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Medical insurance : Factor influencing medical insurance purchase decisions among Malaysians

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Abstract Medical insurance covered the person's medical and hospitalization expenditures. Medical insurance pay for pre- and post hospitalization expenses as treatment in the medical plan. Medical insurance is a very important function to secure a family member as well as to provide security financial for individuals. In Malaysia, there are still lack of knowledge about demand and loyalty of Malaysians consumers about medical insurance purchase decision. This study investigates the factors influencing medical insurance purchase decisions among Malaysians. This study applied the quantitative research and data was collected using a questionnaire that has been distributed to Malaysian citizens as the target respondents. Convenient sampling was employed and the total feedback received is 200 respondents. This research used software SPSS Version 27 in order to analyse and examine the relationships between the dependent and six independent variables. It was found that all the independent variables are positively correlated with the decision of Malaysians to obtain medical insurance. The correlation analysis of this study reveals that government initiatives and incentives have the highest level of association with Malaysians' decisions to purchase medical insurance while perceived vulnerability has the least strong correlation. The results found that Income Level, Government Initiatives and Incentives, Social Influence and Perceived Vulnerability has affected medical insurance purchase decisions among Malaysians, but knowledge on medical insurance and perceived severity did not have significant impacts on medical insurance purchase decisions among Malaysians. This suggests that Malaysians tend to undervalue the consequences of lacking insurance, revealing a potential gap in consumer awareness. It implies that merely enhancing educational efforts about insurance benefits and risks may not be enough to increase insurance uptake. This research enriches the understanding of medical insurance behavior in Malaysia and offers valuable insights for boosting insurance penetration and improving consumer engagement in the sector.

Keywords: medical insurance, purchase decision, hospitalization

1. Introduction

The individual's medical and hospitalization expenses were covered by their medical insurance. Standard health insurance policies cover pre- and posthospitalization charges, as well as medical costs related to treatment. Medical insurance is an integral component of human capital in this field and has the potential to increase the labor productivity of the economy. Insurance companies have the ability to augment their coverage as the occurrence of illnesses and health difficulties becomes more frequent. The primary focus of the government is subsequently to increase the well-being of low- and middle-income households by improving their ability to handle health hazards. Medical insurance is expected to equalize household expenditures and enhance overall welfare in the face of health risks. Medical insurance is essential for safeguarding the well-being of family members and ensuring that individuals have financial stability (Pauly et al., 2006).

Nevertheless, disparities in medical insurance coverage and benefits exist in many developing countries as a result of the division of fundamental medical insurance between urban and rural regions (Chen et al., 2022). Currently, when a family member is afflicted with a severe illness, a substantial sum of money is required for their treatment. Medical insurance can assist individuals in confronting illnesses. Moreover, elderly and middle-aged individuals are predominantly susceptible to this condition and require medical insurance. Medical insurance provides comprehensive coverage and assistance for all necessary medical treatments. The population of middle-aged and elderly individuals has significantly increased. Nevertheless, this increase in profits could be offset by the significant surge in healthcare expenses. The increase in elderly demographics poses a further challenge to the health insurance system because of the generally poorer health status of older individuals than of younger individuals, leading to increased healthcare expenses (Wang et al., 2021).

The medical insurance business in Malaysia has experienced rapid growth in recent years. However, there is limited knowledge regarding the factors that drive Malaysians to obtain medical insurance. Consequently, there is a lack of

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understanding of effective marketing and advertising strategies for insurance companies seeking to enter the Malaysian market. The health care sector persists in grappling with substantial issues that necessitate resolution, including a considerable prevalence of noncommunicable diseases, escalating demand for health care services, a dearth of financial resources allocated to health care expenditures, and surging health-care costs. However, ongoing global efforts to enhance the organization and efficiency of the healthcare industry and promote the equitable use of medical services are needed (Nassar et al., 2020).

Insurance firms face challenges in maintaining a customer-centric approach in today's competitive environment, when client tastes are constantly changing. Consequently, a primary concern for several insurance companies currently is how to adjust to evolving client requirements. The evolving demands of customers necessitate the development of new skills and competencies. These capabilities give proactive and creative individuals the opportunity to identify and deliver the exceptional service that the increasing expectations of the public require. Businesses will have the chance to guarantee consumer loyalty if they can take advantage of these chances and provide high-quality service (Fatima Alinvi & Maira Babri, 2007).

In addition, customers also have specific preferences regarding the insurance policies they wish to acquire. Securing long-term customer loyalty is a crucial task for many firms. The insurance business provides coverage against financial losses caused by numerous hazards, allowing people and corporate entities to be reimbursed for different types of damage and losses (Fatima Alinvi & Maira Babri, 2007). According to a study conducted by Lee (2013) in Korea, the total expenditure on hospitalization treatment increased by 21.76%, from 12.584 billion KRW in 2004 to 15.322 billion KRW in 2007. The investigation concluded that the human body is now more vulnerable and prone to illness than it was previously.

