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# The Influence of Non-Economic Factors on General Takaful Adoption Among MSMEs' in Northwest Nigeria

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**Abstract**
**Purpose:** To investigate the non-economic drivers of General Takaful (Islamic non-life insurance) adoption among Micro, Small, and Medium-Sized Enterprises (MSMEs) in North-West Nigeria.
**Design/methodology/approach:** Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed to test the hypothesized relationships.
**Findings:** The findings reveal that relative advantage, compatibility, awareness, social influence, prior loss experience, and religiosity significantly influence MSME owner-managers' behavioral intention to adopt General Takaful. Conversely, complexity, uncertainty, and government support did not demonstrate a significant effect.
**Research limitations/implications:** This study contributes to the limited body of knowledge on Takaful adoption among MSMEs, particularly in Nigeria.
**Practical implications:**, This study offers practical implications for Takaful operators, regulators, and policymakers seeking to promote the uptake of General Takaful.
**Originality/value:** The study focuses on non-economic behavioral drivers, contextually grounded in a specific and relevant population (MSMEs in Northwest Nigeria), and it provides practical and theoretical insights into General Takaful adoption.

**Keywords:** General Takaful, MSMEs, Diffusion of Innovation Theory, Unified Theory of Acceptance and Use of Technology, Partial Least Squares Structural Equation Modelling (PLS-SEM)

## Introduction

In nations with a majority of Muslims, takaful, or Islamic insurance, has become a well-known alternative risk management tactic that provides people and companies with a way to lessen the financial impact of unanticipated losses. Numerous hazards can endanger an organization's or an individual's long-term viability and operational continuity. By combining resources to compensate for losses, takaful offers a way to deal with these issues. Lack of Takaful coverage, particularly among companies, can obstruct success and expansion, which can have a domino effect on the economy as a whole (Husin & Haron, 2020a; Hoffman, 2015).

While large corporations in developed economies often allocate significant resources to insurance policies as a means of managing diverse business risks (Hoffman, 2015), Micro, Small, and Medium-Sized Enterprises (MSMEs), particularly in developing countries, frequently lack insurance coverage against unforeseen perils (Husin & Haron, 2020a; Dandago, Muhammad & Sabiu, 2020; Central Bank of Nigeria [CBN], 2018).

Developed approximately four decades ago, contemporary Takaful presents an alternative to conventional insurance (COMCEC, 2019; Swartz & Coetzer, 2010; Billah, 1998). Distinct from the risk transfer mechanism inherent in conventional insurance, Takaful operates on a risk-sharing model, pooling financial resources to compensate participants upon the occurrence of specified risks. The Islamic Financial Services Board (IFSB, 2018) defines Takaful as "a mutual guarantee in return for the commitment to donate an amount in the form of a specified contribution to the participants' risk fund, whereby a group of participants agree among themselves to support one another jointly for the losses arising from specified risks."

Similar to traditional insurance, there are two main types of Takaful: General (non-life) Takaful and Family (life) Takaful. Long-term agreements that include savings, investments, and protection for members and their dependents in the event of death, incapacity, or difficulties surviving are commonly associated with family takaful. On the other hand, general takaful is usually a one-year contract that covers liabilities and properties against unanticipated risks. Protection against fire, theft, natural catastrophes, and accidents are typical coverages included in General Takaful (Husin & Haron, 2020a; Aziz, Husin, Hussin & Afaq, 2019). Because of its increased significance to MSMEs' demands, the current study focuses exclusively on general takaful.

Takaful remains a relatively nascent phenomenon in Nigeria, characterized by low adoption rates (Faber Consulting, 2020; Oxford Business Group, 2019; Dias, Garand & Swiderek, 2013; Yusuf, 2012). Regulated by the National Insurance Commission (NAICOM), the Nigerian Takaful industry is still in its developmental stages (Afrinvest, 2018). EFInA (Enhancing Financial Inclusion & Access, 2020) reports that only 2% of the adult population (estimated at 106 million in 2020) participates in the insurance sector. Furthermore, CBN (2018) data reveals that women, youths, the less educated, MSMEs, and the North-West region constitute the most financially excluded segments of the population. A joint survey by the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) and the National Bureau of Statistics (NBS, 2017) further indicates that 96.61% of micro-enterprises and 63.9% of small and medium-sized enterprises are uninsured. This trend poses a significant threat to the sustainability of numerous small businesses in Nigeria. Therefore, this study aims to identify the non-economic factors influencing the adoption of General Takaful among MSME owner-managers in North-West Nigeria.

This article's following sections are organized as follow: The literature review and the formulation of hypotheses are presented in section two; the research technique is described in section three; the data analysis and findings are presented in section four; and the study is concluded in the last part.

## Literature Review

### *Takaful in Nigeria*

Takaful, an Islamic financial product offering a Sharia-compliant alternative to conventional insurance, was introduced in Nigeria approximately two decades ago. The initial foray into the market was marked by the launch of the first Takaful product in 2003 by African Alliance Insurance Plc. This pioneering effort was later followed by Niger Insurance Plc and Cornerstone Insurance Plc in 2008 (Dandago et al., 2020; Yusuf & Babalola, 2015; Maiyaki & Ayuba, 2015). These

companies were primarily motivated by the substantial Muslim population in Nigeria, a demographic largely underserved by conventional insurance offerings. The low adoption rates of conventional insurance in Nigeria, evidenced by low insurance penetration and density, presented a significant opportunity for Takaful to expand insurance coverage (Yusuf & Babalola, 2015).

A significant impediment to the early growth of Takaful in Nigeria was the absence of a supporting regulatory framework. This regulatory gap, potentially contributing to the initially low uptake of Takaful products, was addressed in 2013 with the issuance of the first Takaful regulation by the National Insurance Commission (NAICOM). This milestone marked a decade after the introduction of Takaful and provided the first comprehensive guidelines for Takaful operations in Nigeria (Dandago et al., 2020; NAICOM, 2013). Following this regulatory intervention, NAICOM licensed four full-fledged Takaful operators: Jaiz Takaful and Noor Takaful in 2016, and Hilal Takaful and Salaam Takaful, which received approval in principle in 2019 (Dandago et al., 2020). Currently, all four operators function as composite insurance companies, offering both life and general Takaful services.

According to Section 2.2 of the Takaful rules, Nigeria currently uses three different Takaful operational models: Wakalah, Mudarabah, and hybrid models that combine Wakalah and Mudarabah. Any of these models may be chosen by takaful operators, provided NAICOM gives their clearance (Dikko & Bakar, 2018). Motor, fire and specific dangers, agricultural, burglary, commodities in transit, and maritime Takaful are among the products available under the general Takaful system.

***Factors influencing Takaful Adoption***

A substantial body of research has explored the adoption of Islamic finance products, including Takaful, utilizing various behavioral and adoption theories. These theories, including the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), and the Diffusion of Innovation (DOI), have been adapted, extended, and combined to investigate adoption across diverse contexts (Yahaya et al., 2016b; Thambiah et al., 2013; Amin et al., 2011; Haider et al., 2018; Mahdzan et al., 2017; Jamshidi and Hussin, 2016; Bodibe et al., 2016). Studies employing these theoretical frameworks have consistently demonstrated their efficacy in predicting behavioral intentions and the utilization of Islamic finance products.

Attitude, subjective norms, perceived behavioral control, awareness, religiosity, uncertainty, trust, relative benefit, and compatibility are important elements that have been found to influence the adoption of Takaful. Research on Takaful adoption, particularly utilizing behavioral and marketing theories, has witnessed significant growth in recent years. While a considerable portion of this research originates from South and Southeast Asia, with Malaysia and Pakistan as prominent contributors, studies focusing on Africa, and Nigeria specifically, remain limited.

