

A Multivariate Analysis of Demographic and Socioeconomic Determinants of Takaful Awareness, Perception, Attitude, and Trust among Rural Plantation Communities in Malaysia

(Analisis Multivariat Kesan Faktor Demografi dan Sosioekonomi terhadap Kesedaran, Persepsi, Sikap dan Kepercayaan terhadap Takaful Dalam Kalangan Masyarakat Ladang Luar Bandar di Malaysia)

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ABSTRACT

This study examines how demographic and socioeconomic characteristics influence Takaful awareness, perceptions, attitudes, and trust among residents of a rural plantation community in Malaysia. Takaful, an Islamic insurance system based on mutual assistance and risk-sharing, offers financial protection aligned with Shariah principles. However, awareness and participation remain uneven, particularly in rural areas with limited access to financial information and services. Using a cross-sectional survey design, data were collected through a structured questionnaire with proportionate stratified from a rural palm oil plantation. A one-way multivariate analysis of variance (MANOVA) was sampling, yielding 1,199 valid responses employed to assess differences across four constructs: awareness, perception, attitude, and trust based on demographic and socioeconomic variables, including age, gender, education, occupation, and income. The findings show significant differences across demographic groups, indicating that individuals' evaluation of Takaful is closely associated with their socioeconomic background. Trust emerges as a critical factor shaping perceptions of Takaful as a credible financial protection mechanism. These results highlight that disparities reflect broader patterns of financial vulnerability and exclusion. The study contributes to Islamic financial inclusion literature and emphasizes targeted financial education and trust-building strategies to enhance Takaful engagement.

Keywords: Countryside; demographic factors; individual behaviour; Malaysia; Takaful demand

ABSTRAK

Kajian ini meneliti bagaimana ciri demografi dan sosioekonomi mempengaruhi kesedaran, persepsi, sikap dan kepercayaan terhadap Takaful dalam kalangan penduduk komuniti ladang luar bandar di Malaysia. Takaful merupakan sistem insurans Islam berasaskan prinsip saling membantu dan perkongsian risiko yang menyediakan perlindungan kewangan selaras dengan prinsip Syariah. Namun, tahap kesedaran dan penyertaan masih tidak sekata, khususnya di kawasan luar bandar yang mempunyai akses terhad kepada maklumat dan perkhidmatan kewangan. Menggunakan reka bentuk tinjauan keratan rentas, data dikumpulkan melalui soal selidik berstruktur dengan pensampelan berstrata berkadar, menghasilkan 1,199 respons sah daripada penduduk ladang kelapa sawit luar bandar. Analisis varians multivariat sehala (MANOVA) digunakan untuk menilai perbezaan merentasi empat konstruk kesedaran, persepsi, sikap dan kepercayaan berdasarkan pemboleh ubah demografi dan sosioekonomi seperti umur, jantina, pendidikan, pekerjaan dan pendapatan. Keputusan menunjukkan perbezaan signifikan antara kumpulan demografi, menandakan bahawa penilaian individu terhadap takaful berkait rapat dengan latar belakang sosioekonomi mereka. Kepercayaan muncul sebagai faktor penting dalam membentuk persepsi terhadap takaful sebagai mekanisme perlindungan kewangan yang diyakini. Hasil kajian ini menekankan bahawa jurang yang wujud mencerminkan kerentanan dan pengecualian kewangan dalam komuniti luar bandar serta menggariskan keperluan pendidikan kewangan dan strategi pembinaan kepercayaan yang bersasar bagi meningkatkan penglibatan takaful.

Kata kunci: Faktor demografi; kawasan luar bandar; Malaysia; permintaan takaful; tingkah laku individu

INTRODUCTION

Takaful is an Islamic insurance system based on mutual assistance, where participants contribute to a shared fund to support one another against unexpected losses. Under the Islamic Financial Services Act 2013, takaful is defined as a mutual arrangement that provides financial benefits to participants or their beneficiaries upon the occurrence of specified events. It emphasizes collective protection and mutual indemnity, distinguishing it from conventional insurance models (Abdou, Ali & Lister 2014).

Although historically rooted in Muslim-majority countries, takaful has gained growing global attention as demand for ethical and Shariah-compliant financial products increases (Wofuma et al. 2026). In 2024, the global Takaful market was valued at USD 36.57 billion, slightly higher than USD 36.00 billion in 2023 (IMARC 2024; Polaris Market Research 2024). However, the market value reached approximately USD 39.60 billion in 2025 and is projected to attain USD 78.28 billion by 2034 (IMARC 2026). This growth reflects rising awareness of risk-sharing mechanisms and the broader expansion of Islamic finance.

Malaysia plays a leading role in this development through sustained efforts to strengthen its Islamic financial system. By mid-2025, the country's takaful industry had assets of about RM62.54 billion, underscoring its growing importance in the national financial sector (Bernama 2025a). Takaful operators represent roughly 32% of Malaysia's combined insurance and takaful market and contribute an estimated 4.5% to national GDP (Takaful Malaysia 2025a). Family takaful remains the dominant segment, accounting for most new certificates and benefit pay-outs. In 2024 alone, nearly 993,000 new family takaful certificates were issued, reflecting increasing demand for household financial protection amid rising living costs and economic uncertainty (Bernama 2025b).

Despite this progress, takaful penetration in Malaysia remains relatively low at around 20%, meaning only two in ten Malaysians are covered (Bernama 2025a). This gap indicates significant growth potential, particularly among underserved groups. The Malaysian Takaful Association notes that higher penetration will require coordinated efforts, innovation, and cross-sector collaboration to address structural and informational barriers (Takaful Malaysia 2025b).

Previous studies show that takaful participation is shaped by various sociodemographic and socioeconomic factors that influence financial behaviour and decision-making (Ishak 2025; Nadzirah et al. 2024). Urban populations generally show higher uptake due to better access to information, financial services, and institutional support, while rural communities often face limitations in awareness and accessibility (Nadzirah et al. 2024). Understanding these differences is essential for

developing inclusive strategies that encourage wider participation and strengthen the sustainability of the takaful industry in Malaysia (Maduku & Mbeya 2024).

Beyond market penetration, disparities in takaful engagement also reflect deeper social inequalities. Awareness and trust in takaful can act as indicators of social well-being and inclusion, closely linked to social capital networks of trust and reciprocity that support collective action (Algan 2018). Low institutional trust, including trust in takaful operators, is often associated with lower well-being and greater financial vulnerability, as highlighted in institutional trust measures such as the World Values Survey (Haerpfer et al. 2022). In rural settings, limited access to risk-sharing mechanisms may further intensify socioeconomic exclusion and financial insecurity (Abdul Rahman, Samsudin & Osman 2024). As such, engagement with takaful can also be viewed as a reflection of social capital and resilience within Islamic financial systems.

Financial behaviour, including decisions related to takaful participation, is shaped by the interaction of demographic characteristics, social context, and individual economic circumstances (Loke 2017; Muhamad, Kusairi & Zamri 2021). Previous studies consistently identify factors such as age, education, income, occupation, marital status, and work experience as important influences on individuals' engagement with financial protection mechanisms, including takaful (Yakob, Hafizuddin-Syah & Hisham 2019). Among these, education and income play particularly significant roles. Higher educational attainment is often associated with stronger financial literacy and a better understanding of risk-sharing principles, which can increase awareness and foster more favourable attitudes toward takaful participation (Husin & Ab Rahman 2013; Salleh & Afthanorhan 2018; Wan Noor Hazlina 2023). Income similarly affects individuals' capacity to prioritise formal financial protection, contributing to differences in participation across socioeconomic groups.

