




“Financial literacy in Saudi Arabian MSMES: Insights from Islamic banks’ customers”

AUTHORS	Ibrahim Abiodun Oladapo  
ARTICLE INFO	Ibrahim Abiodun Oladapo (2024). Financial literacy in Saudi Arabian MSMES: Insights from Islamic banks’ customers. <i>Investment Management and Financial Innovations</i> , 21(4), 25-34. doi: 10.21511/imfi.21(4).2024.03
DOI	http://dx.doi.org/10.21511/imfi.21(4).2024.03
RELEASED ON	Thursday, 03 October 2024
RECEIVED ON	Thursday, 18 July 2024
ACCEPTED ON	Tuesday, 10 September 2024
LICENSE	 This work is licensed under a Creative Commons Attribution 4.0 International License
JOURNAL	"Investment Management and Financial Innovations"
ISSN PRINT	1810-4967
ISSN ONLINE	1812-9358
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

46



NUMBER OF FIGURES

1



NUMBER OF TABLES

4

© The author(s) 2025. This publication is an open access article.



BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine
www.businessperspectives.org

Received on: 18th of July, 2024

Accepted on: 10th of September, 2024

Published on: 3rd of October, 2024

© Ibrahim Abiodun Oladapo, 2024

Ibrahim Abiodun Oladapo, Assistant Professor, Department of Banking and Finance, College of Business Administration, Imam Abdulrahman Bin Faisal University, Saudi Arabia.

Ibrahim Abiodun Oladapo (Saudi Arabia)

FINANCIAL LITERACY IN SAUDI ARABIAN MSMEs: INSIGHTS FROM ISLAMIC BANKS' CUSTOMERS

Abstract

This paper investigates the influence of financial knowledge, financial attitude, financial skills, and financial behavior on the financial literacy of Saudi Arabian MSMEs. The sample is 341 MSMEs that are clients of Islamic banking institutions. The paper employs the PLS-SEM method to analyze the collected data. The findings reveal statistically significant and strong positive correlations ($p < 0.05$) between financial knowledge, financial skills, financial behavior, and financial literacy. This implies that MSMEs with a strong foundation in financial knowledge, proficient skills, and positive financial behaviors tend to exhibit higher levels of financial literacy. Among the variables studied, financial knowledge exerted the strongest influence on financial literacy. This shows the importance of enhancing financial knowledge among MSME owners and managers to improve their overall financial literacy. Interestingly, the study did not identify a statistically significant relationship between financial attitude and financial literacy. This suggests that simply possessing a positive attitude toward finance may not necessarily translate into higher levels of financial literacy without complementary knowledge, skills, and behaviors. By prioritizing these areas, policymakers and Islamic banking institutions can contribute to improving financial literacy levels among Saudi Arabian MSMEs, ultimately fostering their growth, performance, and resilience.

Keywords

financial knowledge, financial attitude, financial skills, financial behavior, PLS-SEM

JEL Classification

G53, N85, G40, G21

INTRODUCTION

The contributions of micro, small, and medium-sized enterprises (MSMEs) are multifaceted, encompassing job creation, national income generation, fostering innovation, ensuring the provision of essential goods and services, and promoting healthy market competition. The MSMEs constitute a substantial segment of the Saudi Arabian private sector, accounting for over 60% of the nation's workforce and encompasses 99.6% of all businesses (GEM Report, 2021). However, despite the significance of this sector, its contribution to the Saudi Arabian economy remains very low, potentially due to low levels of financial literacy. The detrimental consequences associated with low financial literacy rates in the country, including inadequate investment strategies, insufficient savings, and high levels of debt, have prompted many MSMEs to prioritize initiatives aimed at improving financial acumen. Thus, achieving the ambitious goals outlined in Saudi Vision 2030 necessitates a collaborative effort among diverse stakeholder groups to effectively address the financial literacy deficit within the country.

The Islamic finance industry's potential to propel economic expansion and support the progress of small businesses has been particularly evident in recent years. The negative impacts stemming from financial illiteracy among MSME operators have underscored the need for the financial services sector, especially the Islamic banking sector, to



This is an Open Access article, distributed under the terms of the [Creative Commons Attribution 4.0 International license](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted re-use, distribution, and reproduction in any medium, provided the original work is properly cited.



Conflict of interest statement:

Author(s) reported no conflict of interest

spearhead financial literacy initiatives targeting their MSME customer base. Given Saudi Arabia's rapid emergence as a global center for Islamic banking and finance, examining the sector's role in promoting financial literacy among Saudi Arabian MSMEs is particularly relevant. A critical evaluation of this role is both timely and essential.

1. LITERATURE REVIEW

Previous research has explored the multifaceted nature of financial literacy, primarily through an individual-level lens. Among the various models proposed, a three-factor framework encompassing attitude, behavior, and knowledge has emerged as particularly influential in literature (Er & Mutlu, 2017; Antara & Musa, 2020). While the three-dimensional model is widely recognized, some studies have proposed an expanded framework that incorporates additional factors such as awareness, understanding, skill, knowledge, behavior, and attitude (Fraczek & Klimontowicz, 2015; Atkinson & Messy, 2012).