Furthermore, the majority of empirical studies have employed the TPB as their theoretical foundation (Dandago et al., 2020; Kirfi et al., 2019; Kazaure, 2019; Mas'ud, 2017) and have primarily focused on individual adoption, with limited attention given to MSMEs, specific Takaful products (e.g., family Takaful, micro-Takaful), and general Takaful.

**Theoretical Framework**

This study draws upon established theoretical frameworks to investigate the adoption of general Takaful among Micro, Small, and Medium Enterprise (MSME) owner-managers in North-West

Nigeria. Specifically, the Diffusion of Innovation (DOI) theory and the Unified Theory of Acceptance and Use of Technology (UTAUT) serve as the primary theoretical lenses.

***Diffusion of Innovation Theory***

Diffusion of Innovation (DOI) theory has been widely employed and validated across diverse research domains as a robust model for predicting innovation adoption (e.g., Al-Rahmi et al., 2019; Latip, Yahya & Junaina, 2017; Mahdzan et al., 2017; Moore & Benbasat, 1991, 1996; Talukder, Chiong, Bao & Hayat Malik, 2019; Tan & Teo, 2000; Thambiah et al., 2013; Yahaya et al., 2014; Gerrard & Cunningham, 2003). According to the hypothesis, an innovation's features affect how quickly it is adopted. Relative advantage, compatibility, complexity, observability, and trialability are the five essential characteristics that Rogers (2003) highlighted. The latter two characteristics are more pertinent to physical and observable innovations, although the first three are generally applicable to both tangible and intangible innovations (Rogers, 2003; Tornatzky & Klein, 1982).

DOI has been utilized to examine innovation adoption at both the individual (e.g., Gerrard & Cunningham, 2003; Jamshidi & Hussin, 2015; Latip, Yahya & Junaina, 2017; Mahdzan et al., 2017; Moore & Benbasat, 1991; Thambiah et al., 2013; Yahaya et al., 2014) and organizational levels (e.g., Bradford & Florin, 2003; Hsu, Kraemer & Dunkle, 2006; Zhu, Dong, Xu & Kraemer, 2006). Researchers frequently modify, extend (e.g., Gerrard & Cunningham, 2003; Jamshidi & Hussin, 2015; Latip, Yahya & Junaina, 2017; Mahdzan et al., 2017; Moore & Benbasat, 1991; Thambiah et al., 2013; Yahaya et al., 2014; Ayanwale & Ndlovu, 2024 ), or integrate DOI with other behavioral or adoption theories (e.g., Bradford & Florin, 2003; Jamshidi & Hussin, 2016, 2018; Moore & Benbasat, 1996; Tan & Teo, 2000; Zhu, Dong, Xu & Kraemer, 2006; Patnaik & Bakkar, 2024). Empirical evidence consistently suggests a strong association between DOI constructs, particularly relative advantage, compatibility, and complexity, and innovation adoption decisions (e.g., Gerrard & Cunningham, 2003; Moore & Benbasat, 1996; Tornatzky & Klein, 1982).

Despite its widespread application, DOI has been criticized for its limited consideration of external influences, such as social pressure and governmental support, on adoption decisions (Al-Zoubi, 2013; Lippert & Govindarajulu, 2006). Consequently, DOI alone may not fully explain innovation adoption across all contexts. This study, therefore, integrates DOI with constructs from other relevant theories, specifically UTAUT, to provide a more comprehensive understanding of general Takaful adoption among MSME owner-managers in North-West Nigeria.

***Unified Theory of Acceptance and Use of Technology (UTAUT)***

The Unified Theory of Acceptance and Use of Technology (UTAUT) is a significant theory in the domain of innovation adoption, especially in Information Technology (IT) research. It was developed to address limitations present in other behavioral and adoption models. By synthesizing constructs from eight such theories, Venkatesh et al. (2003) consolidated them into four core constructs, thereby mitigating weaknesses observed in previous models. Four moderators were also incorporated to enhance the model's predictive capacity (Dwivedi, Rana, Jeyaraj, Clement & Williams, 2019). UTAUT's unified approach aims to resolve the dilemma of selecting one behavioral theory over another. Furthermore, it has demonstrated superior explanatory power compared to previous models, accounting for 77% of the variance in behavioral intention and 52% in actual usage (Venkatesh, Thong & Xu, 2012, 2016; Venkatesh et al., 2003).

The four main components of UTAUT are: social influence (SI), which is comparable to subjective norm in the Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), and Decomposed Theory of Planned Behavior (DTPB); performance expectancy (PE), which is

comparable to relative advantage in DOI and perceived usefulness in the Technology Acceptance Model (TAM); and facilitating conditions (FC), which is partially derived from perceived behavioral control (PBC) in TPB/DTPB. While FC is thought to have a direct impact on actual usage, PE, EE, and SI are proposed as direct determinants of behavioral intention (BI). The theory also suggests that the impacts of these dimensions are moderated by age, gender, experience, and voluntariness of use (Venkatesh et al., 2003).

UTAUT has been extensively applied in diverse IT adoption contexts (Chen, Fan, & Azam, 2024; Budhathoki, Zirar, Njoya, & Timsina, 2024). Studies have employed the full model (Bühler & Bick, 2013), examined main effects only (Odeh, 2019; Pynoo et al., 2011; Seid & Lessa, 2012), modified and extended the model (Kwarteng, Ntsiful, L. F. P., & Novák, 2024; Borrero, Yousafzai, Javed & Page 2014; Dasgupta & Gupta, 2011; Ebrahim & Naicker, 2019; Liew, Vaithilingam & Nair, 2014; Martins, Oliveira & Popovic, 2014; Raza, Shah & Ali, 2019). On the other hand, within Islamic finance, UTAUT has been used to study IT adoption (Iqbal, Jose & Tahir, 2022; Kholid, 2019; Raza, Shah & Ali, 2019; Thaker et al., 2019) and innovations in other Islamic finance settings (Bananuka et al., 2020; Bouteraa, Hisham & Zainol, 2020).

Although UTAUT has shown validity and predictive capability, especially about the impact of its fundamental dimensions on behavioral intention and actual usage, there have been less investigations utilizing the complete model (Dwivedi et al., 2019; Venkatesh et al., 2016). Researchers often modify, extend, or integrate UTAUT due to the context-specificity of hypothesized relationships (Dwivedi et al., 2019; Venkatesh et al., 2012). Furthermore, UTAUT's focus on technological and contextual factors, while neglecting personal factors like religious orientation and risk perception, limits its explanatory power (Dwivedi et al., 2019; Venkatesh et al., 2012).

Current research trends emphasize context-specific theories to identify relevant predictors and gain in-depth understanding of phenomena, thus enriching and extending original theories (Venkatesh, Thong & Xu, 2012). New research contexts can alter hypothesized relationships, potentially rendering some inconsequential, inverting others, moderating their strength, adding new relationships, or removing irrelevant constructs (Venkatesh, Thong & Xu, 2012). Therefore, this study integrates a subset of UTAUT constructs with DOI to provide a more nuanced understanding of Takaful adoption.