Life-stage and employment-related characteristics further shape how individuals assess the relevance and reliability of takaful. Age, marital status, occupation, and work experience influence financial responsibilities, income stability, and exposure to formal financial institutions, all of which affect perceptions and trust toward takaful (Mohd Damit & Mohammed 2024). At a broader level, structural conditions also influence demand for takaful. Higher levels of education, income growth, and institutional development tend to encourage participation, whereas economic instability may weaken it (Akhter & Khan 2017; Sherif & Azlina Shaairi 2013; Sherif & Hussnain 2017). In Malaysia, these patterns are further shaped by spatial differences. Urban populations generally demonstrate higher awareness and engagement due to greater access to financial services and information, while rural communities often face

more limited exposure to formal financial protection mechanisms (Che Mohd Salleh & Megat Laksana 2018; Mohamad, Nordin & Rizvi 2024).

Alongside these structural influences, recent research highlights the importance of behavioural and subjective dimensions in shaping takaful participation. In particular, awareness, perception, attitude, and trust are widely recognised as interconnected constructs that influence how individuals understand and evaluate formal risk-sharing arrangements. Awareness represents the starting point, reflecting individuals' access to information and their recognition of takaful as a viable financial protection option. Higher awareness and knowledge are consistently associated with stronger interest in and willingness to adopt takaful products (Ayinde & Echchabi 2012; Hassan et al. 2018; Salman, Rashid & Hassan 2017). Perception further shapes adoption by influencing how individuals evaluate the relevance, fairness, and usefulness of takaful in relation to their needs and values (Arifin & Yazid 2019; Mukhtar & Barre 2024). Attitude reflects individuals' overall evaluation of takaful and their readiness to adopt it as a financial protection mechanism, while trust plays a central role in determining confidence in institutional transparency, ethical fund management, and Shariah compliance (Aziz et al. 2019; Mohy-Ul-Din et al. 2019). Together, these constructs capture how individuals interpret financial protection and their level of confidence in the institutions that provide it.

Taken together, the literature suggests that both structural conditions and subjective evaluations shape engagement with Takaful. Awareness, perception, attitude, and trust are therefore unlikely to be evenly distributed across populations but instead vary with demographic and socioeconomic characteristics. Understanding these variations is important for assessing how different groups perceive and engage with financial protection mechanisms, particularly in rural contexts where access to financial services and information may be uneven.

PROBLEM STATEMENT

Despite extensive research on the factors influencing takaful participation, such as income, education, age, marital status, and occupation, most studies have focused on urban and semi-urban populations. Evidence consistently shows that higher income, greater education, and urban residency are linked to higher participation (Mohamad, Nordin & Rizvi 2024; Salleh & Afthanorhan 2018; Sherif & Azlina Shaairi 2013). Even recent studies examining risk response and post-disaster behaviour largely remain urban-focused (Che Mohd Salleh & Megat Laksana 2018; Mohd Damit & Mohammed 2024), leaving rural communities underrepresented in empirical research.

Behavioural and psychological factors such as awareness, perception, attitude, and trust are widely recognized as key determinants of takaful adoption

(Aziz et al. 2019; Mukhtar & Barre 2024; Raza et al. 2020; Salman, Rashid & Hassan 2017). However, these factors are often analysed in aggregate, without exploring how they differ across demographic groups. This oversight is particularly pronounced in rural settings, where limited access to financial information and institutions may shape both understanding and trust in financial protection mechanisms. From a social perspective, these subjective dimensions reflect broader aspects of well-being, including perceived security and institutional confidence.

Taken together, the literature shows a clear gap: rural populations remain largely invisible in studies of takaful participation, and there is little insight into how awareness, perception, attitude, and trust vary within these communities. Addressing this gap is critical for understanding the inclusivity and effectiveness of takaful as a mechanism for financial protection.

RESEARCH OBJECTIVE

This study aims to explore how takaful awareness, perceptions, attitudes, and trust vary across demographic and socioeconomic groups in rural Malaysia, as often suggested by theories such as the Theory of Planned Behavior, Diffusion of Innovations, Financial Literacy Theory, Trust Theory, and Social Exclusion Theory. By examining these differences, the study provides evidence to support the development of targeted educational, promotional, and policy interventions to strengthen Takaful engagement among socially and economically vulnerable populations. The findings can inform strategies for more inclusive and effective Takaful engagement, particularly in communities with limited access to financial services.

Based on these objectives, Figure 1 illustrates the proposed hypotheses and the tested conceptual model. The figure shows the relationships between demographic factors (such as age, gender, income, and education) as independent variables and the Takaful-related constructs (awareness, perception, attitude, and trust) as dependent variables. This model serves as the basis for testing whether demographic and socioeconomic differences meaningfully influence participants' insight into the study's constructs related to engagement with Takaful.

THEORETICAL BACKGROUND

This study draws on several complementary theoretical perspectives, including the Theory of Planned Behavior (TPB), Diffusion of Innovations, Financial Literacy Theory, Trust Theory, and Social Exclusion Theory. According to the literature, these frameworks provide a solid foundation for examining differences in Takaful awareness, perceptions, attitudes, and trust across demographic and socioeconomic groups. The TPB offers the core explanatory lens, positing that individual behavior is driven by attitudes shaped by beliefs and perceptions

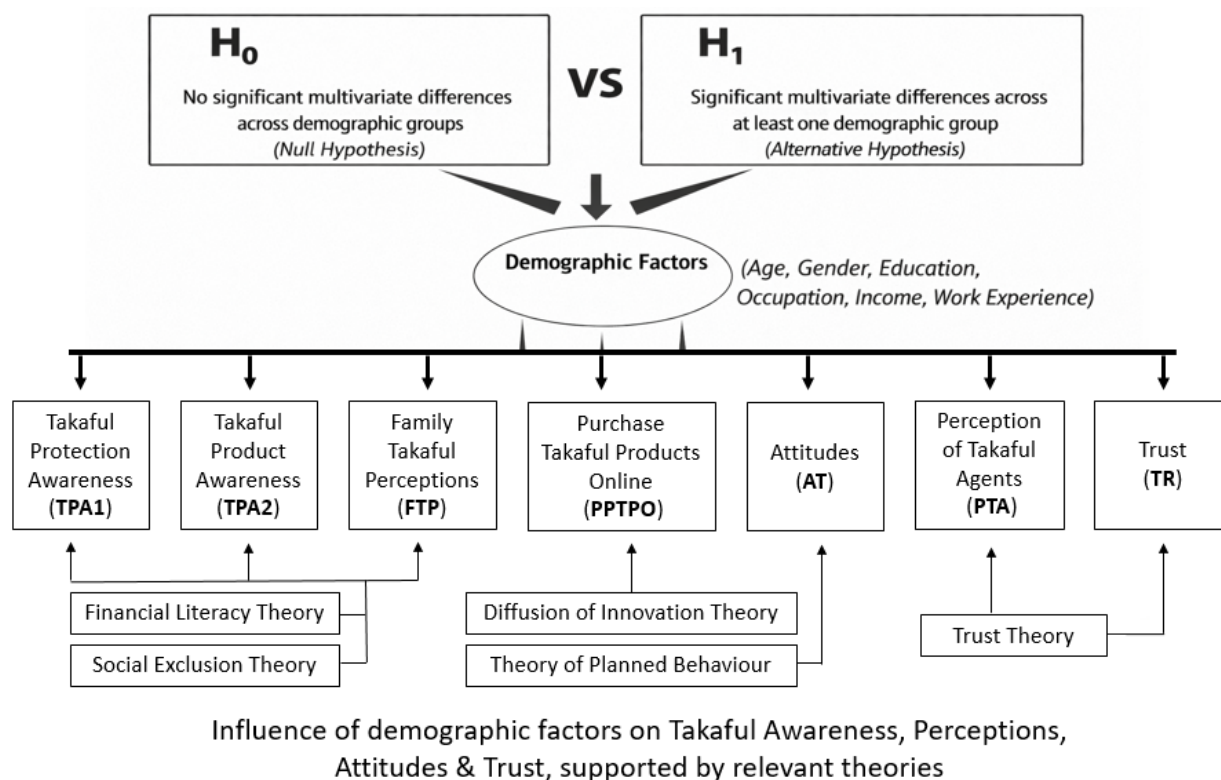


FIGURE 1. Study model and hypotheses

(Ajzen 1991). In the context of Takaful, awareness serves as a foundational input that shapes individuals' perceptions, which in turn influence attitudes and behavioral intentions. Trust reinforces confidence in Takaful as a credible financial protection mechanism.

