“Accessing the impact of farmers’ awareness level and risk management perception on agriculture insurance satisfaction: Mediating role of non-financial satisfaction”

AUTHORS	Ramkrishna Chapagain Rabindra Ghimire Lija Boro

ARTICLE INFO	Ramkrishna Chapagain, Rabindra Ghimire and Lija Boro (2024). Accessing the impact of farmers’ awareness level and risk management perception on agriculture insurance satisfaction: Mediating role of non-financial satisfaction. *Insurance Markets and Companies*, *15*(2), 1-13. doi:10.21511/ins.15(2).2024.01
DOI	http://dx.doi.org/10.21511/ins.15(2).2024.01
RELEASED ON	Friday, 02 August 2024
RECEIVED ON	Monday, 24 June 2024
ACCEPTED ON	Thursday, 25 July 2024

JOURNAL	"Insurance Markets and Companies"
ISSN PRINT	2616-3551
ISSN ONLINE	2522-9591
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
38	3	7

BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

Ramkrishna Chapagain (Nepal), **Rabindra Ghimire** (Nepal), **Lija Boro** (India)

ACCESSING THE IMPACT OF FARMERS' AWARENESS LEVEL AND RISK MANAGEMENT PERCEPTION ON AGRICULTURE INSURANCE SATISFACTION: MEDIATING ROLE OF NON-FINANCIAL SATISFACTION

Abstract

Despite the government's financial support and promotion by the regulator, the agriculture insurance market is still in the nascent stage in Nepal. The paper aims to examine how awareness level and risk management perception affect the farmers' satisfaction, taking non-financial satisfaction as a mediating factor. The study was conducted in two metropolitan cities, Pokhara and Bharatpur, in Nepal. Cluster and purposive sampling design was applied to select the respondents. Opinions were obtained through the structured questionnaire from 400 farmers with experience in agriculture insurance. The survey instrument had two parts. The first part was related to demographic information, while the second part measured attitude to risk management, clients' awareness of insurance, financial satisfaction, and non-financial satisfaction. Almost three forth of the respondents (74.75%) were males and more than half (52%) possessed more than 8 ropani of land. Descriptive statistics, inferential statistics, exploratory factor analysis, confirmatory factor analysis and structural equation modelling were used to arrive at conclusions. The results revealed that respondents' awareness toward agriculture insurance is the most agreed construct (mean = 4.35), followed by financial satisfaction (mean = 3.88), non-financial satisfaction (mean = 3.70), and risk management attitude (mean = 3.5). Although the results did not confirm the mediating effect of non-financial satisfaction on financial contentment and awareness level, a partial mediation effect exists between risk management attitude and financial satisfaction. Financial serenity and non-financial gratification have the strongest association. This study suggests executives and regulators expand risk management capacity and awareness initiatives to increase client satisfaction and loyalty to crop insurance.

Keywords awareness, agriculture insurance, risk management, satisfaction, Nepal

JEL Classification G22, G32

Received on: 24th of June, 2024
Accepted on: 25th of July, 2024
Published on: 2nd of August, 2024

Ramkrishna Chapagain, Assistant Professor of Management, School of Business, Pokhara University, Nepal.

Rabindra Ghimire, Dr., Associate Professor of Management, School of Business, Pokhara University, Nepal. (Corresponding author)

Lija Boro, MPhil Scholar, Guest faculty, Delhi University, India.

Conflict of interest statement:
Author(s) reported no conflict of interest

INTRODUCTION

The foundation of the Nepalese economy, agriculture, was vulnerable to a variety of hazards that reduced livelihood and productivity. Weather-related hazards, extreme climate change, and uncertainty in production result in significant threats to the farmers in Nepal. The Nepalese government, along with regulators and commercial insurers, launched farm insurance schemes in 2013 to lessen the threat they posed. These programs resemble social insurance plans and offer a 50-80% premium subsidy.

Many farmers are still far from agriculture insurance services despite the government of Nepal having granted subsidies of more than USD 30 million for agriculture insurance. A few of the farmers stopped

buying the schemes. Previous papers focused on agriculture insurance items, such as education, income, business size, or farmer location, to evaluate this research gap. The psychological aspects, such as farmers' contentment, knowledge levels, and perceived risk regarding agriculture insurance, have not, however, been taken into consideration. Therefore, it is essential to identify farmers' awareness level, risk management perception, and satisfaction with agriculture insurance, which will aid in policy formulation and effective implementation of agriculture insurance in the future.

1. LITERATURE REVIEW

The level of customer satisfaction can vary depending on the disparity between the anticipated value and the actual value experienced. Perceived value refers to the consumer's holistic assessment of a product or service's usefulness, considering their perceptions of what they receive and give in return (Zeithaml, 1988). Emotional variables, such as ideas, opinions, values, and perceptions, shape an individual's attitude. Satisfaction includes mental, emotional, and behavioral elements (Sang et al., 2023; Eagly & Shelly, 1998).

According to expectancy-value theory, satisfaction with products and services depends upon customer perception of the brands. If customers perceive that the services are as per their expectations, they will become loyal and long-term users of that service. To enhance satisfaction, insurance companies should focus on excellent service by using innovative technologies (Kassem et al., 2021). For instance, timely settlement of claims, proper support from the agents and employees, easy claim settlement process, and transparency in activities motivate the farmers to purchase the insurance products and become loyal to the company. As a result, farmers are delighted with these non-financial activities.

Likewise, satisfaction comes from the financial factors that insurance companies follow while delivering services. Policy-related factors such as an acceptable rate of premium, timely settlement of the claim, proper and timely evaluation of the loss of property by the expert, and the right amount of sum assured according to the premium amounts are some of the factors that determine satisfaction with agriculture insurance (Elias et al., 2016). Insurance companies can also use innovative technologies to improve their services (Lanfranchi & Grassi, 2022).

Non-financial activities have a direct role in promoting financial satisfaction. For instance, timely settlement of claims not only makes customers happy but also helps to minimize costs associated with frequent visits to the insurance companies. The proceeds from claim can invest in productive sector and generate financial returns.

