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DETERMINANTS OF PRIVATE HEALTH INSURANCE ADOPTION IN KLANG VALLEY

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PREFACE

The study drew its foundations from the increased significance of healthcare financing in Malaysia's developing healthcare system. We found it essential to study health decision-making processes among Malaysian students due to their dual healthcare system offering subsidized public care with efficient but expensive private options. We learned during our examinations of literature and class discussions that medical cost increase has not changed the minimal adoption of private health insurance (PHI) while PHI stands as crucial for lowering payment costs.

We studied the factors behind PHI adoption between distinct groups of people while examining the Klang Valley urban area that houses the largest number of private healthcare services and insurance organizations. This research examined the impact of population characteristics and social status together with healthcare status and financial and accessibility aspects on PHI adoption while employing the Health Insurance Demand Theory and the Theory of Planned Behaviour as interpretational frameworks.

The current research grew from our team work that included thorough literature review and questionnaire-based field work and statistical examination of the data. The research has been developed to provide meaningful insights for policymakers and academics who work on equitable healthcare access and sustainable insurance uptake strategies in Malaysia.

ABSTRACT

Private Health Insurance (PHI) plays an increasingly important role in Malaysia's dual healthcare system, providing an alternative to public healthcare services that often suffer from overcrowding and long wait times. Despite the rising cost of healthcare and growing demand for timely and high-quality services, PHI adoption rates in Malaysia remain stagnant. This study investigates the determinants influencing the adoption of PHI among residents in Klang Valley, a densely populated urban region with high access to private healthcare facilities and insurers.

The study adopts a quantitative research design, surveying 385 residents aged between 22 and 60 through structured questionnaires. Five categories of independent variables were examined: demographic factors, socioeconomic status, health variables, financial and insurance knowledge, and awareness and accessibility. The study employed descriptive statistics, reliability testing, and multiple linear regression analysis using SPSS to determine the influence of these variables on PHI adoption.

Grounded in the Health Insurance Demand Theory and the Theory of Planned Behaviour, the findings suggest that income, education, health condition, insurance literacy, and access to information significantly impact individuals' decisions to purchase PHI. Moreover, behavioural elements such as trust in insurers, perceived affordability, and exposure to health insurance information were found to shape purchasing behaviour. This research contributes to the academic discourse by integrating a multi-dimensional framework and provides practical insights for policymakers, insurers, and healthcare providers seeking to improve PHI uptake.

Keywords: Health Economics / Insurance Behaviour / Public Policy
Subject Area: RA410–410.9 Medical economics. Economics of medical care. Employment

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LIST OF ABBREVIATIONS

AAF	Awareness and Accessibility Factors
ACA	Affordable Care Act
BNM	Bank Negara Malaysia
CBHI	Community-Based Health Insurance
CHI	Complementary private health insurance
DV	Dependent variable
FIF	Financial and Insurance Factors
FK	Financial Literacy
GLSS 7	Wave 7 of the Ghana Living Standards Survey
HF	Health Factors
HIDT	Health Insurance Demand Theory
ITOs	Islamic insurance operators
IVs	Independent variables
KMO	Kaiser-Meyer-Olkin
MHI	Medical health insurance
MHIT	Medical and Health Insurance/Takaful
MLR	Multiple linear regression
NHS	National Health Service
PBC	Perceived behavioural control
PHI	Private health insurance
SF	Socioeconomic Factors
TPB	Theory of Planned Behaviour
UHC	Universal Health Coverage
VIF	Variance Inflation Factor
VPHI	Voluntary Private Health Insurance
WTP	Willingness To Pay

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CHAPTER 1: RESEARCH BACKGROUND

1.0 Introduction

Many developing countries are striving to achieve the third Sustainable Development Goal of universal health coverage (UHC), which entails ensuring that all people have access to essential health services without facing financial hardship (World Health Organization, 2025). Because private health insurance (PHI) lowers direct out-of-pocket costs, it may relieve financial strain. The premiums that the insured pay to private insurance companies support PHI. On the other hand, taxes or mandatory social contributions are used to pay for public health insurance. The primary health care system determines the type of PHI. PHI can be classified as substitutive, supplementary, or complementary (Mhazo, Maponga, and Mossialos, 2023).

Substitutive health insurance provides benefits that are identical or comparable to those offered by public health insurance schemes, particularly for individuals who are excluded from public insurance coverage or are granted the option to choose between statutory and private insurance plans (Tit Albreht, Kuhar and Rupel, 2022). According to Busse, Blümel, Knieps and Bärnighausen (2017), statutory health insurance had become mandatory for numerous occupational groups in Germany by 1914, including transport workers, itinerant workers, and white-collar employees. The expansion of coverage enabled beneficiaries to continue receiving benefits through alternative sickness funds, while also allowing them to choose between the main fund, primarily for blue-collar workers, or an alternative fund that is usually voluntarily purchased by individuals or by employers on behalf of employees.

In contrast, supplementary insurance enhances services already covered by statutory plans, such as faster access to treatment or a broader selection of healthcare providers. Complementary PHI covers services that are either not included in or only partially covered by the public healthcare system. CHI is divided into two groups: one that pays statutory co-payments and the other that covers services not included in the public insurance package, such as dental treatment, optometry, physiotherapy, chiropractic adjustments, and outpatient prescription drugs (Bazyar et al., 2022).

Figure 1.1: Out-of-Pocket (OOP) Health Expenditure as a GDP Percentage, 2011-2022

TABLE 9.1b: OOP Health Expenditure and as GDP Percentage, 2011-2022		
Year	OOP Health Expenditure (RM Million)	OOP Health Expenditure as % GDP
2011	11,466	1.26
2012	12,649	1.30
2013	13,933	1.37
2014	15,373	1.39
2015	16,349	1.39
2016	17,555	1.40
2017	19,518	1.42
2018	21,302	1.47
2019	22,382	1.48
2020	22,648	1.60
2021	24,688	1.59
2022	29,381	1.64

Source: Ministry of Health Malaysia (2024b)

PHI complements the shortcomings of incomplete public health care coverage and provides people with financial protection to avoid financial difficulties in the current social situation of rising medical costs. Despite the rising medical costs, ageing population and the growing preference of elderly consumers for high-quality medical services, the adoption rate of PHI in Malaysia remains stagnant. This has consistently caused a continuous rise in out-of-pocket spending, where the amount went up to RM11,644 million (1.26 per cent of GDP) in 2011 to RM29,381 million (1.64 per cent of GDP) in 2022 and increasing the burden on finances (Figure 1.1). Developing nations such as Malaysia and developed nations such as the United States have similar issues of maintaining a high cost of health care, which is seen as a problem for both nations.

The Affordable Care Act (ACA) was implemented in the United States, and it essentially ensures that people have insurance coverage irrespective of their gender and pre-existing disorders, provides the necessary benefits with no annual or lifetime constraints, and allows dependents to continue being covered by the family plans up to the age of 26 (USAGov, 2023). Unlike in Malaysia, where the premiums are risk-based, the reforms in the U.S. rely more on

fairness. Nevertheless, the healthcare costs continue to increase, as it rose to $1.37 trillion in 2000 and then to $4.12 trillion in 2020 (Grover, Orgera and Pincus, 2022) and out-of-pocket expenses are a significant pain point. Despite those differences in the system, the citizens of both nations seek private protection insurance.

PHI plays mainly a supplementary role in Malaysia, and such a situation is not peculiar to the Malaysian healthcare system. Even though the public healthcare system is nearly free, it also has a problem of overcrowding and a lack of specialised doctors, causing people to seek out private insurance to acquire faster service. The same case also applies in the United Kingdom, where PHI acts as a supplement, yet the government has been more proactive in lightening the pressure on the public health care system. For example, the U.K. government will provide an additional £2.5 billion per year to address the long waiting list for treatment. Under this plan, private hospitals undertake nearly 20 per cent of NHS-funded surgeries and will provide up to 1 million additional NHS appointments each year to ensure that no patient waits for non-urgent care for more than 18 weeks by 2029 (Department of Health and Social Care, 2021).

In this way, one can conclude that different countries have different methods to enforce the adoption of PHI. Malaysia's dilemma is in trying to maintain the low cost of its public health care system while, ensuring that PHI remains accessible and equitable.

1.1 Research Background

PHI is mainly self-financed in Malaysia and has both supplementary and complementary aspects. It covers hospitalisation expenses at private healthcare facilities, including expenses associated with the number and length of hospital stays. Certain insurance plans also incorporate components like co-payments and deductibles. Additionally, PHI in Malaysia provides insured persons with shorter waiting times and priority access to healthcare providers and services, making it a crucial option for anyone looking for prompt, individualised medical care (Balqis-Ali et al., 2023).

Figure 1.2: Waiting Time to Cataract Procedure (in days) for Public and Private Groups.

Waiting Time to Cataract Procedure Approaches (Days)	Public: Private Ratio
Clock continuous	6.9
Clock pause	5.9
Clock restart (new clock)	5.5

Source: Fun et al. (2021)

To address the issue of brain drain among medical professionals in Malaysia, the Ministry of Health (MOH) introduced the Dual Practice Program in 2007. This initiative allows qualified specialists in public hospitals to supplement their income by attending to private patients after their official working hours. According to research by Fun et al. (2021), the disparity in waiting times between public and private group patients in Malaysia can range from 5.5 to 6.9 times, depending on the measurement method used (Figure 1.2). Therefore, the waiting times in the public and private hospitals are not merely a trifle; as per this research, they are quite significant. That is why many people even purchase personal health insurance to cut off the wait and receive treatment sooner.

