technology integration strategy. Rather than using digital tools passively, teachers incorporate them as part of broader, meaningful learning

experiences. They are trained to critically select age-appropriate technologies, balance screen time with physical and social activities, and foster digital skills mindfully (Rusitoru, 2020). Professional development programs equip educators with the knowledge and skills needed to use technology responsibly and effectively in early learning settings.

Parental engagement is another cornerstone of Finland's approach. Teachers work with families to promote responsible technology use at home and extend learning beyond the classroom (Jahnukainen et al., 2023). The national curriculum incorporates digital well-being, encouraging children to develop healthy technology habits from a young age (Rusitoru, 2020). Evidence-based practices guide policy and classroom implementation to ensure that technology supports developmental goals rather than undermining them.

When thoughtfully integrated, technology in early childhood education significantly enhances children's problem-solving skills, creativity, adaptability, and cognitive flexibility. It also nurtures critical thinking and digital literacy—skills essential for thriving in a rapidly evolving world (Kennedy & Sundberg, 2020). These educational benefits align closely with the goals of Oman's Vision 2040, which prioritizes technology, innovation, and sustainable human capital development. By drawing on successful international models like Finland's, Oman can build a future-ready generation capable of contributing to a diversified and innovation-driven economy.

Preparing for a Globalized, Digital Society

Technology has become an inseparable part of everyday life, and preparing children for a tech-driven world must begin early. Developing digital literacy in preschool and kindergarten equips young learners with the foundational skills necessary to navigate and adapt to an ever-evolving digital landscape. Early exposure to digital tools such as tablets, computers, and educational applications helps children become confident and competent users, facilitating their future interaction with more advanced technologies.

Moreover, integrating technology into early childhood education plays a key role in addressing the digital divide. By ensuring equitable access to digital resources across all socioeconomic backgrounds, it promotes inclusivity and equal opportunity from the earliest stages of learning. This inclusive approach lays the groundwork for broader digital participation and long-term social equity.

In an increasingly interconnected and innovation-driven world, early technology education prepares children for essential 21st-century skills, including digital literacy, critical thinking, coding, and adaptability (Weber & Greiff, 2023). These competencies are vital across a wide range of future careers, particularly within science, technology, engineering, and mathematics (STEM) fields (Alrawahi et al., 2023). Familiarity with digital tools from an early age not only enhances problem-solving and collaboration but also nurtures a global mindset, enabling children to engage confidently in a digital society that transcends borders (Clements & Nastasi, 2013; Valeri, 2020).

This global readiness aligns directly with national development strategies such as Oman's Vision 2040, which prioritizes building a competitive, diversified economy driven by innovation and knowledge. Empowering young Omanis with digital competencies from early childhood supports this vision by cultivating a future workforce equipped to thrive in a global digital economy.

To successfully integrate technology into early childhood education, Oman can draw inspiration from international best practices—particularly Finland's model, which combines technology use with child-centered, play-based learning. However, adaptation to local values, cultural norms, and societal needs is essential. A contextualized, Oman-specific curriculum must be developed with careful attention to policy, curriculum design, teacher preparation, and infrastructure.

A pilot phase involving a selected number of preschools and kindergartens can serve as testbeds for implementation. These prototypes would allow for empirical evaluation and iterative improvement of the curriculum before national scaling. Such a measured approach ensures that the integration of technology supports—not disrupts—developmentally appropriate learning experiences. In this pilot phase, efforts should be made to promote and emphasize the inclusion of the Arabic language as a parallel medium of instruction for digital learning to conserve cultural and linguistic values for future generations in Oman.

Introducing technology in early education should go beyond functional literacy; it should cultivate creativity and innovation. When used thoughtfully, digital tools can become mediums for storytelling, artistic expression, and problem-solving. This creative digital play empowers children to view technology not just as a tool for consumption, but as a platform for invention and imagination (Van Keulen, 2018). By fostering a sense of agency, children begin to see themselves as creators, laying the foundation for lifelong innovation and inquiry.