The cultivation sector risk can be observed at three levels: state, markets, and farms (OECD, 2011). It is further classified into manufacturing risk, market hazards, organizational risk, individual risk, and economic risk. Some risks hold more significance than others within certain contexts (Komarek et al., 2020). Prevention and efficient risk mitigation are crucial components of effective agricultural organization management, as highlighted by Jankelová et al. (2021). Producers utilize a range of tools to manage potential losses effectively. These tools can be categorized into three groups: safeguarding oneself, private insurance, and market-based insurance (Fleisher, 1990). Managing risks is crucial in ensuring customer satisfaction in the insurance industry (Pangestuti et al., 2024).

Farmers widely use the agricultural sector insurance options to mitigate uncertainty. However, it is only practical for some farmers to implement such products independently. Understanding farmers' perception of risk, risk aversion, and preferred risk management strategies is crucial for formulating policy tools to assist agricultural risk handling. It is also vital for designing training initiatives that cater to the specific needs of farmers facing challenges such as low crop yields, varying input prices, decreased revenue from agriculture, limited access to meals, price regulation (or lack thereof), and health issues. Given the risks' interconnected nature and potential outcomes, it is impossible to devise a single strategy that can effectively tackle all of them at once. Hence, it is crucial to bundle risk management strategies to successfully tackle the risks (Osiemo et al., 2021).

http://dx.doi.org/10.21511/ins.15(2).2024.01

An insurance company can help farmers reduce risk in a number of ways. It can offer crop insurance programs to lessen the negative effects of climate change or assess client risk profiles and offer recommendations for risk mitigation. Moreover, it can provide various resources to inform clients about risks, expeditiously handle the claim settlement process to minimize disruption to farmers, collaborate with clients on research and innovation to reduce the negative effects of hazards, and much more (Birthal et al., 2021).

A proper risk management strategy creates satisfaction for the farmers in many ways. First, proper risk management creates financial stability for the farmers, reducing product uncertainty. Second, risk management creates the energy for the farmers to focus on their core business and innovative activities. Third, a proper risk management strategy encourages farmers to invest in sustainable businesses that produce long-term returns. Ultimately, a risk management strategy helps the farmers become loyal to the insurance company's services.

Olubiyo et al. (2009) report that farmers engage in insurance with the expectation of risk management. They argue that agriculture insurance is the best strategy for risk management, long-term orientation of the business, and increasing the market share of the products.

The level of farmers' understanding of farming risk control and insurance and their perception of the current insurance services plays a significant role in shaping the demand for agriculture insurance policies.

No matter how good the goods or service is, it will only be successful once it reaches the intended market and target customers (Suleswski & Kloczko-Gajewska, 2014). Awareness of the product and services creates better customer loyalty, which will help the firm achieve its competitive advantage. Awareness of products and services provides room for informed decision-making, increases perceived value, enhances trust and credibility, improves service experience, and enhances brand loyalty. Oguz and Diyanah (2021) find that education and awareness programs through advertisement increase farmers' engagement in insurance. Therefore, it is possible to increase customer satisfaction and loyalty by carrying out different promotional activities.

The paper aims to examine how awareness level and risk management perception affect farmers' satisfaction, taking non-financial satisfaction as a mediating factor. The following hypotheses are formulated:

H1: Non-financial satisfaction leads to financial satisfaction.

H2: Risk management leads to non-financial satisfaction.

H3: Risk management leads to financial satisfaction.

H4: Non-financial satisfaction mediates the relationship between risk management and financial satisfaction.

H5: Awareness leads to non-financial satisfaction.

H6: Awareness leads to financial satisfaction.

H7: Non-financial satisfaction acts as a mediator between financial satisfaction and awareness.

2. METHODOLOGY

The study was conducted using a primary survey of the respondents. The paper employed a structured questionnaire, descriptive statistics, factor analysis, and structure equation modeling (SEM) to analyze the data (Anderson & Gerbing, 1988). The utilization of structural equation modeling (SEM) is justified by its capacity to assess the theoretical relationship inside the model, as well as evaluate the model's reliability and validity through a two-step procedure. Initially, the study assessed the reliability and validity using confirmatory factor analysis. Subsequently, structural equation modeling (SEM) was used to determine the anticipated correlations (Rehman et al., 2021).

Among six metropolitan cities, Bharatpur and Pokhara were randomly chosen. Bharatpur is located in the Chitwan district, which is in the in-

ner Terai region. Pokhara metropolitan city, on the other hand, is situated in the Kaski district, which is in the mid-hill region. These metropolitan cities were selected based on their strong commercial farming practices, convenient access to the market, and easily accessible assistance services for farmers. Both locations experienced various hazards, such as thunderstorms, heavy rains, and storms. Agriculture in Chitwan is substantially endangered by several challenges, including floods, droughts, severe weather, excessive moisture, and elevated heat (Ghimire et al., 2016). After selecting cities, policyholders were those who had already claimed against losing their crops or livestock or whose claims settlement was in process.

Since the claim recipient and claimants' numbers were not easy to calculate, it had been assumed that they were indefinite. The sample size of 400 was determined based on the table proposed by Yamane (1967) and Glenn (1992), assuming a population size of more than 100,000. Out of 400, half of the sample was taken from the Bharatpur metropolis ($n_1 = 200$) and half from the Pokhara metropolis ($n_2 = 200$). A list of claim recipients from 20 general insurance companies in two districts had been prepared. A purposive sampling technique has been applied to select the respondents. Respondents who showed a willingness to share their experience (information-rich) and managed sufficient time for the survey were included in the survey.

