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FINANCIAL RESILIENCE AMONG WOMEN SMALL AND MEDIUM ENTERPRISE IN MALAYSIA DURING AND AFTER COVID-19: THE ROLE OF ISLAMIC SOCIAL FINANCE

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ABSTRACT

The COVID-19 pandemic disproportionately impacted women-owned small and medium enterprises (SMEs) in Malaysia, exposing their vulnerabilities and highlighting the need for effective resilience strategies. This study examines the role of Islamic social finance in enhancing the financial resilience of these businesses during and beyond the pandemic. To achieve this goal, the study explores three key areas i.e., identifying factors shaping the financial resilience of women-owned SMEs in Malaysia during and beyond the pandemic, assessing the effectiveness of Islamic social finance instruments in fostering financial resilience for these businesses, and formulating recommendations for effective policies that strengthen the financial resilience of women-owned SMEs, enabling them to navigate future pandemics more effectively. Using a Partial Least Squares Structural Equation Modeling (PLS-SEM) method and 330 respondents, we document no significant effects of Islamic social finance instruments on the financial resilience of women-owned SMEs. We argue that this documented insignificance could be due to the ways Islamic Social Finance (ISF) is operationalized. At the same time, contradicting previous research on the ISF women-owned SMEs financial resilience, we also believe that further investigation is needed.

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I. INTRODUCTION

In the wake of the COVID-19 outbreak and subsequent lockdown measures, households and businesses worldwide faced profound financial challenges (AFI, 2020). The pandemic's economic repercussions were particularly felt by women-owned small and medium enterprises (SMEs) in Malaysia, exacerbating existing vulnerabilities within this demographic (OECD, 2020). Despite government initiatives to support SMEs, including women-owned businesses, the pandemic underscored persistent gender disparities in access to resources and financial literacy (Odoch et al., 2024). These challenges have prompted an exploration of innovative solutions, such as Islamic social finance, to enhance the financial resilience of women entrepreneurs in Malaysia during and after the pandemic.

Islamic social finance, encompassing instruments like zakāt, waqf, and ṣadaqah, holds promise in addressing the financial vulnerabilities of women-owned SMEs (Shuaib & Sohail, 2022). However, empirical evidence regarding its effectiveness in bolstering the financial resilience of women-owned SMEs in Malaysia remains scarce. Existing studies often lack comprehensive analysis tailored to women-owned SMEs, hindering a deeper understanding of their unique challenges and needs (Hassan, Muneeza, & Sarea 2022; Abdul Samad, 2014). Moreover, while financial assistance is recognized as crucial, there is limited research on how women-led SMEs utilize available resources, including Islamic social finance, during the pandemic (Aziz et al., 2024; Mahat, Mahat, & Mustafa 2021). Furthermore, existing literature predominantly focuses on the immediate impact of the pandemic, neglecting the long-term sustainability of women-led SMEs and the efficacy of Islamic social finance in fostering enduring financial resilience (Afshan, Shahid, & Tunio, 2021).

Addressing these gaps is vital for a holistic understanding of the financial challenges faced by women-led SMEs in Malaysia and optimizing the effectiveness of Islamic social finance in supporting their resilience throughout and after the COVID-19 pandemic. This study aims to investigate the factors contributing to the financial resilience of women micro and small business entrepreneurs in Malaysia, with a particular focus on the role of Islamic social finance. By exploring the utilization and impact of Islamic social finance instruments, such as zakāt, waqf, and ṣadaqah, this research presents an opportunity to observe the impact of Islamic social finance instruments on women entrepreneurs (i.e. the targeted group). In addition, the study seeks to provide insights into the effectiveness of these mechanisms in mitigating financial challenges faced by women-owned SMEs.

Bridging these research gaps will not only contribute to understanding the dynamics of financial resilience among women-owned SMEs but also inform policymakers and stakeholders in developing strategies to enhance their resilience and promote their participation in the SME sector, ultimately fostering economic growth and development in Malaysia.

II. LITERATURE REVIEW

The COVID-19 pandemic has had a significant impact on households and businesses worldwide, leading to financial challenges and economic disruptions

(AFI, 2020). Women-owned small and medium enterprises (SMEs) have been particularly vulnerable during this period, facing numerous obstacles to their financial resilience (OECD, 2020). This section reviews relevant literature on the financial resilience of women-owned SMEs in Malaysia during and after the COVID-19 pandemic, with a specific focus on the role of Islamic social finance.

The immediate effects of the pandemic on individuals and businesses have resulted in financial shortfalls, loss of income, and trouble meeting financial obligations (AFI, 2020). Women entrepreneurs have faced difficulties in accessing working capital and financing sources, which are crucial for the survival and growth of their businesses (OECD, 2020). According to a country survey conducted by the Organisation for Economic Co-operation and Development (OECD), the average financial shortfall for participatory countries during the pandemic is roughly 35% (OECD, 2020). In Malaysia, the depletion of working capital among small and medium-sized business owners is estimated to be 25% within the first 12 months of the pandemic due to Movement Restrictions Orders (OECD, 2020). These findings highlight the pressing need to examine the financial resilience of women-owned SMEs in Malaysia and explore potential solutions.

To address the financial challenges faced by SMEs, including women entrepreneurs, the government of Malaysia and Bank Negara Malaysia (BNM) has implemented various measures and intervention programs (Khan & Anuar, 2018). These initiatives aim to support business continuity, enhance economic resilience, and alleviate the financial burden on SMEs. For instance, BNM directed banks and financial institutions to exercise forbearance and provide a three-month moratorium on loan repayments to ease immediate debt burdens and support the ability to repay loans (Bank Negara Malaysia, 2020). Additionally, the Malaysian government rolled out stimulus packages and allocated funds for wage subsidies, microcredit loans, and sector-specific grants to assist SMEs in weathering the pandemic (Nhamo et al, 2020). In 2022, under Madani Economy Framework, the government has provided an allocation of RM400 million for microfinancing under SME Corporation Malaysia, National Entrepreneurial Group Economic Funds (Tekun), Majlis Amanah Rakyat (MARA) and Bumiputera Agenda Steering Unit (Teraju) to provide entrepreneurial opportunities, training and financing for the marginal groups including women and youth, and financing worth RM200 million under Agrobank to facilitate the application of technology in farming (Jalil & Povera, 2023).