This study addresses gaps in existing financial literacy literature by shifting from the dominant individual-level focus to examining determinants of financial literacy at the organizational level. Furthermore, it employs a more comprehensive four-factor model to examine how the independent variables influence the dependent variable. This approach distinguishes it from previous studies that primarily relied on the three-factor model. This study investigates the impact of financial skills, knowledge, attitude, and behavior on the financial literacy of MSMEs in Saudi Arabia. While previous studies, such as those by Antara and Musa (2020), Nawi et al. (2018), and Fraczek and Klimontowicz (2015), have examined these variables at the individual level, the current study extends their application to the organizational context, specifically within the Saudi Arabian MSME sector. Thus, this study expands the frontiers of knowledge in the area of financial literacy.

Financial knowledge is widely recognized as a fundamental cornerstone of sound financial decision-making and efficient resource allocation. Despite its importance, there is a growing concern about the low financial literacy rates among MSME owners, a trend particularly pronounced in Saudi Arabia (Ali et al., 2018; Bancoro, 2023; Seraj et al., 2022). Studies, including a study by Rahim

and Balan (2020), have identified inadequate financial knowledge as a key factor in the underperformance of many small businesses. Financial knowledge has emerged as a crucial determinant of financial literacy for both individuals and businesses, given its recognized impact on personal financial well-being and organizational success (Anshika et al., 2021).

The increasing recognition of financial knowledge as a critical driver of entrepreneurial success has led small firms to prioritize its acquisition (Usama & Yusoff, 2018; Song et al., 2017). The increasing emphasis on financial literacy stems from a growing body of research that underscores its positive influence on both financial decisions and overall business success. Numerous studies have demonstrated a clear link between financial literacy and the ability to apply financial principles, leading to improved financial outcomes for both individuals and organizations. For example, Howlett et al. (2008) found that those who possess greater financial acumen demonstrate thorough financial decision-making and superior money management skills. Similarly, Ye and Kulathunga (2019) demonstrated a relationship between strong financial literacy within a company and its ability to achieve sustained growth.

Attitude significantly shapes individual behavior and intention, impacting performance across various domains, including finance (HS et al 2022; Ali et al., 2021; Amin et al., 2017). Financial attitude, as defined by Chaulagain (2015), encompasses an individual's assessment of and inclination to respond prudently or recklessly in managing financial issues. Many enterprises leverage financial attitude as a basis for conducting rational analyses and identifying viable solutions, enabling them to proactively make financially sound decisions that contribute to their prosperity. As highlighted by Shafik and Ahmad (2020), this is particularly crucial in today's rapidly evolving and unpredictable financial markets, where small businesses with strong financial attitudes demonstrate a proac-

tive approach to acquiring relevant information, ultimately fostering a robust financial standing for both present and future stability. Bosma and Harding (2006) posit that a deficiency in financial literacy and business acumen, often linked to a negative financial attitude, can contribute to SME failure and hinder entrepreneurial endeavors. Therefore, cultivating a positive and informed financial attitude is essential for SMEs to effectively navigate financial challenges, capitalize on opportunities, and achieve sustainable growth.

Several studies have shown financial attitude as a significant determinant of financial literacy among both individuals and businesses (Soroshian & Teck, 2014; Hidayati et al., 2021; Tuffour et al., 2020; Haque & Zulfiqar, 2015; Esiebugie, Richard, & Emmanuel, 2018). For example, research conducted in Ghana by Tuffour et al. (2020) demonstrated a strong direct correlation between financial attitude, financial literacy, and SME success. Similarly, Esiebugie et al. (2018) found that financial attitude influenced SME performance in Nigeria. Bhushan and Medury (2014) emphasize the crucial role of cultivating a positive financial mindset to finances as a key strategy for enhancing financial literacy across generations. Their findings suggest that promoting a favorable disposition towards financial matters can contribute to a more financially literate population. Also, Soroshian and Teck (2014) found a positive correlation between students' attitudes towards money and their levels of financial literacy. Similarly, Haque and Zulfiqar (2015)'s research on working women in Pakistan found that financial attitude, financial literacy, and financial behavior were significantly and positively related. Furthermore, Hidayati et al. (2019) highlighted how financial attitudes and knowledge positively and significantly affect financial decision-making. This suggests that individuals, including SME managers and owners, with favorable financial attitudes may exhibit greater confidence and risk tolerance in their financial judgments. Conversely, Sohn et al. (2012) argue that a negative financial attitude can hinder an individual's capacity for sound financial judgment.