Complementing this behavioural perspective, Diffusion of Innovations theory explains how Takaful, as a financial innovation, spreads unevenly across populations, particularly in rural communities where limited exposure to information constrains adoption (Rogers 2003). This uneven diffusion is closely linked to Financial Literacy Theory, which posits that individuals with higher levels of financial knowledge are better equipped to understand, evaluate, and adopt financial products (Lusardi & Mitchell 2014). Consequently, variations in education, income, and occupation are expected to produce systematic differences in awareness and perception, directly aligning with the study's objective of examining how demographic and socioeconomic factors shape individuals' understanding of Takaful.

In addition, Trust Theory emphasizes the central role of institutional confidence in shaping decision-making under uncertainty (Gambetta 1988). This is particularly relevant in the context of Islamic finance, where perceptions of Shariah compliance and institutional credibility significantly affect acceptance. Therefore, variations in trust across demographic groups reflect differing levels of exposure, experience, and confidence

in financial institutions, supporting the study's objective of assessing trust as a critical determinant of Takaful engagement.

Furthermore, Social Exclusion Theory extends the analysis beyond individual-level factors by highlighting how structural inequities, such as income, education, and occupational status disparities, limit access to financial services and information (World Bank 2018). This perspective explains why certain groups, particularly in rural settings, may exhibit lower awareness, less favourable perceptions, and weaker trust, not merely due to personal choice but as a consequence of systemic financial exclusion.

By reviewing these theoretical perspectives, the study provides a comprehensive framework that captures cognitive processes (awareness and perception), behavioural orientation (attitude), relational dynamics (trust), and structural conditions (socioeconomic disparities). This alignment ensures that the study's objectives, which examine differences in awareness, perception, attitude, and trust across demographic and socioeconomic groups, are grounded in solid theory and supported by strong analysis. It also justifies using a multivariate approach, such as MANOVA, to assess variation across multiple constructs simultaneously, thereby offering a holistic understanding of Takaful engagement in rural communities and contributing to the broader discourse on Islamic financial inclusion.

METHODS

RESEARCH DESIGN AND INSTRUMENT DEVELOPMENT

This study adopts a quantitative cross-sectional survey design to examine demographic differences in Takaful awareness, perceptions, attitudes, and trust within a rural Malaysian community. A survey-based approach was selected because it enables the systematic collection of comparable responses across a large population while capturing multiple behavioural and perceptual dimensions related to financial protection.

Data were collected using a structured questionnaire, which was adapted with minor modifications from previously validated instruments developed by Bashir (2011), Hassan et al. (2018), Imran et al. (2020), Mishra et al. (2024), Poan, Merizka and Komalasari (2022), and Zuki and Bakar (2023). The questionnaire was designed to ensure alignment with the study's research objectives while maintaining conceptual consistency with existing studies on Takaful participation.

The instrument consisted of two main sections. The first section collected demographic information, including age, gender, marital status, education level, occupation, work experience, and household income. The second section measured the main study constructs, including Takaful awareness, perception, attitude, and trust using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

To ensure clarity and accessibility for rural respondents, the questionnaire was translated into Bahasa Melayu and simplified where necessary. Content validation was conducted jointly by two academic experts from the research team and two industry representatives to ensure both academic rigor and practical relevance. A pilot test was carried out with respondents from a rural palm oil plantation community ($n = 27$). The reliability of the instrument was assessed using Cronbach's alpha, where values of 0.70 or higher indicate acceptable internal consistency (Taber 2018).

SAMPLING PROCEDURE AND DATA COLLECTION

The study employed a proportionate stratified sampling approach to ensure adequate representation of demographic groups within the rural palm oil plantation estate community. Based on the population distribution, 1,200 questionnaires, slightly more than 1% of the community population, were distributed through authorized community representatives. These representatives were carefully briefed by the researchers on the study objectives and data collection procedures. The survey was developed using Google Forms and administered with the assistance of these community representatives. Importantly, the data collection process was enumerator-guided, where representatives provided direct, in-person support

to respondents, including explaining questions, assisting with the digital form, and ensuring all items were completed accurately.

This structured and assisted approach was a key factor in achieving the exceptionally high response rate. The presence of enumerators helped minimize non-response, prevent incomplete submissions, and reduce misunderstanding of questions. In addition, distributing the survey through trusted community representatives increased respondents' confidence and willingness to participate, as the study was perceived as credible and relevant. The ability of representatives to follow up immediately with participants further ensured near-complete participation. Data collection was conducted over a month, resulting in 1,199 valid responses, representing a 99.9% response rate.

VARIABLES AND MEASUREMENT

The study focuses on four key dependent constructs: Takaful awareness, perception, attitude, and trust. These constructs represent subjective dimensions that influence individuals' understanding of and confidence in Takaful as a financial protection mechanism. Each construct was measured using multiple Likert-scale items adapted from previous studies in the Islamic finance and Takaful literature.

Demographic and socioeconomic characteristics, including age, gender, marital status, education level, occupation, work experience, and household income, served as independent grouping variables. These variables were used to examine variations in the four study constructs across different population segments within the rural community.

DATA ANALYSIS AND MULTIVARIATE PROCEDURES

Before the main analysis, the normality of study variables was assessed using skewness and kurtosis statistics. According to Hair, Sarstedt and Ringle (2019), skewness values between -1 and $+1$ indicate acceptable normality, while values between -2 and $+2$ are generally considered acceptable for multivariate analysis. A distribution is considered approximately normal when both skewness and kurtosis are close to zero (Hatem et al. 2022).

To examine demographic differences across the study constructs, a one-way multivariate analysis of variance (MANOVA) was conducted. The analysis assessed whether the combined mean scores of Takaful awareness, perception, attitude, and trust differed across demographic groups, including age, gender, marital status, education, occupation, work experience, and household income. MANOVA is appropriate here because it allows multiple dependent variables to be analysed simultaneously, accounting for their intercorrelations and reducing the risk of Type I error associated with conducting multiple separate tests.

Before analysis, additional assumptions were evaluated. Multivariate normality was confirmed using skewness and kurtosis, homogeneity of variance–covariance matrices was tested using Box’s M test, and Levene’s test assessed equality of variances across dependent variables. The primary test statistic used was Wilks’ Lambda (Λ), which compares the variance within groups to the variance between groups. It is defined as:

$$\Lambda = \frac{|E|}{|E + H|} \quad (1)$$

The $|E|$ is the determinant of the error (within-group) sum of squares and cross-products matrix, and $|H|$ is the determinant of the hypothesis (between-group) sum of squares and cross-products matrix. Smaller values of Λ indicate greater differences among group means. When a significant multivariate effect was detected, follow-up univariate ANOVAs were conducted to identify which dependent variables contributed to the observed differences.

The conceptual framework of the analysis is illustrated in Figure 1, which shows multiple independent variables (IVs) feeding into the MANOVA model, simultaneously predicting multiple dependent variables (DVs). This diagram highlights why MANOVA is appropriate, as it accounts for correlations among DVs while assessing how demographic characteristics collectively shape individuals’ understanding, evaluation, and trust in Takaful.

RESULTS

The Cronbach’s alpha test (Table 1) indicates high reliability, suggesting that the research instrument consistently measures variables with strong internal consistency across items. The scores for skewness and kurtosis ranged from (-1.341 to +0.150) and (-0.364 to +2.403), respectively, which is typically considered acceptable for the normality assumption of study research variables (Table 2).

Descriptive statistics (Table 3) summarize respondents’ demographics, including age, gender, marital status, education, occupation, work experience, and household income. Most participants were between 31 and 50 years old, with females slightly outnumbering males (53.3%). The majority were married and had completed secondary education. Housewives (36%) and farmers (26.3%) were the most common occupations. Over half had less than 10 years of work experience (53.8%), and most earned below RM3,000 per month.