Women-owned SMEs play a vital role in the Malaysian economy, contributing significantly to the gross domestic product (GDP) and employment (Department of Statistics Malaysia, 2020). However, despite the growth in women's entrepreneurship, gender disparities persist in terms of access to resources and opportunities (Guzman & Kacperczyk, 2019). The COVID-19 pandemic has exacerbated these disparities, placing women entrepreneurs at a greater disadvantage (Monnaf & Rahman, 2022). Women face challenges such as lower levels of financial literacy, risk aversion, and limited access to formal financing (Saluja, Singh & Kumar, 2023). Market imperfections, such as information asymmetries and weak creditor protection, further hinder women entrepreneurs' access to finance (Simba, Tajeddin, Dana, & Ribeiro Soriano, 2024).

Islamic social finance (ISF) has emerged as a potential solution to address the financial challenges women-owned SMEs face in Malaysia (Ilhaamie, Arni, Rosmawani, & Al-Banna, 2014; Mohd, & Azrak, 2021). The sector comprises traditional Islamic instruments based on philanthropy i.e. zakāt, ṣadaqah and waqf; and those instruments based on mutual cooperation e.g. qarḍ and kafālah; as well as the contemporary Islamic microfinance institutions (Islamic Research and Training Institute, (2020). The primary objective of Islamic social finance is to meet the needs of the poor and make a dent in their ever-rising poverty levels. Economic justice, inclusive participation and shared prosperity are the principles behind ISF (Lalani, S. (2019). These principles come from Islamic philanthropy values, including standard giving behaviours to meet the needs of the poor. ISF can help governments and communities meet a range of development needs (Modéer, 2018). Islamic social finance instruments, including zakāt (charitable giving), waqf (endowment), and ṣadaqah (voluntary contributions), can provide alternative sources of financing and support for women entrepreneurs (Zauro et al., 2020).

Islamic social finance mechanisms can contribute to bridging the financing gap (Umar et al.,2022), promoting financial inclusion, and enhancing the financial resilience of women-owned SMEs. For instance, in the utilization of zakāt among women micro-entrepreneurs in Malaysia, contemporary Muslim jurists have debated on the issue of leveraging zakāt proceeds for microfinancing, which provides interest-free loans and profit-sharing arrangements. Should zakāt proceeds be utilized in extending its distribution beyond the present need of the beneficiaries and mustaḥīq in expanding microfinance to them? Do the zakāt institutions have locus standi to exploit it for microfinancing? Similarly, there are research that explored the potential of waqf-based financing in supporting small businesses and concluded that waqf instruments could serve as an effective means to address the financial needs of women entrepreneurs. In Malaysia, to offer waqf-based microfinancing to vulnerable groups, the model that we practice to assist them is either through utilisation of waqf properties (mawqūf) or derives from pecuniary benefits or proceeds (manfaʿah) of waqf capital which is not from its principal (Mahadi, 2022).

Research on the role of ISF in supporting women-owned SMEs is still limited. However, studies have highlighted its potential impact on entrepreneurship and economic development (Azman et al., 2021; Zauro et al., 2020). For example, Azman et al. (2021) conduct a study on the utilization of zakāt among women micro-entrepreneurs in Malaysia and find that zakāt funds provide a significant source of financing and contribute to their business growth. Similarly, Ismail et al (2023) and Mohd Thas Thaker et al (2021) explore the potential of waqf-based financing in supporting small businesses and conclude that waqf instruments could serve as an effective means to address the financial needs of women entrepreneurs.

Islamic social finance (ISF) offers a unique avenue to empower women-owned SMEs. For instance, *zakāt*, a mandatory charitable donation given its defined set of beneficiaries in need and rapid disbursement, can be vital for crisis response, providing resources needed for women entrepreneurs to overcome financial difficulties and invest in their businesses. Whereas, *waqf* a charitable endowment, provides permanent sources of funding. It is well-suited for building resilience through institutions and infrastructure, and also offers long-term financial stability through sustainable investments, supporting women's economic participation and social well-being. Microfinance, a cornerstone of Islamic social finance, provides women entrepreneurs with access to crucial capital, overcoming the gender gap in traditional financing. This financial inclusion fuels business growth, creates employment opportunities, and enhances women's economic independence. Beyond microfinance, zakāt and waqf offer vital support (Ismail et al., 2023; Mahadi, 2022; Shuaib & Sohail, 2022; Azman et al., 2021; Zauro et al., 2020; Mohd Thas Thaker et al., 2021).

Studies by Mahadi (2023), Adhariani (2022) and Soemitra et al. (2022) highlight the positive impact of Islamic social finance on women entrepreneurs' financial resilience and business sustainability. This empowerment translates into economic growth and social development, fostering a more inclusive and equitable society. Therefore, Islamic social finance plays a critical role in empowering women-owned SMEs, driving economic progress, and fostering a more inclusive and just society.

Islamic social finance initiatives have gained attention from policymakers and stakeholders in Malaysia, with efforts to promote their utilization among SMEs. The government recognizes the importance of Islamic social finance in supporting the growth and resilience of women-owned SMEs (Ismail et al., 2023). However, further research is needed to assess the effectiveness and inclusiveness of these initiatives, their impact on women entrepreneurs' financial resilience, and the extent of their utilization by women-owned SMEs. There are few affordable takaful schemes introduced by the government to reduce their vulnerabilities against unpredictable shocks and to boost their financial resilience. Tenang Protection is a market-based initiative developed by private insurance providers, it is a microtakaful product designed to offer affordable insurance coverage to low-income individuals and families. MySalam is a government-funded program, it is issued by the Malaysian government at appropriate price to target large number of vulnerable groups, it is a free health insurance scheme specifically targeted at B40 households (the bottom 40% of income earners). These programs provide basic hospitalization coverage to eligible individuals, offering them financial protection in case of unexpected medical expenses or other unforeseen events. These initiatives demonstrate a commitment to addressing the financial needs of vulnerable groups in Malaysia and ensuring their access to essential financial protection.

