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INSURANCE LITERACY, RISK KNOWLEDGE MANAGEMENT, RISK-TAKING PROPENSITY AND ECONOMIC SUSTAINABILITY AMONG SMEs: THE MODERATING EFFECT OF FINANCIAL INCLUSION

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ABSTRACT

Small and medium enterprises (SMEs) are known worldwide as tools for economic growth and development as they lead to job creation, improved living standards, sustainable development and poverty eradication. However, complicated risks in production, operation, management, and risk-based decision-making in business has troubled the sector. This study examines the moderating effect of financial inclusion on the relationship between insurance literacy, risk knowledge management, risk-taking propensity and economic sustainability of Nigerian SMEs. Data was collected from 370 SMEs registered with the Small and Medium-scale Enterprise Development Agency of Nigeria (SMEDAN) using self-administered questionnaires. The study employs structural equation modelling (SEM) using AMOS 26.0 software for analysis. The study used multi-group analysis to determine the group in which the effect of moderation is more pronounced. The SEM produced a variety of findings; the path coefficients in the model and the results of the hypothesis testing show that insurance literacy (IL) significantly affects economic sustainability (ES). Also, the path coefficient between risk knowledge management (RKM) and economic sustainability shows a positive and significant relation, indicating that risk management (RM) has a significant positive impact on ES. Finally, the results show that risk-taking propensity (RTP) significantly affects ES. The results of the moderation also revealed that financial inclusion moderates the relationship between IL, RM, RTP and ES. However, the multi-group analysis shows that the effect is more pronounced in the ABC group than the NABC group.

Contribution: The study developed a new integrated model of insurance literacy, risk knowledge management and risk-taking propensity on the economic sustainability of Nigerian SMEs and provided empirical evidence to support the moderating role of financial inclusion. Evidence shows that financial inclusion provides a valuable impetus toward achieving economic sustainability.

1. INTRODUCTION

Complicated risks in production, operation, management, and risk-based decision-making in business troubled small-scale businesses, hindering their economic success. Currently, Nigeria's sustainability index score of 49.3 is ranked 160th of 166 available rankings of the 193 member states of the United Nation's sustainable development index, which is below the regional average of 53.1 (Sachs et al., 2020). The figure for the SME sector is more

pronounced. SMEs are characterized by a low insurance uptake due to weaker risk management practices and insurance illiteracy. According to NBS (2017), only about 36% of SMEs have insurance. As a result, 22.9% experienced a temporary closure in their early stage (between 4–6 months), while 80% closed permanently before they reached five years of establishment. Consequently, Nigeria's nominal GDP declined from 9.9% to 8.01% in the second and third quarters of 2019, respectively (NBS, 2017). This is a negative growth rate of -3.62% (year-on-year) in real terms in the third quarter of 2020 and a cumulative contraction of the economy by -2.48% (NBS, 2021).

Business performance is a component of economic sustainability. Studies have found a positive connection between business performance and economic sustainability (Boermans & Willebrands, 2017; Salleh et al., 2020). A firm can optimize profit and gain economic success by rising per unit sales, lowering per unit cost, or doing both simultaneously (Sharma & Jain, 2021). If a risk is adequately handled, the chances are that a detrimental impact of a risky occurrence would be significantly reduced, thereby leading to reduced cost and economic sustainability. Financial inclusion (FI) has been acknowledged to support businesses in their quest for sustainability (Arner, Buckley, Zetzsche, & Veidt, 2020). However, a lack of risk knowledge management (RKM) and insurance literacy (IL) creates fear among entrepreneurs, hindering financial inclusion and is detrimental to finance access. Fear and risk exist because SME owners are risk-averse, and achieving financial inclusion necessitates interaction between individuals, processes, and structures (Ozili, 2020) to ease access to modern financing.

Extant literature has it that risk and sustainability in business are correlated (Sciarelli, Landi, Turriziani, & Tani, 2019; Yusoff et al., 2021). Business risk emerges from business disruptions (Pham, Tran, & Nguyen, 2018), and firms cannot escape from risk so far as sustainability is their target. Previous studies on insurance literacy (Driver, Brimble, Freudenberg, & Hunt, 2018; Uddin, 2017; Weedige, Ouyang, Gao, & Liu, 2019), risk knowledge management (Bratianu, Neştian, Tiţã, Vodã, & Guţã, 2020; Cardoni, Zanin, Corazza, & Paradisi, 2020; Durst & Ferenhof, 2016; Daud et al., 2017; Salleh et al., 2017; Durst, Hinteregger, & Zieba, 2019), and risk-taking propensity (Kreiser, Marino, Kuratko, & Weaver, 2013; Lawal, Adegbuyi, Iyiola, Ayoade, & Taiwo, 2018; Rodríguez-Gutiérrez, Romero, & Yu, 2020; Salleh, 2015) have established a connection to SMEs' sustainability within the context of enterprise risk management. However, none of the studies covers West African countries, such as Nigeria, creating a literature gap.

There is still a shortage of literature on the moderating effect of financial inclusion on risk sustainability relations. Variables such as firm size, firm growth, firm age and financial performance have been used as moderators (Corvino, Caputo, Pironti, Doni, & Bianchi Martini, 2019; Leal-Rodríguez, Eldridge, Roldán, Leal-Millán, & Ortega-Gutiérrez, 2015; Lee & Song, 2019; Leoncini, Marzucchi, Montresor, Rentocchini, & Rizzo, 2019; Suhadak, Kurniaty, Handayani, & Rahayu, 2018). Few, however, have tested the moderating effect of FI in Nigeria, including (Zauro, Saad, Ahmi, & Mohd Hussin, 2020), who proposed a framework for testing the moderating the effects of financial inclusion on Qardhul Hassan financing acceptance in Nigeria. Consequently, the present research aims to examine the moderating effect of financial inclusion on the relationship between insurance literacy, risk knowledge management, risk-taking propensity and SMEs' economic sustainability. A multi-group analysis was used to determine the group on which the effect of the moderator variable is more pronounced. In order to accomplish these objectives, significant risk intelligence indicators for SMEs were identified through literature reviews, and a questionnaire was adapted to analyze the selected variables. Self-administered surveys of 370 SME managers were carried out using questionnaires to evaluate insurance literacy (IL), risk knowledge management (RKM) and risk-taking propensity (RTP) on economic sustainability (ES).

2. HYPOTHESES AND RESEARCH MODEL

In scientific research, hypotheses are grounded in theory (Meyer, Van Witteloostuijn, & Beugelsdijk, 2017) and are developed to bridge the gap between constructs to determine the research's significance (Salleh, 2015). It guides the development of hypotheses and tells the researcher what to expect from a specific inquiry line. Risk theories try

to understand why people make choices when they are unsure about the future. Any decision people make about the future must allow for some level of uncertainty. Several theories explain firms' behavior in connection to risk or production functions. Such theories include the stakeholder theory and the knowledge-based view theory, among others. However, this research found the Risk Theory of Profit fitting due to its ability to establish a connection between risk and firms' economic success. In line with this, the paper proposes a connection between Insurance Literacy, Risk Knowledge Management, Risk-Taking Propensity and SMEs' Economic Sustainability, moderated by Financial Inclusion.

2.1. Hypotheses

2.1.1. Insurance Literacy and Economic Sustainability

Research on insurance and financial literacy has attracted much interest in recent times (Mutegi, Njeru, & Ongesa, 2015; Tennyson, 2011), especially in less developed countries (LDCs) where the literature is still in its infancy (Agyei, 2018). The expansion of structured insurance policies to help mitigate severe risks has sparked widespread concern, especially in developing countries. These issues stem primarily from a lack of knowledge of insurance policies, general financial illiteracy, and the desire for poor households to use increasingly exotic products to keep costs down (Harrison, Morsink, & Schneider, 2021). According to Driver et al. (2018), consumer insurance literacy is generally low, compounded by insufficient product knowledge, low provider confidence, low understanding of risk mitigation techniques, and behavioral decision-making biases. However, the risk theory can shape our understanding and explain the effect of insurance and its literacy on sustainable performance. Insurance literacy is midway between financial literacy and its acquisition and significantly affects expertise and financial resources, thereby positively relating to performance. Consequently, we propose the following hypothesis:

H₁: Insurance literacy (IL) significantly affects the economic sustainability (ES) of SMEs.