A one-way MANOVA was conducted to examine whether Takaful awareness, perceptions, attitudes, and trust differ across demographic factors (age, gender, marital status, education, occupation, work experience,

and income) within the studied rural community. Wilks’ Lambda was used to assess the extent to which these demographic characteristics differentiate the combined dependent variables, which included awareness of Takaful products, perceptions of family Takaful, agents, online purchases, attitudes, and trust (Table 4). Wilks’ Lambda values closer to 0 indicate stronger group differentiation, while values near 1 suggest weaker discrimination.

The results showed statistically significant differences (P -value < 1% and 5%) across most demographic factors, indicating that individuals’ socio-economic and demographic characteristics meaningfully shape variations in awareness, perceptions, attitudes, and trust. Marital status was an exception, showing a weaker effect ($p < 0.1$), suggesting a more limited role in differentiating respondents’ engagement with Takaful.

These findings directly address the study’s research questions by highlighting which demographic groups differ in terms of access to information, evaluation of Takaful, and confidence in Takaful institutions. The results also carry implications for social inclusion, showing that factors such as education, income, age, and work experience contribute to unequal awareness and trust in Takaful within rural communities. Understanding these demographic differences provides insight into which groups may be underserved or less engaged, pointing to the need for targeted strategies to enhance equitable access to financial protection and risk-sharing mechanisms.

Following the Wilks’ Lambda results, the study further examined between-subject effects, presenting the mean, standard deviation, and comparisons across demographic groups for key Takaful-related variables, including awareness of Takaful protection and products, perceptions of family Takaful, perceptions of Takaful agents, attitudes toward online purchases, overall attitudes, and trust.

AGE DIFFERENCES IN TAKAFUL AWARENESS, PERCEPTIONS, ATTITUDES, AND TRUST

The results in Table 5 show mean differences across age groups, showing that perceptions of Takaful agents did not vary significantly ($p = .120$), suggesting shared expectations of ethical conduct and service quality across age cohorts. Respondents aged 31–40 exhibited the highest awareness of Takaful protection ($M = 4.00$), while both the 21–30 and 31–40 age groups recorded the highest awareness of Takaful products ($M = 3.85$ and 3.84 , respectively). The 21–30 age group also scored highest on perceptions of family Takaful ($M = 3.80$), online purchase intention ($M = 3.37$), positive attitudes ($M = 3.94$), and trust in Takaful institutions ($M = 3.74$), with trust levels among the 31–40 group nearly matching those of the younger cohort ($M = 3.73$).

Overall, these findings indicate that younger and middle-aged adults are more aware of, more positively inclined toward, and more trusting of Takaful compared with older respondents. One possible explanation is that individuals in these age groups are typically more economically active and engaged in financial planning, making them more likely to seek information about financial protection products such as Takaful. They are also generally more exposed to digital platforms, marketing campaigns, and financial education, which increases their familiarity with Takaful products and services. In contrast, older individuals may rely more on traditional savings practices, family support systems, or informal risk-sharing mechanisms, which can limit their awareness and engagement with formal financial protection schemes.

At the same time, the results show that perceptions of Takaful agents remain relatively stable across age groups, suggesting that respondents share similar expectations regarding agents' professionalism, ethical conduct, and service quality. The small-to-moderate effect sizes ($\eta^2 = 0.013\text{--}0.042$) indicate that while age differences exist, they are not large, implying that Takaful awareness and trust are influenced by multiple factors beyond age alone. Nevertheless, the observed pattern highlights the importance of age-sensitive

outreach strategies, particularly initiatives aimed at improving financial literacy and accessibility among older populations, to strengthen engagement with Takaful and enhance financial protection in rural communities.

GENDER DIFFERENCES IN TAKAFUL AWARENESS, PERCEPTIONS, ATTITUDES, AND TRUST

The results (Table 6) indicate that gender does not significantly influence respondents' awareness, perceptions, attitudes, or trust toward Takaful. All variables recorded non-significant results ($p > 0.05$), suggesting that male and female respondents demonstrate similar levels of engagement with Takaful-related aspects.

Male respondents reported slightly higher mean scores for Takaful protection awareness (TPA1) ($M = 3.92$) and Takaful product awareness (TPA2) ($M = 3.78$) compared to females ($M = 3.87$ and $M = 3.72$, respectively). Males also showed marginally higher perceptions of family Takaful (FTP) and Takaful agents (PTA). However, these differences were minimal and statistically insignificant. Conversely, female respondents showed slightly higher trust (TR) in Takaful ($M = 3.62$) than male respondents ($M = 3.55$), although this difference was not statistically significant. Similarly, perceptions toward

TABLE 1. Reliability test

Factors	Cronbach's alpha
Takaful protection awareness	0.986
Takaful product awareness	0.971
Perception of Family Takaful	0.967
Perception of the Takaful agent	0.983
Perception of purchasing Takaful products online	0.938
Attitude	0.960
Trust	0.983

TABLE 2. Normality test (n=1199)

Study variables	Mean	Std. Deviation	Skewness		Kurtosis	
			Statistic	Std. Error	Statistic	Std. Error
Takaful Protection Awareness	3.900	0.879	-1.256	0.071	2.129	0.141
Takaful Product Awareness	3.753	0.812	-0.763	0.071	1.294	0.141
Family Takaful Perception	3.664	0.788	-0.542	0.071	0.991	0.141
Perception of Takaful Agents	4.076	0.847	-1.341	0.071	2.403	0.141
Perceptions towards purchasing Takaful products online	3.029	0.911	0.150	0.071	-0.364	0.141
Attitude	3.709	0.785	-0.537	0.071	0.861	0.141
Trust	3.590	0.862	-0.813	0.071	1.116	0.141

TABLE 3. Demographic characteristics of respondents (n=1199)

Factors	Frequency	(%)	Factors	Frequency	(%)
Age (years)			Occupation		
10-20	5	0.4	Farmer	315	26.3
21-30	100	8.3	Housewife	440	36.7
31-40	320	26.7	Retired	50	4.2
41-50	297	24.8	Private Sector Workers	277	23.1
51-60	152	12.7	Public Sector Workers	117	9.8
61-70	239	19.9	Work Experience (years)		
more 70	86	7.2	Less than 5	337	28.1
Gender			5-10	308	25.7
Male	560	46.7	11-15	234	19.5
Female	639	53.3	16-20	93	7.8
Marital Status			More than 20	227	18.9
Single	102	8.5	Household Income (month)		
Married	917	76.5	Below RM 1,500	360	30.0
Divorced	25	2.1	RM 1,501 – 3,000	505	42.1
Widow/Widower	155	12.9	RM 3,001 – 5,000	224	18.7
Education			RM 5,001 – 8,000	75	6.3
Not Finishing School	59	4.9	More than RM 8,001	35	2.9
Primary School	201	16.8			
Secondary School	702	58.5			
Diploma	151	12.6			
Bachelor's Degree	78	6.5			
Master's Degree	8	0.7			

TABLE 4. Wilks' Lambda

Independent variables	Value Wilks' Λ	P-value	η^2
Age	0.910	0.000	0.016
Gender	0.987	0.031	0.013
Marital status	0.975	0.098	0.008
Education levels	0.866	0.000	0.028
Occupations	0.922	0.000	0.020
Work experiences	0.917	0.000	0.021
Household income	0.921	0.000	0.020

purchasing Takaful products online (PPTPO) and overall attitudes (AT) were nearly identical between both groups.

Furthermore, the effect sizes ($\eta^2 = 0.000\text{--}0.002$) are extremely small, indicating that gender explains almost none of the variance in Takaful awareness, perceptions, attitudes, or trust. Overall, these findings suggest that Takaful awareness and perceptions are relatively consistent between male and female respondents, implying that gender may not be a key factor influencing engagement with Takaful products in this sample.