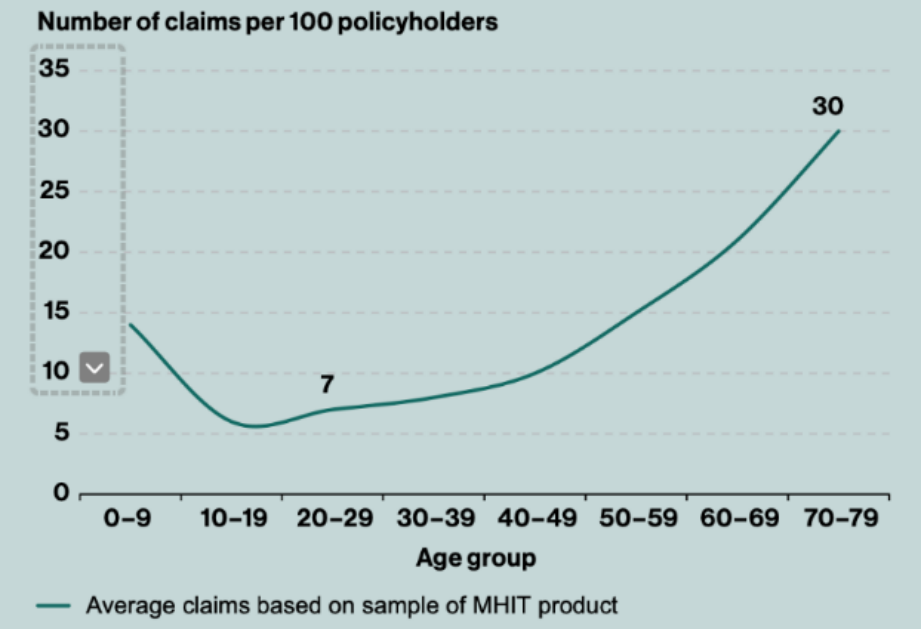
Although PHI have existed since the 1970s, their popularity only began to surge in the mid-1990s. This was largely due to the introduction of personal income tax relief in 1996, which presently has a deduction of up to RM3,000 per year. In particular, the stand-alone medical insurance or medical rider attached to life insurance policies is 100 per cent deductible on the premium, whereas the medical or critical illness coverage under the term life or personal accident insurance policy leads to a deduction of 60 per cent of the premium. At the same time, regulatory reforms allowed life insurance companies to offer stand-alone MHI policies starting in 1997 (Prudential Malaysia, 2020).

Between 2000 and 2005, revenues from medical health insurance (MHI) policies grew at an impressive average rate of 28 per cent per year (Bank Negara Malaysia, 2025). However, recent statistics reflect stagnation in adoption rates. According to the Institute for Public Health （2024）, 15 per cent of hospitalisation expenses are now covered by PHI, and 8.8 per cent by employee insurance. By comparison, the Institute for Public Health, Ministry of Health Malaysia 2020 reported that 14.3 per cent of Malaysians had adopted PHI, while 14.6 per cent had employer-sponsored insurance. This marks only a 0.7 percentage point increase over four

years, indicating that growth in insurance adoption remains marginal despite rising healthcare needs.

The medical and health insurance/takaful (MHIT) products are developed to merge risks with individuals to share the expenses of claims so that they can mitigate the effects of financial strains. Premiums tend to be non-guaranteed and change periodically to be commensurate with the rise in medical inflation and so that the risk pool has enough funds to cover the claims. This implies that premium rates will rise among all the policyholders, including those who have never claimed.

Figure 1.3: Average Claims by Policyholders' Age Group



Source: Bank Negara Malaysia (2025)

The premium rates are pegged on the nature of the risk pool, which includes the age factor, medical history, lifestyle, and type of plan. The most common is age, as one becomes older, and there will be an increase in the premiums because of the health risks associated with age. Using an example, claim ratios of the older groups (30 claims per 100 policyholders aged group of 70-79) are remarkably higher as compared to those of the younger groups (7 claims per 100 policyholders aged group of 20-29). A different way is the community rating, in which the same rate is charged to everybody at a rate irrespective of the risks (Figure 1.3).

Figure 1.4: Reported Satisfaction with Public and Private Hospitals, 2015

Satisfaction (%)	Public Hospitals		Private Hospitals	
	Excellent	Fair	Excellent	Fair
Ability to ask for private room/share with less people	44	41	72	25
Allowed to choose the doctor	45	40	73	24
Waiting time to see doctor	38	41	72	25
Amount of time the doctor spends with patient	65	31	75	24
Treatment charges	89	10	47	27

Source: Atun, Berman, Hsiao, and Myers (2016)

PHI in Malaysia exhibits predominantly complementary characteristics, functioning as an alternative mechanism for individuals seeking enhanced healthcare experiences. Existing literature suggests that individuals with higher income levels are more inclined to adopt PHI, often motivated by the pursuit of superior service quality and reduced waiting times. Empirical evidence underscores the perceptual disparities between public and private healthcare services. Atun, Berman, Hsiao, and Myers (2016) indicate that private healthcare facilities receive significantly more favourable evaluations in several dimensions: 72 per cent of respondents expressed satisfaction with the ability to request private rooms or share with fewer patients in private hospitals, compared to only 44 per cent in public hospitals. Similarly, 73 per cent of private hospital users were satisfied with the ability to choose their physician, whereas only 45 per cent reported the same for public hospitals. Regarding consultation efficiency, 72 per cent of respondents favoured private hospitals for shorter waiting times, while only 38 per cent felt positively about public hospital waiting times. Moreover, 75 per cent of private healthcare users were content with the time spent by physicians per patient, compared to 65 per cent in the public sector. However, public hospitals received more favourable evaluations regarding treatment affordability, with 89 per cent expressing satisfaction, compared to just 27 per cent in private hospitals (Figure 1.4).

1.2 Research Problem

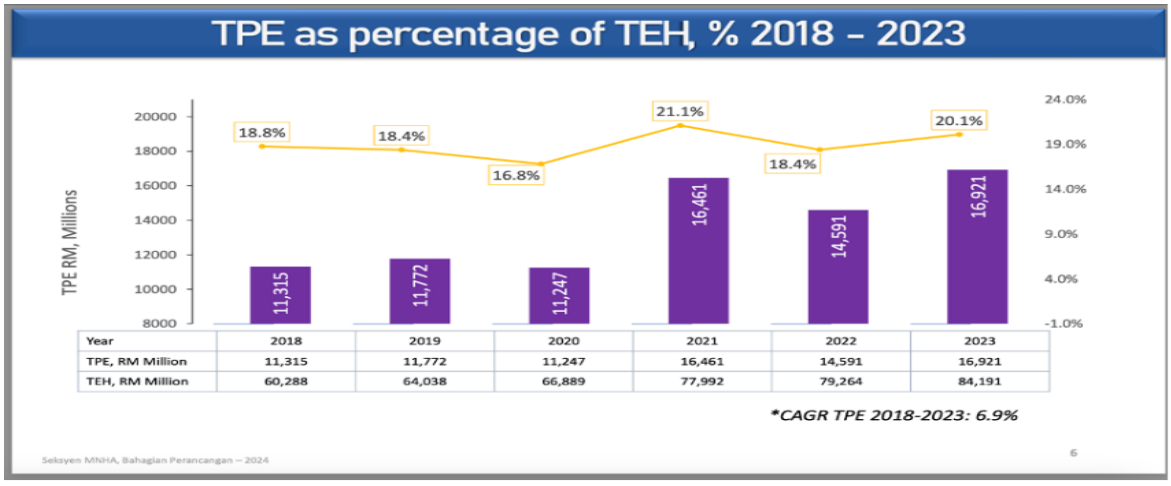
PHI serves as a critical financial safety net, particularly for vulnerable populations. In emergencies, elderly individuals in Malaysia are sometimes compelled to seek treatment at private hospitals in order to receive timely medical attention. However, approximately 70 per

cent of charges in private healthcare facilities, including those for basic items such as gloves, wheelchairs, and heart monitors, remain unregulated by government authorities (Alifah Zainuddin, 2025). Although certain political groups have proposed the establishment of a regulatory body to oversee these unregulated costs, such initiatives are still in their preliminary stages. Consequently, elderly care services in Malaysia currently lack comprehensive protection.

Furthermore, the issue extends to foreign nationals residing in Malaysia. In 2023, the total amount of unpaid medical bills incurred by foreigners reached RM40.08 million (Harun and Qistina Sallehuddin, 2024). A significant proportion of these individuals belong to low-income groups and face substantial financial hardship in the event of medical emergencies. Encouraging the adoption of PHI not only enhances personal financial security but also contributes to alleviating the financial burden on the national healthcare system.