**Research Model and Hypotheses Development**

With a focus on studies pertaining to the adoption of takaful and Islamic finance, the conceptual research model was developed after a thorough analysis of pertinent constructs and underlying theories from earlier research in the innovation adoption literature. The Unified Theory of Acceptance and Use of Technology (UTAUT), created by Venkatesh et al. (2003), and Rogers' (2003) Diffusion of Innovation (DOI) theory served as some of the models used in this study's conceptual framework. The following is an illustration of the research model:

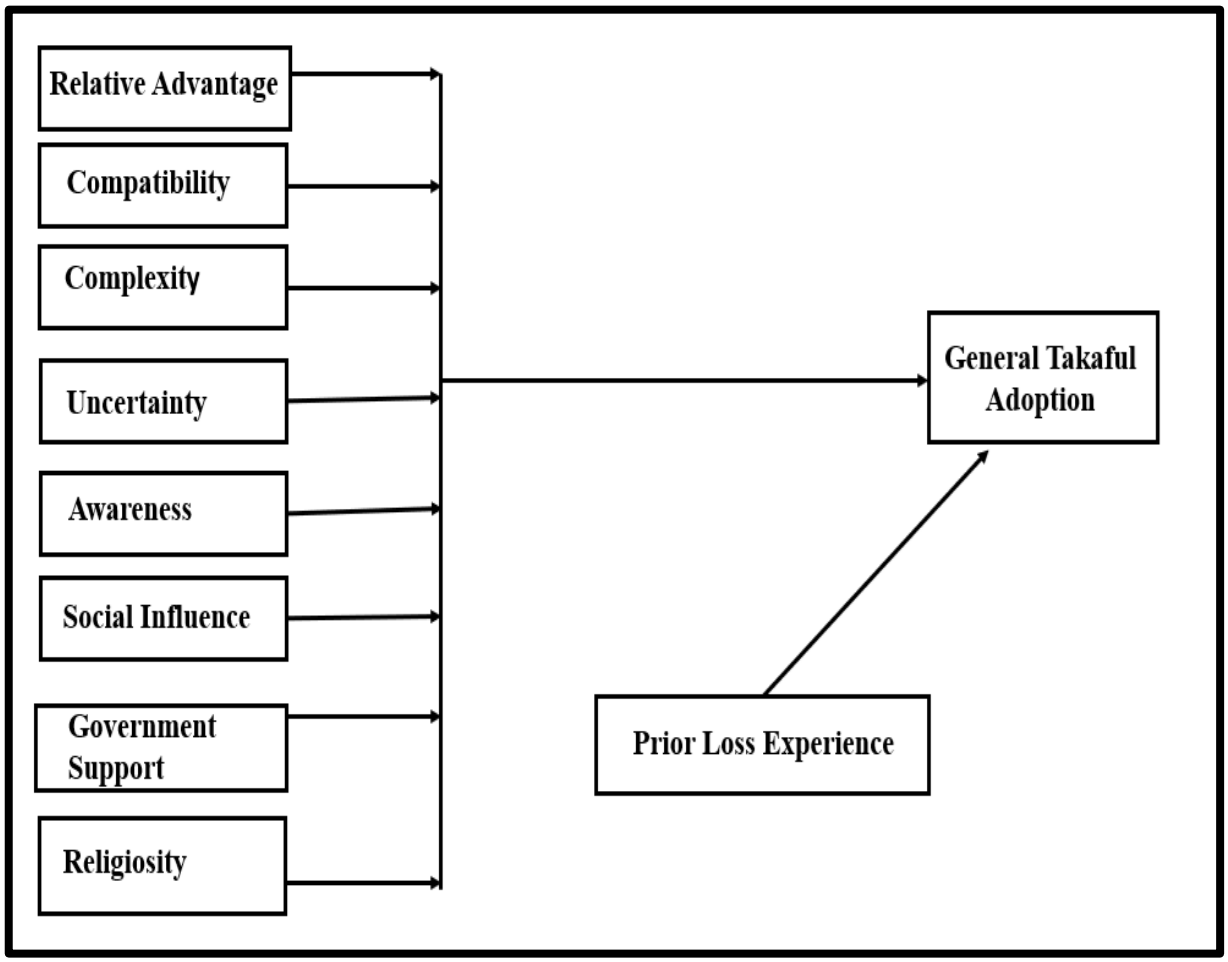


Figure 1: Illustration of the research model

***Relative advantage***

Relative advantage, as defined by Rogers (2003), denotes the perceived superiority of an innovation compared to its predecessor or alternative, evaluated based on economic gains, social prestige, convenience, and overall satisfaction. Previous studies on innovation adoption have consistently recognized relative advantage as a crucial factor influencing adoption behavior (Yahaya et al., 2014; Latip et al., 2017; Mahdzan et al., 2017; Thambiah et al., 2011). Its positive association with adoption has been validated across diverse contexts, environments, and cultures (Mahdzan et al., 2017; Moore & Benbasat, 1991; Tornatzky & Klein, 1982).

In the takaful adoption literature, findings on the significance of relative advantage remain mixed. While some studies confirm its influence (Salman & Hassan, 2020; Hassan & Abbas, 2019; Raza et al., 2019; Shaikh et al., 2019; Aziz et al., 2019; Coolen-Maturi, 2013), others report an insignificant effect (Kirfi et al., 2019; Echchabi & Ayedh, 2015; Echchabi et al., 2014; Ayinde & Echchabi, 2012). For instance, Kirfi et al. (2019) found no significant relationship between relative advantage (perceived usefulness) and takaful adoption in Gombe State, Nigeria, a finding echoed in studies conducted in Yemen, Tunisia, and Malaysia (Echchabi & Ayedh, 2015; Echchabi et al., 2014; Ayinde & Echchabi, 2012). Conversely, studies in India and Pakistan confirm its significance in predicting takaful adoption (Salman & Hassan, 2020; Hassan & Abbas, 2019; Raza et al., 2019; Shaikh et al., 2019). Mokhtar et al. (2017) further established that relative advantage influences corporate demand for both conventional and Islamic insurance in Malaysia, while Aziz et al. (2019)

confirmed its relevance in family takaful adoption. Additionally, Coolen-Maturi (2013) highlighted competitive pricing as a factor influencing insurance choices among Muslims in the UK.

Given these inconsistencies, further investigation is warranted, particularly in underexplored contexts. Relative advantage encompasses financial and non-financial benefits, including return on investment (ROI), cost, service quality, business support services, range of services/products, and convenience. Similar constructs have been employed in studies on banking and insurance choices (Gerrard & Cunningham, 2003; Blankson et al., 2007). The more MSMEs perceive general takaful as beneficial compared to alternatives, the higher its adoption rate.

**H1:** The adoption of general takaful by MSME owner-managers in North-West Nigeria is positively impacted by relative advantage.

***Compatibility***

One important factor influencing adoption rates is compatibility, which is the perceived fit between an innovation and the requirements, attitudes, beliefs, and past experiences of potential adopters. Higher levels of perceived compatibility are connected with increasing adoption. Yahaya et al. (2014), Al-Gaith et al. (2010), Thambiah et al. (2010), Mahdzan et al. (2017), and others have all provided empirical validation of this association in a variety of circumstances. For instance, compatibility has a favorable impact on Malaysia's adoption of Islamic home finance products, as shown by Amin et al. (2014).

A significant amount of research has also demonstrated the significance of compatibility in the particular field of takaful adoption (Hassan & Abbas, 2019; Raza et al., 2019; Shaikh et al., 2019; Echchabi & Ayedh, 2015; Echchabi, Olorogun & Azouzi, 2014; Ayinde & Echchabi, 2012). Using an enhanced Diffusion of Innovations (DOI) model, Echchabi & Ayedh (2015) discovered that compatibility was the only significant predictor of Yemeni customers' desire to adopt takaful. In Tunisia, compatibility provided a unique explanation for takaful adoption, according to a comparable finding published by Echchabi, Olorogun, and Azouzi (2014). Studies by Shaikh et al. (2019) and Ali et al. (2019), which also used extended DOI models, provided additional evidence in favor of this claim by confirming the important role compatibility plays in forecasting the acceptance of takaful in Pakistan.