MARITAL STATUS DIFFERENCES IN TAKAFUL AWARENESS, PERCEPTIONS, ATTITUDES, AND TRUST

The results (Table 7) show that marital status does not significantly influence respondents' awareness, perceptions, attitudes, or trust toward Takaful, as all variables recorded non-significant results ($p > 0.05$). This indicates that individuals across different marital groups demonstrate generally similar levels of awareness and perceptions regarding Takaful.

TABLE 5. Mean and standard deviation scores of Takaful measures across age groups

	Age (year)							F	P-Value	η^2
	10-20 (n=5)	21-30 (n=100)	31-40 (n=320)	41-50 (n=297)	51-60 (n=152)	61-70 (n=239)	>70 (n=86)			
TPA ¹	3.08 ±1.13	3.90 ±0.98	4.00 ±0.99	3.93 ±0.88	3.86 ±0.89	3.83 ±0.68	3.68 ±0.63	2.615	0.016	0.013
TPA ²	3.23 ±1.15	3.85 ±0.85	3.84 ±0.87	3.76 ±0.81	3.78 ±0.83	3.67 ±0.69	3.46 ±0.65	3.528	0.002	0.017
FTP	3.16 ±1.21	3.80 ±0.78	3.75 ±0.88	3.66 ±0.79	3.75 ±0.78	3.53 ±0.65	3.40 ±0.60	4.641	0.001	0.023
PTA	3.26 ±1.36	4.13 ±0.99	4.14 ±0.90	4.10 ±0.84	4.03 ±0.88	4.01 ±0.71	3.97 ±0.65	1.692	0.120	0.008
PPTPO	2.90 ±0.85	3.37 ±0.90	3.10 ±0.97	2.90 ±0.87	3.12 ±0.86	2.91 ±0.86	2.92 ±0.83	4.958	0.001	0.024
AT	3.12 ±1.17	3.94 ±0.77	3.83 ±0.82	3.66 ±0.81	3.78 ±0.78	3.56 ±0.69	3.45 ±0.55	6.723	0.001	0.033
TR	3.06 ±1.14	3.74 ±0.80	3.73 ±0.85	3.61 ±0.85	3.68 ±0.80	3.41 ±0.82	3.12 ±0.92	8.790	0.001	0.042

TPA¹ = Takaful protection awareness, TPA² = Takaful product awareness, FTP= Family Takaful perceptions, PTA= Perception of Takaful agents, PPTPO= Perception towards purchasing Takaful products online, AT= Attitudes, TR= Trust

TABLE 6. Mean and standard deviation scores of Takaful measures across gender

	Gender		F	P-value	η^2
	Male (n=560)	Female (n=639)			
TPA ¹	3.92 ±0.84	3.87 ±0.91	0.895	0.344	0.001
TPA ²	3.78 ±0.78	3.72 ±0.83	1.598	0.206	0.001
FTP	3.68 ±0.80	3.64 ±0.77	0.521	0.471	0.000
PTA	4.11 ±0.80	4.04 ±0.88	2.147	0.143	0.002
PPTPO	3.04 ±0.97	3.01 ±0.85	0.409	0.523	0.000
AT	3.72 ±0.78	3.69 ±0.78	0.308	0.579	0.000
TR	3.55 ±0.94	3.62 ±0.77	1.958	0.162	0.002

TPA¹ = Takaful protection awareness, TPA² = Takaful product awareness, FTP= Family Takaful perceptions, PTA= Perception of Takaful agents, PPTPO= Perception towards purchasing Takaful products online, AT= Attitudes, TR= Trust

TABLE 7. Mean and standard deviation scores of Takaful measures across marital status

	Marital status				F	P-value	η^2
	Single (n=102)	Married (n=917)	Divorced (n=25)	Widow/ Widower (n=155)			
TPA ¹	3.92 ±0.95	3.91 ±0.88	4.00 ±0.80	3.80 ±0.79	0.751	0.522	0.002
TPA ²	3.88 ±0.81	3.75 ±0.81	3.78 ±0.88	3.63 ±0.75	1.994	0.113	0.005
FTP	3.80 ±0.87	3.66 ±0.79	3.76 ±0.75	3.56 ±0.68	1.889	0.130	0.005
PTA	4.09 ±0.98	4.07 ±0.86	4.29 ±0.42	4.05 ±0.70	0.609	0.609	0.002
PPTPO	3.21 ±0.98	3.03 ±0.91	2.97 ±0.84	2.89 ±0.84	2.540	0.055	0.006
AT	3.77 ±0.85	3.72 ±0.79	3.87 ±0.61	3.56 ±0.70	2.477	0.060	0.006
TR	3.72 ±0.85	3.58 ±0.90	3.90 ±0.54	3.49 ±0.63	2.588	0.052	0.006

TPA¹ = Takaful protection awareness, TPA² = Takaful product awareness, FTP= Family Takaful perceptions, PTA= Perception of Takaful agents, PPTPO= Perception towards purchasing Takaful products online, AT= Attitudes, TR= Trust

In terms of mean scores, single and divorced respondents tend to report slightly higher levels of awareness and positive perceptions. For example, divorced respondents recorded the highest mean for Takaful protection awareness (TPA1) ($M = 4.00$) and trust (TR) ($M = 3.90$), while single respondents showed relatively higher scores in Takaful product awareness (TPA2) ($M = 3.88$) and perceptions toward purchasing Takaful products online (PPTPO) ($M = 3.21$). In contrast, widowed respondents generally reported slightly lower scores across most constructs, particularly in online purchase perception (PPTPO) and trust (TR).

Although PPTPO ($p = 0.055$), attitudes (AT) ($p = 0.060$), and trust (TR) ($p = 0.052$) approached significance at the 10% level, the differences remain statistically weak. Additionally, the effect sizes ($\eta^2 = 0.002$ – 0.006) are very small, indicating that marital status explains only a minimal proportion of variation in Takaful awareness, perceptions, attitudes, and trust. Overall, these findings suggest that marital status is not a major determinant of engagement with Takaful products among respondents.

These findings respond to the research issues by emphasising the demographic aspects that significantly influence Takaful engagement. Specifically, gender appears not to create differential access or perceptions, suggesting equitable engagement across males and females. In contrast, marital status shows limited influence, with certain subgroups such as widows and widowers exhibiting lower trust and weaker perceptions of online Takaful. This underscores the importance of considering social vulnerability when promoting inclusive participation in financial protection schemes within rural communities.

EDUCATION LEVEL DIFFERENCES IN TAKAFUL AWARENESS, PERCEPTIONS, ATTITUDES, AND TRUST

The results (Table 8) indicate that education level significantly influences all Takaful-related constructs, including awareness, perceptions, attitudes, and trust, as all variables recorded statistically significant differences ($p < 0.01$). This suggests that respondents with different educational backgrounds demonstrate varying levels of engagement with Takaful.

Overall, the findings show a clear increasing trend, where respondents with higher education levels report higher mean scores across most variables. Individuals with Bachelor's and Master's degrees consistently show the highest levels of Takaful protection awareness (TPA1), product awareness (TPA2), perceptions of family Takaful (FTP), perceptions of Takaful agents (PTA), attitudes (AT), and trust (TR). In contrast, respondents who did not finish school or only completed primary education generally reported lower mean scores.

The pattern is particularly noticeable for Takaful product awareness (TPA2) and trust (TR), which recorded

the largest effect sizes ($\eta^2 = 0.069$ and $\eta^2 = 0.071$, respectively), indicating that education explains a moderate proportion of the variance in these constructs. Meanwhile, perceptions toward purchasing Takaful products online (PPTPO) also differ significantly across education groups, although the effect size is relatively small ($\eta^2 = 0.016$).

Overall, the results suggest that higher education levels are associated with greater awareness, more positive perceptions, stronger attitudes, and higher trust toward Takaful, highlighting the important role of education in shaping individuals' understanding and acceptance of financial protection products.