Financial skills are increasingly recognized as essential for driving positive economic outcomes and fostering corporate sustainability. Proficient financial skills empower businesses to navigate

evolving financial landscapes and make informed, strategic decisions that support their growth and resilience (Priyadharsini, 2017). Conversely, a lack of adequate financial skills can hinder the survival, growth, and innovation potential of small businesses (Hussain et al., 2018). To cultivate these vital financial skills, businesses can employ various strategies, including proactive information gathering, ongoing training programs, and seeking expert consultation (Dewi et al., 2020). In other words, investing in the development of financial skills can enhance businesses' adaptability, resilience, and overall competitiveness in today's dynamic economic environment.

In today's complex business environment, MSMEs face mounting pressures from both internal and external forces. Several studies emphasize the interdependence of financial skills and financial literacy, highlighting that a deficiency in financial expertise can severely hinder financial literacy and SME performance. This is supported by Adomako et al. (2016) and Zarook et al. (2013). This lack of financial expertise can manifest in various ways, including difficulties in securing optimal debt and equity financing, ultimately increasing the risk of bankruptcy (Hatten, 2015).

Financial behavior encompasses an individual's actions and decisions related to financial matters, reflecting either positive or negative financial habits (Shafik & Ahmad, 2020). The behavioral dimension of financial literacy is critical, as it directly impacts both financial health and overall well-being (Kadoya et al., 2018; Xiao & Porto, 2019; Lusardi & Mitchell, 2014; Morris et al., 2022).

A growing body of literature has explored the complex interplay between financial behavior and its effect on financial literacy across diverse demographics. These studies have examined various aspects of financial behaviors, such as investment patterns, savings habits, credit card usage, and budgeting practices, to understand their influence on individuals' financial knowledge and management. The prevailing views emerging from this research highlight the significant effect of financial behavior on shaping financial literacy. Bhushan and Medury (2014), Rai et al. (2019), and Priyadharsini (2017) have all contributed to this

understanding by demonstrating a strong correlation between positive financial behaviors and higher levels of financial literacy. More specifically, Bhushan and Medury (2014) highlight the crucial role of government intervention in promoting positive financial behavior as a means of improving financial literacy among individuals. Their findings suggest that targeted policies and initiatives aimed at fostering responsible financial habits can effectively contribute to a more financially literate population. Similarly, Rai et al. (2019) emphasize the strong link observed in financial behavior and financial literacy with respect to working women in India, suggesting that this relationship holds relevance across diverse demographics and cultural settings.

Recognizing the importance of financial literacy, particularly the interconnectedness of attitude, knowledge, skills, and behavior, banking institutions and regulatory bodies have an opportunity to develop targeted interventions. These interventions can mitigate business failure, promote financial literacy, and foster sustainable growth among MSMEs.

Given the established importance of financial literacy and its multifaceted nature, this study investigates how financial knowledge, attitudes, skills, and behaviors influence the financial literacy of Saudi Arabian MSME firms that utilize Islamic banking services. The research hypotheses are articulated as follows:

H1: Financial knowledge has a positive effect on financial literacy.

H2: Financial attitude has a positive effect on financial literacy.

H3: Financial skills have a positive effect on financial literacy.

H4: Financial behavior has a positive effect influence on financial literacy.

2. METHOD

The primary research method for this study was a quantitative survey. The target population comprised micro, small, and medium-sized enterprises in Saudi Arabia that utilize Islamic banking services. To maintain ethical integrity and protect the rights of participants, ethical approval for this study was granted by the Ethics Board of Imam Abdulrahman bin Faisal University, Dammam, Saudi Arabia (IRB-2024-14-489). Prior to data collection, participants received comprehensive information about the study, including its objectives, their right to participate or withdraw without consequence, and the measures taken to ensure the confidentiality of their responses. All participants provided written informed consent, thereby formally agreeing to participate in the study.

The study measured four latent variables – financial knowledge, attitude, skills, and behavior – using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). These variables served as indicators of financial literacy. The study utilized a 25-item instrument, drawing upon existing research and literature, to measure financial litera-

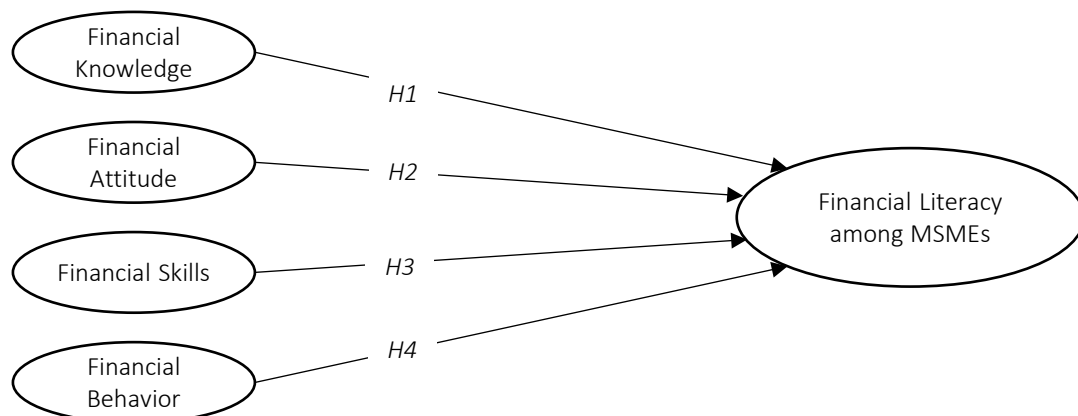


Figure 1. Research model

cy. Data were collected via an online survey disseminated through social media platforms and personal networks. Conducted between June and July 2024, the study gathered responses from 341 participants.