It is assumed that the perceived alignment of takaful products and services with MSME owner-managers' ethical values, beliefs, and experiences influences their adoption decisions in the context of takaful adoption in general. It is therefore predicted that adoption rates would be positively impacted by the degree to which takaful operators and agents successfully illustrate how their products align with the values, business requirements, and beliefs of MSME owner-managers. Therefore, the following theory is put forth:

**H2:** The adoption of general takaful by MSME owner-managers in North-West Nigeria is positively impacted by compatibility.

***Complexity***

Adoption is negatively correlated with perceived complexity, which is the difficulty of comprehending and utilizing an innovation (Jamshidi & Hussin, 2018; Thambiah et al., 2013; Gerrard & Cunningham, 2003). However, some studies have revealed negligible effects, although previous research has shown this negative association for Islamic financial services, especially takaful (Ali et al., 2019; Jamshidi et al., 2014; Thambiah et al., 2011; Mokhtar et al., 2017). This

disparity could be explained by respondents' varying levels of awareness and knowledge about takaful; those who are more aware of the concept might not see it as complicated, while others who are less informed would see it as a major obstacle.

Given these variations, further investigation is required across different regions and demographic groups to ascertain the role of complexity in takaful adoption. If MSME owner-managers perceive takaful as complex and difficult to understand, its adoption rate is expected to be low. Accordingly, the following hypothesis will be tested:

**H3:** In North-West Nigeria, MSME owner-managers' adoption of general takaful is adversely impacted by complexity.

***Uncertainty***

Innovation is inherently characterized by uncertainty, where Bauer (1960) explicitly defined perceived risk as the uncertainty and unfavorable outcomes connected to a purchase, although some studies have used perceived risk and uncertainty interchangeably when studying adoption (Echchabi & Ayedh, 2015; Yahaya et al., 2016a; Thambiah et al., 2013; Teo & Pok, 2003; Tan & Teo, 2000). Accordingly, Rogers (2003) and Kotler and Armstrong (2001) emphasize risk, trust, and dependability as elements of uncertainty. It has been noted that adoption and uncertainty are negatively correlated (Yahaya et al., 2016a; Teo & Pok, 2003; Tan & Teo, 2000). However, studies on takaful adoption have reported insignificant effects of uncertainty (Echchabi & Ayedh, 2015; Echchabi et al., 2014; Ayinde & Echchabi, 2012), potentially due to the religious connotations associated with takaful, which may mitigate perceived uncertainty. This suggests that religiously labelled products may be viewed more favorably, reducing the impact of uncertainty on adoption decisions. Nevertheless, further investigation is warranted. Given takaful's novelty, potential adopters may perceive uncertainty regarding its reliability, Shariah compliance, and risk. Furthermore, the intangible nature of insurance services can amplify perceived risk (Laroche et al., 2003; Murray & Schlacter, 1990), even if takaful's underlying principles are designed to address such concerns (Echchabi & Ayedh, 2015). Therefore, this study hypothesizes:

**H4:** In North-West Nigeria, MSME owner-managers' adoption of general takaful is adversely impacted by uncertainty.

***Awareness***

Awareness, defined as an individual's passive involvement and interest in an issue (Bickford & Reynolds, 2002), is a key determinant of innovation adoption. Numerous studies confirm a positive relationship between awareness and adoption (e.g., Mahdzan et al., 2017; Rogers, 2003). High awareness of an innovation's positive attributes fosters positive perceptions, while low awareness can lead to negative ones (Rogers, 2003; Kotler & Armstrong, 2001). This is consistent with behavioral finance research, which suggests that well-understood financial products are more likely to be adopted where individuals tend to avoid ambiguity, seeking information to increase familiarity and knowledge (Heath & Tversky, 1991). In addition, the competence hypothesis also done by (Heath & Tversky, 1991) posits that increased knowledge reduces perceived ambiguity, improving decision-making. Similarly, familiarity bias (Cao et al., 2011) can influence financial choices. In the context of Islamic finance, prior research emphasizes the importance of public education and awareness campaigns (Mahdzan et al., 2017; Ringim, 2013). Regarding takaful adoption, while several studies report a positive relationship with awareness (Dandago et al., 2020; Husin & Haron, 2020a), others have found insignificant effects (Kazaure, 2019; Khan & Siddiqui, 2017). This inconsistency necessitates further investigation. This study examines the influence of awareness,

specifically comprehension of general takaful features, concepts, benefits, and principles, on adoption among MSME owner-managers in North-West Nigeria. We therefore hypothesize that:

**H5:** In North-West Nigeria, MSME owner-managers' adoption of general takaful is positively impacted by awareness.

***Government Support***

Government support, encompassing policies, regulations, and political backing (Amin et al., 2011), plays a crucial role in influencing individual and business decisions, particularly within the financial sector (Abubakar, 2018; Lajuni et al., 2017). Malaysia's success in Islamic finance exemplifies this influence (Lajuni et al., 2017). This support aligns with the concept of facilitating conditions in innovation adoption literature (Tan & Teo, 2000; Venkatesh et al., 2003), reflecting the perceived availability of necessary environmental and technical support (Venkatesh et al., 2003). Government support, through policies, regulations, incentives, and infrastructure, can significantly impact MSME financing decisions, including takaful adoption.

While prior innovation adoption studies often report a positive relationship between government support and adoption (Mandari & Chong, 2018; Lajuni et al., 2017), findings are not always consistent. For example, Amin et al. (2011) found government support insignificant in influencing Islamic personal financing adoption, while Lajuni et al. (2017) demonstrated its significant role in Islamic banking product usage. In the takaful literature, government support's influence is under-explored empirically (Sherif & Shaairi, 2013). Although some studies highlight its importance (Kazaure, 2019), empirical validation is lacking. While Husin & Rahman (2013) identified facilitating conditions as a potential determinant of family takaful adoption, this remains untested. Qualitative studies, however, suggest a positive link (Husin & Haron, 2020a; Yusuf & Babalola, 2015). This study, therefore, examines the influence of government support on general takaful adoption among MSME owner-managers in North-West Nigeria, hypothesizing that:

**H6:** In North-West Nigeria, MSME owner-managers' adoption of general takaful is positively impacted by government support.

***Social Influence***

Numerous studies have examined social influence, which is defined as the effect of reference groups on the acceptance of innovations (Badaj & Radi, 2018; Al Balushi et al., 2018). Research has validated its significance in a number of situations, such as choosing a bank (Blankson et al., 2007) and embracing internet banking (Al-Somali et al., 2009). It has been found to impact entrepreneurial decisions (Al Balushi et al., 2018; Badaj & Radi, 2018) and is synonymous with subjective norm (Ajzen, 1991), social considerations (Thompson et al., 1991), and the opinions of significant others and peer influence (Taylor & Todd, 1995). MSME owner-managers rely on both internal and external groups for support. This aligns with the herd mentality bias in behavioral finance, where individuals imitate others (Zhou & Anderson, 2013; Areiqat et al., 2019), a phenomenon also observed in firm financial decisions (Brendea & Pop, 2019).

Numerous research have demonstrated a positive correlation between adoption and social impact in the context of takaful (Kehinde & Sharofiddin, 2021; Aziz et al., 2020). For instance, Aziz et al. (2020) discovered that subjective norms had both direct and indirect effects on family takaful adoption. Salman & Hassan (2020) have emphasized the importance of social variables in the acceptability of takaful. Nevertheless, some research has found little impacts (e.g., Echchabi &

Ayedh, 2015; Husin & Rahman, 2016a, 2016b). Further research is necessary to resolve this discrepancy.

This study examines the influence of social influence, encompassing significant others, external groups, and internal groups, on general takaful adoption among MSME owner-managers in North-West Nigeria, hypothesizing:

**H7:** In North-West Nigeria, MSME owner-managers' adoption of general takaful is positively impacted by social influence.