2.1. Determinants of Financial Resilience among Women Entrepreneurs

This sub-section develops the hypotheses to be tested in this study, which involves the relations between entrepreneurial orientations and actions and financial resilience and between Islamic social finance and financial resilience. We detail these in turn below.

2.1.1. Entrepreneurship and Financial Resilience

Entrepreneurial activities play a crucial role in economic growth and development, and women entrepreneurs have been increasingly recognized as a significant force driving entrepreneurship worldwide. Women entrepreneurs engage in a wide range of activities, spanning from informal petty market traders to high-tech start-ups (Delle, 2022). However, compared to their male counterparts, women entrepreneurs often face unique challenges and barriers that hinder their business growth and sustainability. Studies have shown that women entrepreneurs tend to have limited access to resources, including financial capital, human capital, and social networks (Brush et al., 2020; Sarfaraz, 2017). Women entrepreneurs often leverage strong social networks for support and resource sharing, mitigating the impact of challenges (Stephens, Cunningham, & Kabir, 2021).

Financial resilience is a key aspect of the entrepreneurial journey, especially during challenging periods such as economic crises or global pandemics. Financial resilience refers to the ability of entrepreneurs to withstand and recover from financial shocks or difficulties, maintain business operations, and adapt to changing market conditions (Sreenivasan, & Suresh, 2023). Women entrepreneurs' financial resilience is influenced by various factors, including access to finance, financial literacy, risk-taking behaviour, and social capital (Fanaja et al., 2023).

Access to finance is a critical determinant of women entrepreneurs' financial resilience. Studies have shown that women entrepreneurs often face challenges in accessing formal financing sources, such as bank loans or venture capital (Brush et al., 2020; Coleman & Robb, 2019). They may encounter biased lending practices, higher interest rates, or collateral requirements that disproportionately affect their ability to obtain funding (Brush et al., 2018). As a result, women entrepreneurs often rely on alternative sources of financing, such as personal savings, family and friends, or microfinance (Coleman & Robb, 2019).

Financial literacy is another important factor that influences women entrepreneurs' financial resilience. Limited financial knowledge and skills can hinder their ability to manage business finances effectively, make informed financial decisions, and access appropriate financial products and services (Baporikar & Akino, 2020). Studies have highlighted the need for targeted financial education and training programs to enhance the financial literacy of women entrepreneurs and empower them with the necessary skills to navigate financial challenges (Mutegi et al., 2015; Rosca et al., 2020).

Based on the foregoing, we believe that entrepreneurial orientations and actions are key to financial resilience. Entrepreneurial orientations refer to the strategic orientations and mindsets that entrepreneurs adopt in their business activities. These orientations can influence women entrepreneurs' decision-making, resource allocation, and overall business performance (Dess & Lumpkin, 2005; Rauch et al., 2009; Cowden et al., 2024). Several orientations have been identified in the literature, including innovation orientation, growth orientation, and social orientation.

Innovation orientation is characterized by a focus on developing and implementing new ideas, products, or processes within the business (Covin & Slevin, 1991). Women entrepreneurs with an innovation orientation are more likely to seek out opportunities for product or service innovation, which can enhance their competitiveness and resilience in the face of changing market conditions (Dey & Banerjee, 2021). Tajeddini & Mueller (2018) have shown that women tend to be more adaptable and resourceful in challenging environments, finding creative solutions to overcome obstacles.

Growth orientation involves a strong desire for expansion and growth of the business (Lumpkin & Dess, 1996). Women entrepreneurs with a growth orientation are motivated to scale up their ventures and pursue opportunities for market expansion (Brush et al., 2020). Studies have indicated that women entrepreneurs with a growth orientation are more likely to access external financing, engage in strategic partnerships, and withstand financial challenges (Orser & Riding, 2018).

Social orientation refers to a focus on social and environmental goals alongside economic objectives (Hockerts & Wüstenhagen, 2010). Women entrepreneurs with a social orientation prioritize social impact, sustainability, and community development in their business activities (Doherty et al., 2014). Research has shown that women entrepreneurs with a strong social orientation are more resilient in the face of financial difficulties, as their commitment to social causes and community support networks can provide additional resources and resilience-enhancing mechanisms (Welter et al., 2019).

Financial resilience is a crucial aspect of women entrepreneurs' ability to navigate financial challenges and sustain their businesses. It involves the capacity to withstand financial shocks, adapt to changing market conditions, and recover from setbacks (Dey & Banerjee, 2021). The orientations discussed above can contribute to women entrepreneurs' financial resilience in several ways. For example, an innovation orientation enables women entrepreneurs to identify new market opportunities, develop innovative products or services, and differentiate themselves from competitors (Vadnjal, 2020). This ability to innovate can help women entrepreneurs adapt to market disruptions, sustain customer demand, and maintain financial stability (Terjesen et al., 2016). A growth orientation allows women entrepreneurs to seek out growth opportunities, expand their customer base, and diversify their revenue streams (Orser & Riding, 2018). By pursuing growth, women entrepreneurs can increase their financial resources, enhance their bargaining power with suppliers and lenders, and build economies of scale that contribute to their financial resilience. A social orientation, while primarily focused on social impact, can also enhance women entrepreneurs' financial resilience. Women entrepreneurs with a social orientation often develop strong networks and partnerships with stakeholders who share their social values (Doherty et al., 2014). These networks can provide access to additional resources, funding opportunities, and support during challenging times, thus bolstering financial resilience (Welter et al., 2019). Therefore, this study suggests women entrepreneurs exhibit greater resilience in the face of adversity.

Based on the foregoing, the following hypotheses are stated:

H1: There is a positive and significant relationship between entrepreneurial orientation and financial resilience of women entrepreneurs.

H2: There is a positive and significant relationship between entrepreneurial action and financial resilience of women entrepreneurs.

2.1.2. Financial Resilience and Islamic Finance

Financial resilience among women small and medium enterprises (SMEs) in Malaysia during and after the COVID-19 pandemic, particularly in the context of

Islamic social finance, has gained attention from researchers and policymakers. This section provides a theoretical review of the literature on financial resilience, Islamic social finance, and their role in supporting women entrepreneurs. In-text citations will be provided for each statement or claim made.