One of the most pressing issues facing Malaysia's MHIT industry is the persistent increase in insurance premiums. This is primarily because the claims paid by insurance companies and Islamic Insurance Operators (ITOs) are growing at a faster rate than the premiums collected. This trend is largely driven by the increasing demand for medical services, which stems from advancements in medical technology and the rising prevalence of non-communicable diseases. If this situation continues unchecked, ITOs may eventually be unable to meet their claim obligations. Consequently, ITOs are compelled to adjust MHIT premiums regularly.

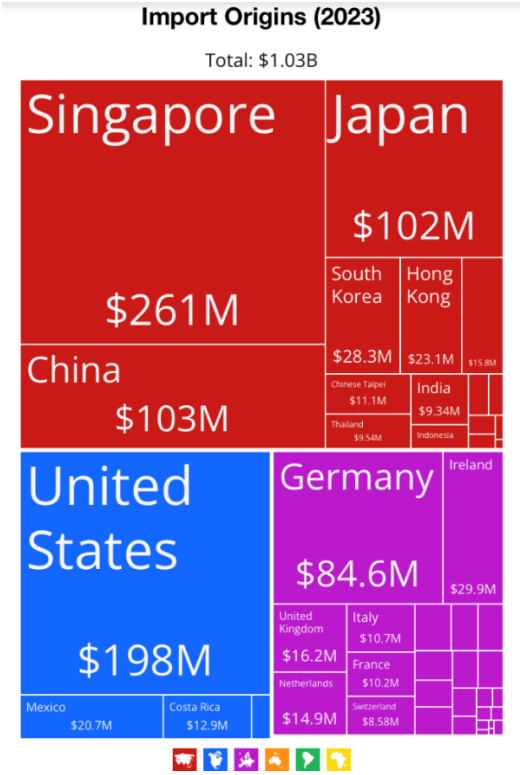
Figure 1.5: Total Pharmaceutical Expenditure as a percentage of Total Expenditure on Health (TEH), per cent 2018 - 2023



Source: Ministry of Health Malaysia (2024b)

Many insurance providers attribute the rise in insurance premiums to the escalating cost of pharmaceuticals, which is largely driven by the lack of price transparency and the enforcement of intellectual property rights (Mukhriz, 2024). TPE, which encompasses the cost of all medications, including those administered during medical care, has shown a consistent increase. According to Figure 1.5, TPE as a proportion of TEH is on an upward trend, indicating a growing financial burden associated with pharmaceutical consumption (Ministry of Health Malaysia, 2024b).

Figure 1.6: Malaysia's Imported Medical Instruments in 2023



Source: Observatory of Economic Complexity (2025)

Another contributing factor to the escalation in insurance premiums is the adoption of advanced medical technologies aimed at enhancing the quality of healthcare services. Between 2018 and 2023, the value of imported medical instruments into Malaysia showed a consistent upward trend (Appendix 1.1). The primary sources of these imports are Singapore is USD 261 million the United States is USD 198 million, and China is USD 103 million (Figure 1.6).

In response to these pressures, Malaysia's central bank (Bank Negara Malaysia, BNM) has taken several prompt measures. Notably, ITOs are now required to distribute premium changes

for all policyholders affected by repricing over a minimum period of three years. Under this framework, it is expected that at least 80 per cent of policyholders will face annual premium adjustments due to medical claims inflation, with the increase kept below 10 per cent. Furthermore, BNM has mandated a one-year suspension of premium adjustments due to medical claims inflation for policyholders aged 60 and above who purchase the lowest-tier MHIT products ((Bank Negara Malaysia, 2024). However, Bayan Baru MP Sim Tze Tzin reported that BNM has received complaints of medical insurance premiums increasing by 30 per cent to 50 per cent even after the measures were implemented. In response, the central bank took regulatory action against the insurers involved, who later pledged to rectify the excessive increases (Zainuddin, 2025). These developments indicate that, despite the central bank's interventions, the steep rise in medical costs continues to exert significant pressure on premium pricing.

According to Besanko, Dranove and Garthwaite (2020), the expansion of health insurance is often a result of policy measures aimed at improving access to healthcare services. However, their research also highlights that the benefits of increased access can diminish over time, particularly when insurance packages cover specialised therapeutic drugs sold by monopoly pharmaceutical companies. In such cases, these companies tend to set drug prices at profit-maximising levels. Due to the cost-sharing structure of medical insurance, higher prices are often passed on to consumers, making insurance less affordable for low-income individuals. As these individuals opt out of purchasing insurance, the remaining insured population becomes increasingly composed of higher-income individuals. This, in turn, allows pharmaceutical companies to continue raising prices until demand declines significantly.

Higher-income people are much more dissatisfied with public healthcare delivery, according to the report. Adoption of PHI is more likely when people believe that the benefits of PHI coverage outweigh the premium costs. On the other hand, high insurance costs have repeatedly been noted as the main obstacle to the adoption of PHI (Mamun, Rahman, Munikrishnan and Permarupan, 2021). This report emphasises that the crucial service quality influences customer behaviour. PHI is more likely to be seen as a wise investment by the public if private healthcare organisations can show observable increases in the effectiveness and quality of care.

Moreover, socioeconomic and demographic disparities further compound the issue. Mulenga, Musings and Phiri (2021) found a persistent gender gap in insurance coverage, with men having

higher rates of adoption. Married men were more likely to purchase insurance than their unmarried counterparts, likely due to the ability to pool financial resources within households. Additionally, men living in rural areas were less likely to purchase health insurance, as rural residents tend to have lower educational attainment, and most private insurance providers are concentrated in urban centres.

Other studies have further reinforced the role of income and financial knowledge in shaping insurance adoption. For example, Pinilla and López-Valcárcel (2020) observed that voluntary private health insurance (VPHI) coverage is significantly higher among Spain's wealthiest individuals. They argue that tax incentives for medical service expenditures disproportionately benefit higher-income groups. Aguiar-Díaz and Ruiz-Mallorquí (2023) contributed by analysing the role of financial literacy across different age groups. Their findings suggest that a basic level of financial knowledge does not significantly influence the likelihood of PHI adoption among either younger or older individuals. Rather, only advanced financial literacy, particularly the ability to comprehend complex financial concepts, was significantly associated with PHI adoption among the elderly.

Overall, Malaysia is experiencing an increase in both healthcare expenses and unregulated private prices, and the high cost of MHIT insurance is becoming an affordability issue that prevents more people to adopt PHI, particularly vulnerable communities and low-income populations.

1.3 Research Objectives

1.3.1 General Objective

The primary objective is to examine the determinants of private health insurance adoption among residents in Klang Valley region.

1.3.2 Specific Objective

a) To examine the relationship between demographic factors and private health insurance adoption.
b) To examine the relationship between socioeconomic factors and private health insurance adoption.
c) To examine the relationship between health factors and private health insurance adoption.
d) To examine the relationship between financial and insurance factors and private health insurance adoption.
e) To examine the relationship between awareness and accessibility factors and private health insurance adoption.

1.4 Research Questions

The following research questions are formulated in this section to give our investigation a defined direction.

a) Do demographic factors have a significant relationship to private health insurance adoption?
b) Do socioeconomic factors have a significant relationship to private health insurance adoption?
c) Do health factors have a significant relationship to private health insurance adoption?
d) Do financial and insurance factors have a significant relationship to private health insurance adoption?
e) Do awareness and accessibility factors have a significant relationship to private health insurance adoption?

1.5 Research Significance

The introduction of PHI is a highly relevant issue of tremendous importance to policymakers and researchers in Malaysia. With growing pressure on the public healthcare system, it is necessary that the determinants of the adoption of PHI are understood to enhance the healthcare financing methods and make them sustainable in the long run. The present study is able to contribute well to both practitioners and the scholarly community because it throws light on the socioeconomic factors that affect the adoption of PHIs.

Practically, the best thing about this study is that the results can be used to assist policymakers in coming up with a better healthcare policy. Malaysian government has had a long history of subsidising public health using a tax-based system, yet the sector still lacks in areas, with the sector being overwhelmed. Promoting the adoption of PHI among those who can afford it would help decrease the load on public hospitals, enabling governments to provide more services to the vulnerable. This paper identifies those factors that do not allow Malaysians to acquire PHI, which include the perception of the rise of the premium, income, and the sufficiency of the offerings of the privatised healthcare providers. Knowledge of these will guide policymakers to implement specific incentives in order to encourage vulnerable groups to enroll in personal health insurance more.

Moreover, the results of this study will also apply to the private insurance firms, since it encompasses knowledge on consumer behaviour and customer preferences. Insurance companies can benefit by evaluating socioeconomic factors that affect the PHI adoption to focus on a specific population and come up with more appealing and cost-effective health insurance services. To illustrate, in the event that the study indicates that young people are less likely to buy PHI because of their financial struggle, then insurers can introduce lower initial plans to attract them in early adoption. Moreover, insurers may utilise such insights to observe the weak and strong sides of their marketing scheme and make sure that the information about PHI benefits is delivered to the appropriate audience.

This study has a significant implication for the direction of care providers, besides the policy and commercial uses of this study. The expected rising use of PHI may start channeling more patients towards the privately-owned hospitals, hence, enhancing services, reducing delays,

and raising the quality of health infrastructure. Subsequently, healthcare providers will be able to forecast the patterns of demand and organise their resources related to PHI adoption by learning the impact that certain factors have on the practice. This will eventually develop a balanced healthcare system where the interaction of the public and private health sector institutions is effective.