This study used PLS-SEM to analyze the data due to its ability to address limitations inherent in first-generation methods like regression analysis. This statistical method is particularly suitable for exploratory research, such as this current study (Hair et al., 2016).

Table 1 presents descriptive statistics of the sample. Notably, firm owners comprise 43.7 percent of the sampled MSME firms, compared to 34.6 percent of employees and 21.7 percent of managers. The dominant business size represented is micro-enterprises (41.6%), followed by small businesses (32.0%) and medium-sized firms (26.4%). The observed prevalence of micro and small enterprises within the Saudi Arabian business sector stresses the need for targeted support and policy interventions from relevant stakeholders. Geographically, participating companies are primarily located in major Saudi Arabian cities, including Riyadh, Jeddah, Makkah, and others. Regarding industry representation, service-based businesses comprise the largest sector (33.7%), followed by retail (25.5%), manufacturing (17.3%), wholesale (11.4%), construction (6.2%), and other industries (5.9%). The dominance of service-based businesses among Saudi Arabian firms underscores the need for governmental support in the form of funding and incentives to stimulate growth.

Table 1. Descriptive statistics of business profiles

Description	Frequency	Percent
Position		
Business owner	149	43.7
Manager	74	21.7
Employee	118	34.6
Workforce size		
1-5 workers (micro enterprise)	142	41.6
6-49 workers (small enterprise)	109	32.0
50-249 workers (medium enterprise)	90	26.4
Business location		
Eastern Province	107	31.4
Riyadh	78	22.9
Asser	14	4.1
Qassem	7	2.1
Qatif	13	3.8

Description	Frequency	Percent
Jeddah	56	16.4
Abha	17	5.0
Makkah	42	12.3
Hail	7	2.1
Industry sector type		
Manufacturing	39	17.3
Construction	21	6.2
Retail	59	25.5
Wholesale	20	11.4
Services	115	33.7
Others	87	5.9

3. RESULTS

Table 2 displays the reliability and convergent validity assessment of the study variables. Following Hair et al.'s (2019) recommendation, composite reliability values exceeding 0.70 are considered indicative of adequate construct reliability. The result demonstrates that all constructs achieved a satisfactory level of reliability. Assessment of convergent validity, using Average Variance Extracted as the metric, demonstrated that all latent constructs surpassed the 0.50 benchmark, signifying adequate convergent validity. Of the initial 25 measurement items, 19 exhibited factor loadings above the recommended cut-off of 0.70. Three items fell within the acceptable range of 0.60 to 0.70, while three items (FINB1, FINL1, and FINL3) with loadings below 0.60 were removed from further analysis (Hair et al., 2017). Multicollinearity between latent variables was evaluated through Variance Inflation Factor analysis. The resulting VIF values, which fell between 1.240 and 1.447 for all variables, indicated the absence of multicollinearity.

Table 3 shows the discriminant validity assessment results, which were determined using the Heterotrait-Monotrait criterion. The results indicate acceptable discriminant validity among the variables, with all values lower than the recommended benchmark of 0.85 (Henseler et al., 2015). This finding provides evidence that the constructs measure distinct concepts, as expected.

The statistical significance of the hypothesized relationships was examined using structural equation modeling. Table 4 summarizes the hypothesis testing results. The findings support three out of the four proposed hypotheses (H1, H3, and H4).

Table 2. Composite reliability and convergent validity

Constructs	Items	Loadings	Composite Reliability	AVE	VIF
Financial Knowledge	FINK1	0.657	0.840	0.515	1.452
	FINK2	0.825			
	FINK3	0.736			
	FINK4	0.631			
	FINK5	0.722			
Financial Attitude	FINA1	0.734	0.872	0.577	1.461
	FINA2	0.789			
	FINA3	0.756			
	FINA4	0.778			
	FINA5	0.739			
Financial Skills	FINS1	0.702	0.854	0.540	1.240
	FINS2	0.717			
	FINS3	0.704			
	FINS4	0.797			
	FINS5	0.751			
Financial Behavior	FINB2	0.678	0.816	0.527	1.361
	FINB3	0.712			
	FINB4	0.721			
	FINB5	0.787			
	FINL2	0.800			
Financial Literacy	FINL4	0.762	0.833	0.625	–
	FINL5	0.810			

Table 3. Heterotrait-Monotrait analysis

Constructs	FINA	FINB	FINK	FINL	FINS
Financial Attitude					
Financial Behavior	0.456				
Financial Knowledge	0.630	0.542			
Financial Literacy	0.442	0.512	0.646		
Financial Skills	0.427	0.499	0.369	0.419	

Note: FINA – Financial Attitude, FINB – Financial Behavior, FINK – Financial Knowledge, FINL – Financial Literacy, FINS – Financial Skills.