***Religiosity***

Religiosity, the degree to which individuals adhere to Shariah principles (Jaffar & Musa, 2014; Amin et al., 2011; Worthington et al., 2003), has been extensively studied in the context of Islamic finance adoption. It encompasses both individual religious inclination towards Islamic products (Yasin & Hati, 2017) and perceptions of Islamic financial institutions' adherence to Shariah (Kaakeh et al., 2019; Jaffar & Musa, 2014; Amin et al., 2011). Numerous studies have demonstrated a positive relationship between religiosity and the adoption of Islamic financial products (Janah et al., 2020; Bananuka et al., 2019; Kaakeh et al., 2019; Obeid & Kaabachi, 2016; Tara et al., 2014). This association is particularly relevant to takaful, where religiosity has also been a subject of inquiry. While several studies indicate a positive link between religiosity and takaful adoption (Salman & Hassan, 2020; Dandago et al., 2020; Hassan & Abbas, 2019; Kirfi et al., 2019), others have found no significant relationship (Adamu, 2018; Mokhtar et al., 2017; Husin & Rahman, 2016b). This study hypothesizes that religiosity positively influences general takaful adoption among Micro, Small, and Medium Enterprise (MSME) owner-managers in North-West Nigeria, testing the following hypothesis:

**H8:** In North-West Nigeria, MSME owner-managers' adoption of general takaful is positively impacted by religiosity.

***Prior Loss Experience***

According to Weinstein (1989), experience is a powerful behavioral trigger. Purchase decisions in traditional insurance are heavily influenced by past loss experience (Innocenti et al., 2019; Thistlethwaite et al., 2018; Turner et al., 2014; Norris, Smith & Kaniasty, 1999). People who have experienced loss in the past are more prone to take precautions (Weinstein, 1989). Research indicates that those who have had significant losses in the past, especially from natural catastrophes, are more likely to get insurance (Weinstein, 1989; Norris et al., 1999; Turner et al., 2014; Thistlethwaite et al., 2018). Adoption of income protection insurance is also correlated with adverse health experiences (Innocenti et al., 2019). The impact of past loss experiences on takaful adoption has not yet been investigated, yet. This study posits that MSME owner-managers who have previously experienced a loss are more inclined to use generic takaful.
Therefore, the following hypothesis is tested:

**H9:** The adoption of general takaful by MSME owner-managers in North-West Nigeria is positively influenced by prior loss experience.

**Methodology**

***Population and Sample***

The target population for this survey comprised MSMEs in the North-West region of Nigeria, specifically Kano and Kaduna. According to the SMEDAN & NBS (2017) report, these states had

1,827,402 and 1,934,037 MSMEs, respectively, most of which operated informally without formal registration. Due to the absence of a centralized MSME database in Nigeria, a sampling frame was derived from registered MSMEs listed with the SMEDAN Kano Branch and the Kaduna Investment Promotion Agency, following a similar approach by Oke (2019) in North-Central Nigeria. Given the uniform characteristics of MSMEs across Nigeria (Oke, 2019; SMEDAN & NBS, 2017), this formal list was considered representative of the broader MSME population. The dataset included business names, addresses, and contact details, facilitating the application of probability sampling techniques—specifically proportionate stratified and systematic sampling. These methods enhance the generalizability of research findings (Sarstedt et al., 2018; Elfil & Negida, 2017).

A sample of 400 MSMEs was randomly selected for this study, aligning with established guidelines for sample size determination (Krejcie & Morgan, 1970; Roscoe, 1975; Creswell, 2014; Sekaran & Bougie, 2016; Hair et al., 2014). Kline (2015) classifies sample sizes in SEM as small (<100), medium (100–200), and large (≥200), supporting the adequacy of the chosen sample**.** Consequently, a sample of 400 was deemed sufficient.

***Research Instrument and Data Collection***

A self-administered questionnaire was used in this study to collect information from a subset of MSME owner-managers. The questionnaire was accompanied by a cover letter that ensured ethical considerations including secrecy and privacy. The survey approach was selected because to its anticipated response rates, population size, privacy, and cost effectiveness. The Drop-off/Pick-Up (DOPU) method was used to distribute 400 surveys in person, while research assistants helped with administration.

The three sections of the questionnaire—demographic data, independent variables, and dependent variables—were derived from verified research in the literature on innovation uptake. Because of its improved validity and reliability, a 7-point Likert scale was employed. Prior to the main survey, the instrument was subjected to a pilot test and expert evaluation to guarantee its validity, reliability, and clarity.

***Data Analysis***

Descriptive and inferential statistics were used to examine the data, with partial least square structural equation modeling (PLS-SEM) serving as the main analytical technique. There were two steps in the process. The measurement model (outer model) was first evaluated for validity and reliability, including discriminant validity (cross-loadings, Fornell-Larcker criterion, and HTMT ratio), convergent validity (average variance extracted), internal consistency reliability (Cronbach's alpha and composite reliability), and individual item reliability (factor loadings) (Awang, 2011; Hair et al., 2014). Second, in order to investigate the connections between test hypotheses and latent constructs, the structural model (inner model) was estimated. This involved assessing path coefficients, Path coefficients, $R^2$, $f^2$, $Q^2$, model goodness-of-fit (GoF), and out-of-sample predictive relevance (PLSpredict) were evaluated in this process (Hair et al., 2021). A variance-based method called PLS-SEM was used to test the hypotheses and examine the connections between the independent and dependent components.model goodness-of-fit (GoF), and out-of-sample predictive relevance (PLSpredict) (Hair et al., 2021). PLS-SEM, a variance-based approach, was utilized to analyze relationships among the dependent and independent constructs, and to test the hypotheses proposed.

## Results and Findings

### *Profile of Respondents*

Most respondents were young (76.6% aged 18-40), male (83.7%), and relatively educated, reflecting regional demographics and graduate unemployment. Owner-managed businesses (70%) were prevalent, typically sole proprietorships or partnerships (80%) operating for 5-10 years. Wholesale/retail and agriculture were the dominant business lines. While takaful awareness was moderate (50.8%), usage was low (70.5% reported no takaful products), despite frequent prior losses (76.3%). Encouragingly, a substantial majority (82%) perceived takaful as a valuable support mechanism for their businesses. This suggests a potential market for takaful products with increased awareness and understanding of the benefits takaful provides for MSMEs.

### *Measurement Model Evaluation*

To estimate the measurement model, the following analysis were conducted: individual item reliability test, internal consistency reliability test, convergent validity assessment and discriminant validity test (Hair et al., 2019; Henseler et al., 2009).

*Reliability of Individual Items*

The standardized factor loading is used to evaluate the reliability of individual items (indicators) evaluating the latent components. Standardized factor loadings greater than 0.708 are preferred since they demonstrate that more than half of the indicator variation may be explained by the reflective construct under study (Hair et al., 2019). Hair et al. (2021) argued, however, that factor loadings between 0.40 and 0.70 should only be maintained if eliminating items will jeopardize the material's authenticity. However, items with loadings below 0.40 need to be eliminated. if the removal of indicators with factor loadings between 0.40 and 0.708 leads to an increase in convergent validity or internal consistency reliability over the recommended threshold value.

Six components in this study fell below the 0.708 criteria (AW1=0.669, AW7=0.691, CX2=0.561, RA1=0.662, RA5=0.681, UC1=0.599). Nevertheless, the items were kept since they had no effect on the convergent validity or composite reliability scores (Table 1). Additionally, removing certain pieces (such CX2) may have a detrimental effect on the construct's content validity and should be kept. However, two items (CX1 and CX4) that had factor loadings below 0.40 were eliminated.