On top of being practically beneficial, this study also adds to the scholarly debate on the topic of health insurance adoption and financing. The literature pertaining to the subject of PHI in Malaysia is also very limited, particularly concerning itself with the effects of socioeconomic and demographic factors on purchasing decisions. This study will help fill this gap, since it presents empirical evidence on the main factors that influence the adoption of PHI, which provides invaluable insights into how a consumer behaves in the medical field in Malaysia.

To conclude, the study in question is highly beneficial to practitioners and academics. The presented study can deliver practical information to policymakers, insurance companies, and health care facilities, which may raise the adoption of PHI, enhance the cost of healthcare delivery, and decrease the burden of encroachment on governmental health services. To the scholar, this paper fills the gap in the literature, gives a comparative argument, and enhances the health economics research methodology. With the ongoing change in the healthcare system of Malaysia, the determinants of PHI adoption will assist in establishing a more sustainable and inclusive health financing system.

1.6 Conclusion

On the whole, the role of the PHI in the Malaysian healthcare system, in particular as occupying the gaps that the public healthcare system cannot fill, becomes more significant. It is important to identify the forces that have come into play to influence its adoption, and hindrances to its accessibility, as well as its overall sense of equity and financial protection.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter reviews all relevant theories and examines the relationship between a dependent variable and five independent variables. Besides that, a conceptual framework has been proposed to provide a clear view of this study and to identify the research gap that this study seeks to address.

2.1 Underlying Theories

2.1.1 Health Insurance Demand Theory

The health insurance demand theory proposed by Nyman (2001) explained the factors that influence individuals' decisions to purchase private health insurance (PHI). Nyman suggest that individual purchase PHI not only to avoid risk but also to obtain the income transfer that allow them to access unaffordable and high-quality healthcare service from this theoretical perspective, the acceptance of PHI is affected by factors such as wealth, type of work, employment status, education, and marital status (Adjei-Mantey and Horioka, 2023).

Numerous studies have examined the elements influencing insurance acceptance using health insurance demand. Balqis-Ali, Anis-Syakira, Fun and Sararaks (2021) investigate the factors that influence the PHI adoption in Malaysia by using the analysed data from the 2015 National Health Morbidity Survey. The study found that household income had a substantial impact on the purchase of PHI; the higher the household income, the more likely the person was to have insurance. Also, Abd Khalim and Sukeri (2023) conducted a cross-sectional online survey which included 1,138 participants to determine the determinants of the PHI adoption among East Coast Malaysian

populations and it showed that employees in both the public and private sectors are more likely to have PHI and that the type of employment is a significant factor in determining whether to purchase PHI.

Moreover, education level has a significant impact on their decision to buy insurance; Adjei-Mantey and Horioka (2023) use the microdata of wave 7 of the Ghana Living Standards Survey (GLSS 7) to analyse the determinants of health insurance adoption and health expenditure in Ghana. They examined people with higher levels of education and discovered that they were more likely to purchase insurance as a protective measure. Wo, Liu, Li and Xi (2020) examined the factors that affected the individuals' take-up of tax subsidies PHI by conducting a self-report questionnaire in Hangzhou. The research found that knowing insurance significantly increases the likelihood of accepting insurance; therefore, people are more likely to purchase insurance if they have a greater understanding of it.

Besides that, marital status and age are also important elements that affect the choice of buying insurance. Aguiar-Díaz and Ruiz-Mallorquí (2023) examine how age affects the relationship between financial literacy (FK) (basic FK and advanced FK) and PHI ownership using the 2016 Financial Competences Survey in Spain. Based on the findings, advanced FK significantly increased the likelihood of PHI ownership, but this positive relationship was only significant in the middle-aged and older group and not in the young group. Also, Balqis-Ali, Anis-Syakira, Fun and Sararaks. (2021) found that individuals who had married are more likely to purchase insurance compared to single and divorced individuals.

The theory of demand for health insurance provides a solid foundation for understanding the complex factors that encourage people to purchase private insurance. The factors such as income, type of work, education, age and marital status that influence people's need for health insurance are supported by empirical evidence from a variety of sources.

2.1.2 Behavioural Economics Theory

The theory assumes that an individual's decision-making is guided by both mental and psychological components (Grayot, 2020). These factors can significantly influence whether someone chooses to purchase PHI, even when it is economically or medically advantageous for them.

Through a conceptual review of Corcos, Montmarquette and Pannequin (2020), the ambiguity aversion decreases the insurance demand. For example, ambiguity in contract performance may affect the insurance demand. Other than that, Cardon (2020) examines the impact of loss aversion on switching health insurance plans by developing a model under Prospect Theory, and the data came from the claims records of a medium-sized insurance company from 1999 to 2015. The study shows that loss aversion significantly affects consumers' insurance choices. In his study of employer-provided health insurance, individuals tend to stay with their current plan not because of explicit switching costs, but because they are not willing to lose their current insurance, and this is the phenomenon known as loss aversion. Empirical evidence shows that those who switch to a higher-insurance plan spend significantly more both before and after the switch than those who do not, suggesting that loss aversion inhibits rational switching behaviour, even when the switch is beneficial.

According to the study of Dietz (2020), it emphasised the tendency of individuals to choose more familiar insurance plans rather than explore alternatives that may be more cost-effective or provide better coverage, which refers to the default effect in behavioural economics. This tendency is attributed to "System 1" thinking, which was proposed by Kahneman and Tversky, that emphasises quick, immediate judgments rather than analytical reasoning. In the context of PHI, this can lead people to not purchase insurance, especially if insurance options are perceived as complex or assessed as risky. Keeping in account that public hospitals in Malaysia are user-friendly and well-supported, most citizens might not see the need to compare or switch to private insurance plans unless there is a pressing health need or a shocking financial change.

Kiwanuka and Sibindi (2023) undertook a research study in which they utilised structured survey questionnaires of 400 voluntarily insured people in Uganda to examine the interaction and influence of insurance literacy and perceived trust on insurance inclusion in Uganda. The inclusion of insurance implies that the previously uninsured, the poor, and people living in remote locations are now able to access insurance and they can afford it. It established that insurance literacy is directly and positively related to the perceived trust and insurance inclusion and that the perceived trust is also directly and positively related to insurance inclusion. In addition, insurance literacy and perceived trust were found to have an interactive effect, which means that the higher the trust an individual has in their insurance provider, the stronger the impact of insurance literacy on insurance inclusion.

Dragos, Dragos and Muresan (2020) used a questionnaire survey to investigate how behavioural factors and insurance knowledge index affect the transition from purchase intention to decision for life insurance and private pension products. They found that trust in the company determined both the willingness and the decision to purchase life or health-related insurance products. Trust represents a different but equally important behavioural component. The studies also showed that important insurance knowledge and financial literacy are in behavioural decisions. Although people with knowledge didn't intend to buy insurance, they were certainly going to buy it. Although the study focused on life insurance and private pensions in Romania, the behavioural mechanisms they found, such as trust in insurance companies and financial knowledge, are theoretically transferable to PHI decisions.

The Behavioural Economics Theory accounts for a range of psychological and cognitive drivers of choice concerning PHI. Numerous facts have shown that ambiguity aversion, loss aversion, trust, default effects, and financial literacy are important for the delay or avoidance of the purchase of insurance.

2.1.3 Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) is a psychological concept used to explain people's behavioural intentions and actual corresponding behaviours for the rest of their business activities, including purchasing PHI policies for themselves (Ajzen, 1991). TPB contends that an individual's intention to perform a specific behaviour is affected by three main components: attitude toward the behaviour, subjective norms, and perceived behavioural control (Ajzen, 2002).

Attitude is considered a mental disposition from which an individual evaluates a given object positively or negatively. From the view of Mishra, Jamshed, Ahmad, Garg and Madsen (2024), attitude towards a behaviour provides an answer to whether a person loves or hates something. Therefore, consumers who maintain a positive attitude are predicted to subscribe more to insurance products.

Subjective norms refer to the perceived social pressure in whether to participate or not participate in a behaviour. According to the study of Maurya and Yasmeen Ansari (2023), if people expect them to participate in a behaviour, it will increase the intention to implement. For example, the purchase of insurance will be influenced by individuals' family, friends, colleagues and so on. Hence, it depends on the perceived value from others.

Perceived behavioural control (PBC) refers to an individual's perception of their ability to perform a specific behaviour, considering both internal and external constraints. According to Ajzen and Schmidt (2020), PBC is formed by the aggregate of control beliefs —beliefs about the presence of factors that may facilitate or hinder the performance of a behaviour. For example, these beliefs include time, money, skills, and external support.

Mamun, Rahman, Munikrishnan and Permarupan (2021) used the study to examine the influences of insurance knowledge, perceived usefulness, attitude toward health insurance, subjective norms, and perceived behavioural control on the purchase of health insurance among working adults in Malaysia, among 1,308 working adults. The

researchers discovered that the three elements of the Theory of Planned Behaviour, including the attitude, subjective norms, and perceived behavioural control of intention to purchase PHI, were significantly positively related to intention to purchase. The research also established that intention had a potent effect on actual purchase behaviour, which identified the practical significance of TPB in the Malaysian environment.