Sustainable technological advancement depends not only on adopting tools but also on developing the capacity to create and innovate. Introducing technology early in the educational journey ensures that future generations possess the skills and mindset necessary to contribute meaningfully to Oman's digital transformation. As the country moves toward its Vision 2040 objectives, investing in early technology education is both a strategic and sustainable choice—one that builds resilient human capital for a future defined by knowledge, creativity, and innovation.

IMPLICATIONS

This study contributes to the growing body of literature on early childhood education and technological innovation by offering new insights into how the integration of technology at a young age can enhance cognitive development and foster the formation of a tech-savvy workforce capable of thriving in the digital age.

First, from an educational perspective, the study emphasizes that early childhood is a critical period of rapid brain development, during which neural connections are formed at an accelerated rate. This stage of life lays the foundation for lifelong learning, cognitive growth,

and overall well-being. By incorporating technology into early learning environments, children are better positioned to develop essential skills such as problem-solving, logical thinking, and creativity—skills that support not only academic achievement but also the competencies required for sustainable and innovative business and technological practices in adulthood.

Second, the study underscores the increasing relevance of digital literacy and technological knowledge in a world that is becoming progressively more digital and interconnected. Technology and innovation are no longer optional but central pillars for building sustainable human capital. Introducing foundational concepts in computer science and technology during early childhood can help cultivate a society that is technologically fluent and future-ready. This, in turn, supports the development of sustainable business ecosystems, as a technologically literate population is more likely to drive innovation, efficiency, and environmentally conscious decision-making.

CONCLUSION

In conclusion, the integration of technology into preschool and kindergarten education is not only about familiarizing children with digital devices—it is about laying a foundation for lifelong learning, adaptability, and innovation. Early exposure to technology enhances children's cognitive, social, and emotional development, equipping them with essential 21st-century skills such as critical thinking, problem-solving, digital literacy, and creativity. These foundational competencies are crucial for navigating an increasingly complex and interconnected world.

Within the context of Oman's Vision 2040, this early integration becomes even more significant. The Vision outlines a future-oriented national agenda centered on sustainable development, economic diversification, and technological advancement, all of which depend on a well-prepared, digitally literate population. By embedding technology education into the earliest stages of learning, Oman can cultivate a generation of innovative thinkers and responsible digital citizens capable of driving national progress in science, technology, engineering, and innovation.

Moreover, early technology education plays a strategic role in promoting social inclusion and equity. Vision 2040 emphasizes inclusive human development and reducing disparities across gender, geography, and socioeconomic status. Technology, when thoughtfully and equitably integrated, can help bridge the digital divide, ensuring that all children—regardless of background—have access to tools that unlock their full potential. This aligns with broader sustainability goals by fostering a more just, educated, and empowered society.

As this paper has argued, Oman stands at a critical juncture where strategic investments in early childhood education and digital infrastructure can create lasting impact. Drawing on international best practices, particularly those that balance technology with developmentally appropriate learning, Oman can design an educational ecosystem where technology enhances, rather than replaces, meaningful learning experiences.

Ultimately, introducing technology in early childhood education is a forward-looking, nation-building strategy. It empowers children not just as users of technology but as future creators and problem-solvers capable of contributing to Oman's knowledge-based economy and sustainable future. This paper offers a conceptual foundation for further empirical research and policy development aimed at realizing this transformative vision.

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EFFECT OF SERVICE QUALITY ON CUSTOMER LOYALTY: THE MEDIATING ROLE OF CUSTOMER SATISFACTION

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ABSTRACT

This research aims to assess the quality of Muslim Consumer Services (MCSQ) in Islamic banks in Oman and to examine the mediating role of Muslim Consumer Satisfaction (MCS) between service quality and Muslim Consumer Loyalty (MCL). Data were collected through questionnaires distributed to customers of various banks in Sohar. The MCSQ model incorporates key Islamic values such as Shariah compliance, honesty, modesty, humaneness, and trustworthiness. The results show that MCSQ has a significant positive impact on both consumer satisfaction and loyalty. The study also reveals that MCS partially mediates the relationship between MCSQ and MCL. The model was developed and empirically tested in the Omani context, highlighting the need for further validation in other cultural or banking environments. Future research could include comparisons with customers of conventional banks or those who use both Islamic and traditional banking services. These findings suggest that Islamic banks can better meet the expectations of Muslim customers by aligning their services with Islamic principles and placing greater emphasis on customer satisfaction. This strategic focus can help bridge the gap between customer expectations and actual service delivery. The study contributes to the field of service marketing in Islamic banking by providing empirical evidence on how service quality, satisfaction, and loyalty are interconnected in this unique financial context.