The data collection tool was developed following Yazdanpanah et al. (2013) with slight modifications in the Nepalese context. Psychological constructs, risk management attitude, awareness, and satisfaction, were measured using a five-point Likert scale (Likert, 1932), which is widely used in social science (Nunnally, 1994). The survey instrument had two parts. The first part was related to demographic information, while the second part measured attitude to risk management, clients' awareness of insurance, financial satisfaction, and non-financial satisfaction. Permission was taken from the Nepal Insurance Authority (regulator)

Table 1. Socio-demographic statistics

Categories	Attributes	Metropolis				Total		*p*-value χ^2
		Pokhara		Bharatpur				
		N	%	N	%	N	%	
Gender	Male	152	(76)	147	(74)	299	(75)	0.565
	Female	48	(24)	53	(27)	101	(25)	
Education	Literate	96	(48)	62	(31)	158	(40)	0.001
	Up to SLC	33	(17)	78	(39)	111	(28)	
	Intermediate	63	(32)	37	(19)	100	(25)	
	Bachelor's	6	(3)	9	(5)	15	(4)	
	Above Bachelor's	2	(1)	14	(7)	16	(4)	
Age (Years)	≤ 30	25	(13)	26	(13)	51	(13)	0.109
	>30-40	65	(33)	44	(22)	109	(27)	
	> 40-50	69	(35)	72	(36)	141	(35)	
	> 50-60	29	(15)	37	(19)	66	(17)	
	> 60	12	(6)	21	(11)	33	(8)	
Land hold size (*Ropani*)	≤ 8	94	(47)	96	(48)	190	(48)	0.841
	≥ 8	106	(53)	104	(52)	210	(53)	
Satisfaction to sum assured	Strongly satisfied	56	(28)	78	(39)	134	(34)	0.043
	Partially satisfied	119	(60)	103	(52)	222	(56)	
	Strongly not satisfied	25	(13)	17	(9)	42	(11)	
Main source of income	Crop farming and livestock	101	(51)	61	(31)	162	(41)	0.001
	Bird farming	85	(43)	130	(65)	215	(54)	
	Fishery	11	(6)	4	(2)	15	(4)	
	Vegetable farming	2	(1)	2	(1)	4	(1)	
	Fruit farming	1	(1)	3	(2)	4	(1)	
Total		200	100	200	100	400	100	–

http://dx.doi.org/10.21511/ins.15(2).2024.01

to carry out the survey. The value of Cronbach's Alpha (α) indicated that the tool is reliable. While gathering the data, the study considered respondents' rights, confidentiality, and other moral considerations.

The survey found that almost three forth the respondents (74.75%) were male, the largest portion (39.5%) were literate, the highest number (35.25%) were under the age group of 40 to 50, more than half (52%) possessed more than 8 ropani of land, majority (55.5%) were partially satisfied, and more than half (53.5%) respondents' main source of income was bird farming. The study observed a significant association between education, satisfaction to sum assured, and a major source of income with the residence of respondents; however, no significant associations were found between age, and size of landholding with the residence of respondents as shown by the p-value of the Chi-square test.

3. RESULTS

More than two-thirds (69%) of respondents agreed that they have good knowledge of traditional and modern approaches to crop and livestock risk management, while 84% agreed that they were aware that insurance is a useful tool for managing risk and that insurance is a complex legal contract with many terms and conditions. Figure 1 shows the aggregate response toward risk attitude, awareness of insurance services, and satisfaction with financial and non-financial benefits from insurance.

More than one-third (39%) of respondents were strongly satisfied with services provided by insurance companies, which is a non-financial matter. Similarly, 50% of policyholders were strongly satisfied with financial provisions and support.

Farmers' awareness, risk management attitude, and satisfaction with insurance were examined through 26 items. Next, the study calculated the average of each construct utilizing the values of each item on that construct. The average of all constructs is greater than 3, indicating the positive response of the farmers toward the awareness level, risk management perceptions, and satisfaction. However, items like "A traditional way manages the risk of livestock" have a mean below 3 (2.18), indicating that farmers did not believe in the traditional risk management style. They prefer insurance managing the risk rather than adopting the traditional way of risk management. Table 2 shows the mean and standard deviation values of each construct.

Table 2 shows that the mean score of all dimensions was reported as more than average (3.0), which indicates that the level of understanding of policyholders is more than average. Respondents' awareness toward agriculture insurance is the most agreed construct (mean = 4.35), followed by financial satisfaction (mean = 3.88), non-financial satisfaction (mean = 3.70), and risk management attitude (mean = 3.5). Almost all respondents highly agree on "Agriculture insurance is a good plan for a farmer" (mean = 4.96) while disagree on the statement "Crop risks are managed tradition-