Mishra, Jamshed, Ahmad, Garg and Madsen (2024) constructed a further Theory of Planned Behaviour (TPB) and then obtained the responses of 420 consumers of tobacco and alcohol after establishing a link via Google Form to assess the most important factors that affect the willingness of tobacco and alcohol consumers to buy health insurance. The study established that their intention to buy health insurance was highly predicted by subjective norm and perceived behavioural control. Although the attitude is the element originally included in the model, it was not placed in the model because of the low validity, whereby social influence and perceived ability might play a more significant role than opinion in some populations.

Raza, Ahmed, Ali and Qureshi (2020) investigate the willingness of consumers to purchase Islamic insurance (Takaful) in Pakistan using a structured questionnaire with 305 participants. They found that attitude, subjective norms and the perceived behavioural control had positive effects on the intention of consumers to adopt Takaful.

To assess the relevance of the Theory of Planned Behaviour (TPB) in forecasting the intention to purchase the private health and medical insurance among fresh university graduates in Malaysia, Azizam et al. (2020) conducted a cross-sectional survey of graduate participants of Universiti Teknologi MARA Selangor, Puncak Alam Campus, with a sample size of 443 graduates. The research concluded that attitudes and subjective norm had a significant effect on purchase intention and the perceived behavioural control did not.

Alatawy (2022) investigates the behavioural factors that influence the intention to purchase online health insurance by conducting a questionnaire survey with 355 Saudi respondents, who were primarily from university communities and the private sector employees. The study found that attitude, subjective norm and perceived behavioural control were all significantly predictive of purchase intention.

The Theory of Planned Behaviour offers a strong and validated framework for understanding PHI decisions. Its three core components — attitude, subjective norms, and perceived behavioural control have been shown to significantly influence individuals' intentions across different populations and cultural settings.

2.2 Review of Variables

2.2.1 Dependent Variable: Private Health Insurance Adoption

PHI adoption is the process of acquiring PHI through ongoing private insurance coverage (Balqis-Ali, Anis-Syakira, Fun and Sararaks, 2021). Factors such as socioeconomic, demographic, health-related and so on are significantly affected by this decision, especially within dichotomous healthcare systems like Malaysia. People who have PHI can access better healthcare services, shorter wait times, and a greater range of treatment alternatives and providers (Al-Sanaani et al., 2022).

Malaysia's public healthcare system is almost free, yet patients face notable restrictions, including overcrowding, limited specialist availability, and prolonged waiting times (Balqis-Ali, Anis-Syakira, Fun and Sararaks, 2021). These systemic inefficiencies drive higher-income individuals to seek a private healthcare system, commonly financed through PHI (Abd Khalim and Sukeri, 2023). According to the research of Al-Sanaani et al. (2022), the probability of being insured was five times higher among patients who visited private healthcare facilities compared to those who used public services.

A large amount of research highlights socioeconomic motivators for PHI adoption, such as the disparities in PHI adoption in different age and income groups. For example, the likelihood of insurance adoption is significantly higher among individuals with education, urban residence, and stable employment (Abd Khalim and Sukeri, 2023). Balqis-Ali, Anis-Syakira, Fun and Sararaks (2021) found that Malaysians aged 50 and above, those with lower education, and individuals in rural areas were significantly less likely to possess PHI. The dichotomous nature of Malaysia's healthcare system—public

care being low-cost but overburdened, and private care being costly but efficient—exacerbates this inequity.

In terms of healthcare financing, PHI contributes 7.6 per cent to Malaysia's total health expenditure, second only to public funds and out-of-pocket payments (Abd Khalim and Sukeri, 2023). However, Ng, Choo, Ng and Hairi (2024) found that PHI holders incurred significantly higher out-of-pocket inpatient expenses, suggesting that the financial risk protection of insurance schemes may be inadequate.

Recent policy shifts may further influence PHI trends. Private healthcare demand is rising due to public hospital resource constraints and the government's targeted subsidy policies, which were proposed by Malaysia's Budget 2025, encouraging high-income individuals to seek private healthcare options, including PHI, for better and faster medical treatment access (CodeBlue, 2024).

2.2.2 Independent Variable – Demographic Factors

Demographic characteristics have been widely recognised as significant determinants in influencing the PHI adoption (Bayked, Kahissay and Workneh, 2021). A lot of empirical studies emphasise the influence of age, gender, marital status and others in shaping individuals' likelihood of purchasing PHI in Malaysia.

According to Balqis-Ali, Anis-Syakira, Fun and Sararaks (2021), individuals aged 50 and above in Malaysia are significantly more likely to remain uninsured compared to their younger counterparts. This age-related disparity may arise from risk-based pricing in Malaysia's PHI market, which leads to the result that older individuals face higher premiums or are unable to purchase it (Balqis-Ali, Anis-Syakira, Fun and Sararaks, 2021). According to the research of Bayked, Kahissay and Workneh (2021), through a systematic review of multiple studies on Community-Based Health Insurance (CBHI) in Ethiopia, the researchers found that the significance of age as a determinant was affected by others—some studies indicated higher willingness among older individuals, while others reported increased adoption among younger age groups due to family

structure. Therefore, age plays a different role depending on factors such as country, policy, family composition and so on.

Gender is also a significant demographic factor. Most studies have shown that the probability of health insurance adoption among females is lower than that of males. For instance, Balqis-Ali, Anis-Syakira, Fun and Sararaks (2021) reported that 53.1 per cent of males in Malaysia were uninsured, compared to 60.3 per cent of females. Similarly, in Kenya, 80.9 per cent of female respondents were uninsured, and the figure for males was 76.1 per cent (Yego, Nkurunziza and Kasozi, 2023). These results may lead to inequality in education level.

In addition, marital status and household size also influence the purchase of PHI. According to Balqis-Ali, Anis-Syakira, Fun and Sararaks (2021), individuals who were single or divorced were disproportionately represented among the uninsured population. According to the study of Wan, Peng, Shi and Coyte (2020), married individuals were significantly more likely to purchase private insurance, likely due to increased family responsibility. For the household size, Balqis-Ali, Anis-Syakira, Fun and Sararaks (2021) and Vasudeva et al. (2024) observed that individuals from larger households had lower insurance coverage, which may be due to insufficient economic resources.

2.2.3 Independent Variable - Socioeconomic Factors

Education level, income, and employment type influence PHI adoption (Abd Khalim and Sukeri, 2023). The study found that there is a positive relationship between household income and the possibility of purchasing PHI. Individuals from the middle 40 per cent and top 20 per cent income households were significantly more likely to possess PHI compared to those from the bottom 40 per cent. Batbold and Pu (2021) in Mongolia showed that willingness to pay (WTP) for PHI is positively correlated with both income and current or previous medical expenses, implying that economic capability and past financial burdens motivate insurance demand.

Education also plays a crucial role. People with higher education levels both understand insurance advantages better and have consistent work that enables them to pay insurance costs, according to Khelfaoui et al. (2022). Wan, Peng, Shi and Coyte (2020) and Vasudeva et al. (2024) also found that there is a positive relationship between the education level and the possibility of purchasing PHI. This suggests that education can enhance understanding of the insurance-related knowledge and improve the ability to make informed decisions regarding financial risk protection.

Other than that, employment status is also an important socioeconomic factor. According to the research of Abd Khalim and Sukeri (2023), the employment status can significantly affect the PHI adoption. They found that individuals who work in the private or public sectors are approximately six times more likely to purchase PHI compared to those who are unemployed. According to the study of Phillips (2021), entities that provide insurance through employment, as well as workplace policies, affect how many people purchase private coverage.

2.2.4 Independent Variable – Health Factors

Health perils, along with high medical expenses and unending disease conditions, coupled with access to healthcare facilities, significantly influence the choice of PHI (Tuolong, Alatinga and Yendaw, 2024). Distance to healthcare stations is what determines people's willingness to enrol in PHI. The authors argued that households located far from hospitals experienced higher transit costs and, despite having health insurance coverage, were less likely to seek care.

Kapur (2020) conducted their research and found that poor health status increases the chances of having PHI. On the other hand, the study indicated that sicker individuals in Ireland were more often allowed to benefit from PHI as a first signal of adverse selection, which is when high-risk individuals want to reduce the cost of healthcare before it occurs, through their insurance. Additionally, patients with chronic diseases often recognise private insurance as a way of ensuring uninterrupted quality care (Al-Sanaani et al., 2022).

Furthermore, the experience of illness is one of the considerable psychological mechanisms that trigger insurance adoption. Health insurance navigating households is influenced by their last visit to a healthcare facility (Savitha and Banerjee, 2021). Moreover, Kessy, Tibenderana, Gimonge and Moshi (2024) found that women who had visited a medical facility within the preceding 12 months were likelier to obtain insurance cover compared to those who had not.

2.2.5 Independent Variable - Financial and Insurance Factors

Financial literacy has been the main culprit behind the slow adoption rates. Kopplin (2024) has shown a direct link between increased financial literacy and the role it plays in purchasing health insurance. The latter then helps to pre-emptively avoid situations that can lead to incurring higher medical obligations or foregoing care due to preconceived cost problems.