*Internal Consistency Reliability*

Internal consistency reliability shows the degree of relationship between items evaluating a construct (Hair et al., 2021). Composite reliability (CR) and Cronbach's alpha are the two most widely used techniques for evaluating internal consistent dependability. According to Sarstedt et al. (2017), this study used both methods to evaluate the items' internal consistency reliability in assessing the latent components. According to Hair et al. (2019: Sekaran & Bougie, 2016), a minimum threshold of 0.60 is considered enough for exploratory research inquiries (for both Cronbach's alpha and composite reliability). Higher coefficients between 0.70 and 0.95, however, are often the best thresholds (Hair et al., 2021; Hair et al., 2019; Sarstedt et al., 2017). All of the study's latent variables had Cronbach's alpha and composite reliability (CR) coefficients that fell within the permissible range (Table 1).

*Convergent Validity*

Convergent validity indicates the degree of correlation of measurement items that represent a particular construct (Hair et al., 2019; Hair et al., 2014) and it is measured using the average variance extracted (AVE) value. AVE shows the average variance shared between a latent construct and the measurement items. To calculate the AVE the factor loading of each individual indicator is squared

and afterward the mean is calculated (Hair et al., 2019). Acceptable AVE should be at least 0.50 or above. This indicates that 50% or more of the variance in the measurement items are reflective of the latent construct (Hair et al., 2021; Hair et al., 2019). The criteria for convergent validity were met in this study as the AVE for all latent constructs exceeded the minimum requirement d of 0.50 (Table 1).

*Discriminant Validity*

To ensure that each latent construct in the model is empirically distinct and that the measurement indicators are not capturing multiple dimensions, discriminant validity must be established in PLS-SEM. By confirming that the constructs in the measurement model are conceptually and statistically distinct, discriminant validity essentially upholds the validity of the model. This distinction, according to Sarstedt et al. (2017), is determined by two primary indicators: the degree of construct correlation and the extent to which each indicator just assesses a single construct. Researchers frequently use the Fornell-Larcker (1981) criterion, cross-loading analysis (Chin, 1998), and the more sophisticated Heterotrait-Monotrait (HTMT) ratio technique (Henseler, Ringle & Sarstedt, 2015) to assess discriminant validity. The latter has gained fame recently for its high sensitivity in identifying discriminant validity issues.

Cross-loadings are used to attain discriminant validity when each indicator's loading exceeds all of its cross-loadings (Henseler et al., 2009). Additionally, according to Chin (1998), discriminant validity is attained when, in relation to other constructs in the model, each indicator has the largest loading on the construct it is measuring. When the AVE value of a single latent construct exceeds the squared correlations with other latent constructs in the structural model, discriminant validity is satisfied according to the Fornell and Larcker criterion. According to Heseler et al. (2009), this indicates that each latent construct has a higher variance with its own block of indicators than with other constructs that reflect a different block of items.

The HTMT ratio, a recent and widely used technique for discriminant validity evaluation in PLS-SEM was also used in this study. According to Henseler et al., 2015, a lower HTMT ratio (= 0.85 or < 0.85) indicates discriminant validity, while a higher HTMT ratio (> 0.85 or > 0.90) signifies lack of discriminant validity. In the current study all three criteria were met, confirming discriminant validity (Table 2). The next phase in evaluating PLS-SEM is to assess the structural model.

Table 1: Loadings, Cronbach's Alpha, Composite Reliability (CR) and AVE

| Constructs | Items | Loadings | Cronbach's Alpha | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|---|---|
| Awareness | AW1 | 0.669 | 0.887 | 0.915 | 0.575* |
| | AW2 | 0.782 | | | |
| | AW3 | 0.784 | | | |
| | AW4 | 0.750 | | | |
| | AW5 | 0.819 | | | |
| | AW6 | 0.813 | | | |
| | AW7 | 0.691 | | | |
| | AW8 | 0.745 | | | |
| Compatibility | CP1 | 0.849 | 0.881 | 0.913 | 0.679 |
| | CP2 | 0.875 | | | |
| | CP3 | 0.859 | | | |
| | CP4 | 0.744 | | | |
| | CP5 | 0.786 | | | |
| Complexity | CX2 | 0.561 | 0.736 | 0.818 | 0.610 |
| | CX3 | 0.785 | | | |
| | CX5 | 0.948 | | | |
| General Takaful Adoption | AI1 | 0.915 | 0.864 | 0.931 | 0.772* |
| | AI2 | 0.897 | | | |
| | AI3 | 0.920 | | | |
| | AI4 | 0.775 | | | |
| Government Support | GS1 | 0.823 | 0.922 | 0.939 | 0.718 |
| | GS2 | 0.851 | | | |
| | GS3 | 0.878 | | | |
| | GS4 | 0.885 | | | |
| | GS5 | 0.815 | | | |
| | GS6 | 0.830 | | | |
| Relative Advantage | RA1 | 0.662 | 0.887 | 0.912 | 0.601 |
| | RA2 | 0.722 | | | |
| | RA3 | 0.851 | | | |
| | RA4 | 0.829 | | | |
| | RA5 | 0.681 | | | |
| | RA6 | 0.817 | | | |
| | RA7 | 0.838 | | | |
| Religiosity | RG1 | 0.854 | 0.912 | 0.932 | 0.696 |
| | RG2 | 0.866 | | | |
| | RG3 | 0.842 | | | |
| | RG4 | 0.825 | | | |
| | RG5 | 0.791 | | | |
| | RG6 | 0.825 | | | |
| Social Influence | SI1 | 0.804 | 0.936 | 0.946 | 0.662 |
| | SI2 | 0.828 | | | |
| | SI3 | 0.801 | | | |
| | SI4 | 0.800 | | | |
| | SI5 | 0.819 | | | |

| | | | | | |
|---|---|---|---|---|---|
| | SI6 | 0.874 | | | |
| | SI7 | 0.779 | | | |
| | SI8 | 0.801 | | | |
| | SI9 | 0.813 | | | |
| Uncertainty | UC1 | 0.599 | 0.898 | 0.914 | 0.642 |
| | UC2 | 0.816 | | | |
| | UC3 | 0.865 | | | |
| | UC4 | 0.842 | | | |
| | UC5 | 0.820 | | | |
| | UC6 | 0.836 | | | |

Table 2: HTMT Ratio

| **Constructs** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** |
|---|---|---|---|---|---|---|---|---|---|
| Awareness | | | | | | | | | |
| Compatibility | 0.334 | | | | | | | | |
| Complexity | 0.141 | 0.188 | | | | | | | |
| General Takaful Adoption | 0.382 | 0.657 | 0.180 | | | | | | |
| Government Support | 0.528 | 0.291 | 0.200 | 0.320 | | | | | |
| Relative Advantage | 0.371 | 0.743 | 0.197 | 0.680 | 0.358 | | | | |
| Religiosity | 0.337 | 0.726 | 0.176 | 0.800 | 0.334 | 0.702 | | | |
| Social Influence | 0.583 | 0.252 | 0.117 | 0.370 | 0.604 | 0.347 | 0.368 | | |
| Uncertainty | 0.145 | 0.239 | 0.700 | 0.153 | 0.193 | 0.162 | 0.143 | 0.098 | |

***Structural Model Evaluation***

The primary statistical tests used to evaluate the structural model in PLS-SEM were the test of significance of the model's path coefficients, the model's goodness of fit (GoF), the coefficient of determination (R2), the effect size (f2), the predictive relevance (Q2), the model's goodness of fit (GoF), and the out-of-sample predictive relevance (PLSpredict) (Hair et al., 2021; Hair et al., 2019).

PLS-SEM is a distribution-free approach that uses a bootstrap resampling procedure to assess the significance of the route coefficients (Hair et al., 2021). Bootstrapping with 5000 resamples was used to determine the importance of path coefficients. A one-tailed significance level of $p < 0.05$ and $p < 0.01$ was employed, as recommended by Hair et al. (2014). The model fit (GoF) was evaluated using the standardized root mean square residual (SRMR), as recommended by Henseler, Hubona, and Ray (2016), before the significance test. To satisfy model fit (GoF), an SRMR value of less than 0.08 is considered acceptable. The current study's SRMR was 0.066.