Islamic social finance represents a system of financial intermediation guided by Islamic principles that promote fairness, social justice, and community well-being (Archer & Karim, 2019). It includes various instruments such as zakāt (obligatory alms-giving), waqf (endowments), and Islamic microfinance, which aim to address social and economic needs while adhering to Islamic ethical values. Islamic social finance offers a unique approach to financial inclusion and empowerment, particularly for marginalized groups, including women entrepreneurs (Obaidullah & Khan, 2008).

Women entrepreneurs, despite their significant contributions to economic growth, often face gender-specific challenges in accessing finance, resources, and market opportunities (Kabeer, 2012). However, the literature recognizes the potential of women entrepreneurs to drive economic development and highlights the importance of supporting their financial resilience (Brush et al., 2020).

Islamic social finance can play a vital role in addressing the financial needs of women entrepreneurs and promoting their financial resilience. Thus, the implementation of Islamic social finance programs and instruments among women entrepreneurs can reinforce active forms of social support mechanisms and financial inclusion. Research has shown that women entrepreneurs who have access to Islamic social financial instruments or programmes such as Islamic microfinance, are more likely to overcome financial barriers and enhance their business performance (Aziz et al., 2024). Islamic social finance has a significant potential to address women entrepreneurs' financial needs when driven towards programmes targeted at promoting financial resilience and financial inclusion.[1] Islamic microfinance institutions offer financial services that align with Islamic principles, providing interest-free loans and profit-sharing arrangements, which are particularly beneficial for women entrepreneurs who may face challenges in accessing conventional financing (Hassan, 2015; Yusuf et al., 2016).

Moreover, Islamic social finance promotes values of inclusivity and social impact, aligning with the principles of sustainable and responsible entrepreneurship. It emphasizes the equitable distribution of resources, support for community development, and ethical business practices (Kuanova et al., 2021). Women entrepreneurs who engage with Islamic social finance initiatives can benefit from not only financial support but also social networks, mentorship, and capacity-building programs, enhancing their financial resilience (Aziz et al., 2024). The integration of Islamic social finance principles into government support programs and policies can further strengthen the financial resilience of women entrepreneurs. By incorporating Islamic values and instruments, policymakers can create an enabling environment that addresses the specific needs of women entrepreneurs, fosters their participation in the economy, and ensures their long-

1. The Sultan of Perak, His Royal Highness Sultan Nazrin Shah at the World Humanitarian Summit of 2016 highlighted ISF as one of the ways to address global shortages in humanitarian aid.

term sustainability (Dawood et al., 2020). Based on the forgoing, the following hypothesis is developed and tested in this study:
H3: There is positive and significant relationship between Islamic Social Finance and Financial Resilience of women entrepreneurs.

III. METHODOLOGY

3.1. Data

This study adopts a quantitative research design to examine the role of Islamic social finance in enhancing the financial resilience of women SMEs in Malaysia during and after the COVID-19 pandemic. The data are from an online survey of women entrepreneurs (Ascarya & Tekdogan, 2021) using a purposive sampling technique. The target population consists of women entrepreneurs who operate small and medium-sized businesses in various industries. The sample size is determined based on the recommended sample size calculation for PLS-SEM studies (Hair et al., 2017).

The questionnaire consists of validated scales and items adapted from previous studies, capturing variables related to entrepreneurial activities, orientations, access to Islamic social finance, and financial resilience. The questionnaire was pre-tested to ensure its validity and reliability. The measurement of variable is based on Likert-scale items, ranging from strongly disagree to strongly agree. The questionnaire includes demographic information, followed by sections addressing entrepreneurial activities, entrepreneurial orientations, access to Islamic social finance, and financial resilience. Each construct is measured using established scales from relevant literature. The items for entrepreneurial activities are adopted from Botha & Pietersen (2020), items for entrepreneurial orientations are from Lumpkin et al. (2009) and Covin & Slevin (1989) while those of financial resilience are from Gielnik et al. (2015). Islamic social finance is measured by a dummy variable in the form of beneficiaries and none beneficiaries.

3.2. Method

The collected data are analyzed using descriptive statistics for the demographic part and partial least squares structural equation modeling (PLS-SEM) with the SmartPLS software for the items that measure the measurement variables. SEM is a powerful statistical technique that allows for the examination of complex relationships between observed and latent variables. SmartPLS provides robust estimations and facilitates the assessment of measurement models and structural models. The measurement model is assessed for reliability, convergent validity, and discriminant validity. Reliability is evaluated using Cronbach's alpha and composite reliability. Convergent validity is examined through factor loadings, average variance extracted (AVE), and construct reliability. Discriminant validity is assessed by comparing the AVE values with the squared correlations between constructs. The structural model will be evaluated to examine the relationships between the constructs. The significance and strength of the relationships will be assessed using bootstrapping techniques and path coefficients.

3.3. Model Development

Based on the theoretical framework that culminated into Figure 1., three hypotheses are formulated to test the relationships between entrepreneurial activities, entrepreneurial orientations, access to Islamic social finance, and financial resilience of women SMEs. The hypotheses were tested using the estimated path coefficients and the significance of the direct effects.

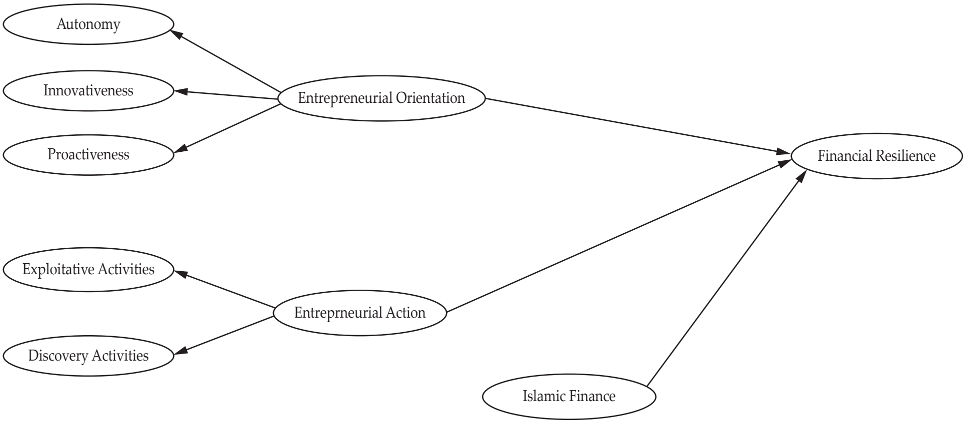

Figure 1.
The Proposed Model

IV. RESULTS AND DISCUSSION

4.1. Preliminary Analysis

Prior to performing regression analysis, it is crucial to perform preliminary analyses on the acquired data (Hair et al., 2014), namely missing values, outlier identification and screening of the obtained data.