Therefore, it is crucial for insurance enterprises to fully understand the specific needs and demands of Malaysian customers. The emphasis on understanding and meeting the preferences of Malaysian customers stems from the recognition that doing so will allow an insurance company to maintain these clients for their entire lifetimes. In Malaysia, an increasing number of insurance companies are expanding their presence in the market. To gain a larger market share, organizations must accurately identify and understand the needs and desires of their customers. Insurance firms may cultivate satisfied and devoted consumers over time by continually adapting to their evolving expectations. Companies will encounter difficulties if they lack knowledge about the needs and desires of their clients. However, there is currently a lack of information regarding the demand for insurance in Malaysia (Chee Chee, 2013). The main objective of this research is to examine the factors that influence Malaysians' choices in acquiring medical insurance. Medical insurance is an essential tool for mitigating the financial risks associated with unexpected medical costs. Therefore, this study aims to determine the elements that impact the decision-making process of purchasing medical insurance among Malaysians. Furthermore, this study aims to ascertain the preferences of Malaysians in regard to acquiring specific insurance policies, as well as the obstacles they face in obtaining and buying medical insurance.

2. Literature Review

2.1. Medical insurance companies in Malaysia

Insurance is a strategically vital sector in the modern economy. Given the unpredictability of the market economy, virtually all organizations utilize insurance services. The insurance system helps stabilize the financial conditions of economic organizations by compensating them for whatever losses they incur. Compensations for economic, natural, technological, and social disaster damage are provided without relying on public funding. Insurance businesses, like other participants in economic transactions, are also exposed to the possibility of incurring losses due to risks. Put simply, those companies are at risk of incurring losses that significantly weaken their ability to maintain a stable financial position. The fact that insurance firms are both the subject and the target of risk management is another crucial consideration (Ustinova, 2021).

Internal control procedures in insurance businesses must ensure the provision of comprehensive, dependable, and unbiased information regarding financial statements, assets, and risks. Internal controls should be implemented to achieve break-even and efficient insurance operations, prevent money laundering, and effectively manage financial and economic activities, assets, and risks. (Turgaeva et al., 2020). Medical insurance can improve individuals' utilization of medical services and overall health by reducing the financial barrier to accessing medical treatment and increasing the availability of healthcare services. Multiple studies have demonstrated that persons who possess medical insurance exhibit higher rates of utilization for outpatient, inpatient, and healthcare services. Conversely, individuals without medical insurance may choose to forgo or delay treatment because of the substantial financial burden (Gao et al., 2021).

Medical insurance policies can provide coverage for expenses associated with the treatment of serious illnesses. Standard medical insurance policies often provide financial coverage for hospital admissions, surgeries, and other medical procedures. All individuals who contribute the same premium amount should be entitled to an equal portion of reimbursement payments, including identical expenses and benefits. An equitable system ensures that all insured individuals have equal access to benefits, with low-income groups having access to identical core health services (Gao et al., 2021).

2.2. Types of medical insurance products in Malaysia

Hospitalization and surgical insurance provide coverage for medical treatment and hospital expenses in the event of a beneficiary's illness or accidental damage. Hospitalization and surgery insurance cover expenses such as hospital lodging, boards, laboratory charges, access to specialized facilities, nursing care, and certain drugs and supplies. The health insurance claims database classifies hospitalization expenses into various categories, including laboratory and diagnostic costs, nonmedication treatment costs, prescription costs, bed fees, and additional service costs such as special care fees and air conditioning (Venkatesh et al., 2019), Table 1 presents the synthesis of all this information.

Critical illness insurance (CII) is a specialized form of health insurance that provides coverage exclusively for persons who have been diagnosed with severe and life-threatening medical disorders. In the early 1980s, CII was initially introduced in South Africa under the name "Dread Disease Insurance." The event was highly successful since it addressed the absence of any covering for excessively high medical expenses. In the early 1990s, the United Kingdom likewise embraced CII and experienced significant growth by integrating coverage for severe illnesses with protection for income (Gatzert & Maegebier, 2015).

Disability income insurance is a form of insurance that offers financial security by providing a monthly replacement of income in the event that the policyholder becomes incapacitated and is unable to work due to disease or injury. Its purpose is to safeguard one's earnings and offer financial assistance in the event of a disability that renders them unable to work and earn a livelihood. Disability income insurance generally provides compensation for a fraction of the earnings, typically a percentage, for a specific duration or until the policyholder or recipient is able to resume employment (Gelber et al., 2018).

Table 1 Types of medical insurance products in Malaysia.

Name of insurance	Characteristics and Coverage	Beneficiary
Hospitalization and surgery insurance	Covers medical treatment and hospital costs such as laboratory and diagnostic costs, nonmedication treatment costs, prescription costs, bed fees.	Illness or unintentional injury.
Critical illness insurance	Provides additional coverage for medical emergencies like heart attacks, strokes, or cancer	Mostly the beneficiary that have health occurrences include heart attacks, strokes, organ transplants, cancer, and coronary bypass surgery.
Disability income insurance	Provides a regular income replacement if the beneficiary become disabled and are unable to work due to illness or injury. It is designed to help protect the income and provide financial support during a period of disability when they are unable to earn a living.	The beneficiary that become disabled and are unable to work due to illness or injury.

2.3. Importance of medical insurance products

Overall, individuals without insurance often receive approximately 50% less healthcare than those with private insurance does, even when accounting for the availability of free treatment from healthcare providers. Even after controlling for age, wealth, health, and other factors, this inequality remains. Uninsured adults undergo a reduced number of screening and preventative treatments, and they do so with less frequency. Several illnesses and ailments have acknowledged deficiencies, such as screening methods for breast and cervix cancer, as well as for high blood pressure or cholesterol (Michael McWilliams, 2009).