OCCUPATION DIFFERENCES IN TAKAFUL AWARENESS, PERCEPTIONS, ATTITUDES, AND TRUST

Table 9 shows that occupation significantly influences awareness, perceptions, attitudes, and trust toward Takaful ($p < 0.01$). However, the effect sizes are small to moderate ($\eta^2 = 0.017$ – 0.045), indicating that occupation explains only a modest portion of the variation. Public sector workers reported the highest mean scores across all Takaful measures, including protection awareness (TPA1), product awareness (TPA2), family Takaful perceptions (FTP), perceptions of agents (PTA), perceptions of online purchase (PPTPO), attitudes (AT), and trust (TR). Private sector workers also showed relatively high scores, while farmers and housewives generally reported lower awareness, attitudes, and trust, with retired respondents showing moderate levels.

The largest differences were observed in trust (TR) ($\eta^2 = 0.045$), family Takaful perceptions (FTP) ($\eta^2 = 0.044$), and product awareness (TPA2) ($\eta^2 = 0.041$), while perceptions of agents and online purchasing showed smaller differences. Overall, individuals with formal employment, particularly in the public sector, demonstrate higher awareness and more positive attitudes toward Takaful, likely due to greater exposure to financial information, stable income, and better access to financial services.

WORK EXPERIENCE DIFFERENCES IN TAKAFUL AWARENESS, PERCEPTIONS, ATTITUDES, AND TRUST

The results in Table 10 show that work experience significantly influences awareness, perceptions, attitudes, and trust toward Takaful ($p < 0.01$), although the effect sizes are small ($\eta^2 = 0.015$ – 0.042), indicating a modest influence. Overall, respondents with moderate work experience (5–20 years) reported higher mean scores across most Takaful measures. Those with 16–20 years of experience recorded the highest scores for protection awareness (TPA1), perceptions of Takaful agents (PTA), and attitudes (AT), while respondents with 5–10 years of experience showed higher product awareness (TPA2) and perceptions of online purchase

TABLE 8. Mean and standard deviation scores of Takaful measures across education levels

	Education level						F	P-value	η^2
	Not finishing school (n=59)	Primary school (n=201)	Secondary school (n=702)	Diploma (n=151)	Bachelor's degree (n=78)	Master's degree (n=8)			
TPA ¹	3.82 ±0.69	3.80 ±0.72	3.81 ±0.93	4.18 ±0.82	4.40 ±0.65	4.50 ±1.06	11.383	0.001	0.046
TPA ²	3.55 ±0.72	3.66 ±0.70	3.65 ±0.82	4.07 ±0.76	4.31 ±0.67	4.47 ±0.74	17.800	0.001	0.069
FTP	3.46 ±0.68	3.52 ±0.69	3.59 ±0.80	3.96 ±0.74	4.16 ±0.64	4.27 ±0.70	15.615	0.001	0.061
PTA	3.90 ±0.61	4.03 ±0.71	3.99 ±0.86	4.35 ±0.81	4.45 ±0.63	4.50 ±1.06	8.900	0.001	0.036
PPTPO	2.80 ±0.89	3.00 ±0.90	2.99 ±0.87	3.12 ±0.97	3.36 ±1.04	3.47 ±1.13	3.814	0.002	0.016
AT	3.45 ±0.65	3.57 ±0.73	3.64 ±0.79	4.06 ±0.71	4.11 ±0.73	4.22 ±0.66	15.259	0.001	0.060
TR	2.93 ±1.17	3.41 ±0.84	3.57 ±0.81	3.85 ±0.78	4.07 ±0.77	4.20 ±0.64	18.324	0.001	0.071

TPA¹ = Takaful protection awareness, TPA² = Takaful product awareness, FTP = Family Takaful perceptions, PTA = Perception of Takaful agents, PPTPO = Perception towards purchasing Takaful products online, AT = Attitudes, TR = Trust

TABLE 9. Mean and standard deviation scores of Takaful measures across occupations

	Occupations					F	P-value	η^2
	Farmer (n=315)	Housewife (n=440)	Retired (n=50)	Private sector workers (n=277)	Public sector workers (n=117)			
TPA ¹	3.82 ±0.76	3.79 ±0.94	3.87 ±0.78	4.01 ±0.87	4.25 ±0.85	8.722	0.001	0.028
TPA ²	3.65 ±0.71	3.62 ±0.83	3.76 ±0.82	3.93 ±0.81	4.08 ±0.80	12.632	0.001	0.041
FTP	3.54 ±0.72	3.56 ±0.77	3.65 ±0.76	3.80 ±0.80	4.05 ±0.80	13.751	0.001	0.044
PTA	4.00 ±0.73	4.00 ±0.93	3.93 ±0.82	4.21 ±0.78	4.27 ±0.86	5.236	0.001	0.017
PPTPO	2.90 ±0.91	2.97 ±0.85	3.04 ±0.75	3.13 ±0.95	3.31 ±0.99	5.863	0.001	0.019
AT	3.57 ±0.72	3.62 ±0.77	3.61 ±0.79	3.86 ±0.77	4.06 ±0.82	13.002	0.001	0.042
TR	3.37 ±0.96	3.54 ±0.78	3.53 ±0.76	3.73 ±0.81	3.99 ±0.81	14.184	0.001	0.045

TPA¹ = Takaful protection awareness, TPA² = Takaful product awareness, FTP = Family Takaful perceptions, PTA = Perception of Takaful agents, PPTPO = Perception towards purchasing Takaful products online, AT = Attitudes, TR = Trust

TABLE 10. Mean and standard deviation scores of Takaful measures across work experiences

	Work experiences (year)					F	P-value	η^2
	<5 (n=337)	5-10 (n=308)	11-15 (n=234)	16-20 (n=93)	>20 (n=227)			
TPA ¹	3.75 ±0.94	3.93 ±0.87	3.99 ±0.83	4.12 ±0.74	3.88 ±0.85	4.568	0.001	0.015
TPA ²	3.61 ±0.84	3.83 ±0.75	3.84 ±0.82	3.93 ±0.74	3.67 ±0.82	5.614	0.001	0.018
FTP	3.53 ±0.80	3.77 ±0.75	3.73 ±0.79	3.79 ±0.73	3.57 ±0.78	5.582	0.001	0.018
PTA	3.89 ±0.96	4.10 ±0.80	4.18 ±0.77	4.31 ±0.74	4.09 ±0.77	6.740	0.001	0.022
PPTPO	3.00 ±0.86	3.20 ±0.95	3.01 ±0.93	3.14 ±0.86	2.79 ±0.86	7.234	0.001	0.024
AT	3.57 ±0.82	3.81 ±0.72	3.79 ±0.80	3.97 ±0.72	3.58 ±0.78	8.871	0.001	0.029
TR	3.47 ±0.80	3.74 ±0.75	3.74 ±0.78	3.77 ±0.79	3.31 ±1.06	13.099	0.001	0.042

TPA¹ = Takaful protection awareness, TPA² = Takaful product awareness, FTP = Family Takaful perceptions, PTA = Perception of Takaful agents, PPTPO = Perception towards purchasing Takaful products online, AT = Attitudes, TR = Trust

(PPTPO). In contrast, respondents with less than 5 years or more than 20 years of experience generally reported lower scores, with the >20 years group recording the lowest online purchase perception (PPTPO) ($M = 2.79$) and relatively lower trust (TR).

The largest differences were found in trust (TR) ($\eta^2 = 0.042$), attitudes (AT) ($\eta^2 = 0.029$), and online purchase perceptions (PPTPO) ($\eta^2 = 0.024$). This suggests that individuals with moderate work experience may be more financially active and receptive to Takaful, while those with very limited or long work experience may show lower engagement with financial protection products or digital platforms.