4.1.1. Missing Values

One of the most frequent issues in data analysis is missing data (Tabachnick, Fidell, & Ullman, 2013). The data set should constantly be checked for missing values. Hair et al. (2014) recommend that researchers adopt 10 per cent as a reasonable threshold for missing values. There are no missing data in the data set, according to descriptive statistics. This accounts for 0 percent of the missing data set, which is less than the 10 percent threshold recommended by Hair et al. (2017) and is disregarded.

4.1.2. Assessment of Outliers

An outlier is a circumstance where one variable has an extreme value (a univariate outlier) or where scores on two or more variables are combined in an odd way (a multivariate outlier), which causes statistics to be skewed (Tabachnick, Fidell, & Ullman, 2013). Mahalanobis distance is the most effective method for identifying outliers in multivariate analyses, such as the one used in this study (D^2). No matter how many variables are taken into account, the Mahalanobis distance (D^2) approach gives a single value for each observation by measuring each observation's distance in multidimensional space from the mean center of all observations (Hair et al., 2014). Hair et al. (2014) propose using a cautious level of significance (.001) as the cutoff point for classifying a data point as an outlier. In order to identify outliers, this study uses the Mahalanobis distance (D^2). No data point is removed from the analysis due to outliers. Thus, all the 330 cases collected are used for the analysis.

4.2. Demographic Profile of Respondents

This section shows the descriptive statistics of the participants based on their demography, which includes respondents' ethnicity, education attainment, business sector and monthly income. Table 1 presents the ethnic, education, monthly income and economic sector distribution of the respondents.

Table 1.
Respondents Distribution by Demographic Characteristics

Ethnic	Frequency	Percent	Valid Percent	Cumulative Percent
Malay	267	80.9	80.9	80.9
Chinese	13	3.9	3.9	84.8
Indian	2	.6	.6	85.5
Others	48	14.5	14.5	100.0
Total	330	100.0	100.0	

Monthly Income	Frequency	Percent	Valid Percent	Cumulative Percent
<=RM2000	116	35.2	35.2	35.2
RM2001-RM3999	74	22.4	22.4	57.6
RM4000-5999	31	9.4	9.4	67.0
RM6000-7999	22	6.7	6.7	73.6
RM8000-9999	35	10.6	10.6	84.2
>=10000	52	15.8	15.8	100.0
Total	330	100.0	100.0	

Education	Frequency	Percent	Valid Percent	Cumulative Percent
No Education	4	1.2	1.2	1.2
Secondary	99	30.0	30.0	31.2
Diploma	94	28.5	28.5	59.7
Degree	115	34.8	34.8	94.5
PG	13	3.9	3.9	98.5
Primary School	5	1.5	1.5	100.0
Total	330	100.0	100.0	

Sector	Frequency	Percent	Valid Percent	Cumulative Percent
Agriculture	22	6.7	6.7	6.7
Services	68	20.6	20.6	27.3
Manufacturing	64	19.4	19.4	46.7
Others	176	53.3	53.3	100.0
Total	330	100.0	100.0	

Source: Field Survey, 2023

A significant portion of the respondents, more than 80%, are Malay followed by others, 14%, while less than 5% of the respondents are Hindu and Chinese. The education level of the respondents is fairly distributed among Degree, Diploma and Secondary school holders, only 4% have postgraduate certificate, while less than 3% have Primary school qualification and below. On the distribution of monthly income, majority of the respondents, 35%, earn RM2000 and below, followed by those that earn between RM2000 and RM4000, 22%, then those that have monthly pay above RM10,000. The least category of respondents in the income distributions are those that earn between RM6000 and RM8000, 7%. Finally, the disaggregation of the respondents according to their economic sector reveals that most, 53%, take to other sector different from Agriculture, Services or Manufacturing. This is followed by Services, 21%, Manufacturing, 19%. Agricultural sector has the least representation of the respondents, 7%.

4.3. Presentation and Interpretation of Measurement and Structural Model Results

The data is screened and the preliminary analysis conducted in readiness for the main analysis. The data are then evaluated using SmartPLS software's for partial least square structural equation modeling (PLS-SEM). The findings of the measurement model and structural model for model fit and hypotheses testing are presented in this portion of the study.

4.3.1. Assessing Model Fit

The hypotheses for this study are tested using variance based structural equation modeling. Data collected are subjected to validity and reliability tests to examine the reliability and validity of the survey instruments before progressing to examine the measurement and structural model. The Figure 2 presents the full structural model and the assessment of both measurement and structural models follow.