Contrary to expectations, the hypothesized relationship between financial attitude and financial literacy (H2) was not statistically supported ($\beta = 0.061$, $p = 0.338$).

The model's goodness of fit, as measured by the coefficient of determination (R^2), is shown in Table 4. R^2 represents the proportion of variation in the dependent variable accounted for by the independent variables. The R^2 value for financial literacy, the outcome variable, is 0.308. This shows the exogenous accounts for 30.8% of the variation in financial literacy among Saudi Arabian MSME firms, demonstrating an acceptable level of predictive capability. While the coefficient of determination provides an overall measure of model fit, Cohen's f^2 , as proposed by Cohen (1988), allows for calculating effect sizes for individual constructs. In this

study, the f^2 values for the constructs indicate negligible effect sizes. This discrepancy underscores the importance of considering both overall model fit and individual effect sizes when interpreting model results.

The analytical relevance (Q^2) was assessed using blindfolding analysis, a technique that determines a model's ability to predict omitted data points (Henseler et al., 2009). The obtained Q^2 value of 0.176 surpasses the benchmark of zero, implying that the exogenous variables possess predictive relevance for the endogenous variable (Hair et al., 2019). The practical efficacy of the model in predicting financial literacy among Saudi Arabian MSME firms is supported by its predictive relevance. The structural model's fit was tested using the Standardized Root Mean

Table 4. Hypothesis testing results

Hypotheses	Relationships	Beta	Std. error	t-values	p-values	Confidence Intervals		R ²	f ²	Q ²	Decision
						LL	UL				
H1	FINK → FINL	0.340	0.056	6.031	0.000	0.228	0.455	0.308	0.117	0.176	Supported
H2	FINA → FINL	0.069	0.058	1.186	0.236	-0.046	0.192		0.005		Not Supported
H3	FINS → FINL	0.152	0.053	2.867	0.004	0.046	0.256		0.026		Supported
H4	FINB → FINL	0.122	0.057	2.136	0.033	0.012	0.233		0.015		Supported

Note: FINK – Financial Knowledge, FINA – Financial Attitude, FINS – Financial Skills, FINB – Financial Behavior, FINL – Financial Literacy.

Square Residual (SRMR). Hu and Bentler (1999) suggested that the SRMR value of 0.074 is lower than the cut-off value of 0.08, suggesting a good model fit.

4. DISCUSSION

The study provides support for hypothesis one (H1) by demonstrating a statistically significant impact of financial knowledge on the financial literacy of MSMEs. This direct relationship highlights the critical role of financial knowledge in fostering sound financial understanding and literacy. The level of financial knowledge possessed by MSME operators is a key determinant of their capacity to prudently manage financial resources and mitigate the risk of business failure. The positive relationship between financial knowledge and financial literacy suggests that business managers with adequate financial knowledge are more likely to achieve enhanced financial performance for their businesses. This outcome is consistent with earlier research by Anshika et al. (2021), Ye and Kulathunga (2019), Seraj et al. (2022), and Bancoro (2023), which highlights the significant impact of financial knowledge on financial literacy within small enterprises.

Contrary to expectations, the findings from examining hypothesis two (H2) indicate that financial attitude has no significant association between financial attitude and the financial literacy of MSME firms in Saudi Arabia. This weak relationship may be attributed to many small businesses' challenges in identifying viable financial options and effectively addressing financial issues. To enhance their financial literacy, improve business performance, and effectively manage their finances, MSME operators need to demonstrate a shift in attitude towards financial matters. This finding aligns with previous research by HS et al. (2022), Ali et al. (2021), and Sohn et al.

(2012), which highlights that a negative financial attitude can hinder the financial decision-making capabilities of SME managers and owners, ultimately leading to low financial literacy and suboptimal business performance.

Analysis of hypothesis three (H3) reveals that financial skills are a significant predictor of financial literacy among MSME businesses. This positive association highlights that organizations with adequate and relevant financial skills are more likely to demonstrate effective financial management capabilities. Therefore, enhancing financial skills within the MSME sector is crucial for small businesses to make sound financial judgment that supports their growth and sustainability, ultimately improving their financial literacy levels. This finding supports the conclusions of Adomako et al. (2016) and Zarook et al. (2013), who found that financial skills significantly influence the financial literacy of Saudi Arabian MSMEs.

Hypothesis four (H4) testing supports the existence of a significant association between financial behavior and financial literacy among MSMEs in Saudi Arabia. This finding suggests that MSME managers and operators who exhibit strong financial behavior are more likely to experience improved financial literacy and business performance. Conversely, negative financial behavior can increase the likelihood of financial insecurity and business disruptions. This conclusion aligns with previous research by Lusardi and Mitchell (2014), Bhushan and Medury (2014), and Rai et al. (2019), which emphasizes the crucial role of financial behavior in driving financial literacy.