2.1.2. Risk Knowledge Management and Economic Sustainability

Firms' sustainable competitive advantage in a knowledge-based economy focuses on how well they obtain, transform, reconfigure, and exploit internal and external knowledge-based assets (Roxas & Chadee, 2016). In general, risk knowledge management strategies impact the organizational success (Bratianu et al., 2020). However, SMEs often lack formal arrangements for developing, storing, or disseminating risk knowledge for sustainable performance. Compared to larger firms, SMEs often rely on their employees' knowledge and ability to create competitive advantages rather than physical and financial assets. Organizations rich in knowledge-based capital are also more likely to enjoy healthy returns (Hussein & Caǧlar, 2019). It is widely acknowledged that risk and other knowledge forms are critical strategic resources for companies to maintain a competitive advantage over time. Its management, therefore, can add value to a firm by improving its ability to respond to new and unusual situations as it is developed and disseminated throughout the organization (Gharakhani & Mousakhani, 2012).

Consequently, the following is hypothesized:

H₂: Risk knowledge management (RKM) significantly affects the economic sustainability (ES) of SMEs.

2.1.3. Risk-Taking Propensity and Economic Sustainability

Entrepreneurship has long been associated with risk-taking (Antoncic et al., 2018) as demonstrated in the definition of entrepreneurship (Venkataraman, 2019), which focuses on entrepreneurs' willingness to be involved in calculated business risks (McCarthy, Puffer, & Lamin, 2018). Risk-taking is a critical aspect of entrepreneurship; however, research shows that entrepreneurs are reluctant to classify their decisions as risky (Vollero, Siano, & Della Volpe, 2019). Salleh and Ibrahim (2011) described risk-taking propensity as an individual's inclination to assume a certain degree of risk associated with his/her business venture. The risk-taker makes bold decisions in circumstances where certainty and knowledge are missing. There is mixed belief that risk-taking propensity relates

to general economic performance (Kiprotich, Kimosop, Chepkwony, & Kemboi, 2015; Lawal et al., 2018; Muturi & Olaniran, 2017). Similarly, Brownhilder (2016) found a positive relationship between risk-taking propensity and firm performance. A negative relationship evolves mainly when the return on equity and assets is considered (Muturi & Olaniran, 2017).

Consequently, the following hypothesis is proposed:

H₃: Risk-Taking Propensity (RTP) significantly affects the economic sustainability (ES) of SMEs.

2.1.4. The Moderation Effect of Financial Inclusion

A moderator is introduced to impact the strength of a relationship between explanatory and explained variables (Shatnawi, Hanefah, Anwar, & Eldaia, 2019). The link between risk knowledge management and sustainability is justified in the literature (Bratianu, 2018; Durst & Ferenhof, 2016; Durst & Zieba, 2019). Studies linking insurance literacy to economic activity include Driver et al. (2018); Uddin (2017); and Weedige et al., (2019). However, the novelty of the present study is the unique proposal to test the moderation effect of financial inclusion on IL, RKM and RTP on SMEs' economic sustainability. Risk theory provides the theoretical foundation for hypothesizing the moderating role of financial inclusion in this study. Risk knowledge management and insurance literacy are identified as organizations' intangible resources (Monteiro, Soares, & Rua, 2019) capable of creating organizational value. According to the theory, profit motivates risk-taking, while profit is a byproduct of sustainable performance.

Therefore, financial inclusion as a moderating variable between IL, RKM and RTP and SMEs' economic sustainability is examined.

H₄: Financial inclusion moderates the relationship between insurance literacy and economic sustainability.

H₅: Financial inclusion moderates the relationship between risk knowledge management and economic sustainability.

H₆: Financial inclusion moderates the relationship between risk-taking propensity and economic sustainability.

2.2. Research Framework

The present study's research framework is illustrated in Figure 1, which establishes the relationships between the constructs and the moderating variable. The framework was developed to explore how the predictors affect SMEs' economic sustainability.
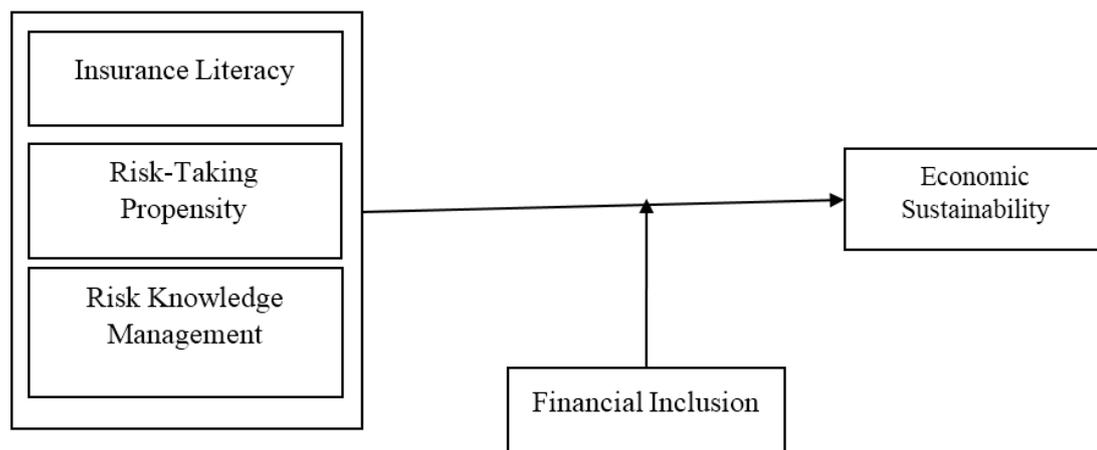

Figure 1. Research framework.

3. METHODOLOGY

The study draws a sample of 370 SMEs registered with the Small and Medium Enterprise Development Agency of Nigeria (SMEDAN) from six geopolitical regions of Nigeria, using multi-stage sampling techniques (cluster, stratified, proportional and simple random sampling). Data cleaning was carried out to resolve missing

values, outliers and normality using IBM-SPSS version 26. The data collected was analyzed using structural equation modelling (SEM). SEM is a multivariate technique that combines factor analysis, multiple regression analysis, and path model analysis to estimate many equations simultaneously. The SEM analysis begins with confirming each construct's measurement models (Singh & Sharma, 2016). An exploratory factor analysis (EFA) was carried out to assess the construct validity during the initial development of an instrument (Singh & Sharma, 2016). In the SEM analysis, the EFA is used to extract the principal factors (Mohanty, Tiwari, & Balakrishnan Nair, 2022), and the confirmatory factor analysis (CFA) validates the model's factor structure. The AMOS 26.0 software package was employed to examine the CFA and SEM.

4. DATA ANALYSIS

4.1. Preliminary Analysis

Hair, Anderson, Babin, and Black (2010) opined that a statistical study with more than 10% missing data would be biased. On the contrary, Tabachnick and Fidell (2001) and Wayman (2003) emphasized that the missing data pattern is more important than the quantity missing. Missing values that are randomly distributed throughout a data matrix cause fewer problems. A descriptive statistic was used to check for missing values, and the results demonstrate that there are no missing values in the data. Outliers are observations in which a single variable has a value that is out of the ordinary (Tabachnick & Fidell, 2013). Aside from histograms and box plots, each variable was assessed for univariate outliers using a z-score. A case is considered an outlier if its Z-score is smaller than -4 or greater than 4 (Hair et al., 2010). They indicate an associated outlier value greater than 3.29 standard deviations from the mean (Tabachnick & Fidell, 2013). The research variables' standardized (z) scores varied from -2.512 to 1.648, suggesting that none of the items exceeded the 4-point threshold, confirming that none of the cases contains outliers.

4.1.1. Exploratory Factor Analysis (EFA)

4.1.1.1. KMO and Bartlett's Test

The Kaiser–Meyer–Olkin (KMO) test and Bartlett's test were used to establish sampling adequacy. If the data is suitable for factor analysis, the Kaiser-Meyer-Olkin (KMO) test is used. The test evaluates the sample suitability of each model variable and the complete model. The two measurements (a KMO value near 1.0 and Bartlett's test significance value close to 0.0) indicated that the data is suitable for further analysis (Hair, Black, Babin, & Anderson, 2018). The KMO and Bartlett's test results for insurance literacy, risk knowledge management, risk-taking propensity and economic sustainability are presented in Table 1.

Table 1. KMO and Bartlett's test for all the constructs.