Insurance literacy refers to the level of understanding of health insurance schemes that individuals possess (Mamun, Rahman, Munikrishnan and Permarupan, 2021). The study also noted that insurance literacy is an effective driver for the process of buying insurance among the labour population in Malaysia. These results imply that financial education is not only committed to furnishing the information needed for sound decision-making but also builds confidence in insurance products. According to the study of Dragos, Dragos and Muresan (2020), the research indicates that there is a direct relationship between insurance literacy and insurance purchase rate.

Apart from the fact that people should trust insurance companies, which will also influence the adoption of PHI. According to the study by Tam, Tyquin, Mehta and Larkin (2021), making decisions on health insurance influences personal confidence since individuals obtain a higher degree of assurance on private coverage when they have confidence in the insurer. It is examined that (Dragos, Dragos and Muresan, 2020) trust in insurance companies is a significant factor affecting the decision to purchase insurance.

2.2.6 Independent Variable - Awareness and Accessibility Factors

Access to information is one of the crucial components which influence the decision to purchase insurance. Insurance-related information obtained from various media platforms, such as newspapers and radio, as well as TV and social media, strongly influences public understanding and purchase decisions according to Adeniran et al. (2024). A recent study by Sondergeld and Ammar (2023) showed that young consumers rely heavily on a variety of media sources, including social media, insurance websites, and others, when making insurance purchasing decisions. For example, social media platforms such as Facebook and Twitter are the main sources of information for individuals who are under the age of 24.

Problem recognition is defined as an individual's perception of the difference between the expected situation and the experience (Tam, Tyquin, Mehta and Larkin, 2021). For example, perceived the lack of PHI as a serious problem. According to the research, there is a significant positive relationship between problem recognition and the attitude toward insurance, which means that individuals with problem recognition are more likely to purchase insurance.

2.3 Conceptual Framework

Figure 2.1: Proposed Conceptual Framework

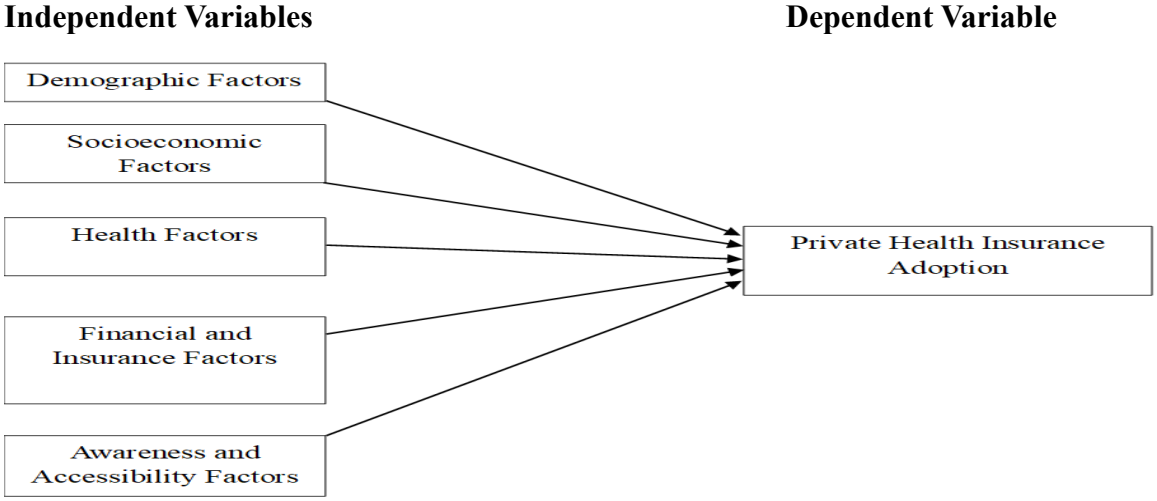


Figure 2.1 displays the conceptual framework for the research. The framework integrates two theoretical foundations, which are the Health Insurance Demand Theory (HIDT) proposed by Nyman (2001) and the Theory of Planned Behaviour (TPB) developed by Ajzen (1991). This figure aims to explain and understand the relationship between dependent variables and independent variables. In this study, the dependent variable is the adoption of health insurance among the privately insured people. In addition to that, the research team developed five independent variables that are demographic factors, socioeconomic factors, health factors, financial and insurance factors and awareness and accessibility factors.

Adjei-Mantey and Horioka (2023) applied HIDT to explain the relationship between demographic factors and insurance adoption. Balqis-Ali, Anis-Syakira, Fun and Sararaks. (2021) and Adjei-Mantey and Horioka (2023) applied HIDT to explain the relationship between socioeconomic factors and insurance adoption. In addition, Kapur (2020) used HIDT to study the relationship between health factors and PHI adoption.

Mamun, Rahman, Munikrishnan and Permarupan (2021) used TPB to study the impact of financial and insurance factors, such as insurance knowledge and attitudes towards health insurance, on the purchase of health insurance by adults in Malaysia. Tam, Tyquin, Mehta and Larkin (2021) used TPB to study the relationship between awareness and accessibility factors and young people's willingness to purchase PHI.

2.4 Research Gap

This study examines the determinants of PHI adoption in the most healthcare-rich region, Klang Valley, where insurance providers and healthcare facilities are highly concentrated. Rather than providing an overview of Malaysia's healthcare system, this study examines how a range of multidimensional factors influence PHI adoption. Specifically, the analysis covers demographic characteristics, socioeconomic status, health status, financial and insurance-related variables, and factors related to awareness and accessibility.

Several studies have examined the determinants of PHI adoption in different countries. In Ghana, factors such as age, poverty, education level, urban residence, household size, and

marital status were found to significantly influence health insurance adoption and expenditure (Adjei-Mantey and Horioka, 2023). Similarly, a Malaysian study found that age, gender, ethnicity, education, occupation, marital status, geographic category, household income, household size, and home ownership were significant factors influencing PHI adoption (Balqis-Ali, Anis-Syakira, Fun and Sararaks, 2021). Another Malaysian study of working adults aged 18-50 found that insurance knowledge, perceived usefulness, attitudes toward health insurance, subjective norms, and perceived behavioural control all had a positive impact on both the willingness to purchase and actual acquisition of PHI (Mamun, Rahman, Munikrishnan and Permarupan, 2021). In Australia, studies have found that perceptual and psychological factors, including problem identification, engagement, trust, and perceived value, shape attitudes toward PHI adoption among young adults Z (Tam, Tyquin, Mehta and Larkin, 2021). Meanwhile, a study in Ireland showed that people who rated their health as "very unhealthy" were more likely to purchase PHI than those who considered themselves "very healthy," although beliefs about the value or benefits of PHI did not show a significant association with adoption (Kapur, 2020).

These prior studies informed the construction of our conceptual framework by highlighting key research gaps. First, we expanded the age range of our target population from 22 to 60 years old. This adjustment reflects the typical transition toward financial independence after graduation, which usually begins around the age of 22, thereby granting individuals greater autonomy in insurance-related decisions. The upper limit of 60 years is consistent with the increasing retirement age in Malaysia and the literature indicating an increase in demand for PHI among older adults. In addition, while some existing studies consider the national population, we narrow the geographic scope to the Klang Valley. This region is the most densely populated and urbanised in Malaysia, with a concentrated distribution of insurance providers and medical institutions and therefore may have different patterns of PHI adoption compared to other regions.

This study integrates five key dimensions: demographic characteristics, socioeconomic status, health factors, financial and insurance-specific considerations, and awareness and accessibility. Each dimension builds on findings from the reviewed literature, but previous studies have rarely examined these variables together within a single analytical framework. By integrating these dimensions, our study addresses existing limitations and reduces the risk of omitted

variable bias. This holistic approach enhances the explanatory power of our analysis and helps provide a more nuanced understanding of the determinants of PHI adoption in Klang Valley.

2.5 Conclusion

In conclusion, this chapter has discussed relevant theories, including Health Insurance Demand Theory, Behavioural Economics Theory and Theory of Planned Behaviour, to provide a fundamental knowledge of this research. Besides that, five independent variables have been identified, which are demographic factors, socioeconomic factors, health factors, financial and insurance factors, and awareness and accessibility factors, with one dependent variable, which is the PHI adoption. Lastly, this chapter also includes the conceptual framework and the research gap.

CHAPTER 3: METHODOLOGY

3.0 Introduction

This study uses the research methodology provided in this chapter to determine the issues affecting the adoption of private health insurance (PHI) among residents of Klang Valley. The chapter describes the research design, data collection process, sampling method, survey design, reliability cheques and ethical issues, and data analysis process. The quantitative methodology was used to observe the connexion between PHI adoption as a dependent variable and five independent variables: demographic factors (DF), socioeconomic factors (SF), health factors (HF), financial and insurance factors (FIF), and awareness and accessibility factors (AAF). This standardised methodology makes the primary data reliable and allows valid statistical analysis with the use of SPSS.

3.1 Research Design

The collection of numerical data for quantitative studies depends on hypothesis testing statistics, whereas qualitative research examines non-numeric ideas and experiences (Sardana, Shekoohi, Cornett and Kaye, 2023; Schoonenboom, 2023). The study focuses on PHI adoption as the central outcome (DV) to examine how other independent variables (IVs), namely DF, SF, HF, FIF, and AAF, influence this outcome. Standardised evaluation of variable interrelations is possible through systematised data collection methods, which support quantitative methods.