Conclusively, this study posits that when small-scale businesses prioritize and develop these factors, it leads to sound financial decision-making among MSMEs, ultimately fostering financial literacy and strengthening their market competitiveness.

CONCLUSION

This study investigates the effect of financial knowledge, financial skills, financial attitude, and financial behavior on the financial literacy of MSMEs in Saudi Arabia. The findings indicate that three of the exogenous variables are fundamental determinants of financial literacy among MSMEs. More specifically, financial knowledge emerged as the most influential factor in the study's structural model. However, the relationship between financial attitude and financial literacy was found to be insignificant.

To thrive in a dynamic and challenging market environment, MSME firms in Saudi Arabia should prioritize initiatives that enhance their financial knowledge and competency. This focus is expected to improve access to capital, informed decision-making, risk mitigation, and ultimately, enhanced productivity and organizational performance. Moreover, the Islamic banking sector in Saudi Arabia should specifically target the MSME market, providing much-needed financial information, training, and consultancy services. This targeted support can promote financial literacy and sustainable growth within the sector. Government agencies, including Chambers of Commerce and the Saudi Small and Medium Enterprises General Authority (Monsha'at), are recommended to implement decisive measures to support MSMEs in areas that improve financial literacy and contribute to national economic growth. Recognizing that a universal approach may not be effective, it is essential to develop tailored strategies that address the specific needs of MSMEs.

This study provides valuable insights within its scope; notwithstanding, certain limitations warrant acknowledgment. The study's focus on MSME businesses presents a limited perspective. Future research should encompass a broader range of organizational forms, including limited companies, social enterprises, and non-profit entities, to deepen the understanding of financial literacy. Additionally, the cross-sectional nature of this study represents a methodological constraint. Future research should employ a longitudinal approach to provide more robust data on how financial literacy is shaped by various factors over time.

AUTHOR CONTRIBUTIONS

Conceptualization: Ibrahim Abiodun Oladapo.

Data curation: Ibrahim Abiodun Oladapo.

Formal analysis: Ibrahim Abiodun Oladapo.

Investigation: Ibrahim Abiodun Oladapo.

Methodology: Ibrahim Abiodun Oladapo.

Project administration: Ibrahim Abiodun Oladapo.

Resources: Ibrahim Abiodun Oladapo.

Software: Ibrahim Abiodun Oladapo.

Supervision: Ibrahim Abiodun Oladapo.

Validation: Ibrahim Abiodun Oladapo.

Visualization: Ibrahim Abiodun Oladapo.

Writing – original draft: Ibrahim Abiodun Oladapo.

Writing – review & editing: Ibrahim Abiodun Oladapo.

REFERENCES

1. Adomako, S., Danso, A., & Damoah, J. O. (2016). The moderating influence of financial literacy on the relationship between access to finance and firm growth in Ghana. *Venture Capital*, 18(1), 43-61. <http://dx.doi.org/10.1080/13691066.2015.1079952>
2. Ali, H., Omar, E. N., Nasir, H. A., & Osman, M. R. (2018). Financial literacy of entrepreneurs in the small and medium enterprises. In *Proceedings of the 2nd advances in business research international conference* (pp. 31-38). Singapore: Springer.
3. Ali, M., Ali, L., Badghish, S., & Soomro, Y. (2021). Determinants of Financial Empowerment Among Women in Saudi Arabia. *Frontiers in Psychology*, 12, 4049. <https://doi.org/10.3389%2Ffpsyg.2021.747255>