KMO and Bartlett's Test		IL	RKM	RTP	ES
Kaiser–Meyer–Olkin Measure of Sampling Adequacy		0.907	0.896	0.916	0.773
Bartlett's Test of Sphericity	Approx. chi-square	634.350	652.672	589.034	297.614
	df	28	45	36	10
	Sig.	0.000	0.000	0.000	0.000

Table 1 demonstrates that insurance literacy, risk knowledge management, risk-taking propensity and economic sustainability have Kaiser–Meyer–Olkin values of 0.907, 0.896, 0.916, and 0.773, respectively, which are higher than the required threshold of 0.60 (Hair, Gabriel, Silva, & Braga, 2019). The chi-squares with the degree of freedom and p-values are significant. The findings show that the items under consideration have a close correlation and are thus suitable for further investigation (Hoque & Awang, 2016; Pallant, 2020).

When performing an exploratory factor analysis, it is critical to have factors with an eigenvalue greater than 1.0 (Hair et al., 2010). As a result, for all of the constructs, the exploratory factor analysis output extracted one

dimension with eigenvalues larger than 1.0. The total variance explained (TVE) for all constructs utilizing the principal component analysis extraction method meets the suggested minimum criterion of 60% (Hair et al., 2010). In essence, they satisfy the minimum cut-off for IL (67.378%), RKM (61.169%), RTP (62.505%), and ES (63.901%) and are appropriate for further examination.

Table 2 shows the EFA results for all of the constructs. All constructs' items have a factor loading greater than 0.60 (Awang, 2012; Hair et al., 2019; Nunnally, 1975), indicating that the scales are convergent and discriminantly valid. This finding implies that the instrument is worthy of further study. According to Peterson (2000), factor loadings of +/- 0.30 meet the minimum level; however, loadings greater than +/- 0.50 are practically significant. All retrieved component coefficients with factor loadings more than 0.6 were maintained, whereas items with loadings less than 0.6 were discarded (Awang, 2012).

Table 2. Pattern matrix.

Items	1	2	3	4
IL2	0.864			
IL3	0.787			
IL4	0.855			
IL6	0.879			
IL7	0.769			
IL9	0.818			
IL10	0.764			
RM1		0.739		
RM2		0.765		
RM3		0.754		
RM4		0.845		
RM5		0.811		
RM6		0.850		
RM7		0.732		
RM8		0.766		
RM9		0.774		
RM10		0.774		
RTP1			0.769	
RTP2			0.741	
RTP3			0.721	
RTP4			0.882	
RTP5			0.821	
RTP6			0.824	
RTP7			0.723	
RTP8			0.775	
RTP9			0.842	
ES1				0.788
ES2				0.836
ES3				0.863
ES4				0.836
ES5				0.828

Notes: Factor loadings < 0.60 were removed.

4.1.2. Reliability

The ability of an instrument to consistently show the same result over time is referred to as its reliability. It demonstrates how the instrument taps the variable consistently and reliably (Garba, Garba, & Usman, 2017; Sekaran & Bougie, 2003). Reliability analysis shows the level of agreement across several attempts to calculate the same theoretical constructs (Hair et al., 2010). In order to ensure the instrument's consistency, a reliability test was undertaken using Cronbach's alpha coefficient, which was determined to be more than or equal to 0.7. (Hair, Black, Babin, Anderson, & Tatham, 2006; Hair, Ringle, & Sarstedt, 2011; Nasidi, bin Ahmad, Garba, Hassan, & Gamji, 2021).

Table 3. Reliability statistics for the constructs.

No.	Construct	Cronbach's Alpha
1	Insurance Literacy	0.918
2	Risk Knowledge Management	0.928
3	Risk-Taking Propensity	0.923
4	Economic Sustainability	0.886

Table 3 shows the reliability results for all four constructs and demonstrates that they all exceeded the Cronbach's alpha minimum value requirement of 0.7 (Hair et al., 2006; Hair et al., 2011). Cronbach's alpha for IL is 0.918 (7 items), the RKM value is 0.928 (10 items), the RTP value is 0.923 (9 items) and the ES value is 0.886 (5 items).

4.1.3. Confirmatory Factor Analysis

Awang (2015) recommended that confirmatory factor analysis (CFA) and structural equation modelling (SEM) should be used to develop and analyze the structural model in two steps. Confirmatory factor analysis is a type of factor analysis that is most typically employed in social research (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014; Hair, Ringle, & Sarstedt, 2017; Kline, 2005; Nazim & Ahmad, 2013). A measuring model must satisfy three elements of validity of latent constructs (Afthanorhan, Awang, & Aimran, 2020; Awang, Hui, & Zainudin, 2018; Dash & Paul, 2021). The fitness indices are used to assess the measurement model's construct validity. The average variance extracted (AVE) is used to assess convergent validity, and the discriminant validity index summary assesses discriminant validity (Ibrahim, Mariapan, Lin, & Bidin, 2021). Awang et al. (2018) asserted that unidimensionality is satisfied for an established item if the factor loading is less than 0.6. Likewise, the constructs' reliability and validity are examined once the measuring model is unidimensional. For the construct CFA, all the items' factor loadings were higher than 0.6, while the AVE and CR values were greater than 0.5 and 0.6, satisfying both thresholds (Awang et al., 2018; Hair, Black, Babin, & Anderson, 2013), indicating that unidimensionality and construct validity were achieved.

4.1.4. Pooled CFA

The pooled CFA approach was preferred because evaluating the entire measurement model is more beneficial than studying the factor structure of individual components (Rababah, Al-Hammouri, & Drew, 2020). If each measurement model's CFA is successful, a 'pooled CFA' for all latent constructs is recommended (Alias, 2020; Awang, 2015). In evaluating the SEM, numerous fitness indices reflect how well the model fits the data. However, researchers cannot agree on which fitness indices to use (Awang, 2015). Nevertheless, according to Hair et al. (2010) and Holmes-Smith, Coote, and Cunningham (2006), at least one fitness metric from each category of model fit (incremental fit, absolute fit, and parsimonious fit) should be used (Awang, 2015). The fitness indices' results for the pooled CFA are used for the construct validity check. The fitness indices generated by the pooled CFA (see Figure 2) revealed that the construct validity requirements were met (RMSEA = 0.076 < 0.08, CFI = 0.912 > 0.90, TLI = 0.904 > 0.9, and Chisq/df = 2.271 < 3.0). The factor loadings for each of the items in the model is greater than 0.6. Furthermore, the construct correlations are satisfied because all are smaller than 0.85.
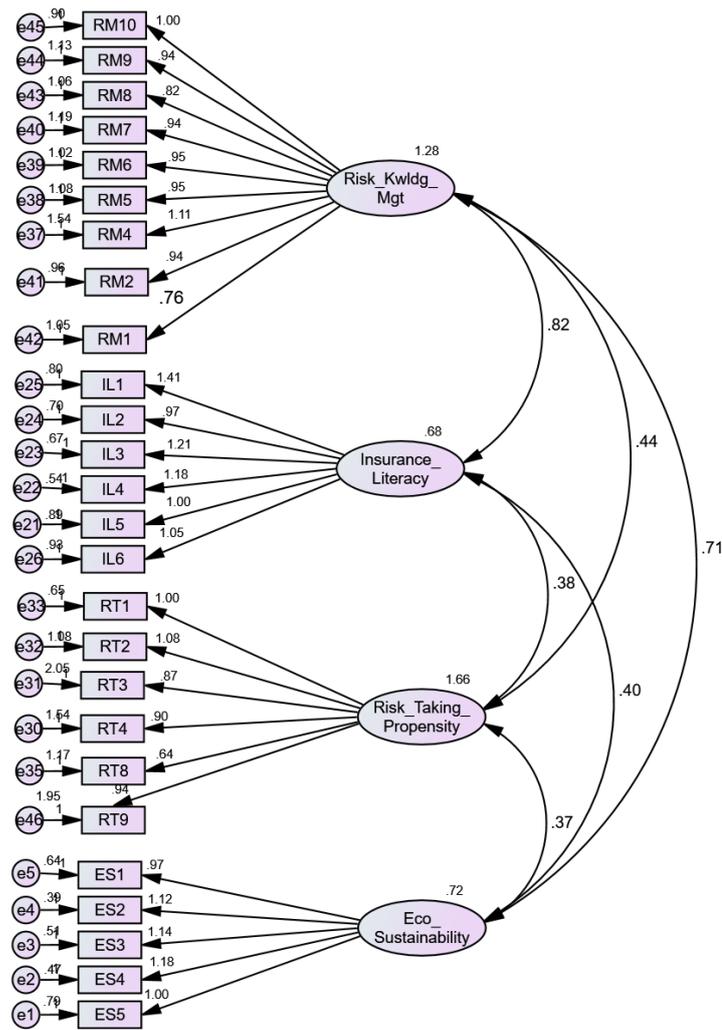
Figure 2. Pooled CFA for all measurement model results.