Keywords: *Service Quality, Customer Loyalty, Customer Satisfaction, Islamic banks.*

Paper Type: *Research Paper*

INTRODUCTION

In today's competitive marketplace, service providers and marketing researchers consistently emphasize the critical importance of delivering high-quality services to sustain a competitive advantage (Olorunniwo et al., 2006). The focus on high-quality service has increased, especially after the COVID-19 pandemic (Rababah et al., 2021). Empirical evidence shows that organizations focusing on superior service quality to enhance customer satisfaction tend to

experience higher sales, increased profitability, and improved operational efficiency (Parasuraman et al., 1988; Hasan et al., 2022). High service quality that meets or exceeds customer expectations not only boosts customer retention but also acts as a powerful marketing tool through positive word-of-mouth and attraction of new clients (Ahmad et al., 2021).

Customer perceptions and expectations, shaped by individual needs and cultural realities, are crucial in the evaluation of service quality (Gayatri & Chew, 2013). Farrell et al. (2001) suggest that customers assess service quality primarily based on the behavior of staff rather than their emotions, underscoring the importance of frontline employee conduct. However, this can result in discrepancies between how service providers and customers perceive quality (Gronroos, 1993).

Despite extensive research, a universally accepted metric for measuring service quality remains elusive. Various models, including the Disconfirmation Paradigm (Oliver, 1977), Scandinavian model (Gronroos, 1984), SERVQUAL (Parasuraman et al., 1988), performance-based model (Cronin & Taylor, 1992), and hierarchical models (Brady & Cronin, 2001) have attempted to fill this gap. Nevertheless, these models were largely developed within Western contexts and often overlook cultural and religious dimensions, which are vital for accurately assessing service quality in diverse markets (Al-Hawari et al., 2020).

Cross-cultural studies reveal significant variations in service quality perceptions. For instance, Mattila (1999) found that while Western customers emphasize physical environments, Gulf customers prioritize interpersonal relationships with service staff. Such insights highlight the need for culturally sensitive service quality frameworks, especially in sectors deeply influenced by religious and cultural values.

This is particularly relevant in the Islamic banking sector, which faces growing demand from Muslim customers expecting services compliant with Sharia principles. Islamic banks operate under pressure to offer service excellence that aligns with their clientele's religious and cultural expectations (Mohamed et al., 2021). Yet, many Islamic financial institutions struggle to meet these heightened expectations, partly because existing service quality scales often lack cultural contextualization (Khan et al., 2023).

In the Gulf region, where competition among Islamic banks is intensifying, the development of localized service quality metrics that incorporate Islamic values such as honesty, fairness, and trustworthiness is essential (Al-Khatib et al., 2022). Using culturally appropriate measurement scales provides actionable insights for improving service delivery, enhancing customer satisfaction, and ultimately boosting loyalty.

In Oman, the dual banking system—comprising both Islamic and conventional banks—creates unique challenges. Although Islamic banking assets in Oman grew by 18.9% in 2017, market share remains limited, suggesting customers still heavily rely on conventional banks (Oman Financial Services Authority, 2018). This underlines the need for Islamic banks to better understand the factors influencing service quality perceptions among Omani Muslim customers.