4. Amin, L., Hashim, H., Mahadi, Z., Ibrahim, M., & Ismail, K. (2017). Determinants of stakeholders' attitudes towards biodiesel. *Bio-technology for Biofuels*, 10(1), 219. <https://doi.org/10.1186/s13068-017-0908-8>
5. Anshika, Singla, A., & Mallik, G. (2021). Determinants of financial literacy: Empirical evidence from micro and small enterprises in India. *Asia Pacific Management Review*, 26, 248-255. <https://doi.org/10.1016/j.apmr.2021.03.001>
6. Antara, P. M., & Musa, R. (2020). Validating Islamic financial literacy instruments among mum generation: Rasch analysis approach. *International Journal of Business and Society*, 21(3), 1113-1121. <https://doi.org/10.33736/ijbs.3315.2020>
7. Atkinson, A., & Messy, F. (2012). *Measuring financial literacy: results of the OECD/International Network on Financial Education (INFE) Pilot study* (Working Paper No. 15). Paris: OECD Publishing. <http://dx.doi.org/10.1787/20797117>
8. Bancoro, Y. C. (2023). Financial Literacy of MSME Business Owners in the Municipality of San Jose, Negros Oriental, Philippines: A Basis for a State University's Extension Program. *International Journal of Asian Business and Management*, 2(3), 241-274. <https://doi.org/10.55927/ijabm.v2i3.4369>
9. Bhushan, P., & Medury, Y. (2014). An empirical analysis of inter linkages between financial attitudes, financial behavior and financial knowledge of salaried individuals. *Indian Journal of Commerce and Management Studies*, 5(3), 58. Retrieved from <https://ideas.repec.org/a/aii/ijcmss/v5y2014i3p58-64.html>
10. Bosma, N., & Harding, R. (2006). *Global entrepreneurship monitor: GEM 2006 summary results*. London, UK: Babson College London Business School.
11. Chaulagain, R. P. (2015). Contribution of financial literacy to behaviour. *Journal of Economics and Behavioral Studies*, 7(6), 61-71. [https://doi.org/10.22610/jeb.v7i6\(J\).618](https://doi.org/10.22610/jeb.v7i6(J).618)
12. Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Hillsdale, New Jersey, NJ: Lawrence Erlbaum Associates.
13. Dewi, V., Febrian, E., Effendi, N., & Anwar, M. (2020). Financial Literacy among the Millennial Generation: Relationships between Knowledge, Skills, Attitude, and Behavior. *Australasian Accounting, Business and Finance Journal*, 14(4), 24-37. <https://doi.org/10.14453/aabfj.v14i4.3>
14. Er, B., & Mutlu, M. (2017). Financial inclusion and Islamic finance: a survey of Islamic financial literacy index. *International Journal of Islamic Economics and Finance Studies*, 3(2), 33-54. Retrieved from <https://pdfs.semanticscholar.org/0133/2da0fb39afbbf7b1b0ef082d9441c2a8c90b.pdf>
15. Esiebugie, U., Richard, A. T., & Emmanuel, A. L. (2018). Financial literacy and performance of small and medium scale enterprises in Benue State, Nigeria. *International Journal of Economics, Business and Management Research*, 2(04), 65-79. Retrieved from https://ijebmr.com/uploads/pdf/archive-pdf/2020/IJEBMR_02_230.pdf
16. Fraczek, B., & Klimontowicz, M. (2015). Financial literacy and its influence on young customers' decision factors. *Journal of Innovation Management*, 3(1), 62-84. http://dx.doi.org/10.24840/2183-0606_003.001_0007
17. GEM Report (2021). *Kingdom of Saudi Arabia National Report 2020-2021*. Global Entrepreneurship Monitor.
18. Hair, J., Risher, J., Sarstedt, M., & Ringle, C. (2019). When to use and how to report the results of PLSSEM. *European Business Review*, 31(1), 2-24. <https://doi.org/10.1108/EBR-11-2018-0203>
19. Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2016). *A Primer on Partial Least Squares Structural Equation Modelling (PLS-SEM)*. Thousand Oaks, CA: Sage.
20. Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modelling* (2nd ed.). Thousand Oaks, CA: Sage.
21. Haque, A., & Zulfiqar, M. (2015). Women's economic empowerment through financial literacy, financial attitude and financial wellbeing. *Research Journal of Finance & Accounting*, 6(21), 57-66. Retrieved from <https://www.gotriple.eu/documents/ftiisteojs%3Aoai%3Aoj.s.localhost%3Aarticle%2F26911>
22. Hatten, T. S. (2015). *Small business management: Entrepreneurship and beyond*. Nelson Education.
23. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115-135. <https://psycnet.apa.org/doi/10.1007/s11747-014-0403-8>
24. Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *New Challenges to International Marketing* (Advances in International Marketing). Emerald Publishing Limited, Bingley, 20, 277-319. [https://doi.org/10.1108/S1474-7979\(2009\)0000020014](https://doi.org/10.1108/S1474-7979(2009)0000020014)
25. Hidayati, S. A., Wahyulina, S., & Suryani, E. (2021). The Effect of Financial Attitude and Financial Knowledge on Company Performance with Financial Decisions as Intervening Variables: a Behavioral Finance Perspective. *JMM UN- RAM*, 10(1), 1-14. <http://dx.doi.org/10.29303/jmm.v10i1.635>
26. Howlett, E., Kees, J., & Kemp, E. (2008). The role of self-regulation, future orientation, and financial knowledge in long-term financial decisions. *Journal of Consumer Affairs*, 42(2), 223-242. <https://psycnet.apa.org/doi/10.1111/j.1745-6606.2008.00106.x>
27. HS, S., Handayani, T., Marzuki, F., & Zaelani, A. H. (2022). Socialization of Islamic Financial Institution Literacy in MSMEs