4.1.5. Validity and Reliability

The average variance extracted (AVE) was estimated to test convergent validity (CV). The AVE ranges from 0.512 to 0.631 (see Table 4). All values are above the acceptable 0.50 threshold (Hair et al., 2013), indicating that the measurement model's convergent validity has been confirmed. We compared the square root of the AVE (on the diagonal in Table 4 below) to all inter-factor correlations to see if it had discriminant validity. Discriminant validity is established if the calculated correlations are smaller than 0.85 (Kline, 2005). For each construct, we also calculated the composite reliability (CR). The CR was over the minimum threshold of 0.70 in all cases (Hair et al., 2010), demonstrating that our constructs are reliable.

Table 4. CFA reliability and validity.

Construct	AVE	CR	ES	IL	RKM	RTP
ES	0.631	0.895	0.794			
IL	0.512	0.862	0.403	0.716		
RKM	0.568	0.888	0.705	0.624	0.757	
RTP	0.59	0.850	0.373	0.375	0.437	0.748

Note: For composite reliability (CR > .70); convergent validity (CR > AVE > .50).

4.1.6. Normality

Hair et al. (2010) and Awang (2015) suggested that the SEM's use of the maximum likelihood estimator (MLE) is similarly resilient to kurtosis violations of multivariate normality if the sample size is large and the kurtosis

critical region does not exceed 7.0. If the skewness is between -2 and +2 and the kurtosis is between -7 and +7, the data is considered normal. The normality test found that all items had skewness values ranging from -0.974 to -0.113 and kurtosis values ranging from -0.758 to 1.801. The skewness values are within the absolute values of 1.5, and the assumption of normality of the field data is met (Awang, 2015).

4.2. SEM Analysis

The structural model's standardized estimates and regression weight results were used to assess the study's research hypotheses for direct effects. The regression path coefficients indicate how much the exogenous constructs have influenced the endogenous construct in question. The single-headed arrow denotes the exogenous construct's causal influence on the endogenous construct being estimated. If the structural model comprises more than one exogenous construct, the double-headed arrow should be employed to measure the correlational effects between all exogenous constructs (Awang, 2015). The structural model's estimation confirmed a strong fit to the data. As can be observed from the fit indices, the chi-square to degrees of freedom ratio is 2.271, the CFI is 0.928, the TLI is 0.915, and the RMSEA is 0.069. As a result, the latent constructs are sufficiently assessed. Figure 3 presents the standardized results and squared multiple correlations (R²) of the structural model. It shows that risk knowledge management, risk-taking propensity and insurance literacy explain 74% of the variation in the economic sustainability construct.
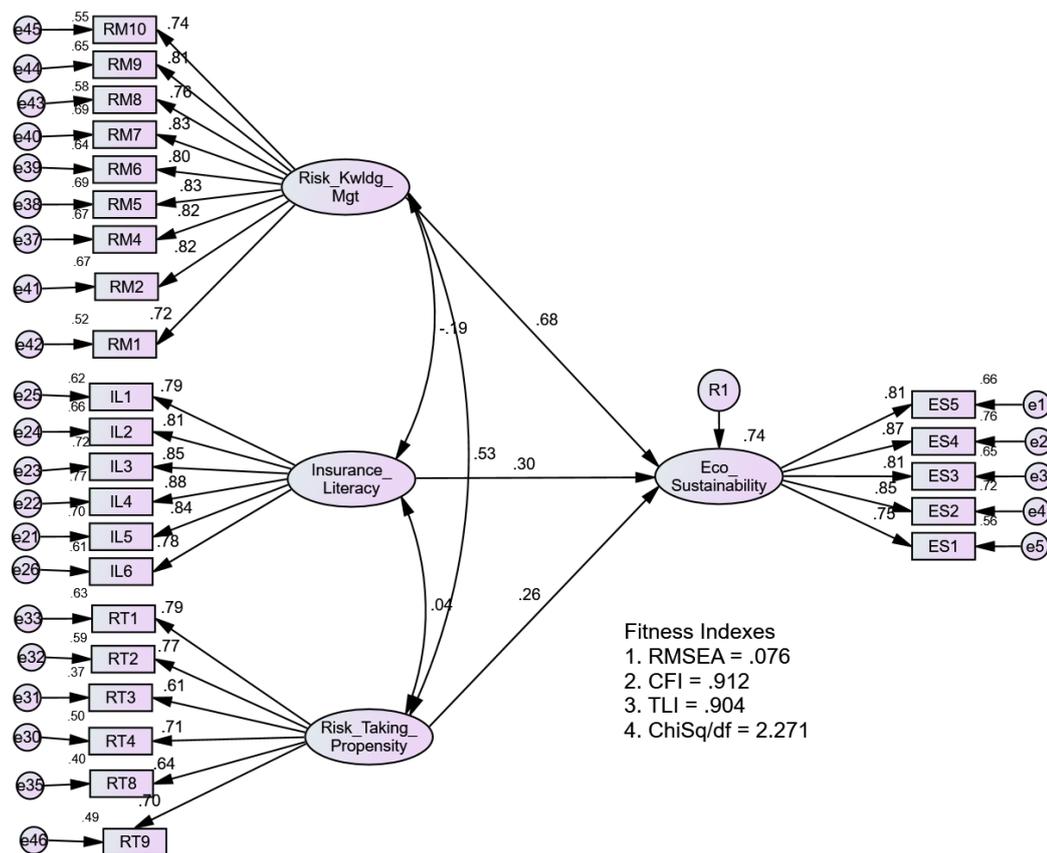

Figure 3. Standardized regression path coefficient among the constructs.

The unstandardized estimates of the regression path coefficients among the study's constructs, risk knowledge management, insurance literacy, and risk-taking propensity, are shown in Figure 4. The regression path coefficients indicate how much the exogenous constructs have influenced the endogenous construct. The risk knowledge management and economic sustainability path coefficient was 0.76, implying a positive relationship between the two constructs. The result is significant at p < 0.01, thereby accepting Hypothesis 1. The regression weights further

indicate how insurance literacy significantly influences economic sustainability, as shown by the path coefficient of 0.25 at p < 0.01. Finally, the relationship between risk-taking propensity and economic sustainability was significant, with a path coefficient of 0.26 at p < 0.01. As shown in Figure 4 below, all constructs significantly affect economic sustainability. The causal effects of all the constructs are presented in Table 5.
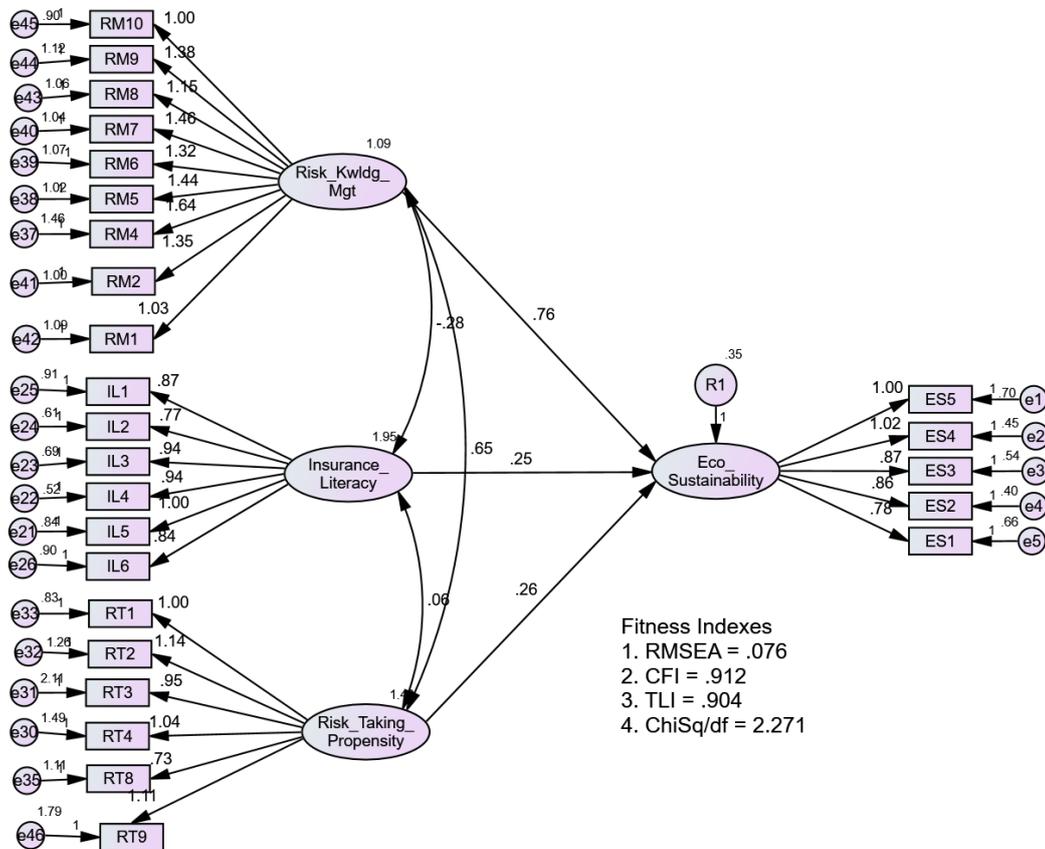

Figure 4. Unstandardized regression path coefficients among the constructs.