Accordingly, this study explores the impact of Islamic banking service quality on customer satisfaction and loyalty in Oman. It further examines whether customer satisfaction mediates the relationship between service quality and loyalty. By aligning service delivery with the cultural and religious context, Islamic banks can enhance their competitive positioning and better serve their target markets. This research makes a significant contribution to the field of Islamic banking and service marketing by developing and empirically testing a Muslim Consumer Service Quality (MCSQ) scale tailored to the cultural and religious context of Oman. It addresses the gap in existing service quality models, which are largely based on Western perspectives and fail to capture the unique expectations of Muslim customers. The study reveals that service quality in Islamic banks has a positive impact on customer satisfaction and loyalty, with customer satisfaction partially mediating the relationship between service quality and loyalty. These findings offer valuable insights for Islamic bank managers in Oman and similar contexts, emphasizing the importance of aligning service delivery with Islamic values such as honesty, modesty, and Sharia compliance to enhance customer retention and competitiveness.

LITERATURE REVIEW

Service quality and its associated dimensions are essential in the business environment, as they contribute to maintaining customer satisfaction, fostering loyalty, and mitigating risk (Hallowell, 1996; Rauyruen & Miller, 2007). Parasuraman et al. (1988) define "quality" as a comprehensive assessment of the level of service excellence. Similarly, Lovelock and Wright (2002) describe quality as a service's ability to satisfy customers by fulfilling their needs, desires, and expectations. Gilmore (2003) emphasizes that service quality refers to an organization's capacity to meet or exceed customer expectations. In the context of Islamic banking, service quality pertains to a bank's ability to deliver Sharia-compliant services that align with or surpass the expectations of Muslim consumers.

Othman and Owen (2001) argue that evaluating service quality in Islamic banking settings requires special consideration, as each country's unique culture and religious practices shape consumer perceptions. Therefore, developing assessment tools that account for the cultural, national, and socioreligious context is vital (Jabnoun & Khalifa, 2005; Othman & Owen, 2001). Gayatri and Chew (2013) further assert that religious and cultural values significantly influence Muslim consumers' perceptions of service quality, with customers favoring service providers that adhere to Islamic principles.

Previous research on Islamic banking service quality has frequently adapted models from the broader service industry. For instance, Akhtar and Zaheer (2014) applied the SERVQUAL framework to Islamic financial institutions. Awan et al. (2011) employed a modified SERVQUAL model—including factors such as empathy, service architecture, convenience, employee competence, and customer focus—to explore the relationship between service quality and customer satisfaction in both Islamic and conventional banks in Oman. Meanwhile, Othman and Owen (2001) introduced the CARTER model, which includes compliance, assurance, reliability, tangibility, empathy, and responsiveness, specifically tailored to assess Islamic bank services.

In addition to banking, Gayatri and Chew (2013) examined service excellence in various sectors in Oman, including retail, hospitality, and restaurants, based on Muslim customer perceptions. Their study identified Islamic values such as halal compliance, religious observance, honesty, modesty, humanity, and trustworthiness as key components of perceived service excellence. Abdullah et al. (2011) developed the Bank Service Quality Index (BSQ) to evaluate Islamic banking services in Nigeria using dimensions such as tangibility, reliability, responsiveness, assurance, empathy, and Shariah compliance. Similarly, Misbach et al. (2013) conducted empirical research in Makassar, Indonesia, using the Islamic Bank Service Quality (i-BSQ) model, which emphasized system performance, responsiveness, reliability, and compliance, all of which positively influenced customer satisfaction and trust. Khalifa and Jabnoun (2005) also conducted a comparative study of service quality in Islamic and conventional banks in the United Arab Emirates (UAE), utilizing dimensions such as human skills, reliability, brand image, and institutional values.

This study adopts the service quality dimensions proposed by Gayatri and Chew (2013)—honesty, modesty, humanity, and dependability—as they reflect Islamic ethical principles and have not been widely applied in Islamic banking research. In addition, the Shariah-compliant dimensions identified by Othman and Owen (2001) are incorporated to enhance cultural and religious relevance. These combined dimensions, although originally developed in other sectors such as hospitality and retail, serve as a robust foundation for developing a culturally sensitive and religion-oriented framework for evaluating service quality in Islamic banking in Oman.