Uninsured individuals do not receive any advantages from discounted medical expenses, which are usually arranged by commercial health insurance or mandated by governmental programmes. Previously, individuals lacking insurance had to pay the entire expense of hospitalization. Certain patients are eligible for philanthropic medical care on the basis of their low income, whereas others are consistently denied treatment owing to outstanding debts. Multiple polls indicate that uninsured families have medical bill difficulties at a rate that is two to three times greater than that of insured families. Additionally, medical bills have been identified as a contributing factor in at least one-sixth of bankruptcies. (May & Cunningham, 2004)

The benefits of expanding coverage surpass the cost of offering additional services. Expanding the scope of coverage will stimulate productivity while improving overall health, prolonging lifespan, decreasing disability rates, and aiding in the battle against contagious diseases. Individuals with newly acquired insurance have access to a greater range of services than their current situation does, in addition to the expenses they cover themselves or the uncompensated treatment they receive from healthcare providers. There is a possibility that this could lead to an increase in medical expenses, although the extent of the increase would not be as significant as the benefits gained from increased lifespan and other advantages. These estimates are challenging to develop and do not consider political considerations regarding how to finance expenditures increases, such as the potential shift in spending from the private to the public sector.

2.4. Underpinning Theories

Dragos et al. (2020) noted that nearly all theoretical and empirical studies on life insurance consumption reference the foundational works of Yaari (1964). Lewis (1989) later extended Yaari's model to include economic factors (such as income and wealth), as well as socio-demographic and cultural variables tied to dependency preferences. The authors further highlighted that recent literature on life insurance has begun to incorporate behavioral factors as key determinants.

For instance, the Theory of Planned Behavior (TPB), which builds upon the Theory of Reasoned Action (TRA), has been extensively used to predict and influence behavior (Ajzen, 2020; Mamun et al., 2021). TPB can be employed to predict behavioral intentions related to health insurance purchases. In their study of Malaysian working adults, Mamun et al. (2021) examined the intention to purchase health insurance, emphasizing that TPB's primary determinants include subjective norms (social influence), attitudes toward the behavior, perceived behavioral control, and intention. The study proposed that insurance literacy and perceived usefulness influence intention, which subsequently impacts health insurance purchase decisions. Furthermore, the research introduced intention as a mediating variable, with perceived product risk and average monthly income as moderating variables in the relationship between intention and health insurance purchase.

Another relevant theory related to medical life insurance is protection motivation theory (PMT). PMT is predicated on the notion that opting to invest in property-level safety measures possesses a multitude of distinct attributes. The PMT framework has been widely used to predict various behaviors. For example, health-related behaviors, responses to natural disasters, and attitudes toward online security should be examined. It aims to discover the fundamental cognitive processes that lead to "protection motivation," which is the decision to allocate funds toward safeguarding against a specific risk (Yan et al., 2014).

PMT posits that individuals adopt risk-reducing actions as a means of self-defense against potential harm. Individuals evaluate the advantages and disadvantages of various behaviors and select one depending on its superiority. (Westcott et al., 2017). According to the PMT theory, threat appraisal assesses an individual's assessment of the risk associated with specific actions or diseases. The formation of threat appraisal and avoidant coping as vulnerability factors or reactions to pandemic-related suffering may affect decisions at the clinical and policy levels. Consequently, the monitoring system could offer timely and informed assistance to individuals who are at risk (Xiao et al., 2014).

Furthermore, perceived severity refers to an individual's assessment of the gravity of the issue, and it significantly impacts their behavioral intention and motivation. The presence of a profound phobia toward danger results in a heightened incentive to engage in protective actions. Fear is an affective reaction to perceived danger, which elicits an emotional response rather than a cognitive response. In terms of vulnerability, threats can vary in severity from low to high, and vulnerability can also range from low to high. Vulnerability pertains to the likelihood of individuals encountering damage or engaging in risky activities (Salleh et al., 2013). The concept of coping appraisal is determined by the individual's evaluation of the suggested activity's ability to provoke a response, as well as their sense of their own self-confidence in executing the advised actions. Response efficacy refers to the perceived effectiveness of the recommended preventive intervention. Self-efficacy refers to the belief that one is capable of effectively performing a recommended activity (Ling et al., 2019). This text presents an illustration of the key components of protection motivation theory as described by Oakley et al. in 2020. Figure 1 depicts the information shown.

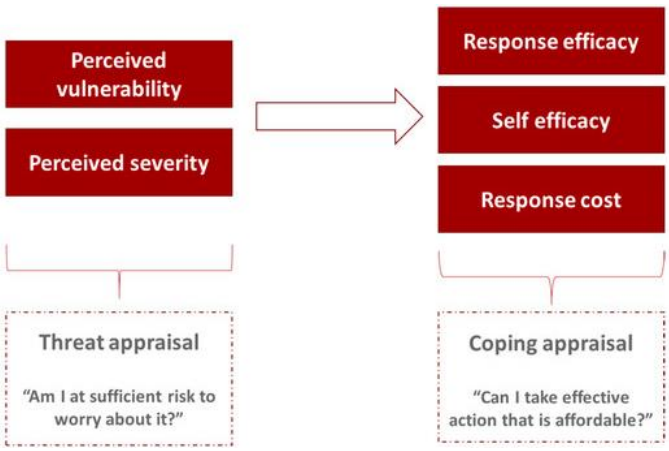

Figure 1 An illustration of protection motivation theory.