Table 5 shows the regression weight for each path analysis presented in the study's research hypotheses. The regression path coefficient model determines whether there is a significant link between the constructs and whether the hypotheses are supported or not based on the data used in the analysis. According to the table, all three constructs have a significant, direct, positive effect on economic sustainability.

Table 5. Testing the causal effects of the constructs.

	Estimate	SE	CR	P-Value
ES <--- IL	0.253	0.054	4.699	***
ES <--- RKM	0.760	0.089	8.539	***
ES <--- RTP	0.260	0.047	5.531	***

Note: *** p < 0.001.

4.2.1. Hypothesis Testing

The path coefficients in the SEM are shown in Figure 3, while the results of the hypothesis testing are summarized in Table 5. Table 5 shows that hypothesis H1 is supported because IL positively impacts ES (β = 0.253, p = 0.000). This implies that variation in ES depends on the change in IL, which contributes to the improvement of SMEs' sustainability. As a result, H1 is supported. Furthermore, the path coefficient between RKM and ES is 0.760 (p = 0.000), demonstrating a positive and significant relationship between the two variables, implying that RKM has a considerable positive impact on ES. This confirms that H2 is supported. Finally, the path coefficient between

RTP and ES is 0.260 (p = 0.000), a significant positive relation, indicating that their economic sustainability will improve when SMEs' risk-taking propensity changes.

4.2.2. Moderation Analysis

Financial inclusion is used as a categorical variable in this study. SMEs with access to bank credit are considered financially included, while those without access to bank credit are financially excluded. Consequently, the dataset is divided into access to bank credit (ABC) and non-access to bank credit (NABC) groups. Each category was constrained by a parameter (1), and the constrained and unconstrained model results were compared. Moderation occurs in a path if the difference in chi-square value between the constrained and unconstrained models is more than 3.84. Also, for moderation to exist, the chi-square degree of freedom (DF) difference must equal 1 (Awang, 2015).

Table 6. Moderation test for access to bank credit group data.

Hypothesis	Chi-square (Constrained) Model	DF	Chi-square (Unconstrained)	DF	Diff. in Chi-square	Diff. in DF	Result on Moderation	Result on Hypothesis
IL --> ES	1105.221	271	1054.834	270	50.387	1	Significant	Supported
RKM --> ES	1068.239	271	1054.834	270	13.405	1	Significant	Supported
RTP --> ES	1171.911	271	1054.834	270	117.077	1	Significant	Supported

Table 6 presents the moderation test of the group with access to bank credit for all the constructs. In line with Awang (2015), the results are significant as the difference in chi-square values between the unconstrained and constrained models are 50.387, 13.405 and 117.077, greater than 3.84, while the difference in degree of freedom is 1.

Table 7. Moderation test for non-access to bank credit group data.

Hypothesis	Chi-square (Constrained) Model	DF	Chi-square (Unconstrained)	DF	Diff. in Chi-square	Diff. in DF	Result on Moderation	Result on Hypothesis
IL --> ES	1013.283	271	942.432	270	70.851	1	Significant	Supported
RKM --> ES	953.248	271	942.432	270	10.816	1	Significant	Supported
RTP --> ES	1030.769	271	942.432	270	88.337	1	Significant	Supported

Table 7 shows the results of the moderation test for all the constructs for the group with access to bank credit. According to Awang (2015), the finding is significant because the difference in chi-square values between the unconstrained and constrained models are 70.851, 10.816, and 88.337, larger than 3.84, and the difference in degree of freedom is 1. The final hypothesis test is for the moderation of financial inclusion on the causal effect of IL, RKM and RTP on SMEs' economic sustainability, which is summarized in Table 8. The table shows that the moderator variable (FI) supports all proposed hypotheses.

Table 8. Summary of the moderation result.

Hypothesis	Hypothesis Statement	Result on Moderation	Result on Hypothesis
H_4	FI moderates the relationship between IL and SMEs' ES.	Significant	Supported
H_5	FI moderates the relationship between RKM and SMEs' ES.	Significant	Supported
H_6	FI moderates the relationship between RTP and SMEs' ES.	Significant	Supported

4.2.3. Multi-Group Analysis

To determine the group (ABC or NABC) in which the effect of the moderator variable (FI) is more pronounced, a multi-group analysis was carried out using the standardized estimates for the path of interest for both datasets. According to Awang (2015), if the standardized parameter estimates for dataset one are higher than dataset two, we can conclude that the effect of the moderator on the dependent variable is more pronounced in dataset one than in dataset two. The results are summarized in Table 9.

Table 9. Standardized regression weights (ABC and NABC – Unconstrained).

Hypothesized Relationship	ABC Group Estimate	NABC Group Estimate
Eco__Sustainability <-–- IL	0.177	0.109
Eco__Sustainability <-–- RKM	0.537	0.560
Eco__Sustainability <-–- RTP	0.476	0.399

Results of the multi-group analysis show that the standardized estimate for access to bank credit (ABC) and non-access to bank credit (NABC) are significant. However, moderation is more pronounced in the ABC group than in the NABC group considering their respective beta values as recommended (Awang, 2015). Furthermore, the results show that partial moderation occurs as both groups have a significant standardized estimate for most of the relationships. Full moderation occurs when one group has significant standardized beta values, while the other has insignificant beta values (Awang, 2015).

5. DISCUSSIONS AND IMPLICATIONS

The study adds to the existing literature because the instrument used to evaluate SMEs' economic sustainability was effective and may be utilized confidently in future risk- and sustainability-related studies. This research aims to uncover the important aspects related to risk intelligence that can influence SMEs' sustainability efforts. The findings demonstrate that the important risk intelligence-related factors in SMEs may be represented by three constructs (measured by 26 items), which supports prior research (Brustbauer, 2016; Durst et al., 2019; Lawal et al., 2018; Schmitt, 2018), while some of the measured items were different. The findings of this study back up the risk sustainability model's expanded addition of interaction and causation relationships. Previous studies have not looked into the impact of new additions and informal relationships.

The SEM analysis showed that IL had a significant and positive effect on ES ($\beta = 0.253$, $p < 0.01$). This indicates that economic sustainability also improves when SMEs' insurance literacy improves. As Ishtiaq, Songling, Hassan, and Hayat (2020) argued that financial and insurance literacy enables entrepreneurs to make proper financial decisions regarding business protection, financial instruments and products to enhance their performance. Extant literature indicates that insurance literacy, risk literacy, and financial literacy enable entrepreneurs to handle business dynamics and financial market problems to attain sustainability, which is consistent with the findings by Ye & Kulathunga (2019). Insurance activity in financial inclusion allows low-income people to access goods that safeguard their lives, health, and assets. Insurance products' built-in savings and loss recovery mechanisms can encourage owners and managers to make better risk management decisions, resulting in long-term sustainability. An entrepreneur who is well versed in insurance may find it easier to obtain finance, which is a requirement for financial inclusion. On the other hand, financial inclusion in insurance allows for the creation of programmes and systems that extend insurance access to communities that are either underserved or excluded from society, providing safeguards and reimbursement against primary hazards (e.g., health problems, injuries, property, and liability).

Risk knowledge management had a significant positive effect ($\beta = 0.760$, $p < 0.01$) on ES. This means that managing risk knowledge is a decisive factor in SMEs' sustainability pursuit. Consistent with this, Durst et al.

(2019) observed that collective and tacit risk knowledge are critical resources for improving organizational performance. If a company cannot govern its knowledge, it will not effectively manage the risks it faces. Many projects have failed due to a lack of understanding among team members or a failure to share knowledge as the project advanced (Alhawari, Karadsheh, Talet, & Mansour, 2012). The risk knowledge management process must develop, store, retrieve, and share risk information and expertise inside an organization to maintain and optimize its corporate performance. However, many organizations, particularly SMEs, lack the experience and resources to implement risk management (Brustbauer, 2016; De Araújo Lima, Crema, & Verbano, 2020).