This research adopts a quantitative methodology to examine the link between the endogenous variable of PHI adoption by analysing it with the exogenous variables. Statistical hypothesis testing is possible because our analysis of the sample can benefit from the numerical data collected through the Google Surveys questionnaire (Sardana, Shekoohi, Cornett and Kaye, 2023). This research approach guarantees an objective data analysis as well as results applicable to widespread scenarios for improved PHI adoption studies across the Klang Valley.

3.2 Sampling Design

3.2.1 Target Population

In this research, the target population consists of every individual we wish to study to achieve scientific conclusions (Whaley, 2024). The research sample comprises PHI owners between 22 and 60 years old to study a diverse set of insurance owners because Khazanah Research Institute (2020) indicates that individuals finish their higher education and enter employment at age 22, thus ensuring financial ability to buy PHI. Age restrictions for retirement and health insurance coverage policies typically match the threshold of 60 since many insurance plans place age limits at this level (Bajaj Finance, 2024). This research investigates workforce and economic conditions in Malaysia through the Klang Valley because these urban regions show high population density and economic activity (Lim, Law and Lee, 2023).

3.2.2 Sampling Location

The study was conducted in Kuala Lumpur and Selangor, collectively known as the Klang Valley. This region was chosen due to its significance as a densely populated urban and economic hub in Malaysia, offering a diverse demographic suitable for the research objectives.

3.2.3 Sampling Size

The number of respondents selected from the population constitutes the sample size, as they represent the results (Bukhari, 2021). The selection of suitable sample numbers serves as a fundamental step because small samples produce unreliable findings, yet large samples lead to unnecessary resource expenditure. Researchers conduct calculations through established formulas to find the sample size by combining data

about population size with confidence level and margin of error. The sample size can be calculated through Krejcie and Morgan's (1970) established formula, which states:

$$S = \frac{X^2 * N * P*(1-P)}{d^2(N-1) + X^2 * P(1-P)}$$

S : The required sample size

N : The population size

P : The population proportion is 0.5 (default for maximum variability)

D : The margin of error is 0.05 (typical for a 95per cent confidence level)

X^2 : The chi-square value for a 95per cent confidence level = 3.841

The Klang Valley's current population is estimated to exceed 8.8 million (New Straits Times, 2025).

Using Krejcie and Morgan's (1970) sample size formula, we calculated:

$$S = \frac{3.841 * 8{,}800{,}000 * 0.5*(1-0.5)}{0.05^2(8{,}800{,}000-1) + 3.841 * 0.5(1-0.5)}$$

$$S = 384.0833$$

$$S \approx 385$$

The research adheres to statistical requirements and accuracy by rounding the survey size to reach a total of 385 respondents.

3.2.4 Sampling Technique

Due to the large size of the Malaysian population, this study focuses on a suitable and manageable area—the Klang Valley—which includes diverse urban populations and represents a practical scope for data collection. All citizens within this area who have adopted PHI are considered eligible for selection. To effectively reach this target population, convenience sampling is applied using accessible platforms such as social media and QR codes, allowing for scalable data collection without requiring a complete

population listing. As explained by Nikolopoulou (2023), convenience sampling involves selecting participants based on ease of access and willingness to participate. Respondents were drawn from various locations within Klang Valley to reflect the diversity of PHI adopters, thereby enhancing the relevance and applicability of the study's findings.

3.3 Data Collection

The research relies on primary data collection to assess the various factors affecting the PHI adoption of individuals in Malaysia. Research based on primary data enables researchers to collect specific data points that align directly with their study aims. The research approach provides reliable data that meets the required standards of quality and stays accurate in the present context (Saint Mary's University, 2021).

A structured questionnaire has been developed to gather detailed responses about the principal independent variables, including DF, SF, HF, FIF, and AAF. The research design uses these selected variables to study their effects on whether people choose PHI.

The accepted participants must possess a suitable understanding of the research topic. The analysis excludes answers from respondents who do not align with these demographic specifications to uphold the research data quality.

The questionnaire divides its sections according to the recognised independent variables. Survey participants must base their selections on their personal experiences instead of external constraints affecting their perception. The study uses this method to obtain detailed information about what drives Malaysian citizens to choose PHI coverage.

3.4 Research Instrument

The online survey based on Google Forms provides respondents with the questionnaire for data collection. The survey format proves efficient and affordable in order to reach people living

across different geographic regions (Cvent, 2023). An online survey will be distributed via the survey link, which will be reached through social media networks Facebook, WhatsApp, and Instagram. The accessibility of the research material will be enhanced by generating QR codes while sharing them to boost participation levels.

3.4.1 Questionnaire Design

This study adopts a structured questionnaire survey as the primary data collection tool to examine the factors influencing PHI adoption in Malaysia. As suggested by Jones, Baxter and Khanduja (2013), questionnaires are efficient tools to collect data from a large sample and facilitate statistical analysis. The questionnaire consists of six major sections, each aligned with specific research objectives and hypotheses.

The questionnaire is divided into the following sections:

First Part: Personal Data Protection Statement
Section A: Socio-Demographic Respondent Details
Section B: Dependent Variable – Private Health Insurance (PHI) Adoption
Section C: Independent Variable – Socioeconomic Factors (SF)
Section D: Independent Variable – Health Factors (HF)
Section E: Independent Variable – Financial and Insurance Factors (FIF)
Section F: Independent Variable – Awareness and Accessibility Factors (AAF)
Section A informs respondents about the academic purpose of the research and ensures data confidentiality, also collecting demographic factors (DF) for one of the independent variables. Section B focuses on the dependent variable, Private Health Insurance (PHI) adoption. Sections C to F cover the independent variables, which are SF, HF, FIF, and AAF, using 5-point Likert scale questions.

Table 3.1: Summary of the variables used in this study, along with their definitions and sources.

Variable	Source of Question	Definition and Measurement
Private Health Insurance Adoption (PHI) (Dependent Variable)	Balqis-Ali, Anis-Syakira, Fun and Sararaks (2021), OECD (2022), Maurya and Yasmeen Ansari (2023), and Ng, Choo, Ng and Hairi (2024)	The adoption of PHI refers to an individual's decision to currently hold or plan to purchase PHI in addition to subsidised public healthcare services. The data collected will be shown on a Likert scale from 1 to 5.
Demographic Factors (DF) (Independent Variable)	Kaur and Singh (2020), Gani and Hussain (2021), Ahmed and Khan (2023), and Wong and Tan (2024)	DF describe personal characteristics such as age, gender, education, income, marital status, employment status and number of dependents that may influence an individual's decision to purchase PHI. The data collected will be shown in a multiple-choice format.

Socioeconomic Factors (SF) (Independent Variable)	Al-Sanaani et al. (2022) and Adeniran et al. (2024)	SF indicate a person's economic and social standing, including income level, financial stability, and ability to manage healthcare expenses, which can affect decisions related to PHI adoption. The data collected will be shown on a Likert scale from 1 to 5.
Health Factors (HF) (Independent Variable)	Wo, Liu, Li and Xi (2020), Balqis-Ali, Anis-Syakira, Fun and Sararaks (2021) and Adeniran et al. (2024)	HF reflect a person's health status, frequency of healthcare use, chronic illness conditions, and proximity to healthcare services, which can impact their likelihood of purchasing PHI. The data collected will be shown on a Likert scale from 1 to 5.
Financial and Insurance Factors (FIF) (Independent Variable)	Wo, Liu, Li and Xi (2020), Maurya and Yasmeen Ansari (2023) and Adeniran et al. (2024)	FIF illustrate the level of understanding, trust, and perceived value of PHI among individuals, which may influence their PHI decisions. The data collected will be shown on a Likert scale from 1 to 5.
Awareness and Accessibility Factors (AAF) (Independent Variable)	Maurya and Yasmeen Ansari (2023), Kessy, Tibenderana, Gimonge and Moshi (2024),	AAF refer to an individual's exposure to health insurance information and ease of accessing or comparing PHI options, which could contribute to their adoption behaviour.

	Mohammed, Birhanu, Abdu, Ahmed and Letta (2024) and Ng, Choo, Ng and Hairi (2024)	The data collected will be shown on a Likert scale from 1 to 5.

3.4.2 Pilot Test

A pilot test is the preliminary distribution of a questionnaire to a small group of respondents to test its feasibility and clarity before launching the full study. Thabane, Ma, Chu, Cheng, Ismaila, et al. (2010) emphasise that a pilot study helps researchers evaluate whether the research process is practical, cost-effective, and free of major design flaws. In this study, the pilot test will be conducted on a minimum of 30 respondents to assess the reliability of the questionnaire related to PHI adoption in the Klang Valley. Following data collection, the internal consistency of the questionnaire will be examined using Cronbach's Alpha. Any items found to be confusing or detrimental to reliability will be modified or removed accordingly, ensuring the instrument is refined and ready for full-scale deployment.

3.5 Data Analysis

The analysis will employ SPSS software to study the elements that affect PHI adoption patterns throughout Klang Valley. The goal of the analysis focuses on inspecting how different independent factors affect PHI adoption, which serves as the key dependent variable. The variables include demographic, socioeconomic, health, financial and insurance and awareness and accessibility. The collected data will undergo descriptive analysis implementation through SPSS to produce respondents' profile summaries before the questionnaire undergoes reliability testing using SPSS. Before conducting inferential analysis, the researcher will execute data

screening tests to validate the assumptions by checking validity as well as detecting multicollinearity and heteroscedasticity. The research will utilise multiple linear regression to examine how each independent variable influences PHI adoption while checking its statistical importance. The conducted statistical analyses will produce an accurate model which represents the predictive connections between input data and results.