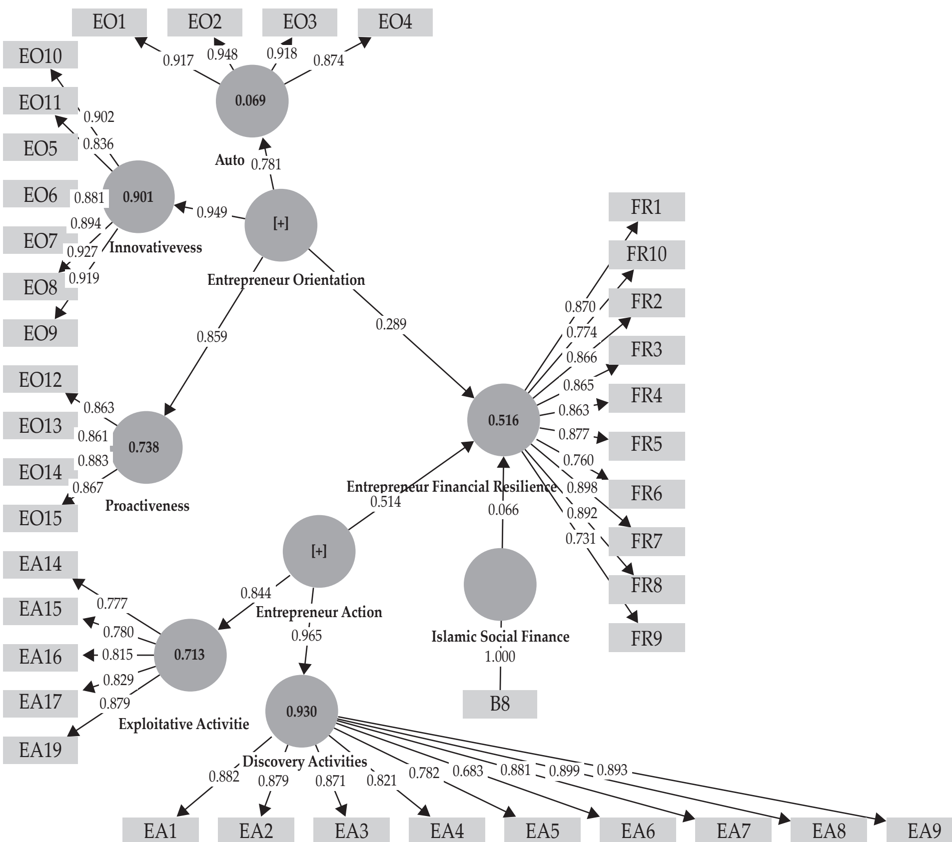

Figure 2.
Full Structural Model

4.3.2. Evaluation of Measurement Model

The criteria to evaluate the outer model are presented in Table 2.

Table 2a.
Quality Criteria Overview

	Cronbach's alpha	Average variance extracted (AVE)	Composite reliability	R-Square
Entrepreneur Financial Resilience	0.954	0.708	0.956	0.512
Autonomy	0.935	0.837	0.936	
Discovery Activities	0.949	0.716	0.952	
Entrepreneurial Action	0.947	0.597	0.950	
Exploitative Activities	0.875	0.667	0.878	
Innovativeness	0.956	0.793	0.956	
Proactiveness	0.892	0.755	0.894	
Entrepreneurial Orientation	0.955	0.616	0.957	

Source: Authors computation, 2023

Table 2b.
Fornell-Larcker Criteria

Constructs	Autonomy	Discovery Activities	Exploitative Activities	Innovativeness	Islamic Social Finance	Proactiveness
Autonomy	0.915					
Discovery Activities	0.376	0.846				
Exploitative Activities	0.354	0.673	0.817			
Innovativeness	0.612	0.576	0.464	0.891		
Islamic Social Finance	-0.058	0.131	0.120	-0.083	1.000	
Proactiveness	0.541	0.346	0.427	0.747	-0.189	0.869

Source: Authors computation, 2023

Table 2c.
Heterotrait-Monotrait ratio (HTMT)

Constructs	Heterotrait-monotrait ratio (HTMT)
Discovery Activities <-> Autonomy	0.392
Entrepreneur Action <-> Autonomy	0.418
Entrepreneur Financial Resilience <-> Autonomy	0.345
Entrepreneur Financial Resilience <-> Discovery Activities	0.684
Entrepreneur Financial Resilience <-> Entrepreneur Action	0.710
Entrepreneur Orientation <-> Autonomy	0.839
Entrepreneur Orientation <-> Discovery Activities	0.550
Entrepreneur Orientation <-> Entrepreneur Action	0.579
Entrepreneur Orientation <-> Entrepreneur Financial Resilience	0.590
Exploitative Activitie <-> Autonomy	0.388
Exploitative Activitie <-> Discovery Activities	0.738
Exploitative Activitie <-> Entrepreneur Financial Resilience	0.624
Exploitative Activitie <-> Entrepreneur Orientation	0.523
Innovativeness <-> Autonomy	0.639
Innovativeness <-> Discovery Activities	0.605
Innovativeness <-> Entrepreneur Action	0.610
Innovativeness <-> Entrepreneur Financial Resilience	0.637
Innovativeness <-> Exploitative Activitie	0.501
Islamic Social Finance <-> Autonomy	0.060
Islamic Social Finance <-> Discovery Activities	0.134
Islamic Social Finance <-> Entrepreneur Action	0.146
Islamic Social Finance <-> Entrepreneur Financial Resilience	0.070
Islamic Social Finance <-> Entrepreneur Orientation	0.122
Islamic Social Finance <-> Exploitative Activitie	0.142
Islamic Social Finance <-> Innovativeness	0.085
Proactiveness <-> Autonomy	0.590
Proactiveness <-> Discovery Activities	0.373

Table 2c.
Heterotrait-Monotrait ratio (HTMT) (Continued)

Constructs	Heterotrait-monotrait ratio (HTMT)
Proactiveness <-> Entrepreneur Action	0.438
Proactiveness <-> Entrepreneur Financial Resilience	0.504
Proactiveness <-> Exploitative Activitie	0.479
Proactiveness <-> Innovativeness	0.802
Proactiveness <-> Islamic Social Finance	0.201

Source: Authors computation, 2023

All constructs and sub-constructs, as shown in Figure 2 and Table 2, have Composite Reliability coefficients of more than 0.8, and all factors assessing financial resilience, entrepreneurial action and Entrepreneurial orientation, as well as their sub-constructs, have good loading of over 0.7, ranges between 0.731 – 0.927 (see the outer loading in Figure 2). Loadings must not be less than 0.7 (Hair et al., 2014). All objects are kept as a consequence. Moreover, all constructs fulfilled the AVE and composite reliability minimal standards of 0.5 and 0.7 respectively. All the Cronbach's alphas are also above 0.7, which establish the reliability of all the items used to measure the constructs. The discriminant validity for this study is established using both both Fornell-Larcker Criterion and Hetretrait-Monotrait ratio as presented in table 2b and 2c based on the recommendations from Hair et al. (2014). The Fornell-Larcker criterion compares the square root of the average variance extracted (AVE) values of each construct to the correlations between the constructs. For discriminant validity to be established, the square root of the AVE for a construct (diagonal elements) should be greater than the correlations (off-diagonal elements) involving that construct. The Heterotrait-Monotrait Ratio (HTMT) is a measure used to assess the discriminant validity of constructs in a structural equation model. It compares the strength of the relationships between different constructs (heterotrait relationships) to the strength of the relationships within the same construct (monotrait relationships). Generally, a HTMT value less than 0.85 indicate good discriminant validity.