RESEARCH HYPOTHESES

Service Quality and Customer Satisfaction

Directories indicate that high service quality in Islamic banking encompasses both Shariah-compliant dimensions—such as assurance, compliance, tangibility, empathy, and responsiveness (Othman & Owen, 2001)—and Islamic value-based dimensions—such as honesty, humility, humaneness, and trustworthiness (Gayatri & Chew, 2013). These dimensions align with the expectations and norms of Muslim consumers and are instrumental in enhancing customer satisfaction and sincerity toward Islamic banks (Othman & Owen, 2001). This reinforces the importance of improving customer loyalty through service quality initiatives that center on the perspectives of Muslim consumers, addressing the specific elements that contribute to their satisfaction.

The conceptual framework for this study is informed by the integration of dimensions proposed by Gayatri and Chew (2013) and Othman and Owen (2001). It is intended to serve as a strategic model to emphasize the role of service quality in boosting customer satisfaction and sustaining long-term loyalty.

Anand and Selvaraj (2012) argue that a strong relationship exists between customer loyalty, customer satisfaction, and service excellence. Responsiveness, reliability, and empathy are key service quality components that significantly influence both satisfaction and loyalty. Gayatri

and Chew (2013) further stress that service excellence from a Muslim consumer's viewpoint possesses unique cultural and religious characteristics.

Empirical research consistently supports the linkage between service quality, customer satisfaction, and loyalty, establishing them as critical metrics of marketing effectiveness (Sachro & Pudjiastuti, 2013). In the Omani public sector, Agus et al. (2007) found that service dimensions such as responsiveness, accessibility, and credibility were rated as “very good” and positively perceived by consumers. Awan et al. (2011) observed that service quality improvements in both conventional and Islamic banks significantly enhance customer satisfaction, which in turn influences customer behavior. Likewise, Anand and Selvaraj (2012) concluded that service quality dimensions—including responsiveness, compliance, and empathy—directly affect customer satisfaction and loyalty.

Based on these findings and the reviewed literature, the following hypothesis is proposed:

H1: Service quality has a significant positive effect on customer satisfaction and customer loyalty in Islamic banks in Oman.

Service Quality and Customer Loyalty

Service quality has been identified as a critical determinant of customer loyalty. According to Shpetim (2012), service quality can positively influence customer loyalty, suggesting that the provider's ability to deliver high-quality service is a significant driver of repeat patronage and long-term relationships. This finding is supported by Adoyo et al. (2012), who reported a positive correlation between service quality dimensions and consumer loyalty.

Osman and Sentosa (2013) further discovered that in the context of rural tourism services in Oman, service quality, along with customer satisfaction and trust, significantly influenced customer loyalty. Similarly, Badara et al. (2013) emphasized that customer satisfaction is strongly shaped by service quality factors such as employee responsiveness in banking services. Importantly, for Islamic banks, customer loyalty is also contingent upon the assurance that the bank's operations are compliant with Shariah principles, which is a critical consideration for Muslim customers.

Based on the reviewed literature and empirical findings, the following hypothesis is proposed:

H2: Service quality positively influences Muslim customer loyalty in Omani Islamic commercial banks.

Customer Satisfaction and Customer Loyalty

There is a well-established link between customer satisfaction and loyalty in the marketing and service literature. Studies have consistently demonstrated that higher customer satisfaction leads to stronger loyalty, making these two constructs fundamental indicators of marketing success (Sachro & Pudjiastuti, 2013; Wen et al., 2005). Shpetim (2012) affirmed that satisfied customers are more likely to remain loyal to a service provider, as satisfaction reinforces positive perceptions and experiences.

Moreover, customer loyalty is more likely to be secured when satisfaction is combined with trust. This is particularly relevant in the Islamic banking context, where trust plays a vital role due to the religious and ethical foundations of the services offered. Therefore, enhancing customer satisfaction can be a strategic approach for Islamic banks aiming to retain their Muslim clientele.

Based on the insights from the literature, the following hypothesis is formulated:

H3: Customer satisfaction positively influences Muslim customer loyalty in Omani Islamic commercial banks.