Also, RTP had a significant positive effect ($\beta = 0.260$, $p < 0.01$) on ES. Scholars have argued that as part of SMEs' growth strategies, managers may opt for a risk-taking approach by making decisions and taking action in uncertainty and making significant resource commitments without being aware of the consequences of their decisions or behaviors (Lawal et al., 2018). These decisions and actions can define or determine their long-term economic success. Decision scientists claim that risk-taking is a logical, economic mechanism by which people can measure and decide objectively on potential benefits and losses; others argue that there are other, more subjective, situational factors on risk propensity (Hillson & Murray-Webster, 2011). This view is consonant with Wärneryd (1996), who stated that risk-taking propensity can arise from choosing between a specific alternative and a potential alternative or between two possible alternatives with the same or unequal expected benefit.

The moderating effect of financial inclusion (ABC and NABC) on IL and ES was also found to be positive and significant (ABC = 0.177, NABC = 0.109, $p < 0.01$). The effect of IL on ES was stronger for ABC respondents than the NABC respondents. This implies that the group with access to bank credit can use their access to expand their business and improve economic sustainability more than the NABC group. Similarly, the moderating effect of financial inclusion (ABC and NABC) on RKM and ES is positive and significant (ABC = 0.537, NABC = 0.560, $p < 0.01$). However, the effect between the two groups (ABC and NABC) is not significant. This means that, in general, financial inclusion can enable SMEs to improve on knowledge-based resources, thereby achieving economic sustainability. As Kulathunga, Ye, Sharma, and Weerathunga (2020) observed, the ability to create value through knowledge-based resources is critical for improving organizational performance. Also, the moderating effect of FI on RTP and ES is significant (ABC = 0.476, NABC = 0.399, $p < 0.01$). Nevertheless, the moderation effect is more pronounced in the ABC than the NABC group, implying that access to bank credit could help SMEs take more risks by investing in more ventures.

Drawing from Hawley's theory, profit was considered the price that society pays to assume a business's risk. Moreover, since risk-taking is an inevitable component of dynamic production (Cherednik, 2021), those who took a risk in business (Pieper, Greenwald, & Schlachter, 2018) had the right to a separate reward in the form of profit Chakraborty and Swinney (2021). Access to bank credit could help SMEs take more of those risks, thereby reaping the economic benefit that comes with it. Risk theory provides the theoretical foundation for hypothesizing the moderating role of financial inclusion in this study. As established, risk knowledge management and insurance literacy are identified as organizations' intangible resources Monteiro et al. (2019), capable of creating organizational value. According to the theory, profit motivates risk, while profit is a byproduct of sustainable performance. Firms battling insufficient capital are mostly financially excluded, especially in less economically developed countries.

6. CONCLUSION

This study examines the moderating effect of financial inclusion on the relationship between insurance literacy, risk knowledge management, risk-taking propensity and economic sustainability of Nigerian SMEs. It was found that IL, RKM and RTP had a significant effect on the economic sustainability of Nigerian small and medium enterprises. The study's finding will help SMEs frame their criteria for growth, especially economic sustainability.

The study also found that financial inclusion moderates the relationship. Consequently, the SME sector can also prioritize the criteria on which they should focus to improve their performance.

Furthermore, policymakers should promote financial inclusion as a critical driver of sustainable performance. However, there were certain limitations to the study that should be mentioned. Every survey-based study shares the common possibility of self-reporting bias, as some variables were self-reported. Future research could add risk perception and financial literacy characteristics that were not included in this study. Furthermore, the samples were drawn from SMEs, so future studies could include large firms for wider coverage.

REFERENCES

Afthanorhan, A., Awang, Z., & Aimran, N. (2020). An extensive comparison of CB-SEM and PLS-SEM for reliability and validity. *International Journal of Data and Network Science, 4*(4), 357-364.

Agyei, S. K. (2018). Culture, financial literacy, and SME performance in Ghana. *Cogent Economics & Finance, 6*(1), 1463813.Available at: https://doi.org/10.1080/23322039.2018.1463813.

Alhawari, S., Karadsheh, L., Talet, A. N., & Mansour, E. (2012). Knowledge-based risk management framework for information technology project. *International Journal of Information Management, 32*(1), 50-65.Available at: https://doi.org/10.1016/j.ijinfomgt.2011.07.002.

Alias, N. B. (2020). *Modelling policy implementation performance of public primary school leaders in Malaysia*. PhD Thesis Submitted to the Faculty of Business and Management Sciences.

Antoncic, J. A., Antoncic, B., Gantar, M., Hisrich, R. D., Marks, L. J., Bachkirov, A. A., . . . Coelho, A. (2018). Risk-taking propensity and entrepreneurship: The role of power distance. *Journal of Enterprising Culture, 26*(01), 1-26.Available at: https://doi.org/10.1142/s0218495818500012.

Arner, D. W., Buckley, R. P., Zetzsche, D. A., & Veidt, R. (2020). Sustainability, FinTech and financial inclusion. *European Business Organization Law Review, 19*(63), 1-25.

Awang, Z. (2012). Research methodology and data analysis (2nd ed., pp. 32-46). Malaysia: UiTM Press.

Awang, P. (2015). *SEM made simple: A gentle approach to learning structural equation modeling*. MPWS Rich Publication: Bangi.

Awang, Z., Hui, L. S., & Zainudin, N. F. S. (2018). *A simple approach to SEM-Structural equation modeling*. Bandar Baru Bangi: MPWS Rich Resources.

Boermans, M. A., & Willebrands, D. (2017). Entrepreneurship, risk perception and firm performance. *International Journal of Entrepreneurship and Small Business, 31*(4), 557-569.Available at: https://doi.org/10.1504/ijesb.2017.085426.

Bratianu, C. (2018). A holistic approach to knowledge risk. *Management Dynamics in the Knowledge Economy, 6*(4), 593-607.Available at: https://doi.org/10.25019/mdke/6.4.06.

Bratianu, C., Neştian, A. Ş., Tiţă, S. M., Vodă, A. I., & Guţă, A. L. (2020). The impact of knowledge risk on sustainability of firms. *Amfiteatru Economic, 22*(55), 639-652.

Brownhilder, N. (2016). Examining the moderating effect of environmental hostility on the entrepreneurial orientation-performance relationship. *Journal of Economics and Behavioral Studies, 8*(6 (J)), 6-18.Available at: https://doi.org/10.22610/jebs.v8i6(j).1479.

Brustbauer, J. (2016). Enterprise risk management in SMEs: Towards a structural model. *International Small Business Journal, 34*(1), 70-85.Available at: https://doi.org/10.1177/0266242614542853.

Cardoni, A., Zanin, F., Corazza, G., & Paradisi, A. (2020). Knowledge management and performance measurement systems for SMEs' economic sustainability. *Sustainability, 12*(7), 2594.Available at: https://doi.org/10.3390/su12072594.

Chakraborty, S., & Swinney, R. (2021). Signaling to the crowd: Private quality information and rewards-based crowdfunding. *Manufacturing & Service Operations Management*, *23*(1), 155-169.Available at: https://doi.org/10.2139/ssrn.2885457.

Cherednik, I. (2021). Artificial intelligence approach to momentum risk-taking. *International Journal of Financial Studies*, *9*(4), 1-42.Available at: https://doi.org/10.3390/ijfs9040058.

Corvino, A., Caputo, F., Pironti, M., Doni, F., & Bianchi Martini, S. (2019). The moderating effect of firm size on relational capital and firm performance: Evidence from Europe. *Journal of Intellectual Capital*, *20*(4), 510-532.Available at: https://doi.org/10.1108/jic-03-2019-0044.

Dash, G., & Paul, J. (2021). CB-SEM vs PLS-SEM methods for research in social sciences and technology forecasting. *Technological Forecasting and Social Change*, *173*, 121092.Available at: https://doi.org/10.1016/j.techfore.2021.121092.

Daud, W. N. W., Zainol, F. A., Salleh, F., Yazid, A. S., Ismail, S., Markom, R., & Mukhtar, N. D. (2017). Takaful rules and regulations for ASEAN countries: Takaful player perspectives. Paper presented at the *Proceedings of the 30th International Business Information Management Association Conference, IBIMA 2017 - Vision 2020: Sustainable Economic Development, Innovation Management, and Global Growth*, , *2017-January* 2363-2369

De Araújo Lima, P. F., Crema, M., & Verbano, C. (2020). Risk management in SMEs: A systematic literature review and future directions. *European Management Journal*, *38*(1), 78-94.Available at: https://doi.org/10.1016/j.emj.2019.06.005.