HOUSEHOLD INCOME DIFFERENCES IN TAKAFUL AWARENESS, PERCEPTIONS, ATTITUDES, AND TRUST

Table 11 shows that household income significantly influences most Takaful measures, including protection awareness (TPA1), product awareness (TPA2), family Takaful perceptions (FTP), perceptions of agents (PTA), attitudes (AT), and trust (TR) ($p < 0.01$). However, perceptions of online purchase (PPTPO) did not differ significantly across income groups ($p = 0.307$). Overall, respondents with higher household income reported higher mean scores in awareness, perceptions, attitudes, and trust. Those earning above RM8,001 recorded the highest scores, while the lowest-income group (< RM1,500) consistently showed the lowest scores.

The largest differences were found in protection awareness (TPA1) ($\eta^2 = 0.050$) and product awareness (TPA2) ($\eta^2 = 0.041$), indicating that income moderately influences awareness of Takaful. In contrast, willingness to purchase Takaful online was not strongly related to income. Overall, higher-income households tend to exhibit greater awareness, more positive attitudes, and stronger trust in Takaful, likely due to higher financial literacy, greater exposure to financial products, and greater financial capacity for protection planning.

DISCUSSIONS

This study demonstrates that engagement with Takaful is shaped not only by the availability of Islamic financial protection products but also by the interaction among individuals' sociodemographic characteristics, socioeconomic resources, financial capability, institutional trust, and access to formal financial systems. Although the observed demographic differences were generally characterised by small to moderate effect sizes, they show systematic disparities in awareness, perceptions, attitudes, and trust that have important implications for financial inclusion in the studied rural Malaysian palm oil plantation communities. Rather than representing isolated demographic differences, these findings suggest that Takaful engagement reflects broader socioeconomic conditions that influence individuals' ability to understand, evaluate, and adopt formal risk protection. Consequently, the findings support the study's integrated theoretical framework by demonstrating that Financial Literacy Theory, Social Exclusion Theory, the Theory of Planned Behaviour (TPB), Diffusion of Innovation Theory (DOI), and Trust Theory provide complementary explanations for variations in Takaful engagement across rural populations.

SOCIODEMOGRAPHIC AND SOCIOECONOMIC DETERMINANTS OF TAKAFUL AWARENESS, PERCEPTION, ATTITUDE, AND TRUST

The findings indicate that education, occupation, work experience, and household income are the most influential socioeconomic characteristics associated with Takaful awareness and perceptions. Respondents with higher education, stable employment, particularly in the public sector, and higher household incomes demonstrated greater Takaful awareness, stronger understanding of Shari'ah principles, more favourable perceptions of family Takaful, and greater confidence in digital Takaful services. These findings suggest that

TABLE 11. Mean and standard deviation scores of Takaful measures across household income

	Household income					F	P-value	η^2
	< RM 1,500 (n=360)	RM 1,501-3,000 (n=505)	RM 3,001-5,000 (n=224)	RM 5,001-8,000 (n=75)	>RM 8,001 (n=35)			
TPA ¹	3.65 $\pm$ 1.03	3.90 $\pm$ 0.78	4.11 $\pm$ 0.71	4.24 $\pm$ 0.76	4.29 $\pm$ 0.81	15.679	0.001	0.050
TPA ²	3.56 $\pm$ 0.88	3.74 $\pm$ 0.74	3.88 $\pm$ 0.74	4.06 $\pm$ 0.75	4.22 $\pm$ 0.88	12.679	0.001	0.041
FTP	3.50 $\pm$ 0.85	3.65 $\pm$ 0.74	3.76 $\pm$ 0.71	3.98 $\pm$ 0.76	4.10 $\pm$ 0.87	10.986	0.001	0.035
PTA	3.89 $\pm$ 0.98	4.08 $\pm$ 0.79	4.25 $\pm$ 0.67	4.25 $\pm$ 0.80	4.36 $\pm$ 0.82	8.476	0.001	0.028
PPTPO	3.01 $\pm$ 0.84	3.00 $\pm$ 0.93	3.04 $\pm$ 0.93	3.24 $\pm$ 0.88	2.99 $\pm$ 1.04	1.205	0.307	0.004
AT	3.57 $\pm$ 0.84	3.69 $\pm$ 0.73	3.79 $\pm$ 0.72	3.96 $\pm$ 0.80	4.17 $\pm$ 0.83	8.732	0.001	0.028
TR	3.47 $\pm$ 0.86	3.53 $\pm$ 0.87	3.70 $\pm$ 0.79	3.99 $\pm$ 0.73	3.98 $\pm$ 0.97	9.335	0.001	0.030

TPA¹ = Takaful protection awareness, TPA² = Takaful product awareness, FTP = Family Takaful perceptions, PTA = Perception of Takaful agents, PPTPO = Perception towards purchasing Takaful products online, AT = Attitudes, TR = Trust

socioeconomic advantages enhance financial capability, enabling individuals to evaluate financial products more effectively rather than merely reflecting differences in economic status.

Financial Literacy Theory helps explain this pattern by proposing that education strengthens individuals' ability to acquire, interpret, and apply financial information. Higher educational attainment may enable consumers to distinguish Takaful from conventional insurance, understand concepts such as *tabarru'*, mutual risk-sharing, surplus distribution, and Shari'ah governance, and recognise the long-term protective value of family Takaful. Consequently, financial literacy can reduce uncertainty and strengthen confidence in Takaful's financial and religious legitimacy. This is consistent with previous research linking financial knowledge with Takaful awareness, purchase intention, and adoption (Abdou, Ali & Lister 2014; Akhter, Jamil & Fam 2021; Dahnoun & Alqudwa 2018; Sherif & Azlina Shairi 2013; Wahidah et al. 2024). The present findings extend this evidence by suggesting that education enhances not only product knowledge but also consumers' ability to evaluate Takaful as a long-term financial protection instrument.

Occupation and household income further strengthen financial capability by increasing exposure to formal financial institutions, banking services, workplace benefits, and structured financial planning. Stable employment provides greater opportunities to access financial information, while higher-income households have greater flexibility to allocate resources toward long-term protection. Thus, favourable Takaful perceptions among these groups may reflect stronger financial capability and confidence in managing future risks. Social Exclusion Theory points to the lower awareness often found in households with less education, unstable jobs, inconsistent incomes, and limited access to financial institutions. In the rural plantation community, seasonal or inconsistent income may lead households to prioritise immediate expenses over regular Takaful contributions. This indicates that financial exclusion involves both limited knowledge and constrained capacity to participate. Previous studies similarly report underutilisation of Takaful among financially vulnerable groups (Che Mohd Salleh & Megat Laksana 2018; Hassan et al. 2018; Iqbal, Ayaz & Saeed 2021; Jahya et al. 2023; Mohd Damit & Mohammed 2024; Wofuma et al. 2026; Yakob, Hafizuddin-Syah & Hisham 2019).

Overall, these disparities extend beyond product awareness to financial resilience. Limited Takaful awareness may increase vulnerability to financial shocks arising from illness, disability, death, or property loss. Therefore, improving Takaful awareness requires more than product availability; it requires targeted financial education, improved financial capability, and reduced structural barriers to financial inclusion, thereby

strengthening household resilience in the studied rural community.

The findings also show that the perception of family Takaful was more favourable among younger respondents, particularly those aged 21-30 years, who also demonstrated greater acceptance of digital Takaful services than older respondents. Similarly, individuals with postgraduate qualifications, higher household incomes, and stable public-sector employment demonstrated greater confidence in online Takaful platforms, appreciating their convenience, affordability, reliability, and security. These findings are consistent with Diffusion of Innovation Theory, which proposes that innovation adoption depends on perceived relative advantage, compatibility, complexity, and ease of use. Younger and more educated respondents exhibit characteristics associated with early adopters, including higher digital literacy, greater technology acceptance, and greater willingness to experiment with innovative financial services (Hassan et al. 2023; Park et al. 2021). Conversely, older respondents exhibited characteristics associated with later adopters, including lower digital literacy, greater uncertainty regarding online transactions, and stronger preferences for face-to-face interactions. These differences suggest that digital readiness and perceived behavioural control, rather than age itself, influence digital Takaful adoption. Therefore, the digital transformation of the Takaful industry should extend beyond technological innovation to incorporate targeted education, digital literacy programmes, and personalised support to build confidence among older and less technologically experienced consumers.