Besides TPB and PMT, Golden et al. (2015) highlighted that the social ecological model (SEM) is widely employed in public health research and practice. The SEM is a theoretical framework that describes the complex interplay between individual, interpersonal, community, and societal factors (Morgan et al., 2023). Morgan et al. (2023) conducted a systematic review of macro - and meso - determinants of national health insurance enrolment among older adults in Ghana. The SEM provides a useful framework for understanding the multiple levels of influence on health insurance enrolment in Ghana. At the individual level, the SEM highlights factors such as age, gender, education, and income that may impact an individual's decision. At the interpersonal level, the SEM highlights the importance of social networks, social support, and interpersonal communication (Hertler et al., 2018) in shaping health behaviours. Community-level factors such as availability and accessibility of registration centres and the quality of healthcare services play a significant role in determining enrolment rate. At the societal level, structural and policy factors play a crucial role and studies suggest that government policies and regulations can

impact enrolment rates.

Various theories from multiple disciplines can be applied when examining the factors that influence medical insurance purchase decisions. This research aims to examine the impact of medical insurance purchase decisions on Malaysians in Malaysia. Hence, part of the three pertinent theories - TPB, PMT and SEM have been selected for this study and incorporated into the conceptual framework.

3. Methodology

The researcher's methodology in this study pertains to the decision of whether to employ a single quantitative technique, a single qualitative technique, or a hybrid approach that integrates both quantitative and qualitative approaches. Therefore, to ensure consistency in this research design, it is likely that each of these options necessitate a distinct combination of characteristics. For this study, a quantitative research approach was utilized to acquire and assess the data. In this study, the data are measured and expressed via a numerical scale.

To achieve conclusions, a quantitative research technique requires the quantification and assessment of components. Data analysis involves the utilization of numerical data and statistical tools to examine those data, which are evaluated via statistical methods and presented in the form of diagrams, histograms, tables, and charts. Quantitative analysis examines the numerical relationship between variables in a study and uses different statistical methods for measurement and analysis. The researcher will employ the survey methodology for this analysis by distributing the questionnaire to the intended respondents. This matter would be presented in a manner that guarantees equal comprehension of all respondents' responses. The survey for this research was divided into two primary parts. Part A aimed to collect demographic information about the respondents, including their gender, age, race, and level of education. The constructs and items created for Part B were designed to evaluate the research technique used in the study. This section of the study examined the factors that were anticipated to impact the decision-making process of Malaysians when purchasing medical insurance. These determinants were identified on the basis of the relevant theories outlined in Figure 2. H1, H2, and H3 are derived from SEM theory, while H4 is based on TPB theory. As for H5 and H6, it is originated from PMT theory.

Both nominal and ordinal scales were utilized for measurement. With the exception of the respondent's personal information, which was measured via a nominal scale, the majority of the questionnaires used an ordinal scale. The Likert scale technique was deemed appropriate for evaluating the questionnaire items in this study. The source of this information is Likert scale from 1932. A five-point scale is the most prevalent form of a Likert-type measure. The respondents were instructed to indicate their level of agreement or disagreement with each statement via a five-point Likert scale, where 1 represents strongly disagree, 2 represents disagree, 3 represents neutral, 4 represents agree, and 5 represents strongly agree.

Following the validation of the instrument, the questionnaire should be assessed with the intended participants to ascertain if any revisions or expansions are necessary (Kasunic, 2005). A pilot survey is a scaled-down version of a larger study that can be used for any type of research, particularly before a questionnaire survey is conducted. It is generally recommended that a pilot survey be conducted prior to starting the data collection process. A pilot study is crucial for the identification and validation of issues in the developed instrument. In this research, a pilot study was conducted to acquire 50 samples and test the measurement model via SPSS version 27 for analysis. According to the researchers, SPSS is a statistical program used for analyzing quantitative data. The conclusive survey was carried out with a sample size of 200 respondents who possessed a certain level of knowledge regarding Malaysians' medical insurance purchasing choices. A minimum sample size of 150 participants or more is required for accurate estimation (Statistics, 2015).

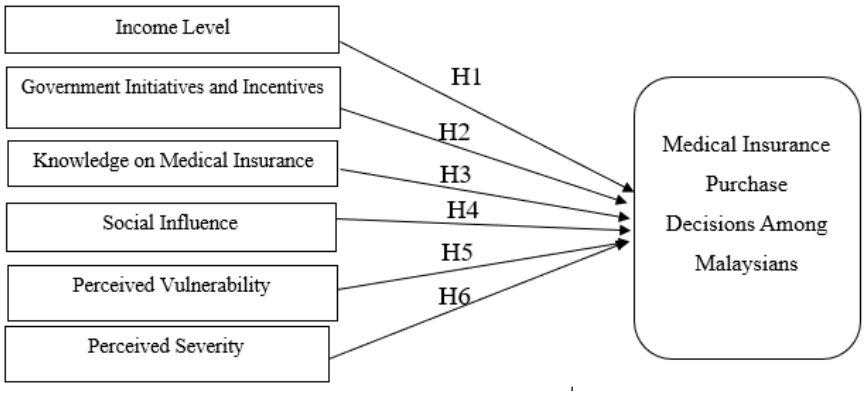

Figure 2 Conceptual framework

The sample frame consists of individuals selected from a population, namely, those who reside in a certain location for the purpose of receiving treatment. This study included a total of 200 questionnaires and focused specifically on the population of Malaysian citizens. As it was subsequently unfeasible to distribute the entire population, a method of convenient sampling