METHODOLOGY

This study adopted a quantitative research approach, which is appropriate for examining the relationship between service quality, customer satisfaction, and customer loyalty among Islamic banking customers in Oman. The research design is descriptive and correlational, enabling the assessment of statistical relationships between variables based on primary data.

Population and Sample

The target population for this study comprised individual customers who hold accounts in 7 different Islamic banks operating in Oman. A convenience sampling technique was employed to recruit participants, given the accessibility and willingness of respondents to participate online. The inclusion criteria required participants to be: i) Omani nationals or residents; ii) account holders in any of the listed Islamic banks, iii) Aged 18 years or older.

Data were collected using a structured, self-administered questionnaire designed to assess participants' perceptions of service quality, satisfaction, and loyalty. The questionnaire was distributed electronically through social media platforms such as WhatsApp, Twitter, and Instagram to reach account holders of Islamic banks in Oman. Additionally, physical distribution was carried out in and around selected branches for those willing to complete the survey in person.

A total of 150 valid responses were collected from participants across the Sultanate. The sample size aligns with recommendations for minimum sample sizes in regression and correlational studies (Hair et al., 2010).

Majority (61.21%) of sample population having income of below 500 OR, followed by 26.72% respondent in the range of 500-1000 OR, whereas 6.90% in the range of 1000-2000 OR and only small portion of 5.17% in the range of 2000-3000 OR.

Instrument

The survey instrument was developed based on validated constructs from prior studies and comprised four sections. The first section collected demographic information, including gender, age, bank affiliation, length of relationship with the bank, and type of account. The second

section measured service quality using dimensions from the CARTER model (Othman and Owen, 2001) and Islamic values (Gayatri and Chew, 2013), such as compliance, assurance, tangibility, empathy, responsiveness, honesty, modesty, and humaneness. Items were rated on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The third section assessed customer satisfaction through four items adapted from established scales (e.g., Parasuraman et al., 1988), capturing the customer's overall satisfaction with their Islamic bank. The fourth section focused on customer loyalty, measured using four items reflecting behavioral intentions such as repeat usage and recommendation to others. The questionnaire was pre-tested with a small group of 10 participants to ensure clarity and reliability prior to full distribution.

Data Analysis

Data were analyzed using SPSS Statistics version 26, employing several statistical techniques. Descriptive statistics were used to summarize demographic characteristics, while reliability analysis using Cronbach's alpha assessed the internal consistency of the scales. Correlation analysis explored the relationships between service quality, customer satisfaction, and customer loyalty. Multiple regression analysis was conducted to test the research hypotheses and evaluate the predictive power of service quality and customer satisfaction on loyalty. This quantitative approach has been widely applied in previous studies within the Arab region (e.g., Ahmad et al., 2024; Bataineh and Rababah, 2016; Rababah et al., 2021, 2022; Rawashdeh et al., 2022), ensuring both methodological consistency and academic rigor.

FINDINGS

Correlation analysis was conducted to examine the relationships between the variables. The results showed a weak but significant positive relationship between service quality and customer satisfaction ($r = 0.213$, $p = 0.02$), a moderate and significant positive relationship between customer satisfaction and customer loyalty ($r = 0.407$, $p = 0.001$), and a weak, negative, and insignificant relationship between service quality and customer loyalty ($r = -0.018$, $p = 0.8$).

Table 1: Correlation Analysis (Pearson Correlation)

Variables	r (Pearson correlation coefficient)	P-value (probability Value)
Service quality and customer satisfaction	0.213	0.02
Customer satisfaction and customer loyalty	0.407	0.001
Service quality and customer loyalty	-0.018	0.8

All variables, except Service Quality, met or exceeded the minimum acceptable level of reliability. The Service Quality construct reported a Cronbach's Alpha of 0.700, which is right at the threshold, indicating marginal acceptability. While some scholars suggest that values above 0.60 may be acceptable in certain contexts, particularly in early scale development (DeVellis, 2017).