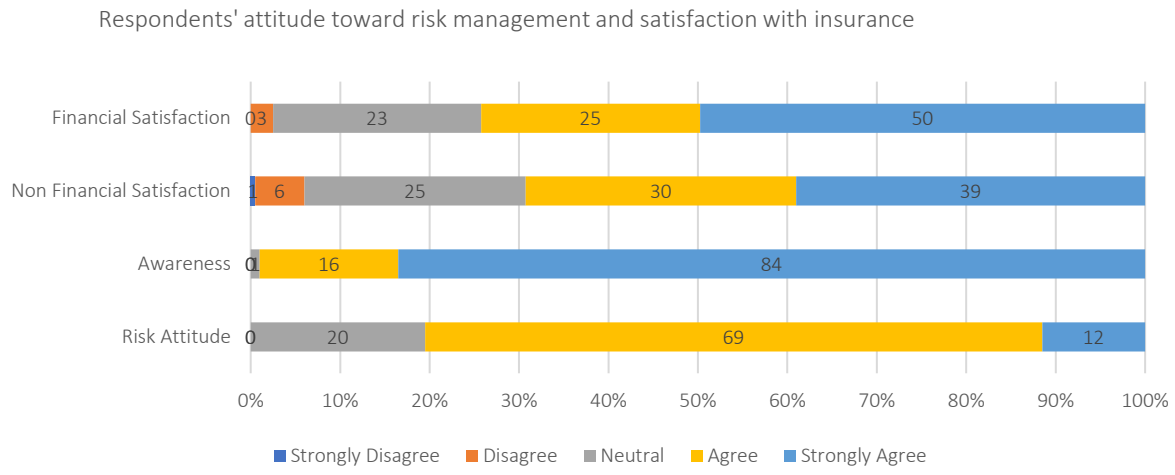


Figure 1. Level of awareness toward insurance risks and satisfaction

Table 2. Descriptive statistics

Dimensions	Mean	SD
Perception of risk management	**3.50**	**1.28**
In my opinion, the agricultural and crop sectors pose higher risks (I1)	4.85	1.20
I believe crop risks are managed in a traditional way (I2)	1.20	1.62
We follow the traditional way of managing livestock risks (I3)	2.69	1.56
An insurance company helps me with techniques of risk management (I4)	3.96	1.17
Traditional risk management technique is reduced due to insurance (I5)	3.95	1.20
Livestock loss is reduced due to medicine and the doctors' help (I6)	4.25	1.22
In my opinion, loss increased after insurance purchase (I7)	2.61	1.01
I do not neglect the protection of my property, although I have an insurance policy (I8)	4.61	1.18
I believe an increase in the market price of livestock has the chance to increase claim frequency (I9)	3.41	1.39
Awareness	**4.35**	**0.80**
An insurance company gives me enough time to become aware of insurance (I10)	3.83	0.68
I know crop and cattle insurance is a good plan for a farmer (I11)	4.96	0.54
I know that insurance follows rules of large numbers (I12)	2.86	1.67
I know insurance requires trust between the insurer and the policyholder (I13)	4.80	0.56
I am aware of minimizing loss, although an insurance company provides me with a claim (I14)	4.83	0.83
I am aware that agriculture insurance is the right plan for a farmer (I15)	4.83	0.51
Non-financial satisfaction	**3.70**	**1.20**
Terms and conditions of insurance pleased me (I16)	3.82	1.05
I am pleased with the service and the cooperation of the insurance company staff (I17)	3.92	1.03
I am pleased with the settlement process of agriculture insurance (I18)	3.37	1.52
I am pleased with the agents' service (I19)	3.81	0.98
I am pleased with the policy and practice of my insurance company (I20)	3.82	1.05
I am pleased with the claim settlement time of my company (I21)	3.46	1.54
Financial satisfaction	**3.88**	**1.20**
I am pleased with the premium amount I paid (I22)	4.14	1.17
I am pleased with the premium subsidy of the government (I23)	3.89	1.21
I am pleased with the sum assured fixed by the company (I24)	3.87	1.26
I am pleased with the loss amount evaluated by experts (I25)	3.87	1.13
I am pleased with the claim settlement amount paid by the company (I26)	3.65	1.21

ally" (mean = 1.2). They disagreed on the statement "Loss increased after insurance purchase" (mean = 2.61). The mean score specifies that farmers were satisfied with insurance services and believed that insurance companies helped reduce their risks.

Next, the study identifies causal relationships among the constructs, examining suitability for factor analysis, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modeling (SEM).

The scale was developed for this study, and the instrument was validated using the EFA tool. The EFA was used to identify suitable items for the construct (questionnaire). Furthermore, KMO (Cerny & Kaiser, 1977), Bartlett's test (Bartlett, 1950), and Communalities test (Field, 2013) were performed and extracted the possible factor using principal component analysis (PCA) with varimax rotation. Table 3 presents the results of KMO and Bartlett's tests.

The KMO and Bartlett's tests are the first step to ensure the given data are appropriate for factor analysis. The KMO value in all items is higher than 0.6, which fulfills the sample adequacy requirement. The *p*-value of Bartlett's test is less

Table 3. KMO and Bartlett's tests

Factors	KMO	Chi-Square	df	p-value
Risk management	0.800	532.86	6	0.001
Awareness	0.787	777.82	6	0.001
Non-financial satisfaction	0.813	656.31	6	0.001
Financial satisfaction	0.833	925.48	6	0.001

http://dx.doi.org/10.21511/ins.15(2).2024.01

than 0.05, indicating a proper correlation among the items used for factor analysis. So, exploratory factor analysis (EFA) can be used. Table 4 presents the results of EFA using PCA with varimax rotation.

EFA is a commonly employed multivariate statistical technique in quantitative studies. It has gained popularity across several disciplines, including social sciences, health sciences, and economics. The sample size of 400 is sufficient for doing factor analysis, as determined by Goretzko et al. (2021).

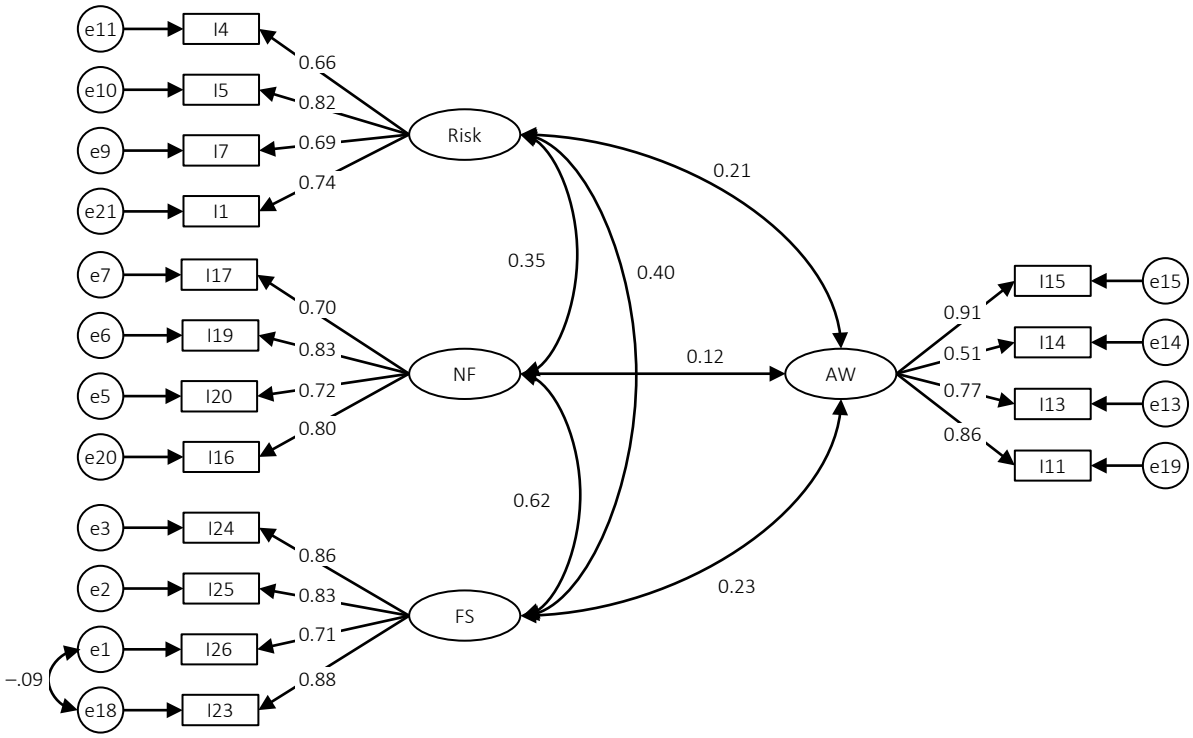
The second and third columns of Table 4 show the results of commonalities, the fourth column shows factor loadings, and the last column shows the total variance explained by the factor. For the first construct, perception of risk management, only four items – I1, I4, I5, and I7 – were loaded. The remaining five items were removed due to cross-loadings and inappropriate loadings. After extraction, these four items were loaded on the single factor, with the commonality of each item being greater than 0.5. The loading is good, as the value of all loadings is greater than 0.5. The four items explain about 64.83% variance, greater than 50%. Likewise, for the second construct, four items, I11, I13, I14, and I15, were loaded among six items on a single factor with good communality value, factor loading, and variance explained.