was employed in two specific regions in southern Malaysia, namely, Johor Bahru (JB) and Malacca Central (MC). The sum of 1,758,500 (JB) and 617,000 (MC) is 2,375,500. The objective of this study is to ascertain the determinants that impact the decision-making process of Malaysians while purchasing medical insurance. For this study, the researcher selects Malaysian individuals who possess experience or knowledge regarding the decision-making process of purchasing medical insurance. The research included online questionnaires, as they are the most efficient and effective data collection method. Consequently, the questionnaire will be utilized to gather data for this research, employing close-ended questions that will be created utilizing Google Forms. When this particular research method, known as online Google Forms, is utilized, all intended participants are required to fill out surveys. The collected data are subsequently reviewed to verify the validity and relevance of the hypothesis in relation to this research.

4. Results and discussion

Researchers commonly employ the pilot test method to evaluate the reliability of questionnaires. The researcher gathered data from a sample of 50 individuals in the pilot study. By executing the pilot test, the assessment of data dependability can be achieved. If needed, the questionnaire questions were adjusted according to the results of the pilot test. The pilot test yielded a result indicating that all 50 respondents (100%) provided valid data and that there were no instances of missing data in the processed dataset as shown in Table 2.

Table 2 Case processing summary.

		N	%
Cases	Valid	50	100.0
	Excluded	0	0
	Total	50	100.0

Table 3 shows the demographic profile of the respondents in this study. The majority of the respondents in the survey were male, with a total frequency of 129 or 64%. The female participants subsequently accounted for a total of 71 participants, which corresponds to 36% of the total. The majority of the respondents were between the ages of 25–31 years, with a frequency of 87 or 44%. Furthermore, individuals who are 45 years old and older have the lowest occurrence rate, specifically 10 or 5%, respectively. The primary focus of this study is the educational attainment of individuals with a degree, which accounts for 116 cases or 58% of the total. Moreover, respondents with a master's degree or above have the lowest frequency, with only 4 individuals, accounting for a total proportion of 2%. The primary frequency that contributed to this study was Chinese, accounting for 97 or 49% of the sample. In contrast, Indian respondents had the lowest frequency, specifically 46% or 23%. The majority of responders, comprising 53 individuals or 27% of the total, are self-employed. Next, individuals working in the government sector and those in higher positions have the lowest occurrence, specifically 8 or 4%, respectively.

Table 3 Demographic profile of the respondents (n=200).

Demographic Variables	Categories	Frequency (n)	Percentage(%)
Gender	Male	129	64
	Female	71	36
Age	18 - 24 years old	33	16
	25 - 31 years old	87	44
	32 - 38 years old	46	23
	39 - 45 years old	24	12
	45 years old and above	10	5
Educational level	Master or above	4	2
	Degree	116	58
	STPM/Diploma	54	27
	SPM or below	26	13
Ethnicity	Malay	57	28
	Chinese	97	49
	Indian	46	23
Occupational level	Government sector	8	4
	Private sector	94	47
	Self-employed	53	27
	Student	45	22

4.1. Reliability analysis for variables

4.1.1. Reliability analysis for independent variables

Table 4 displays the Cronbach's alpha results of the independent variables in this study. This survey has a total of 6 independent factors for respondents to answer. The Cronbach's alpha value for the first independent variable, income level, is

0.972. The Cronbach's alpha for government initiatives and incentives is 0.969, indicating an outstanding outcome for this independent variable. The Cronbach's alpha coefficient for knowledge about medical insurance is 0.975. Furthermore, the social influence construct has a Cronbach's alpha coefficient of 0.968, whereas the perceived vulnerability construct similarly has a Cronbach's alpha coefficient of 0.968. Despite having the lowest value of Cronbach's alpha among all the independent variables, these two factors nonetheless yield a satisfactory result for Cronbach's alpha. In addition, the Cronbach's alpha for perceived severity is 0.976, which is the highest among all the independent variables.

Table 4 Reliability analysis for independent variables.

Independent Variables	Cronbach's Alpha	Result
Income Level (IL)	0.972	Excellent
Government Initiatives and Incentives (GI)	0.969	Excellent
Knowledge on Medical Insurance (KM)	0.975	Excellent
Social Influence (SIF)	0.968	Excellent
Perceived Vulnerability (PV)	0.968	Excellent
Perceived Severity (PS)	0.976	Excellent

4.1.2. Reliability analysis for dependent variables

Table 5 displays the Cronbach's alpha for the dependent variable in the study. The Cronbach's alpha coefficient for medical insurance purchasing decisions among Malaysians is 0.970. The dependent variable demonstrated a highly favorable outcome in terms of the Cronbach's alpha value.

Table 5 Reliability Analysis for the Dependent Variable.