*Hypothesis Testing*

Nine (9) hypotheses were tested regarding the influence of various constructs on general takaful adoption among MSME owner-managers in North-West Nigeria. Table 3 summarizes the results.

Table 3: Hypothesis Testing Results

| Hypothesis | Construct | Path Coefficient (β) | t-value | p-value | Supported ? |
|---|---|---|---|---|---|
| H1 | Relative Advantage → General Takaful Adoption | 0.150 | 2.616 | < 0.01 | Yes |
| H2 | Compatibility → General Takaful Adoption | 0.107 | 1.926 | < 0.05 | Yes |
| H3 | Complexity → General Takaful Adoption | -0.047 | 1.029 | > 0.05 | No |
| H4 | Uncertainty → General Takaful Adoption | -0.023 | 0.452 | > 0.05 | No |
| H5 | Awareness → General Takaful Adoption | 0.077 | 1.724 | < 0.05 | Yes |
| H6 | Social Influence → General Takaful Adoption | 0.077 | 1.813 | < 0.05 | Yes |
| H7 | Government Support → General Takaful Adoption | -0.002 | 0.044 | > 0.05 | No |
| H8 | Religiosity → General Takaful Adoption | 0.499 | 7.738 | < 0.01 | Yes |
| H9 | Prior Loss Experience → General Takaful Adoption | 0.087 | 2.202 | < 0.01 | Yes |

As shown in Table 3, six out of the nine hypotheses were supported. Religiosity emerged as the strongest predictor of general takaful adoption ($\beta = 0.499$, $p < 0.01$).

*Coefficient of Determination ($R^2$)*

Finding the model's explanatory capacity by computing the coefficient of determination ($R^2$), sometimes referred to as the in-sample predictive power, is the next statistical test to assess the structural model. Due to the influence of the independent variables in the structural model, the $R^2$ shows the extent of variance in the dependent variable (Hair et al., 2014). $R^2$ values range from 0 to 1, with better explanatory power indicated by positive values around 1. The current study obtained an $R^2$ value of 0.60, meaning that the model explains 60% of the variance in the overall uptake of takaful. In the social sciences, this value is regarded as moderate (Hair et al., 2011; Chin, 1998) or considerable (Cohen, 1988).

*Effect Size ($f^2$)*

To ascertain the relative weight of each predictor variable in the model, the effect size ($f^2$) values were calculated. The $f^2$ shows the unique contribution of each independent variable on the variance seen in the dependent (Sarstedt et.al., 2017). It is used to determine the practical significance of a predictor variable in real life situations. Table 4 presents the $f^2$ values and their corresponding classifications as proposed by Cohen, 1988.

Table 4: Effect Size ($f^2$) of Predictor Variables

| Construct | $f^2$ | Effect Size |
|---|---|---|
| Relative Advantage | 0.026 | Small |
| Compatibility | 0.013 | None |
| Complexity | 0.003 | None |
| Uncertainty | 0.001 | None |
| Awareness | 0.009 | None |
| Social Influence | 0.008 | None |
| Government Support | 0.000 | None |
| Religiosity | 0.296 | Medium |
| Prior Loss Experience | 0.020 | Small |

From the above table, religiosity exhibited a medium effect size, while relative advantage and prior loss experience demonstrated small effects. The remaining constructs showed no effects.

*Predictive Relevance ($Q^2$)*

Predictive relevance ($Q^2$) is important to PLS-SEM approach as it is more inclined to prediction and explanation of variance in the dependent variable. To evaluated predictive relevance the cross-validated redundancy ($Q^2$) blindfolding procedure was employed (Geisser, 1974; Stone, 1974. As a standard measure, independent variables with $Q^2$ values of 0.02, 0.15, and 0.35 are deemed to have small, medium, and large predictive relevance, respectively, on a dependent variable in a structural model (Sarstedt et al. 2017; Chin, 1998). In this study, a $Q^2$ value of 0.472 was achieved (Table 5, column labelled 1-SSE/SSO).

Table 5: Construct Cross-Validated Redundancy ($Q^2$)

| Construct | SSO | SSE | $Q^2$ (=1-SSE/SSO) |
|---|---|---|---|
| General takaful Adoption | 1356 | 715.491 | 0.472 |

*Out-of-Sample Predictive Power (PLSpredict)*

The PLSpredict procedure (Shmueli et al., 2016) was employed to evaluate the out-of-sample predictive power of the model. Table 3 presents the Root Mean Square Error (RMSE) for the PLS-SEM model and a naïve Linear Model (LM) benchmark.

As a prediction-oriented method, PLS-SEM necessitates estimating both the structural model's out-of-sample predictive capacity (PLSpredict) and in-sample explanatory power (R2). A structural model's capacity to "predict the values of new or future observations" that are not included in the estimating process is known as PLSpredict (Hair et al., 2021). The inability to estimate out-of-sample prediction is a flaw in both R2 and Q2 approaches.

Shmueli et al. (2016) developed the PLSpredict approach to estimate out-of-sample prediction in PLS-SEM in order to overcome this constraint. Because of the greater emphasis on the practicality of research findings, it is advised that scholars incorporate out-of-sample prediction as a standard component of structural model evaluation in PLS-SEM. The PLSpredict approach, which uses predictive metrics like Mean Absolute Error (MAE) and Root Mean Square Error (RMSE) to assess

prediction accuracy for the indicators of endogenous entities, makes this possible. RMSE is usually selected due to its sensitivity to larger prediction errors (Hair et al., 2021; Shmueli et al., 2019).

The PLS-SEM model's RMSE (or MAE) results are contrasted with those of a naïve linear regression (LM) benchmark to assess predictive power. The following is how Shmueli et al. (2019) interpret the model:

1. High predictive power: every indicator exhibits prediction errors that are less than those of the LM benchmark;
2. Medium predictive power: the majority of indicators outperform the benchmark;
3. Low predictive power: very few indicators perform better than the reference; and
4. No predictive power: there is no improvement over the baseline in any of the metrics.

All indicators in the PLS-SEM model in this study had lower RMSE values than the LM benchmark, according to results from the PLSpredict process (Table 6), which validates the model's excellent predictive relevance (Shmueli et al., 2019).

Table 6: Out-of-Sample Predictive Power (PLSpredict) – RMSE Values

| **Item** | **PLS-SEM RMSE** | **LM RMSE** |
|---|---|---|
| AI1 | 1.284 | 1.403 |
| AI2 | 1.295 | 1.369 |
| AI3 | 1.261 | 1.333 |
| AI4 | 1.604 | 1.682 |

The structural model in this study demonstrates satisfactory fit, substantial explanatory power, and high predictive relevance. Religiosity emerged as the most influential factor in general takaful adoption. The robustness and usefulness of the structural model in describing and predicting the behavior of the dependent construct are further supported by the PLSpredict analysis, which further validates the model's excellent predictive capabilities. These findings contribute to a deeper understanding of the factors driving takaful adoption among MSME owner-managers.

**Discussion**

This study investigated the drivers of general takaful adoption among Micro, Small, and Medium Enterprise (MSME) owner-managers in North-West Nigeria, employing an extended Diffusion of Innovation (DOI) framework. The research revealed a complex interplay of factors influencing adoption decisions. Specifically, perceived *relative advantage* (benefits of takaful over conventional insurance) and *compatibility* (alignment with values and beliefs) positively influenced adoption intentions, indicating that MSMEs consider both practical and ethical aspects. While some previous takaful studies differed regarding relative advantage, this study's findings may reflect the pragmatic nature of MSME owner-managers.