Further, four items, I16, I17, I19, and I20, were loaded for the third construct. Finally, for the last construct, four items – I23, I24, I25, and I26 – were loaded on a single factor with good communality value, factor loadings, and total variance explained. After EFA was conducted, CFA was performed to validate the scale (Ingenhoff & Buhmann, 2016; Sujati et al., 2020).

The measurement model is the prerequisite for running the structural model. The measurement model should be well-fitted and significant to run the structural model and identify the relationship's direction between the items.

Table 4. Exploratory factor analysis

Items/Factors	Initial	Extraction	Loading	Total variance explained
Perception of risk management				
In my opinion, the agricultural and crop sectors pose higher risks (I1)	1	0.671	0.819	64.83
The insurance company helps me with techniques of risk management (I4)	1	0.584	0.764	
Traditional risk management technique is reduced due to insurance (I5)	1	0.702	0.838	
In my opinion, loss increased after insurance purchase (I7)	1	0.636	0.798	
Awareness				
I know crop and cattle insurance is a good plan for a farmer (I11)	1	0.796	0.91	68.72
I know insurance requires trust between the insurer and the policyholder (I13)	1	0.710	0.892	
I am aware of minimizing loss, although the insurance company provides me with a claim (I14)	1	0.450	0.842	
I am aware that agriculture insurance is the right plan for a farmer (I15)	1	0.829	0.644	
Non-financial satisfaction				
Terms and conditions of insurance pleased me (I16)	1	0.715	0.871	68.67
I am pleased with the service and the cooperation of the insurance company staff (I17)	1	0.634	0.846	
I am pleased with the agents' service (I19)	1	0.759	0.799	
I am pleased with the policy and practice of my insurance company (I20)	1	0.639	0.796	
Financial satisfaction				
I am pleased with the premium subsidy of the government (I23)	1	0.813	0.902	74.92
I am pleased with the sum assured fixed by the company (I24)	1	0.798	0.893	
I am pleased with the loss amount evaluated by experts (I25)	1	0.774	0.88	
I am pleased with the claim settlement amount paid by the company (I26)	1	0.611	0.782	



Note: AW = awareness; FS = financial satisfaction; NF = non-financial satisfaction; Risk = risk management.

Figure 2. Measurement model results

The measurement model was designed, and items were allowed to load on the measurement model (Figure 2). Four items are loaded for the risk management construct, four for the awareness construct, four for satisfaction with financial matters (also called financial satisfaction), and four for non-financial matters (also called non-financial satisfaction) constructs. It also shows the covariance between the constructs.

The results of model fit values, items loading in different constructs with their loading and significance, values of average variance extracted (AVE) and composite reliability (CR) are shown in Table 5.

Table 5 shows that items on every construct were loaded significantly at the 1% level. The results of the model fit criteria (CMIN/DF) = 2.908, which is less than value 3; CFI = 0.944, which is greater than

Table 5. Items loading

Construct	Items	Estimate	AVE	CR
Satisfaction with financial matters (FS)	I26	0.709***	0.68	0.89
	I25	0.832***		
	I24	0.857***		
	I23	0.885***		
Satisfaction with non-financial matters (NF)	I20	0.721***	0.59	0.85
	I19	0.827***		
	I17	0.703***		
	I16	0.804***		
Awareness (AW)	I15	0.912***	0.61	0.86
	I14	0.508***		
	I13	0.774***		
	I11	0.856***		
Risk management (RM)	I7	0.686***	0.53	0.82
	I5	0.818***		
	I4	0.661***		
	I1	0.74***		

Note: CMIN/DF = 2.908, CFI = 0.944, GFI = 0.922, RMSEA = 0.069; *** denotes significance at the 1% significance level.

http://dx.doi.org/10.21511/ins.15(2).2024.01

Table 6. Discriminant validity

Factors	FS	NF	AW	Risk
Financial satisfaction (FS)	0.678145**	0.3721***	0.0961***	0.0529***
Non-financial satisfaction (NFS)	0.61*	0.586099**	0.0144***	0.1225***
Awareness (AW)	0.31*	0.12*	0.605405**	0.04***
Risk management (Risk)	0.23*	0.35*	0.2*	0.53106**

Note: * = correlations between items, ** = AVEs, and *** = squares of correlations between items. AW = awareness; FS = financial satisfaction; NF = non-financial satisfaction; Risk = risk management.