Dependent Variable	Cronbach's Alpha	Result
Medical Insurance Purchase Decisions Among Malaysians (MP)	0.970	Excellent

4.2. Pearson's correlation analysis

Inferential analysis is commonly used to evaluate differences between groups receiving different treatments. Inferential analysis uses metrics obtained from a subset of participants in the experiment to make comparisons between treatment groups and draw conclusions about the entire population of participants. The Pearson correlation analysis of this study reveals that government initiatives and incentives have the highest level of association with Malaysians' decisions to purchase medical insurance (r = 0.976). This is followed by income level (r = 0.958), social influence (r = 0.858), knowledge of medical insurance (r = 0.767), and perceived severity (r = 0.764). Perceived vulnerability has the least strong correlation with medical insurance purchase decisions among Malaysians (r = 0.738). Therefore, all the independent variables in this study are positively correlated with the decision of Malaysians to obtain medical insurance, and this correlation is statistically significant at the 0.01 level. Table 6 presents the synthesis of all this information.

Table 6 Correlations between the independent and dependent variables.

		IL	GI	KM	SIF	PV	PS	MP
IL	Pearson Correlation	1	.944**	.769**	.802**	.759**	.732**	.958**
GI	Pearson Correlation	.944**	1	.793**	.844**	.776**	.818**	.967**
KM	Pearson Correlation	.769**	.793**	1	.794**	.827**	.821**	.767**
SIF	Pearson Correlation	.802**	.844**	.794**	1	.812**	.842**	.858**
PV	Pearson Correlation	.759**	.776**	.827**	.812**	1	.924**	.738**
PS	Pearson Correlation	.732**	.818**	.821**	.842**	.924**	1	.764**
MP	Pearson Correlation	.958**	.967**	.767**	.858**	.738**	.764**	1

**. The correlation is significant at the 0.01 level (2-tailed).

Note: Income level (IL), government initiatives and incentives (GI), knowledge of medical insurance (KM), social influence (SIF), perceived vulnerability (PV), perceived severity (PS), and medical insurance purchase decisions among Malaysians (MP)

4.3. Multiple regression

Multiple regression is a statistical method used to predict unknown values for two or more variables (Sedgwick, 2013). The objective of this study is to identify the elements that influence the decision-making process of Malaysians when they purchase medical insurance. The independent variables considered for this study are income level, government initiatives and incentives, information on medical insurance, social influence, perceived vulnerability, and perceived severity. The following table displays the outcomes of the multiple regression analysis conducted in this study.

Table 7 displays the outcome of the statistical test for the significance of the relationship between two variables, namely, the independent variable and the dependent variable. The focal variable in this research is the decision-making process of Malaysians in regard to purchasing medical insurance. The six independent factors include income level, government initiatives

and incentives, information on medical insurance, social impact, perceived vulnerability, and perceived severity. Moreover, if the p value exceeds 0.05, the hypothesis is not substantiated.

The study revealed that government initiatives and incentives (β = 0.480, t = 8.827, p =0.000), income level (β = 0.445, t= 9.267, p =0.000), social influence (β = 0.220, t= 7.532, p =0.000), and perceived vulnerability (β = -0.146, t= -3.521, p =0.000) have a significant effect on Malaysians' decisions to purchase medical insurance. Moreover, there was no substantial correlation between awareness of medical insurance (β = -0.020, t= -0.764, p =0.446) or perceived severity (β = 0.012, t= 0.249, p =0.804) and the decision to obtain medical insurance among Malaysians. Therefore, the understanding of medical insurance and its apparent seriousness are disregarded.

Table 7 Multiple regression analysis predicting the independent variable to the dependent variable.

Model	Standardized Beta(β)	t value	p value	Decision
(Constant)	-0.061	-1.322	0.188	-
IL (H1)	0.445	9.267	0.000	Supported
GI (H2)	0.480	8.827	0.000	Supported
KM (H3)	-0.020	-0.764	0.446	Rejected
SIF (H4)	0.220	7.532	0.000	Supported
PV (H5)	-0.146	-3.521	0.001	Supported
PS (H6)	0.012	0.249	0.804	Rejected

Note: Income level (IL), government initiatives and incentives (GI), knowledge of medical insurance (KM), social influence (SIF), perceived vulnerability (PV), perceived severity (PS), and medical insurance purchase decisions among Malaysians (MP)

Therefore, utilizing multiple regression analysis, the equation was formulated as follows:

$$Y = -0.061 + 0.445X_1 + 0.480X_2 - 0.020X_3 + 0.220X_4 - 0.146X_5 + 0.012X_6$$

The equation's explanation indicates that when the constant value is zero, the purchase decision for medical insurance among Malaysians will be -0.061 units. When the income level (X_1) increases by 1 unit, the purchase decisions for medical insurance among Malaysians increase by 0.445 units. An increase of 1 unit in Government Initiatives and Incentives (X_2) leads to a corresponding increase of 0.480 units in Malaysians' decisions to obtain medical insurance. Simultaneously, a rise of 1 unit in knowledge on medical insurance (X_3) will result in a decrease of 0.020 units in Malaysians' decisions to obtain medical insurance. Furthermore, a one-unit rise in social influence (X_4) leads to a 0.220 unit increase in Malaysians' decision to obtain medical insurance. When the level of perceived vulnerability (X_5) increases by 1 unit, there is a corresponding decrease of 0.146 units in the decision of Malaysians to obtain medical insurance. Furthermore, a rise of 1 unit in perceived severity leads to a corresponding increase of 0.012 units in medical insurance purchase decisions among Malaysians.