- Upscale in DKI Jakarta. *Mat-tawang: Jurnal Pengabdian Masyarakat*, 3(4), 409-414. <https://doi.org/10.35877/454RI.mat-tawang1196>
28. Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>
 29. Hussain, J., Salia, S., & Karim, A. (2018). Is knowledge that powerful? Financial literacy and access to finance: An analysis of enterprises in the UK. *Journal of Small Business and Enterprise Development*, 25(6), 985-1003. <https://doi.org/10.1108/JSBED-01-2018-0021>
 30. Kadoya, Y., Khan, M. S. R., Hamada, T., & Dominguez, A. (2018). Financial literacy and anxiety about life in old age: Evidence from the USA. *Review of Economics of the Household*, 16(3), 859-878. Retrieved from https://ideas.repec.org/a/kap/reveho/v16y2018i3d10.1007_s11150-017-9401-1.html
 31. Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5-44. Retrieved from <https://www.aeaweb.org/articles?id=10.1257/jel.52.1.5>
 32. Md.Sapir @ Md.Shafik, A.S. & Wan Ahmad, W.M. (2020). Financial literacy among Malaysian Muslim undergraduate. *Journal of Islamic Accounting and Business Research*, 11(8), 1515-1529. <http://dx.doi.org/10.1108/JI-ABR-10-2017-0149>
 33. Morris, T., Maillet, S., & Koffi, V. (2022) Financial knowledge, financial confidence and learning capacity on financial behavior: a Canadian study. *Cogent Social Sciences*, 8(1), 1-13. <https://doi.org/10.1080/23311886.2021.1996919>
 34. Nawi, F. A. M., Daud, W. M. N. W., Ghazali, P. L., Yazid, A. S., & Shamsuddin, Z. (2018). Islamic financial literacy: a conceptualization and proposed measurement. *International Journal of Academic Research in Business and Social Sciences*, 8(12), 629-641. <https://doi.org/10.6007/IJARBS/v8-i12/5061>
 35. Priyadharshini, S. H. (2017). *From financial literacy to financial well-being: A study of the level of financial literacy of women teaching faculty in educational institutions in Coimbatore region* (Doctoral dissertation). Coimbatore: Bharathiar University.
 36. Rahim, S., & Balan, V. R. (2020). Financial Literacy: The impact on the profitability of the SMEs in Kuching. *International Journal of Business and Society*, 21(3), 1172-1191. <https://doi.org/10.33736/ijbs.3333.2020>
 37. Rai, K., Dua, S., & Yadav, M. (2019). Association of Financial Attitude, Financial Behaviour and Financial Knowledge Towards Financial Literacy: A Structural Equation Modeling Approach. *FIIB Business Review*, 8(1), 51-60. <https://doi.org/10.1177/2319714519826651>
 38. Seraj A. H. A., Alzain, E., & Alshebami, A. S. (2022). The roles of financial literacy and overconfidence in investment decisions in Saudi Arabia. *Saudi Arabia. Frontiers in Psychology*, 13, 1-12. <https://doi.org/10.3389%2Ffpsyg.2022.1005075>
 39. Sohn, S. H., Joo, S. H., Grable, J. E., Lee, S., & Kim, M. (2012). Adolescents' financial literacy: The role of financial socialization agents, financial experiences, and money attitudes in shaping financial literacy among South Korean youth. *Journal of Adolescence*, 35(4), 969-980. <https://doi.org/10.1016/j.adolescence.2012.02.002>
 40. Song, G., Min, S., Lee, S., & Seo, Y. (2017). The effects of network reliance on opportunity recognition: a moderated mediation model of knowledge acquisition and entrepreneurial orientation. *Technological Forecasting and Social Change*, 117, 98-107. <https://doi.org/10.1016/j.techfore.2017.01.004>
 41. Soroshian, S., & Teck, T. (2014). Spending behaviour of a case of Asian university students. *Asian Social Science*, 10(2), 345. <http://dx.doi.org/10.5539/ass.v10n2p64>
 42. Tuffour, J. K., Amoako, A. A., & Amartey, E. O. (2020). Assessing the Effect of Financial Literacy Among Managers on the Performance of Small-Scale Enterprises. *Global Business Review*, 1-18. <https://doi.org/10.1177/0972150919899753>
 43. Usama, K. M., & Yusoff, W. F. W. (2018). The relationship between entrepreneurs' financial literacy and business performance among entrepreneurs of Bauchi State Nigeria. *International Journal of Entrepreneurship and Business Innovation*, 1(1), 15-26. Retrieved from <https://abjournals.org/ijebipapers/volume-1/issue-1/the-relationship-between-entrepreneurs-financial-literacy-and-business-performance-among-entrepreneurs-of-bauchi-state-nigeria/>
 44. Xiao, J. J., & Porto, N. (2019). Present Bias and Financial Behavior. *Financial Planning Review*, 2(2), e1048. Retrieved from https://digitalcommons.uri.edu/cgi/viewcontent.cgi?article=1066&context=hdf_facpubs
 45. Ye, J., & Kulathunga; KMMCB (2019). How Does Financial Literacy Promote Sustainability in SMEs? A Developing Country Perspective. *Sustainability*, 11, 2990. Retrieved from <https://ideas.repec.org/a/gam/jsusta/v11y-2019i10p2990-d234453.html>
 46. Zarook, T., Rahman, M. M., & Khanam, R. (2013). Management skills and accessing to finance: evidence from Libya's SMEs. *International Journal of Business and Social Science*, 4(7), 106-112. Retrieved from <https://www.scirp.org/reference/referencespapers?referenceid=1337114>