The analysis of Fornell Larcker Criteria presented in Table 2b highlights the following key points. For the constructs Autonomy, Discovery Activities, Exploitative Activities, Innovativeness, Islamic Social Finance and Proactiveness, the square roots of the AVEs are 0.915, 0.846. 0.817, 0.891, 1.000 and 0.869 respectively. These values are higher than their corresponding rows and column. From the Fornell-Larcker criterion, it appears that each construct demonstrates discriminant validity because each square root of the AVEs (diagonal elements) is greater than the correlations (off-diagonal elements). Based on the HTMT values obtained from the analysis (Table 2c), all the constructs demonstrate good discriminant validity because their HTMT values are below the recommended threshold of 0.85. These constructs include Autonomy, Discovery Activities, Entrepreneur Action, Entrepreneur Financial Resilience, Entrepreneur Orientation, Exploitative Activities, Innovativeness, Islamic Social Finance, and Proactiveness. The HTMT ratio further supports discriminant validity for most construct pairs, except for Media and Campaign Method, which require closer scrutiny as their

HTMT value slightly exceeds the threshold. Overall, the evidence suggests good discriminant validity across the constructs, with a minor concern between Media and Campaign Method.

4.4. Structural Model

The hypotheses of the study are tested using the path coefficients of the structural model in Figure 2. The result is presented in Table 3 below.

Table 3.
Path Coefficients

Hypotheses (Adj. R^2 0.512)	B Value	P Value	Decision
Entrepreneur Action -> Entrepreneur Financial Resilience (H1)	0.514	0.0001***	Accepted
Entrepreneur Orientation -> Entrepreneur Financial Resilience (H2)	0.289	0.0001***	Accepted
Islamic Social Finance -> Entrepreneur Financial Resilience (H3)	0.066	0.527	Rejected

P value*** < 0.01
Source: Authors computation, 2023.

Table 3 presents the results of hypothesis testing in the context of a structural equation model, specifically focusing on the relationship between different variables and their impact on "Entrepreneur Financial Resilience." The table includes the B value, p-value, and the decision regarding each hypothesis. The hypothesis stating that "Entrepreneur Action has a significant positive impact on Entrepreneur Financial Resilience" is supported by the data. The B value of 0.514 indicates a positive effect, and the very low p-value (less than 0.001) suggests that this relationship is statistically significant.

The hypothesis stating that "Entrepreneur Orientation has a significant positive impact on Entrepreneur Financial Resilience" is also supported. The B value of 0.289 indicates a positive effect, and the very low p-value (less than 0.001) suggests statistical significance. The hypothesis states that "Islamic Social Finance has a significant positive impact on Entrepreneur Financial Resilience," however the B value of 0.066 indicates a small positive effect, but the relatively high p-value (0.527) suggests that this relationship is not statistically significant. Therefore, the hypothesis is rejected. In summary, the results indicate that both Entrepreneur Action and Entrepreneur Orientation have a significant positive impact on Entrepreneur Financial Resilience. The path analyses of more than 0.2 with p-value of less than 0.05 indicate that both variables are both practically and statistically significant. However, there is no significant relationship between Islamic Social Finance and Entrepreneur Financial Resilience based on the analysis.

The adjusted R square of 0.512 indicates that Entrepreneur action, Entrepreneur orientation and Islamic social finance account for about 51 per cent of the variance in financial resilience of women entrepreneurs during and after COVID-19 in Malaysia. The other factors, which are not included in this analysis, accounted for the remaining 49 per cent.

4.4.1. Effect Size and Multicollinearity Output

Assessment of effect size is important for the relationships between microfinance banks' credit, credit delivery system and variation in interest and SMEs performance. The result is presented in Table 4.

Table 4.
Effect Size

R SQUARE 0.516				
Construct	**Unexplained VIF**	**R^2 Change**	**F^2**	**Change**
Ent. Action	0.242	0.619	0.354	2.553
Ent. Orientation	0.242	0.750	0.113	2.486
Islamic Soc Fin.	0.242	0.746	0.002	1.103

Source: Authors computation, 2023

Effect size is calculated as the increase in R^2 relative to the percentage of variation that is still not fully explained by the endogenous latent variable, as shown in Table 4. The change in R^2 caused by the exclusion of a causative (exogenous) element is known as the R-square change. The formula for the f-square coefficient is (R^2 original - R^2 removed) / (1-R^2 original). The R^2 is 0.619 with Entrepreneur action, 0.750 with entrepreneur orientation, and 0.746 with Islamic social finance.

The change in F^2Entrepreneur action is 0.354, change in F^2 for Entrepreneur orientation is 0.113, and change in F^2 for Islamic social finance is 0.002. The higher the change in R^2, the higher the financial resilience variance of women entrepreneurs is explained by that component. Specifically, removing Islamic social finance will lead to a lower explained variance than eliminating other factors. This underscores the reason why entrepreneurial action is the most significant explanatory variable in the model. In addition, we use the value of the variance inflation factor (VIF) to ascertain the absence of multicollinearity in our model. The VIF results obtained range from 1.103 to 2.553 which is below the threshold of 5 set by Hair et al. (2017). Therefore, the multicollinearity is not a problem.

4.5. Discussion of Major Findings

Based on the results obtained from the analysis, the findings are consistent with previous studies in the literature. The positive and significant impact of Entrepreneur Action on Entrepreneur Financial Resilience is consistent with prior research. For instance, Nguyen et al., (2022) find that the proactive actions taken by entrepreneurs, such as seizing opportunities and taking calculated risks, positively influence their financial resilience. Similarly, the positive relationship between Entrepreneur Orientation and Entrepreneur Financial Resilience aligns with the existing literature. This result is in line with the study conducted by Masa'deh et al., (2018), who demonstrate that entrepreneurs with a strong orientation towards innovation and exploration are more likely to achieve financial resilience (B = 0.289, $p < 0.001$) (Masa'deh et al., 2018).