Table 8 displays the analysis of variance (ANOVA) outcome for all independent factors in relation to the decision of Malaysians to obtain medical insurance. The entire result indicates that the discrepancy between the F-ratio regression and residual is precisely 908.931. The statistical significance of this result is extremely high, with a p value of 0.000. This result suggests that the statistical significance of these variables is below the threshold of 0.05 (P<0.05). The outcome indicates that the independent variables exert considerable influence on the decision-making process of Malaysians in regard to purchasing medical insurance. Therefore, the results indicate that the model accurately fits the data.

Table 8 ANOVA of Independent Variable to Dependent Variable.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	208.809	6	34.802	908.931	.000[b]
Residual	7.390	193	0.038		
Total	216.199	199	0.03		

a) Dependent variable: Medical insurance purchase decisions among Malaysians.
b) Predictors: (Constant), income level, government initiatives and incentives, knowledge of medical insurance, social influence, perceived vulnerability, and perceived severity.

4.4. Relationships between independent variables and dependent variables

This section aims to establish the correlation between independent factors and dependent variables. An R square value of 1.0 indicates that the study accounts for 100% of the variation and achieves flawless accuracy. Typically, a study is considered superior when the R square value is closer to 1.0, as opposed to when it is closer to 0. The correlation analysis reveals that government programmes and incentives have the highest positive correlation (r = 0.967) with the decision of Malaysians to obtain medical insurance. This is followed by income level (r = 0.958), social impact (r = 0.858), information on medical insurance (r = 0.767), and perceived severity (r = 0.764). Perceived vulnerability has the least strong correlation with medical

insurance purchase decisions among Malaysians (r = 0.738). Therefore, all the characteristics that are not influenced by other factors have a positive connection with the decisions made by Malaysians to obtain medical insurance. This association is statistically significant at the 0.01 level. Table 9 presents the correlations between independent variables and dependent variables.

Table 9 Correlations between independent variables and dependent variables.

Variables	MP
IL	0.958**
GI	0.967**
KM	0.767**
SIF	0.858**
PV	0.738**
PS	0.764**

** Correlation is significant at the 0.01 level (2-tailed).
Note: Independent Variables: Income Level (IL), Government Initiatives and Incentives (GI), Knowledge of Medical Insurance (KM), Social Influence (SIF), Perceived Vulnerability (PV), Perceived Severity (PS).
Dependent Variables: Medical Insurance Purchase Decisions among Malayians (MP).

5. Discussion

This section aims to establish the correlation between independent factors and dependent variables. An R square value of 1.0 indicates that the study accounts for 100% of the variation and achieves flawless accuracy. Typically, a study is considered superior when the R square value is closer to 1.0, as opposed to when it is closer to 0. The correlation analysis reveals that government programmes and incentives have the highest positive correlation (r = 0.976) with the decision of Malaysians to obtain medical insurance. This is followed by income level (r = 0.958), social impact (r = 0.858), information on medical insurance (r = 0.767), and perceived severity (r = 0.764). Perceived vulnerability has the least strong correlation with medical insurance purchase decisions among Malaysians (r = 0.738). Therefore, all the characteristics that are not influenced by other factors have a positive connection with the decisions made by Malaysians to obtain medical insurance. This association is statistically significant at the 0.01 level.

The hypothesis demonstrates that there is a positive and significant relationship between income level and the decision to obtain medical insurance among Malaysians. Multiple linear regression analysis revealed that the P value was 0.000, which was lower than the significance level of 0.01. Therefore, we can conclude that H1 is supported. Therefore, the outcome indicates that there is a substantial correlation between income level and the decision to obtain medical insurance among Malaysians. Consequently, the results of the literature review align with the conclusions of this study. According to a prior study conducted by Syafinaz et al. in 2016, there was a notable disparity in the monthly income of respondents who were willing to pay compared with those who were unwilling to pay. The income of those who were willing to pay was higher than that of those who were unwilling to pay. According to the hypothesis, government initiatives and incentives have a favorable and considerable effect on the decisions of Malaysians to obtain medical insurance. Multiple linear regression analysis revealed that the P value was 0.000, which was lower than the significance level of 0.01. Therefore, we can conclude that H2 is supported.

Furthermore, the hypothesis regarding the impact of knowledge on medical insurance on Malaysians' decisions to purchase medical insurance is deemed to be insignificant. This is supported by a P value of 0.446, which is greater than the predetermined alpha level of 0.01. Therefore, H3 is deemed invalid. The displayed outcome is incongruous with prior research, as the researcher established that the majority of individuals who refrain from purchasing insurance do so owing to a lack of comprehension regarding the significance of possessing insurance. The findings of the previous study indicate that having knowledge about medical insurance is crucial when making decisions about purchasing medical insurance. Furthermore, the hypothesis demonstrates that social influence has a positive and significant effect on the decision of Malaysians to obtain medical insurance. The multiple linear regression analysis yielded a P value of 0.000, which is smaller than the predetermined significance level of 0.01. Therefore, we can conclude that H4 is supported. Therefore, the outcome indicates that there is a substantial correlation between social impact and the decisions made by Malaysians when purchasing medical insurance. Consequently, the results of the literature review align with the conclusions of this study. According to previous researchers, peer influence is a form of social influence. Customers predominantly make purchases on the basis of peer influence. According to Childers and Rao (2012), this suggests that the influence of a collective of individuals sharing common interests or belonging to the same cultural or socioeconomic background will have an impact on shaping behavior or attitudes. The influence and information offered by individuals in the consumer social circle can sway their purchasing decisions.