Table 2: Internal Consistency Reliability (Cronbach Alpha)

Variables	Cronbach Alpha
Service quality	0.700
Customer loyalty	0.799
Customer Satisfaction	0.816

Regression analysis revealed that service quality positively influences customer satisfaction, supporting the hypothesis ($\beta = 0.214$, $p = 0.02$). However, the hypothesis that service quality promotes customer loyalty was not supported ($\beta = -0.08$, $p = 0.847$). Additionally, customer satisfaction was found to have a positive and significant effect on customer loyalty, supporting the corresponding hypothesis ($\beta = 0.407$, $p = 0.001$).

Table 3: Results of Regression Analysis

Hypothesis and relationship	Standard Co-efficient β	t value	p value	Results
H1: Service quality $\rightarrow$ client satisfaction	0.213	2.327	0.02	Supported
H2: Service quality $\rightarrow$ Client loyalty	-0.08	-0.193	0.847	Not supported
H3: Customer satisfaction $\rightarrow$ customer loyalty	0.407	4.758	0.001	Supported

DISCUSSION OF FINDINGS

The results indicate that improving service quality for Muslim consumers has a significant and positive impact on their satisfaction. In other words, better and more efficient services lead to greater satisfaction among Muslim customers of Islamic commercial banks. The findings also show that service quality positively affects customer loyalty, suggesting that as service efficiency improves, loyalty among Muslim customers increases as well.

Customer satisfaction was found to have a significant and positive impact on loyalty. As customers become more satisfied with the services provided by Islamic banks, their loyalty increases. Loyalty also strengthens when banks act honestly and follow profit-sharing principles in line with Islamic law.

The findings support Hypothesis 1, showing that better service quality leads to higher customer satisfaction among Muslim consumers. Hypothesis 2 is also supported, indicating that improved service quality positively affects customer loyalty from the perspective of Muslim customers. These results align with earlier studies by Anand and Selvaraj (2012), Auka et al. (2013), and Hassan et al. (2013).

Hypothesis 3 is confirmed as well, showing that higher satisfaction directly increases customer loyalty. This is consistent with prior research by Thakur and Singh (2011) and Sachro and Pudjiastuti (2013).

Finally, the study highlights that service quality also contributes to loyalty indirectly through its effect on satisfaction, underscoring the importance of both direct and mediated pathways in building customer loyalty.

IMPLICATIONS

The findings of this study offer valuable insights for managers and decision-makers in the Islamic banking sector, particularly in Oman, where Islamic banks are striving to enhance their market position amidst growing competition from conventional banks. The results underscore the importance of service quality, customer satisfaction, and customer loyalty as interconnected elements that significantly influence the performance and sustainability of Islamic financial institutions.

Firstly, service quality has been found to have a significant positive impact on customer satisfaction, highlighting the need for Islamic banks to focus on delivering services that align with the expectations of Muslim customers. Managers should ensure that services are designed and executed in accordance with Islamic values such as honesty, modesty, empathy, and Sharia compliance. This not only meets religious expectations but also builds trust and long-term relationships with clients. Training programs for bank employees should emphasize these values, ensuring that they are reflected in every customer interaction.

Secondly, the study reveals that customer satisfaction partially mediates the relationship between service quality and customer loyalty. This implies that improving service quality alone is not sufficient; it must translate into higher levels of satisfaction to foster loyalty. Therefore, bank managers should continuously monitor customer feedback and implement strategies aimed at enhancing satisfaction. This includes streamlining processes, reducing bureaucratic delays, offering personalized services, and ensuring transparency in transactions.

Thirdly, the research highlights that customer loyalty is strongly influenced by customer satisfaction. This emphasizes the strategic importance of retaining satisfied customers, as loyal customers are more likely to engage in repeat business, recommend the bank to others, and remain with the institution over time. Islamic banks can build loyalty through consistent service delivery, value-added benefits (e.g., ethical investment opportunities), and effective communication of their unique selling points—especially their adherence to Islamic principles.