Driver, T., Brimble, M., Freudenberg, B., & Hunt, K. H. M. (2018). Insurance literacy in Australia: Not knowing the value of personal insurance. *Insurance Literacy in Australia: Not Knowing the Value of Personal Insurance, Financial Planning Research Journal*, *4*(1), 53-75.

Durst, S., & Ferenhof, H. A. (2016). Knowledge risk management in turbulent times. In Competitive strategies for small and medium enterprises (pp. 195-209). Cham: Springer.

Durst, S., Hinteregger, C., & Zieba, M. (2019). The linkage between knowledge risk management and organizational performance. *Journal of Business Research*, *105*, 1-10.Available at: https://doi.org/10.1016/j.jbusres.2019.08.002.

Durst, S., & Zieba, M. (2019). Mapping knowledge risks: Towards a better understanding of knowledge management. *Knowledge Management Research & Practice*, *17*(1), 1-13.Available at: https://doi.org/10.1080/14778238.2018.1538603.

Garba, M., Garba, L., & Usman, A. (2017). Determinants of customers' Bank Selection Decision in North Eastern Nigeria (Evidence from Bauchi State). *Nigerian Journal of Management Technology & Development*, *8*(1), 154-162.

Gharakhani, D., & Mousakhani, M. (2012). Knowledge management capabilities and SMEs' organizational performance. *Journal of Entrepreneurship in Emerging Economies*, *4*(1), 35-49.Available at: https://doi.org/10.1108/17561391211200920.

Hair, J. F., Black, W., Babin, B., Anderson, R., & Tatham, R. (2006). Multivariate data analysis (Vol. 6, pp. 139-152). Upper Saddle River: Pearson Prentice Hall

Hair, J., Anderson, R., Babin, B., & Black, W. (2010). *Multivariate data analysis: A global perspective* (Vol. 7). Upper Saddle River: Pearson.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139-152.Available at: https://doi.org/10.2753/mtp1069-6679190202.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2013). Multivariate data analysis: Pearson new international edition (pp. 90-152). USA: Pearson Higher Ed.

Hair, J. J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM). *European Business Review*, *26*(2), 106-121.Available at: https://doi.org/10.1108/EBR-10-2013-0128.

Hair, H. G. T. M., Ringle, C., & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM). *Handbook of Market Research*, *26*(1), 1-40.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2018). *Multivariate data analysis* (8th ed.). United Kingdom: Cengage Learning.

Hair, J. F., Gabriel, M. L., Silva, D. d., & Braga, S. (2019). Development and validation of attitudes measurement scales: Fundamental and practical aspects. *RAUSP Management Journal*, *54*(4), 490-507.Available at: https://doi.org/10.1108/rausp-05-2019-0098.

Harrison, G., Morsink, K., & Schneider, M. (2021). Literacy and the quality of index insurance decisions. *The Geneva Risk and Insurance Review, 1-32*, 66-97.

Hillson, D., & Murray-Webster, R. (2011). Using risk appetite and risk attitude to support appropriate risk-taking: A new taxonomy and model. *Journal of Project, Program & Portfolio Management, 2*(1), 29-46.

Holmes-Smith, P., Coote, L., & Cunningham, E. (2006). *Structural equation modeling: From the fundamentals to advanced topics.* Melbourne: Sreams.

Hoque, A., & Awang, Z. (2016). *The impact of marketing strategy on small and medium scale enterprises (SMEs): Case study in Bangladesh.* Paper presented at the Proceedings of the International Postgraduate Research Conference (IPRC 2016), Universiti Sultan Zainal Abidin (UniSZA), Gong Badak Campus, Kuala Terengganu, Malaysia.

Hussein, Y., & Cağlar, D. (2019). The effect of high involvement work systems on organizational performance: The mediating role of knowledge-based capital. *Management Science Letters, 9*(9), 1361-1372.

Ibrahim, H., Mariapan, M., Lin, E. L. A., & Bidin, S. (2021). Environmental concern, attitude and intention in understanding student's anti-littering behavior using structural equation modeling. *Sustainability, 13*(8), 1-12.Available at: https://doi.org/10.3390/su13084301.

Ishtiaq, M., Songling, Y., Hassan, A., & Hayat, A. (2020). The role of financial literacy in resource acquisition and financial performance; Moderating role of government support. *International Journal of Business and Economics Research, 9*(1), 29-39.Available at: https://doi.org/10.11648/j.ijber.20200901.14.

Kiprotich, S., Kimosop, J., Chepkwony, P. K., & Kemboi, A. (2015). Moderating effect of social networking on the relationship between entrepreneurial orientation and performance of small and medium enterprise in Nakuru County, Kenya.

Kline, R. (2005). Principles and practice of structural equation modelling (2nd ed., Vol. 366). New York: Guilford Press.

Kreiser, P. M., Marino, L. D., Kuratko, D. F., & Weaver, K. M. (2013). Disaggregating entrepreneurial orientation: The non-linear impact of innovativeness, proactiveness and risk-taking on SME performance. *Small Business Economics, 40*(2), 273-291.Available at: https://doi.org/10.1007/s11187-012-9460-x.

Kulathunga, K., Ye, J., Sharma, S., & Weerathunga, P. (2020). How does technological and financial literacy influence SME performance: Mediating role of ERM practices. *Information, 11*(6), 1-20.Available at: https://doi.org/10.3390/info11060297.

Lawal, F. A., Adegbuyi, O. A., Iyiola, O. O., Ayoade, O. E., & Taiwo, A. A. (2018). Nexus between informal networks and risk-taking: Implications for improving the performance of small and medium enterprises (SMEs) in Nigeria. *Academy of Strategic Management Journal, 17*(2), 1-14.

Leal-Rodríguez, A. L., Eldridge, S., Roldán, J. L., Leal-Millán, A. G., & Ortega-Gutiérrez, J. (2015). Organizational unlearning, innovation outcomes, and performance: The moderating effect of firm size. *Journal of Business Research, 68*(4), 803-809.Available at: https://doi.org/10.1016/j.jbusres.2014.11.032.

Lee, Y., & Song, E. (2019). The effects of the government funding on venture firms' management performance: Focusing on the mediation effect of firms' internal competencies and the moderation effect of firm's growth stage. *Asia-Pacific Journal of Business Venturing and Entrepreneurship, 14*(2), 31-46.

Leoncini, R., Marzucchi, A., Montresor, S., Rentocchini, F., & Rizzo, U. (2019). 'Better late than never': The interplay between green technology and age for firm growth. *Small business economics, 52*(4), 891-904.Available at: https://doi.org/10.1007/s11187-017-9939-6.

McCarthy, D. J., Puffer, S. M., & Lamin, A. (2018). Entrepreneurial orientation in a hostile and turbulent environment: Risk and innovativeness among successful Russian entrepreneurs. *European Journal of International Management, 12*(1-2), 191-221.Available at: https://doi.org/10.1504/ejim.2018.10009379.

Meyer, K. E., Van Witteloostuijn, A., & Beugelsdijk, S. (2017). What's in ap? Reassessing best practices for conducting and reporting hypothesis-testing research. *Journal of International Business Studies, 48*(5), 535-551.Available at: https://doi.org/10.1057/s41267-017-0078-8.

Mohanty, P. P., Tiwari, S., & Balakrishnan Nair, B. (2022). Analysing food innovation drivers: Chefs' Perspectives. *Journal of Culinary Science & Technology*, 1-18.Available at: https://doi.org/10.1080/15428052.2022.2036661.

Monteiro, A. P., Soares, A. M., & Rua, O. L. (2019). Linking intangible resources and entrepreneurial orientation to export performance: The mediating effect of dynamic capabilities. *Journal of Innovation & Knowledge*, 4(3), 179-187.Available at: https://doi.org/10.1016/j.jik.2019.04.001.

Mutegi, H. K., Njeru, P. W., & Ongesa, N. T. (2015). Financial literacy and its impact on loan repayment by small and medium entrepreneurs. *International Journal of Economics, Commerce and Management*, 3(3), 1-28.

Muturi, D. W., & Olaniran, M. O. (2017). The role of risk-taking on the performance of firms on the Nigerian stock exchange. *International Journal of Research in Business Studies and Management*, 3(3), 36-44.

Nasidi, Q. Y., bin Ahmad, M. F., Garba, M., Hassan, I., & Gamji, M. B. (2021). Empirical investigation of factors affecting online shopping behavior. *Laplage in Magazine*, 7(3D), 363-377.Available at: https://doi.org/10.24115/s2446-6220202173d1728p.363-377.