Furthermore, the hypothesis demonstrates that perceived vulnerability has a favorable and significant effect on the decision of Malaysians to obtain medical insurance. Multiple linear regression analysis revealed that the P value was 0.001,

which was less than the significance limit of 0.01. Therefore, we can conclude that H5 is supported. Therefore, according to the findings, there is a significant correlation between the perception of vulnerability and the decision to obtain medical insurance among Malaysians. Finally, the hypothesis regarding the impact of perceived severity on medical insurance purchase decisions among Malaysians is shown to be statistically insignificant. The P value of 0.804 is greater than the predetermined alpha threshold of 0.01. Therefore, H6 is deemed invalid. Perceived severity refers to an individual's subjective assessment of the extent of harm resulting from participating in a circumstance that poses a hazard to their health. On trivial grounds, the researcher discovered that the previous researcher who investigated perceived severity largely had unsupported hypotheses. Table 10 presents an overview of the hypothesis results.

During the course of this investigation, certain limitations were identified. Krejcie and Morgan (1970) recommended that for populations over one million, a sample size of 384 questionnaires is necessary to provide high levels of accuracy and dependability. Moreover, greater precision is attained, hence minimizing the likelihood of inaccuracies. Nevertheless, this study utilized a mere 200 samples, which fell short in contrast to the recommended sample size. Studies conducted in Malaysia have a limited sample size. The current sample size may not be adequate to accurately represent the viewpoints of Malaysians regarding the matter. Moreover, this study is exclusively applicable in Malaysia. However, its utility is limited to serving as a point of reference for readers or researchers from foreign countries, as well as for local scholars or policymakers. This research focuses on Malaysian viewpoints, which are influenced by the cultural context of Malaysia. The researcher recommends that subsequent researchers use a larger sample size to obtain and generate dependable data. This is due to Malaysia's substantial population. The sample size of this study, consisting of only 200 replies, is considered minuscule and inadequate to accurately represent the population of Malaysia. Therefore, future researchers should prioritize the use of a larger sample size in their studies to obtain more reliable results.

Future researchers could investigate further attributes that could influence judgments about the purchase of medical insurance. This study examines the risk attitudes of individuals when making decisions about purchasing medical insurance. It also investigates the extent to which the trustworthiness of the insurance firm influences these decisions. The findings of this study can serve as a valuable reference for future researchers seeking to gain a deeper understanding of this topic.

Table 10 Summary of Hypothesis Results.

Hypothesis	Significant value	Result
H1: There is a significant relationship between income level and medical insurance purchase decisions among Malaysians.	P<0.001 (P<0.05)	Supported
H2: There is a significant relationship between government initiatives and incentives and medical insurance purchase decisions among Malaysians.	P<0.001 (P<0.05)	Supported
H3: There is a significant relationship between knowledge on medical insurance and medical insurance purchase decisions among Malaysians.	P>0.001 (P>0.05)	Rejected
H4: There is a significant relationship between social influence and medical insurance purchase decisions among Malaysians.	P<0.001 (P<0.05)	Supported
H5: There is a significant relationship between perceived vulnerability and medical insurance purchase decisions among Malaysians.	P<0.001 (P<0.05)	Supported
H6: There is a significant relationship between perceived severity and medical insurance purchase decisions among Malaysians.	P>0.001 (P>0.05)	Rejected

5. Conclusions

Overall, this research highlights the critical factors influencing Malaysians' decisions to obtain medical insurance, including income level, government initiatives and incentives, social influence, and perceived vulnerability. These factors play a significant role in shaping insurance decisions, according to the findings. Nonetheless, the factors of knowledge regarding medical insurance and perceived severity do not exhibit the anticipated positive correlation.

Theoretically, the study integrated three theories – TPB, PMT, and SEM and concluded that four factors are significant and two are not. Two significant factors (income level and government initiatives and incentives) are originated from SEM, while social influence and perceived vulnerability are derived from TPB and PMT respectively. Future research should investigate the relationship between individuals' knowledge of medical insurance and their perceptions of its severity, as well as how these factors collectively impact Malaysian insurance decisions. This will help to clarify whether these two factors, which currently appear insignificant, may indeed have a significant influence.

As for practical contribution, understanding these dynamics could provide valuable insights into improving insurance uptake. Policymakers can leverage these findings to boost insurance sales by analyzing Malaysian consumers' purchasing patterns. Government measures and incentives are shown to have the most substantial impact on insurance decisions. By implementing these recommendations, governments and insurers can better meet the needs of all individuals, ensuring that medical insurance becomes more accessible and aligned with the financial capabilities of different income groups.

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Ethical considerations

The authors affirm that they have obtained consent from participants in research articles utilizing the questionnaire.

Conflict of interest

The authors declare no conflicts of interest.

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