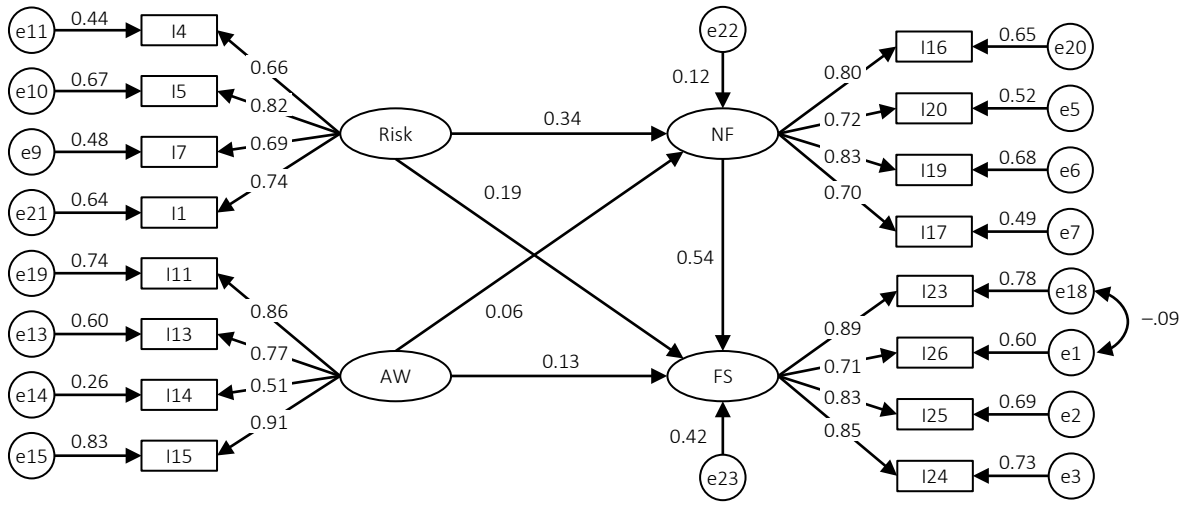
value 0.90; GFI = 0.922, which is greater than value 0.90, and RMSEA = 0.069, which is less than 0.08. These show that the model is appropriate for further analysis. Further, values of AVE for all constructs are greater than 0.5, and values of CR for each construct are greater than 0.7, ensuring convergent validity of the construct (Henseler et al., 2015).

The measured construct should have a different measurement ability than another measured construct used in the study to become discriminant. Among the different ways of measuring the discriminant variability, Fornell and Larcker's (1981) criteria assessed the discriminant validity of the constructs, which measured the discriminant validity using AVE and the square of correlation coefficients.

Table 6 shows that each construct's AVE value is greater than the value of the square of correlation with other constructs, so each construct is discriminant from others. For example, the AVE of financial satisfaction is 0.678145, the square of correlations between financial satisfaction and non-financial satisfaction is 0.3721, financial satisfaction and awareness is 0.0961, and financial satisfaction and risk management is 0.0529. These values are less than AVE. Financial satisfaction is more discriminant than all other constructs.

After all criteria of reliability and validity were satisfied, SEM was used to identify the relationship of the constructs used in the study. In this study, risk management and insurance awareness are exogenous constructs, non-financial satisfaction is a mediator, and financial satisfaction is endogenous construct. The results of constructs and their relationship with other constructs are shown in Figure 3.

Finally, Table 7 presents the relationship between the proposed hypotheses among the constructs and model fit criteria. The value of CMIN/DF is 3.001, which is near three. Further, the values of CFI and GFI are greater than 0.90, and the value of RMSEA is less than 0.08. The results support the model fit criteria.



Note: AW = awareness; FS = financial satisfaction; NF = non-financial satisfaction; Risk = risk management.

Figure 3. Schematic presentation of the structural model

Table 7. Structural equation modeling

Endogenous Variables		Exogenous Variables	Estimate
NF	←	Risk	0.342***
NF	←	AW	0.064
FS	←	NF	0.542***
FS	←	Aw	0.133***
FS	←	Risk	0.186***
FS	←	NF*Risk	0.185***
FS	←	NF*AW	0.035

Note: CMIN/DF = 3.001, CFI = 0.94, GFI = 0.916, RMSEA = 0.071, and *** denotes significance at the 1% significance level. NF: non-financial satisfaction, FS: financial satisfaction, AW: awareness, Risk: risk management.

Based on the estimated value among the seven pairs of relationships, only five relationships are found significant in the 1% level of significance. Risk management attitude has a significant relationship with non-financial satisfaction, which accepts H2. Similarly, no significant relationship between awareness and non-financial satisfaction has been observed, so H5 is rejected. Besides awareness and financial satisfaction, risk management and financial satisfaction also have a significant relationship, so there is sufficient ground to accept H3 and H6. Further, non-financial satisfaction acts as a mediator between risk management and financial satisfaction, which means H4 is accepted. However, no mediation effect is found between financial satisfaction and awareness through non-financial satisfaction, so H7 is rejected. Finally, H1 is accepted as there is a strong positive relationship between financial and non-financial satisfaction. The study has sufficient evidence to conclude that there is a strong relationship between non-financial and financial satisfaction.

4. DISCUSSION

Agricultural insurance has proven to be expensive for authorities and other companies to take on risk from farmers despite its potential as an effective risk-sharing mechanism (Nelson & Loehman, 1987). Studies on farm insurance satisfaction in the Nepalese setting are scarce, and academia has not given the insurance industry's high level of customer satisfaction the attention it deserves compared to other sectors (Pooser & Browne, 2018). In this instance, non-financial satisfaction directly impacts financial satisfaction. This implies that the efficient and innovative services of insurance companies yield financial gain to customers. For example, better suggestions from an insurance company can help reduce catastrophic loss. Besides, proper guidance motivates customers to invest in productive sectors, resulting in financial gains. Aljumah (2023) also agreed that non-financial factors generate motivation, which will induce one to become productive.

If customers have a positive perception toward risk management practices, it will lead them to be satisfied with insurance services as the risk management attitude has a direct and significant impact on financial satisfaction, non-financial satisfaction, and non-financial satisfaction mediated by the relationship between risk management and financial satisfaction. The reasons may be that proper risk management practices increase trust, minimize negative events, enhance customer experience, and increase service reliability. This finding agrees with Seo and Lee (2021), who argued that the perceived risk of the customer creates a negative attitude toward the company's services, leading to customer dissatisfaction. Olubiyo et al. (2009) claim that less perceived risk enhances farmers' productivity by focusing on their core business.