Complexity and uncertainty, however, did not significantly impact adoption, potentially due to the favorable perception of religiously framed products like takaful within a predominantly Muslim context. Using the theoretical stances of Diffusion of Innovation (DOI) and UTAUT, as well as the lens of religious framing, it is possible to effectively evaluate the negligible impact of perceived complexity on MSME owner-managers' adoption of general takaful. In addition to being a financial tool, takaful is a Shariah-compliant insurance scheme that is based on Islamic values of ethical risk-

sharing, mutual assistance (*ta'awun*), avoiding *riba* (interest) and *gharar* (excessive uncertainty). Because of these religious underpinnings, takaful is probably seen more favorably, which lessens the importance of complexity and uncertainty as adoption obstacles.

According to the UTAUT perspective, religious familiarity may have an impact on the effort expectancy construct, which is related to perceived ease of use. All the MSME owner-managers in this study were Muslims who worked in the North-West region of Nigeria, where Islamic finance principles are generally accepted and understood. As a result, takaful might not be seen as complicated or hard to comprehend because its religious designation strengthens social power, trust, and enabling circumstances, all of which are important factors in the UTAUT paradigm.

Similar to this, the DOI theory asserts that characteristics like compatibility and complexity have an impact on the adoption of innovations. In this instance, worries regarding takaful's intricacy are probably outweighed by its religious compliance with Islamic principles. The product's acceptance is accelerated because it is viewed as a morally and culturally appropriate solution rather than as a new or unusual innovation. Furthermore, in this case, the DOI attribute of uncertainty reduction is especially pertinent. The design of takaful specifically addresses the problem of uncertainty, which is one of the main issues with traditional insurance, by abiding by Islamic law, which forbids speculative features. This religious guarantee boosts product confidence and lowers perceived risk.

The results imply that religiously compatible products are not only seen more favorably but are also free from common evaluative obstacles like complexity and uncertainty in religiously homogeneous groups, particularly those with strong Islamic tendencies. This emphasizes how crucial cultural background and religious identity are in influencing how consumers think and act, especially when it comes to using financial services.

The importance of religious framing and the applicability of UTAUT and DOI constructs in innovation acceptance in faith-based contexts are highlighted by the lack of a significant negative effect of complexity and ambiguity on general takaful adoption. It implies that a product's spiritual and ethical conformity to Islamic teachings can successfully remove perceived barriers in areas with Muslims in the majority, thus facilitating smoother adoption pathways.

In a similar vein, the adoption of takaful by MSMEs in Nigeria was found to be unaffected statistically by Government support. Perceived shortcomings in governmental involvement, namely in the creation and implementation of extensive regulatory frameworks, may be the cause of this unanticipated result. This is plausible, as the Nigerian government has not paid much attention to promote the expansion and adoption of takaful, which explains this insignificance. Historical data supports this view: Takaful operated in Nigeria for almost ten years without any legal or regulatory framework (2003 - 2013) (Dandago et al., 2020; NAICOM, 2013).

This lack of effect encourages a closer look at the underlying causes that might be preventing the government influence from having an impact. The first is that low policy visibility can lead to low public awareness and involvement when government activities are either poorly articulated or not sufficiently publicized. Second, people might not pay attention to government initiatives, regardless of their purpose or scope, due to a widely held mistrust of institutions in Niger. Third, a lack of regulatory enforcement damages the legitimacy and efficacy of current regulations, which lessens their ability to influence behavior.

Considering these contextual factors, the government must not only create strong legal and regulatory frameworks but also aggressively support takaful through focused public awareness initiatives, open policy implementation, and reliable enforcement methods. For takaful products to be widely adopted in Nigeria and to positively influence public opinion, increased visibility, trust-building, and institutional accountability are crucial.
Religiosity emerged as the strongest predictor of takaful adoption, consistent with research in Islamic finance, underscoring the critical role of faith-based motivations. Finally, prior loss experience significantly and positively influenced adoption, mirroring findings in conventional insurance research and suggesting that direct experience with loss heightens the perceived need for financial protection.

In essence, this study demonstrates that while practical benefits, ethical alignment, awareness, social networks, religiosity, and past losses drive takaful adoption, complexity and uncertainty are less influential, likely due to the religious framing. The lack of government support impact emphasizes the need for more proactive government engagement in developing the takaful sector.

## Conclusion

The non-economic determinants impacting MSME owner-managers' adoption of General Takaful in North-West Nigeria, a region with a sizable Muslim population and a low insurance penetration rate were examined in this study. The study investigated how relative advantage, Compatibility, complexity, uncertainty, awareness, government support, social influence, loss experience, and religiosity affect the adoption of Takaful by combining concepts from the Diffusion of Innovation theory and the Unified Theory of Acceptance and Use of Technology. Within this crucial sector of the Nigerian economy, the results provide important insights into the particular factors that encourage and hinder the adoption of Takaful.

Understanding these factors is crucial for Takaful operators, policymakers, and regulators seeking to promote financial inclusion, enhance MSME resilience, and unlock the potential of Islamic finance in Nigeria. Ultimately, this research contributes to the growing body of knowledge on Takaful adoption and provides a foundation for developing targeted strategies to increase its uptake among MSMEs in Nigeria and potentially other similar contexts.

## Research implications

### *Theoretical implications*

This study contributes to the body of knowledge on innovation adoption, specifically within the context of Islamic finance. By integrating the Diffusion of Innovation (DOI) theory with constructs from the Unified Theory of Acceptance and Use of Technology (UTAUT), it offers a more nuanced understanding of the factors influencing General Takaful adoption among MSMEs. The research explores the interplay of factors like relative advantage, compatibility, complexity, uncertainty, awareness, government support, social influence, and religiosity, addressing gaps in existing literature, particularly in the under-researched African context. It also tests the applicability and relevance of established adoption theories in a new domain, potentially leading to refinements or extensions of these theories.

### *Practical Implications*

The findings of this study provide valuable insights for Takaful operators, policymakers, and MSME owner-managers. For Takaful operators, understanding the key drivers of adoption allows for targeted marketing strategies and product development. For example, if complexity is a significant barrier, operators can simplify their products and communication materials. Highlighting

the compatibility of Takaful with Islamic values and demonstrating its relative advantage can also boost adoption. Policymakers can leverage the findings to create a supportive regulatory environment and implement initiatives to raise awareness about Takaful among MSMEs. For MSME owner-managers, the study provides information to make informed decisions about risk management and financial planning. By understanding the benefits and principles of General Takaful, they can better assess its suitability for their businesses. Ultimately, this research can contribute to increased financial inclusion and resilience among MSMEs in North-West Nigeria.

**Research limitations and suggestions for future research**

This study focuses exclusively on non-economic factors influencing General Takaful adoption among MSME owner-managers in North-West Nigeria, limiting its comprehensiveness by excluding economic determinants. The geographic scope restricts generalizability, and reliance on self-reported data may introduce common method bias. The cross-sectional design constrains insights into evolving perceptions, while the sole use of quantitative methods limits depth. Furthermore, the study examines adoption intention rather than actual usage due to Takaful's early-stage adoption, affecting predictive accuracy. The model explains 64.8% of the variance, indicating the need for additional constructs.

Future research should explore economic influences on Takaful adoption and conduct comparative studies across diverse Nigerian regions and religious groups. Longitudinal and mixed-methods approaches could enhance understanding, while qualitative methods may provide deeper insights into decision-making processes. Once Takaful penetration increases, research should shift focus to actual usage. Expanding the model with constructs such as perceived fatalism and optimism bias could improve explanatory power. Finally, multi-method data collection strategies could mitigate potential biases.

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