Beyond socioeconomic influences, the findings indicate that respondents generally reported positive attitudes towards family Takaful and recognised its role in providing financial protection against unforeseen events. Positive attitudes were particularly evident among respondents with higher educational attainment, greater household income, stable employment, and longer work experience, suggesting that favourable evaluations of Takaful develop through both increased financial capability and greater exposure to formal financial systems. These findings are consistent with the Theory of Planned Behaviour (TPB), which proposes that behavioural intentions are shaped by attitudes formed through beliefs about the expected outcomes of a behaviour. Individuals who better understand the financial and religious benefits of Takaful are more likely to perceive participation as beneficial, thereby strengthening their intention to adopt the scheme. This supports previous studies showing that favourable attitudes significantly predict Takaful adoption and purchase intentions (Maduku & Mbeya 2024; Qazi & Maizaitulaidawati 2024). The present study extends this evidence by demonstrating that positive attitudes are closely associated with socioeconomic resources that facilitate financial learning and informed decision-making.

Trust also emerged as a critical determinant of Takaful engagement. Respondents with higher education, stable occupations, higher incomes, and moderate work experience reported significantly greater confidence in Takaful agents and operators, reflecting stronger trust in product transparency, ethical governance, and institutional credibility. These findings support Trust Theory, which argues that trust reduces perceived uncertainty and encourages participation in services characterised by information asymmetry, such as insurance and financial products. For Takaful, trust extends beyond provider competence to include confidence that products genuinely comply with Shari'ah principles and operate in accordance with the values of mutual cooperation, fairness, and transparency. Greater financial knowledge enables consumers to understand these principles better, thereby reducing misconceptions and strengthening institutional trust. This interpretation aligns with previous studies identifying trust as a key predictor of Takaful adoption and long-term customer commitment (Abdullah, Hassan & Yusoff 2020; Aziz et al. 2019; Shukor 2020; Yusof et al. 2019; Zuki, Ishak & Hassan 2026).

The findings also indicate that gender and marital status exerted minimal influence on most dimensions of Takaful awareness, perceptions, attitudes, and trust. Previous studies have reported inconsistent evidence regarding these demographic characteristics. Some studies found that males and married individuals were more likely to participate in Takaful due to greater financial responsibility, household protection needs, and decision-making authority. However, some other studies have reported that these demographic characteristics were not significant, whereas education, income, occupation, and other socioeconomic or market-related factors demonstrated greater explanatory relevance (Bangaan Abdullah et al. 2022; Md Husin & Ab Rahman 2016; Mohd Damit & Mohammed 2024; Zuki & Bakar 2023). Although previous studies have reported mixed evidence regarding the influence of these demographic characteristics on insurance participation, the present findings suggest that within the studied rural plantation communities, socioeconomic resources have a substantially greater influence than demographic characteristics alone. This observation indicates that financial capability and access to financial resources are more important determinants of Takaful engagement than gender or marital status.

One possible explanation is the relatively homogeneous social environment within plantation communities, where financial information is commonly disseminated through families, neighbours, religious institutions, and community organisations. Financial decisions are frequently discussed collectively, reducing differences in access to financial knowledge between men and women or between married and unmarried individuals. Furthermore, improvements in educational attainment,

labour force participation, and digital connectivity have increased opportunities for both men and women to access financial information, potentially narrowing traditional gender disparities observed in earlier studies. These findings support the proposition of Social Exclusion Theory that structural access to education, financial services, and institutional resources is more influential than demographic characteristics themselves. Similarly, Financial Literacy Theory suggests that informed financial decision-making depends primarily on knowledge, skills, and financial capability rather than gender or marital status. The present findings therefore contribute to the growing body of evidence suggesting that socioeconomic inequality, rather than demographic identity, constitutes the principal barrier to financial inclusion in rural communities.

Collectively, these findings demonstrate that engagement with Takaful reflects interaction between financial capability, social inclusion, behavioural beliefs, institutional trust, and technological readiness. No single theoretical perspective sufficiently explains the observed patterns. Instead, Financial Literacy Theory explains how education enhances financial capability; Social Exclusion Theory explains how structural inequalities limit participation in formal financial systems; Diffusion of Innovation Theory explains differences in digital Takaful adoption; Trust Theory explains institutional confidence; while the Theory of Planned Behaviour clarifies how favourable attitudes and perceived behavioural control translate into behavioural intentions. Integrating these perspectives therefore provides a more comprehensive explanation of Takaful engagement than relying on any single theory.

POLICY, PRACTICAL AND INDUSTRY IMPLICATIONS

The findings generate several practical and policy implications for strengthening Takaful participation in rural communities. First, increasing participation requires more than expanding product availability. Takaful providers should redesign products according to the financial realities of rural households, particularly lower-income earners, farmers, housewives, and individuals with limited education. Affordable micro-Takaful products with flexible contribution schedules aligned with irregular plantation income, simplified policy terms, efficient claims procedures, and transparent explanations of benefits, exclusions, contributions, and surplus distribution could reduce barriers to affordability and complexity while strengthening consumer confidence.

Second, the findings highlight the importance of community-based financial literacy initiatives. Conventional awareness campaigns may have limited effectiveness when structural barriers constrain participation. Collaboration with trusted local institutions, including mosques, village committees, cooperatives, government-linked organisations, community organisations, and

religious leaders, could improve outreach to households with limited exposure to formal financial services. These intermediaries can facilitate accessible explanations of key Takaful concepts, including *ta'awun*, *tabarru'*, and Shariah compliance, thereby strengthening both financial literacy and institutional trust.

Third, the greater acceptance of digital Takaful among younger respondents presents opportunities to enhance digital financial inclusion. Takaful operators should adopt an omnichannel approach combining digital services with personalised support. User-friendly mobile applications, simplified online enrolment, digital claims submission, multilingual interfaces, and educational content through social media and messaging platforms could improve accessibility. At the same time, assisted digital services and community-based digital literacy programmes should be provided for older adults and first-time users to reduce technological barriers.

Fourth, strengthening agent professionalism is essential for institutional trust. Continuous training should cover ethical communication, consultative financial planning, customer relationship management, product knowledge, and effective explanation of Shariah principles. Agent performance should also incorporate transparency, customer satisfaction, ethical conduct, and service quality rather than relying solely on sales outcomes.

Finally, stronger collaboration among Takaful operators, cooperatives, and government agencies could facilitate group Takaful arrangements, financial education, and affordable access. Policymakers and industry bodies should support Islamic financial literacy, micro-Takaful innovation, digital service delivery, consumer protection, and transparent disclosure. Overall, an integrated strategy addressing financial literacy, affordability, digital capability, accessibility, and institutional trust is essential to reduce financial exclusion and promote more inclusive Takaful participation within rural plantation communities.

CONCLUSION

The findings show that demographic and socioeconomic factors influence awareness, perceptions, attitudes, and trust toward Takaful, although the effects are generally small to moderate. Respondents who are younger or middle-aged, better educated, formally employed, and from higher-income households tend to demonstrate greater awareness, more positive perceptions, stronger trust in Takaful, and higher acceptance of digital Takaful services. These differences are likely linked to higher financial literacy, better access to financial information, and stronger engagement in financial planning.

In contrast, older individuals, those with limited education, farmers, housewives, and lower-income households generally report lower awareness and less favourable attitudes, indicating gaps in knowledge and access to information on financial protection. However,

gender and marital status show minimal influence, while perceptions of Takaful agents remain relatively consistent, reflecting shared expectations of professionalism and ethical conduct. Overall, the results highlight the need for targeted awareness programmes, improved financial literacy, and accessible Takaful products, particularly for vulnerable groups in rural communities, to strengthen financial protection and inclusion.

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