This study shows that awareness increases financial satisfaction. Awareness positively relates to non-financial satisfaction but is not statistically satisfied in direct and mediating effects. This result supports the idea that awareness creates satisfaction for policyholders. The reasons are that awareness creates a better customer experience, increases loyalty, and creates positive feelings toward the organizations and their services, which leads to satisfaction. Similar results were obtained by Iqbal et al. (2021). They viewed that better awareness helps increase firm competitiveness through expanding the customer base. Moreover, this current study supports the expectancy theory (Joshi, 2023) as individual willingness to put in an effort depends upon the outcome of that effort. Suppose an individual is well aware of insurance and feels that the insurance provides financial and non-financial benefits. In that case, they will engage in insurance and will be satisfied with benefits.

The study has several theoretical and practical implications. The theoretical implication is that

http://dx.doi.org/10.21511/ins.15(2).2024.01

better risk management and enhancing awareness programs by insurance companies help to increase customer satisfaction, which will assist in retaining customers in the long term, which results in the company's long-term success. The practical implication is that the regulators can make effective policies to enhance awareness levels across the country, highlighting how it will help minimize risk and benefit the farmers. The study will help insurers to attract more farmers to agriculture insurance programs. Managers and executives of the insurance company tailored risk management practices and awareness campaigns to attract large farmers to their business. Similarly, future researchers and academicians can test agriculture satisfaction using robust designs, such as testing the theory of planned behavior and service quality models.

CONCLUSION

The study examines the mediating role of non-financial satisfaction in the awareness and risk management aspects of agriculture insurance satisfaction among agriculture insurance policyholders. Farmers' awareness, risk management attitude, and satisfaction with insurance were examined through 26 items. The finding shows that risk management perception is significantly related to non-financial and financial satisfaction. Financial satisfaction has a significant relationship with awareness level. The AVE of financial satisfaction is 0.678145, the square of correlations between financial satisfaction and non-financial satisfaction is 0.3721, financial satisfaction and awareness is 0.0961, and financial satisfaction and risk management is 0.0529. This study suggests that insurance companies should give equal attention to cater the financial and non-financial services to the customers. Offering risk management programs and campaigning awareness to potential customers will increase customer satisfaction.

This paper has several limitations. It is based on the field survey of a limited area of two districts. Future studies can be carried out by covering more geography and taking the perspectives of the supply side. In addition, a longitudinal study covering more years will make results more robust.

AUTHOR CONTRIBUTIONS

Conceptualization: Ramkrishna Chapagain, Rabindra Ghimire, Lija Boro.
Data curation: Ramkrishna Chapagain, Rabindra Ghimire, Lija Boro.
Formal analysis: Ramkrishna Chapagain, Rabindra Ghimire, Lija Boro.
Investigation: Rabindra Ghimire, Lija Boro.
Methodology: Ramkrishna Chapagain, Rabindra Ghimire, Lija Boro.
Project administration: Rabindra Ghimire.
Resources: Ramkrishna Chapagain.
Software: Ramkrishna Chapagain, Lija Boro.
Supervision: Ramkrishna Chapagain, Lija Boro.
Validation: Ramkrishna Chapagain, Rabindra Ghimire.
Visualization: Ramkrishna Chapagain.
Writing – original draft: Ramkrishna Chapagain, Rabindra Ghimire, Lija Boro.
Writing – review & editing: Ramkrishna Chapagain, Rabindra Ghimire, Lija Boro.

ACKNOWLEDGMENT

The University Grants Commission, Nepal, is acknowledged for the financial support to conduct the study under the FRG MGMT 4-2019/20. The support of MBA students Mr. Dhan Bahadur Jagari and Lalit Bahadur Shahi is highly appreciated for their fieldwork as enumerators.

REFERENCES

1. Aljumah, A. (2023). The impact of extrinsic and intrinsic motivation on job satisfaction: The mediating role of transactional leadership. *Cogent Business and Management, 10*(3), Article 2270813. https://doi.org/10.1080/23311975.2023.2270813
2. Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411-423. https://doi.org/10.1037/0033-2909.103.3.411
3. Bartlett, M. S. (1950). Tests of significance in factor analysis. *British Journal of Psychology, 3*(2), 77-85. https://doi.org/10.1111/j.2044-8317.1950.tb00285.x
4. Birthal, P. S., Hazrana, J., & Negi, D. S. (2021). Effectiveness of farmers' risk management strategies in smallholder agriculture: Evidence from India. *Climatic Change, 169*(3-4), Article 30. https://doi.org/10.1007/s10584-021-03271-1
5. Cerny, C. A., & Kaiser, H. F. (1977). A study of a measure of sampling adequacy for factor-analytic correlation matrices. *Multivariate Behavioral Research*, *12*(1), 43-47. https://doi.org/10.1207/s15327906mbr1201_3
6. Eagly, A. H., & Shelly, C. (1998). Attitude structure and function. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The Handbook of Social Psychology* (pp. 269-322). New York: McGraw-Hill. Retrieved from https://psycnet.apa.org/record/1998-07091-007
7. Elias, A., Nohmi, M., Yasunobu, K., & Ishida, A. (2016). Farmers' satisfaction with agricultural extension service and its influencing factors: A case study in north west Ethiopia. *Journal of Agricultural Science and Technology, 18*(1), 39-53. Retrieved from https://jast.modares.ac.ir/article-23-6455-en.pdf
8. Field, A. (2013). *Discovering statistics using IBM SPSS statistics.* SAGE.
9. Fleisher, B. (1990). *Agricultural risk management*. Lynne Rienner Publishers.
10. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50. https://doi.org/10.2307/3151312
11. Ghimire, Y. N., Timsina, K., Kandel, G., & Devkota, D. (2016). *Agriculture insurance in Nepal: Case of banana and livestock insurance.* Socioeconomics and Agricultural Research Policy Division, Nepal Agricultural Research Council, Government of Nepal. http://dx.doi.org/10.13140/RG.2.1.4767.6403
12. Glenn, I. D. (1992). *Determining sample size*. Florida Cooperative Extension Services, Institute of Food and Agricultural Sciences, University of Florida, Gainesville. Retrieved from https://www.psycholosphere.com/Determining%20sample%20size%20by%20Glen%20Israel.pdf
13. Goretzko, D., Pham, T. T. H., & Bühner, M. (2021). Exploratory factor analysis: Current use, methodological developments and recommendations for good practice. *Current Psychology, 40*(7), 3510-3521. https://doi.org/10.1007/s12144-019-00300-2
14. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115-135. https://doi.org/10.1007/s11747-014-0403-8
15. Ingenhoff, D., & Buhmann, A. (2016). Advancing PR measurement and evaluation: Demonstrating the properties and assessment of variance-based structural equation models using an example study on corporate reputation. *Public Relations Review, 42*(3), 418-431. https://doi.org/10.1016/j.pubrev.2015.11.010
16. Iqbal, K., Munawar, H. S., Inam, H., & Qayyum, S. (2021). Promoting customer loyalty and satisfaction in financial institutions through technology integration: The roles of service quality, awareness, and perceptions. *Sustainability, 13*(23), Article 12951. https://doi.org/10.3390/su132312951
17. Jankelová, N., Joniaková, Z., & Puhovichová, D. (2021). Innovative approaches in management: a key factor for the quality of health services. *Entrepreneurship and Sustainability Issues, 9*(1), 268-286. https://doi.org/10.9770/jesi.2021.9.1(16)
18. Joshi, A. W. (2023). The effects of a manufacturer's actions on supplier performance: Insights from a contingent expectancy theory-based model. *Industrial Marketing Management, 109,* 106-120. https://doi.org/10.1016/j.indmarman.2022.12.013
19. Kassem, H. S., Alotaibi, B. A., Muddassir, M., & Herab, A. H. (2021). Factors influencing farmers' satisfaction with the quality of agricultural extension services. *Evaluation and Program Planning, 85,* Article 101912. https://doi.org/10.1016/j.evalprogplan.2021.101912
20. Komarek, A. M., De Pinto, A., & Smith, V. H. (2020). A review of types of risks in agriculture: What we know and what we need to know. *Agricultural Systems, 178,* Article 102738. https://doi.org/10.1016/J.AGSY.2019.102738
21. Lanfranchi, D., & Grassi, L. (2022). Examining insurance companies' use of technology for innovation. *The Geneva Papers on Risk and Insurance. Issues and Practice, 47*(3), 520-537. https://doi.org/10.1057/s41288-021-00258-y
22. Likert, R. A (1932). *Technique for the measurement of attitudes.* New York: Columbia University Press.
23. Nelson, C. H., & Loehman, E. T. (1987). Further toward a theory of agricultural insurance. *American Journal of Agricultural Economics, 69*(3), 523-531. https://doi.org/10.2307/1241688
24. Nunnally, J. C. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.