Nazim, A., & Ahmad, S. (2013). Assessing the unidimensionality, reliability, validity and fitness of influential factors of 8th grade student's mathematics achievement in Malaysia'. *International Journal of Advance Research*, 1(2), 1-7.

NBS. (2017). SMEDAN National survey of micro, small-medium enterprises. *National Policy on Micro, Small and Medium Enterprises. National Bureau of Statistics*, 1-148.

NBS. (2021). Nigerian gross domestic product report (Q3 2020). nigerianstat.gov.ng/download/1229. February 2021.

Nunnally, J. C. (1975). Psychometric theory—25 years ago and now. *Educational Researcher*, 4(10), 7-21.Available at: https://doi.org/10.2307/1175619.

Ozili, P. K. (2020). Financial inclusion research around the world: A review. *Forum for Social Economics*, 50(4), 457-479.Available at: https://doi.org/10.1080/07360932.2020.1715238.

Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS*. UK: McGraw-Hill Education.

Peterson, R. A. (2000). A meta-analysis of variance accounted for and factor loadings in exploratory factor analysis. *Marketing letters*, 11(3), 261-275.

Pham, C. D., Tran, Q. X., & Nguyen, L. T. N. (2018). Effects of internal factors on financial performance of listed construction-material companies: The Case of Vietnam. *Research Journal of Finance and Accounting*, 9(10), 7.Available at: https://doi.org/10.2139/ssrn.3291392.

Pieper, J. R., Greenwald, J. M., & Schlachter, S. D. (2018). Motivating employee referrals: The interactive effects of the referral bonus, perceived risk in referring, and affective commitment. *Human Resource Management*, 57(5), 1159-1174.Available at: https://doi.org/10.1002/hrm.21895.

Rababah, J. A., Al-Hammouri, M. M., & Drew, B. L. (2020). The impact of health literacy on college students' psychological disturbances and quality of life: A structural equation modeling analysis. *Health and Quality of Life Outcomes*, 18(1), 1-9.Available at: https://doi.org/10.1186/s12955-020-01541-7.

Rodríguez-Gutiérrez, M. J., Romero, I., & Yu, Z. (2020). Guanxi and risk-taking propensity in Chinese immigrants' businesses. *International Entrepreneurship and Management Journal*, 16(1), 305-325.Available at: https://doi.org/10.1007/s11365-019-00566-9.

Roxas, B., & Chadee, D. (2016). Knowledge management view of environmental sustainability in manufacturing SMEs in the Philippines. *Knowledge Management Research & Practice*, 14(4), 514-524.Available at: https://doi.org/10.1057/kmrp.2015.30.

Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G., & Woelm, F. (2020). The sustainable development goals and COVID-19 (pp. 510). Sustainable Development Report 2020 Cambridge University Press.

Salleh, F., Palaniappan, S., Theng, I. L. P., Helmi, H. N. M., Hamid, A. A., & Kassim, N. M. (2020). A review on risk management implementation in the construction industry. Journal of Critical Reviews, 7(11), 562-567. doi:10.31838/jcr.07.11.102

Salleh F., Mustafa N., Daud W.N.W., Yazid A.S., Ghazali P.L., Remli N., Burhan N.A.S. (2017). A review of the importance on the need of micro medical and health takaful. Proceedings of the 30th International Business Information Management

Association Conference, IBIMA 2017 - Vision 2020: Sustainable Economic development, Innovation Management, and Global Growth, 2017-January, pp. 2398 – 2404.

Salleh, F. (2015). The effect of financial factors on general Takaful demand among Small and Medium Enterprises in Malaysia. *Business and Management PhD*.

Salleh, F., & Ibrahim, M. D. (2011). Demographic characteristics differences of risk taking propensity among micro and small business owners in Malaysia. *International Journal of Business and Social Science*, *2*(9), 149-153.

Salleh, F. (2015). *The effect of financial factors on general Takaful demand among Small and Medium Enterprises in Malaysia*. Business and Management PhD.

Schmitt, U. (2018). Supporting the sustainable growth of SMEs with content-and collaboration-based personal knowledge management systems. *Journal of Entrepreneurship and Innovation in Emerging Economies*, *4*(1), 1-21.Available at: https://doi.org/10.1177/2393957517739773.

Sciarelli, M., Landi, C. G., Turriziani, L., & Tani, M. (2019). Corporate sustainability assessment and risk perception: Empirical evidence from standard & poor's index. *American International Journal of Contemporary Research*, *9*(1), 11-21.Available at: https://doi.org/10.30845/aijcr.v9n1p2.

Sekaran, U., & Bougie, R. (2003). *Research methods for business, A skill building approach*. New York: John Willey & Sons. Inc.

Sharma, S., & Jain, P. (2021). Risk-averse integrated demand response and dynamic G2V charge scheduling of an electric vehicle aggregator to support grid stability. *International Transactions on Electrical Energy Systems*, *31*(5), e12867.

Shatnawi, S. A., Hanefah, M. M., Anwar, N. A. B. M., & Eldaia, M. (2019). The factors influencing the enterprise risk management practices and firm performance in Jordan and Malaysia. *International Journal of Academic Research Business and Social Sciences*, *9*(5), 177–194.

Singh, V., & Sharma, S. K. (2016). Analyzing the moderating effects of respondent type and experience on the fuel efficiency improvement in air transport using structural equation modeling. *European Transport Research Review*, *8*(2), 1-20.Available at: https://doi.org/10.1007/s12544-016-0199-3.

Suhadak, S., Kurniaty, K., Handayani, S. R., & Rahayu, S. M. (2018). Stock return and financial performance as moderation variable in influence of good corporate governance towards corporate value. *Asian Journal of Accounting Research*, *4*(1), 18-34.Available at: https://doi.org/10.1108/ajar-07-2018-0021.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Needham Heights, MA: Allyn & Bacon.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics: International edition* (6th ed.). Boston, MA: Pearson.

Tennyson, S. (2011). Consumers' insurance literacy: Evidence from survey data. *Financial Services Review, 20*(3), 165-180.

Uddin, M. A. (2017). Microinsurance in India: Insurance literacy and demand. *Business and Economic Horizons, 13*(2), 182-191.Available at: https://doi.org/10.15208/beh.2017.14.

Venkataraman, S. (2019). The distinctive domain of entrepreneurship research, Katz, J.A. and Corbet, A.C. (Ed.) Seminal Ideas for the Next Twenty-Five Years of Advances (Advances in Entrepreneurship, Firm Emergence and Growth (Vol. 21, pp. 5-20). Bingley: Emerald Publishing Limited.

Vollero, A., Siano, A., & Della Volpe, M. (2019). A systems perspective for conceptualizing sustainability in long-lived family businesses. Research Proposals on Risk Taking and Innovativeness. *Systems Research and Behavioral Science, 36*(1), 111-127.Available at: https://doi.org/10.1002/sres.2548.

Wärneryd, K.-E. (1996). Risk attitudes and risky behavior. *Journal of Economic Psychology, 17*(6), 749-770.Available at: https://doi.org/10.1016/s0167-4870(96)00034-7.

Wayman, J. C. (2003). *Multiple imputation for missing data: What is it and how can I use it* (Vol. 2). Annual Meeting of the American Educational Research Association, Chicago, IL.

Weedige, S. S., Ouyang, H., Gao, Y., & Liu, Y. (2019). Decision making in personal insurance: Impact of insurance literacy. *Sustainability, 11*(23), 1-24.Available at: https://doi.org/10.3390/su11236795.

Ye, J., & Kulathunga, K. (2019). How does financial literacy promote sustainability in SMEs? A developing country perspective. *Sustainability, 11*(10), 1-21.Available at: https://doi.org/10.3390/su11102990.

Yusoff, M. N. H. B., Zainol, F. A., Ismail, M., Redzuan, R. H., Abdul Rahim Merican, R. M., Razik, M. A., & Afthanorhan, A. (2021). The role of government financial support programmes, risk-taking propensity, and self-confidence on propensity in business ventures. *Sustainability, 13*(1), 1-16.Available at: https://doi.org/10.3390/su13010380.

Zauro, N. A., Saad, R. A. J., Ahmi, A., & Mohd Hussin, M. Y. (2020). Integration of waqf towards enhancing financial inclusion and socio-economic justice in Nigeria. *International Journal of Ethics and Systems, 36*(3), 491-505.Available at: https://doi.org/10.1108/ijoes-04-2020-0054.