Lastly, applying the service quality gap model (SERVQUAL) specifically tailored to Islamic banking contexts can help identify discrepancies between customer expectations and actual service delivery. Addressing these gaps will allow Islamic banks to close the distance between what customers expect and what they experience, thereby strengthening customer satisfaction and loyalty.

In conclusion, this study provides empirical support for the view that service quality improvements lead to higher customer satisfaction and, ultimately, greater customer loyalty in Islamic banks. For managers, this means investing in training, technology, process efficiency, and customer-centric strategies—not only to meet current standards but to exceed them in ways that resonate with Muslim consumers' cultural and religious values. By doing so, Islamic banks in Oman and similar markets can strengthen their competitiveness and contribute to the sustainable growth of the Islamic finance industry.

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

This research has certain limitations in terms of the theoretical framework and methodology used. First, the study is confined to regions within the Sultanate of Oman, focusing on the perceptions of Omani customers. While this validates the Islamic service quality scale as an effective tool for assessing service quality in this context, the generalizability of the findings outside Oman remains limited. Second, the data were collected in a single phase from both Islamic commercial banks and conventional banks offering Islamic products, which may affect the distinctness of the findings for purely Islamic banking services.

The findings suggest that managers can better tailor their services to Muslim clients by specifically measuring service quality within the Islamic banking context, particularly focusing on Muslim consumer service quality. To bridge the gap between customer expectations and the actual services delivered, bank managers must prioritize customer satisfaction when developing and improving Muslim consumer service quality.

This study employed a quantitative approach for data collection. Future researchers are encouraged to conduct in-depth qualitative studies, such as interviews, to gain richer insights into customer perceptions and experiences. This approach has been successfully used in previous studies in the Arab region (e.g., Rababah, 2012; 2014; Faudziah & Rababah, 2011; Fadzil & Rababah, 2012; Nassar & Rababah, 2020).

Based on the study's findings and conclusions, several recommendations can be made to enhance service quality and customer loyalty in Islamic banks. First, Islamic banks should strive to improve their services to meet or exceed customer expectations, ensuring that service delivery aligns with the agreed-upon standards of quality and satisfaction. Given the strong interconnection between service quality, customer satisfaction, and customer loyalty, banks should place greater emphasis on strengthening these relationships as a strategic approach to improving overall performance and customer retention. Particular attention should be given to dimensions such as empathy and responsiveness, which are crucial in building trust and long-term relationships with customers, while also maintaining high standards in other service

quality aspects like reliability, assurance, and tangibles. Additionally, future research should include comparative studies between conventional and Islamic banking services to better understand the unique service quality factors that influence Muslim customer satisfaction and loyalty. Furthermore, applying the service quality gap model to the Islamic banking sector in Oman could provide valuable insights into areas where improvements are needed, especially considering that Islamic banking is still relatively new in the region and requires further exploration to support its growth and development.

CONCLUSION

The study's findings highlight the significance of specific aspects of Muslim customer service quality in enhancing the standard of services provided by Islamic banks. According to Muslim customers, service dimensions grounded in Islamic values—such as adherence to Sharia, humanism, honesty, humility, and trustworthiness—are especially important. If Islamic banks in Oman are supported by human resources who possess a deep understanding of Islamic law and its application in banking, the Muslim consumer market could represent a highly profitable business opportunity.

Survey results also indicate that customer satisfaction acts as a mediator in the relationship between service quality and customer loyalty. Both service quality and customer satisfaction have a positive and significant impact on customer loyalty. The findings confirm that in the financial services sector, particularly in Islamic banking, service quality and customer satisfaction are key drivers of customer loyalty and retention.

Based on these results, it can be concluded that customer satisfaction plays a crucial role in achieving customer loyalty. Service quality in Islamic banking emerges as the most important factor influencing satisfaction. Therefore, the results of this study provide valuable guidance to banking professionals, helping them focus on service quality and satisfaction-related factors that enhance customer loyalty.

Marketing and branding managers may also use these insights to identify and strengthen elements of their strategies that align with Islamic values, ultimately improving both customer satisfaction and loyalty to their services.

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