The finding that there is no significant relationship between Islamic Social Finance and Entrepreneur Financial Resilience lends credence to previous findings by Nawaz (2018), Nazar (2017) and Abdul Razak et al. (2017). This finding implies that despite the increasing awareness of the importance of Islamic Social Finance scheme as the mechanism to build financial resilience and inclusion among women entrepreneurs, the instruments or mechanism has yet achieved the desired result in Malaysia. This suggests that the impact and the utilisation of Islamic Social Finance mechanisms which include zakāt and Islamic microfinance, and instruments such as Qarḍ, Muḍārabah, Mushārakah and others, by women entrepreneurs and other vulnerable groups are low despite the economic potency of these instruments to enhance financial inclusion and resilience as noted by Sadr (2011) and Iqbal & Mirakhor (2012).

The timing of the study during the COVID-19 pandemic is also a significant factor to consider. The pandemic presents extraordinary challenges that may have overshadowed the benefits of ISF (Ismail et al., 2023). For instance, the heightened economic instability and shifts in business operations might have limited the immediate impact of ISF mechanisms. Women Entrepreneurs could have faced obstacles in accessing these resources or experienced delays and inefficiencies in their implementation. Thus, the observed non-significant results could reflect the exceptional circumstances of the pandemic rather than an inherent ineffectiveness of ISF.

V. CONCLUSION

This study investigates the role of Islamic social finance in enhancing the financial resilience of women-owned SMEs in Malaysia during and after the COVID-19 pandemic. The study recognizes the significance of financial resilience for SMEs, particularly amid economic uncertainties and shocks. It also acknowledges the gender-specific challenges that women entrepreneurs often encounter in accessing finance, resources, and market opportunities. The theoretical review establishes the concepts of financial resilience and Islamic social finance, highlighting their importance in supporting women entrepreneurs. Islamic social finance, guided by Islamic principles, offers a unique approach to financial inclusion and empowerment, addressing social and economic needs while adhering to ethical values. It provides access to interest-free loans and profit-sharing arrangements, which can be particularly beneficial for women entrepreneurs facing challenges in accessing conventional financing.

The research design adopts a quantitative approach, utilizing a cross-sectional survey of women who own SMEs in Malaysia. The study employs a purposive sampling technique to select a sample of women SMEs operating in various industries. The collected data are analyzed using PLS-SEM with SmartPLS software. The preliminary analysis confirms the absence of missing data and outliers, ensuring the reliability of the dataset. The demographic profile of the respondents reveals a predominantly Malay representation, with varied educational backgrounds and income levels. The measurement model assessment demonstrates good reliability, convergent validity, and discriminant validity of the constructs.

The results and discussion section provides an analysis of the measurement and structural models, evaluating the relationships between entrepreneurial activities, orientations, access to Islamic social finance, and financial resilience. The results of structural model show positive and significant impacts of both entrepreneurial action and orientation on the financial resilience of women entrepreneurs in Malaysia. However, while the Islamic social finance indicates positive impact on women financial resilience, the result is not statistically significant. However, several key barriers hinder women-owned SMEs from accessing Islamic social finance (ISF) instruments and reaping their benefits. These barriers include the immature state of the ISF industry, limited awareness and accessibility of ISF products and services, and cumbersome application processes burdened with bureaucratic hurdles. Raising awareness about ISF instruments and their benefits for women-owned SMEs through targeted campaigns and educational programs is essential. Simplifying application processes and reducing bureaucratic procedures can facilitate access to ISF for women-owned SMEs. Financial literacy programs specifically designed for women-owned SMEs and focusing on ISF principles can empower them to make informed financial decisions. Collaboration between government agencies, Islamic financial institutions, and NGOs can create a more supportive ecosystem for women-owned SMEs to access ISF. Developing innovative ISF solutions, such as crowd funding platforms and impact investing, can cater to the specific needs of women-owned SMEs in a post-pandemic context.

The major findings emanating from this study indicate that Islamic social finance has positive but non-significant impacts on financial resilience of women entrepreneurs in Malaysia. While we attribute this result to how Islamic social finance is operationalized, we also believe that further study is needed. For example, conducting in-depth empirical studies focused on the impact and effectiveness of Islamic social finance mechanisms, such as zakāt, waqf, and ṣadaqah, in supporting the financial resilience of women-owned SMEs is essential. Employing both qualitative and quantitative methodologies, researchers should gather data through surveys, interviews, case studies, and financial performance metrics to assess the practical application of Islamic finance instruments thoroughly. Future studies also may exploration and develop of inclusive and sustainable financial models that integrate Islamic social finance principles. These models should address the diverse needs of women entrepreneurs, considering factors such as geographic location, educational background, and sector of operation. Identifying and overcoming barriers to implementation, while emphasizing long-term sustainability and scalability, is vital.

Conducting an intersectional analysis to understand how various factors such as geographical location, ethnicity, education, and socioeconomic background intersect with gender in influencing financial resilience among women-owned SMEs is recommended. Identifying specific challenges faced by different groups and tailoring Islamic social finance to cater to these diverse needs effectively will enhance inclusivity and effectiveness. Developing a comprehensive framework for measuring financial resilience specifically tailored to women-owned SMEs within the context of Islamic social finance is also essential. This framework should include qualitative and quantitative indicators to accurately assess and monitor their financial resilience over time, providing valuable insights for policy and decision-making. Considering longitudinal studies to observe the long-term effects and sustainability of Islamic social finance interventions on the financial resilience of women-owned SMEs is advisable. Comparing the performance and resilience of SMEs utilizing Islamic finance with those relying solely on conventional financing will offer insights into the comparative advantages and limitations of different financial approaches. Finally, engaging stakeholders, including government bodies, financial institutions, women entrepreneurs, and Islamic finance experts, to co-create policy recommendations based on research findings is recommended. Proposing actionable policy recommendations to policymakers for improving the ecosystem supporting women-owned SMEs through Islamic social finance will foster better financial inclusivity and resilience in the long run.

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