http://dx.doi.org/10.21511/ins.15(2).2024.01

25. OECD. (2011). *Managing risk in agriculture: Policy assessment and design*. Paris: OECD. https://doi.org/10.1787/9789264116146-en

26. Oguz, C., & Diyanah, S. M. (2021). The analysis of factors affecting farmers to take out agricultural insurance: A case study of Altinekin District, Konya Province of Turkey. *European Countryside, 13*(4), 806-818. Retrieved from https://intapi.sciendo.com/pdf/10.2478/euco-2021-0043

27. Olubiyo, S. O., Hill, G. P., & Webster, J. P. (2009). Econometric analysis of the impact of agricultural insurance on farming systems in the middle belt, Nigeria. *African Journal of Food, Agriculture, Nutrition and Development, 9*(6), 1406-1418. https://doi.org/10.4314/ajfand.v9i6.46266

28. Osiemo, J., Ruben, R., & Girvetz, E. (2021). Farmer perceptions of agricultural risks; Which risk attributes matter most for men and women. *Sustainability, 13*(23), Article 12978. https://doi.org/10.3390/su132312978

29. Pangestuti, D. C., Muktiyanto, A., Geraldina, I., & Darmawan, D. (2024). Optimizing firm performance through contingency factors, enterprise risk management, and intellectual capital in Southeast Asian mining enterprises. *Investment Management and Financial Innovations, 21*(2), 355-369. https://doi.org/10.21511/imfi.21(2).2024.29

30. Pooser, D. M., & Browne, M. J. (2018). The effects of customer satisfaction on company profitability: Evidence from the property and casualty insurance industry. *Risk Management and Insurance Review, 21*(2), 289-308. https://doi.org/10.1111/rmir.12105

31. Rehman, A., Ullah, I., Afridi, F.-e-A., Ullah, Z., Zeeshan, M., Hussain, A., & Rahman, H. U. (2021). Adoption of green banking practices and environmental performance in Pakistan: A demonstration of structural equation modelling. *Environment, Development and Sustainability, 23*(9), 13200-13220. https://doi.org/10.1007/s10668-020-01206-x

32. Sang, V. M., Uyen, Ph. N. Th., Khanh, T. T., & Phung, Ph. V. (2023). The influence of corporate social responsibility on repurchase intention: The mediating effect of satisfaction. *Innovative Marketing, 19*(4), 207- 219. doi:10.21511/im.19(4).2023.17

33. Seo, K. H., & Lee, J. H. (2021). The emergence of service robots at restaurants: Integrating trust, perceived risk, and satisfaction. *Sustainability, 13*(8), Article 4431. https://doi.org/10.3390/su13084431

34. Sujati, H., Sajidan, Akhyar, V., & Gunarhadi. (2020). Testing the construct validity and reliability of curiosity scale using confirmatory factor analysis. *Journal of Educational and Social Research, 10*(4), 229-237. https://doi.org/10.36941/jesr-2020-0080

35. Suleswski, P., & Kloczko-Gajewska, A. (2014). Farmers' risk perception, risk aversion and strategies to cope with production risk: An empirical study from Poland. *Studies in Agricultural Economics, 116,* 140-147. http://dx.doi.org/10.7896/j.1414

36. Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). New York: Harper and Row.

37. Yazdanpanah, M., Zamani, G. H., Hochrainer-Stigler, S., Monfared, N., & Yaghoubi, J. (2013). Measuring the satisfaction of crop insurance a modified American customer satisfaction model approach applied to Iranian Farmers. *International Journal of Disaster Risk Reduction, 5,* 19-27. https://doi.org/10.1016/j.ijdrr.2013.04.003

38. Zeithaml, V. A. (1988). Consumer perceptions of price, quality and value: A means-end model and synthesis of evidence. *Journal of Marketing, 52*(3), 2-22. https://doi.org/10.2307/1251446