3.5.1 Descriptive Analysis

Descriptive statistics provide both the general characteristics of study participants and standard summaries of organised data collection results (Cote, 2021). The study employs descriptive analysis for explaining the demographics of survey participants regarding gender, along with age distribution, marital status, household composition and residential location. The study demonstrates category distribution through frequencies and percentages, which represent each variable.

The sections concerning independent and dependent variables, use descriptive statistics for evaluating response trends. The evaluation of the Likert scale includes standard statistical tests that assess mean scores as well as standard deviations and skewness, and kurtosis measures to understand distribution patterns. The assessment reveals public viewpoints about PHI, together with associated choices that might affect their acceptance of this coverage system. Suitable graphs, together with charts like pie charts or bar graphs, should complement the summary of findings.

3.5.2 Scale Measurement

3.5.2.1 Reliability Test

The reliability analysis is needed to ensure that survey items that measure the independent constructs are consistent. It guarantees that every variable, SF, HF, FIF, and AAF has several items that produce reliable outcomes. Reliability

testing confirms that the survey items in a variable show interaction between themselves and are consistent as well as constant among the respondents (Andersson, Boateng, and Abos, 2024).

Cronbach's Alpha was not applied to DF, which is used to assess internal consistency of usage of the same construct among items, whereas DF are different items (they are not used) on a similar latent trait (Tavakol and Dennick, 2011).

The table below gives the classification of the Alpha values of Cronbach, depending on Arof, Ismail and Saleh (2018). Any scale that gives results that do not reach the threshold needs to be refined on the questionnaire and then the entire data collection can be done.

Table 3.2: Interpretation of Cronbach's Alpha Coefficient

Cronbach's Alpha (α) Values	**Reliability Level**
$\alpha \geq 0.90$	Excellent
$0.80 \leq \alpha < 0.90$	Good
$0.70 \leq \alpha < 0.80$	Acceptable
$0.60 \leq \alpha < 0.70$	Questionnable
$0.50 \leq \alpha < 0.60$	Poor
$\alpha \leq 0.50$	Inacceptable

Source: Arof, Ismail and Saleh (2018)

Cronbach's Alpha provides a reliability measure through its systematic assessment of questionnaire items to determine their capability of measuring the targeted construct (Tufail, Anwar and Ahmed, 2020). A questionnaire item demonstrates reliability if it maintains consistent performance across various data samples, which demonstrates its internal consistency. Cronbach's Alpha analysis will verify the questionnaire's reliability before conducting a full-scale data collection process. Instrument reliability determination is essential because

it directly influences the stability, along with the dependability of results, which strengthens the robustness of study findings. The collected data will become suitable for study conclusions only after validating questionnaire reliability.

3.5.3 Preliminary Data Screening

3.5.3.1 Validity Test

Validity testing is a screening process of data that will be used to confirm that the assessments are aimed at measuring the intended constructs (Galaczi, 2020). It ensures that the methods used are relevant and that the data capture the variables under study in an accurate way, which is paramount because this research is an examination of some variables that are directly related to it.

The Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity are used to determine whether the data are suitable for use in factor analysis. The range of values between 0.70 and 0.79 can be dubbed middling and the range above 0.80 is meritorious or excellent (Nkansah, 2018). The Test of Bartlett is used when the p-value lies under the value of 0.05, which ascertains that the correlation matrix is not similar to that of an identity matrix (Shrestha, 2021). These tests work together to ensure the construct value is suitable before subjecting the tests to advanced analysis like factor extraction or regression.

3.5.3.2 Multicollinearity Test

The study requires the implementation of a multicollinearity test as its next step. When multiple independent variables in a regression model display high correlations, the result is a distorted interpretation of coefficients, according to the DATAtab Team (2025). The test ensures our findings remain accurate by detecting possible unreliable relationships between independent variables and

the dependent variable caused by high correlation. The test is appropriate for our analysis because we analyse various independent variables and uncover multicollinearity to guarantee proper interpretation of regression model estimates. The Variance Inflation Factor (VIF) serves as an important tool to identify multicollinearity through VIF values that exceed 10, which confirms that a model variable might be unnecessary for evaluation (Investopedia Team, 2024). The VIF scale enables understanding of correlations between 1 and 5 as moderate, whereas values above 5 indicate high multicollinearity that needs additional assessment or model adjustments.

3.5.3.3 Heteroscedasticity Test

The final step in our data screening involves conducting a Heteroscedasticity Test. The process of verifying changing residual variations in regression models for correct prediction validity is known as Heteroscedasticity testing (Hayes, 2024). Our research aims to use heteroscedasticity testing to check that the model maintains consistent variance across values because it enhances estimation accuracy. The test serves this research purpose since it detects model problems that influence coefficient precision primarily through changes in residual variance across predictor variable values (Bobbitt, 2020). A significant p-value below 0.05 in the Breusch-Pagan test indicates heteroscedasticity, which shows that the residual variance is not consistent across observations according to Bobbitt (2020).

3.5.4 Inferential Analysis

Researchers use inferential analysis to estimate population-level inferences from information drawn from sample data (Bhandari, 2021). The study applies inferential statistics to analyse PHI adoption factors in Klang Valley, which enables results applicable to broader population groups. This method works effectively to establish hypothesis tests that study different variable interactions which impact insurance

adoption rates. Multiple linear regression stands as the most suitable analytical method because it detects how various predictors affect a continuous outcome variable.

3.5.4.1 Bivariate (Pearson) Correlation Coefficient

This is an analysis that determines the degree of linear relationship between two continuous variables. The value of this coefficient may vary between 0.00 and 1.00 (or between 0.00 and -1.00, given negative correlations), and this percentage reflects the degree of the association of the variables. According to the interpretation table, a correlation of 0.00 to 0.10 is negligible, 0.10 to 0.39 is weak, 0.40 to 0.69 is moderate, 0.70 to 0.89 is strong, and anything between 0.90 and 1.00 is very strong. This type of classification is used to establish whether a change in one variable is always followed by a change in another (Schober, Boer and Schwarte, 2018).

Table 3.3: (Pearson) Correlation Coefficient

Correlation Coefficient	**Interpretation**
0.00-0.10	Negligible correlation
0.10-0.39	Weak correlation
0.40-0.69	Moderate correlation
0.70-0.89	Strong correlation
0.90-1.00	Very strong correlation

Source: Schober, Boer and Schwarte (2018)

3.5.4.2 Multiple Linear Regression Analysis

The statistical tool Multiple linear regression (MLR) furnishes researchers with a method to evaluate dependent variable changes through the assessment of independent variables along with their distinct contribution rates (Hayes, 2024). Our research relies upon multiple linear regression because it lets us analyse multiple influences which affect the dependent variable and remove the impact

of unrelated variables simultaneously. Such analysis requires this method because various elements affect the outcome of this study, so it needs a statistical model which captures such complex interactions. The evaluation includes interpreting the R-squared value as a measure of overall model fit, as well as ANOVA to determine regression model significance and coefficient analysis for understanding variable relationships with the dependent variable.

Multiple Linear Regression Model for our study:

$$\widehat{PHI_i} = \beta_0 + \beta_1 DF_i + \beta_2 SF_i + \beta_3 HF_i + \beta_4 FIF_i + \beta_5 AAF_i + \mu_i$$

Where:

PHI = Private Health Insurance Adoption
DF = Demographic Factors
SF = Socioeconomic Factors
HF = Health Factors
FIF = Financial and Insurance Factors
AAF = Awareness and Accessibility Factors
$\mathbf{i}$ = Each individual or respondent in our sample
μ_i = Error term

A multiple linear regression analysis will be conducted according to the presented regression model to evaluate the connections between dependent and independent variables. The research assumes that all individual components play a substantial role in understanding PHI adoption patterns within the population.

3.6 Conclusion

The research design for PHI adoption among Klang Valley residents is presented in this conclusion. The research adopted a quantitative methodology using structured questionnaires for data collection, which used convenience sampling techniques. The desired number of 385 survey participants was calculated by applying Krejcie and Morgan's formula to achieve proper

representation. A reliability check of the questionnaire occurred before primary data collection through Google Forms by applying Cronbach's Alpha analysis. SPSS software will analyse the database using descriptive statistics alongside multiple linear regression analysis. The following chapter will exhibit an interpretation of analytical results obtained from processed data collection.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

In this chapter, various analytical methods will be employed, including descriptive analysis, reliability testing, multicollinearity testing, and heteroscedasticity testing, in order to ensure the validity of the data, thereby ensuring the accuracy and reliability of the inferential analysis results.

This study is based on 539 valid responses collected through a questionnaire survey, which met strict criteria such as age and residential area. The raw data will be analysed and compiled using SPSS version 29.

4.1 Descriptive Analysis

This section presents the descriptive analysis, which is based on a total of 539 valid responses collected through a questionnaire survey that met strict criteria such as age and residential area. Descriptive analysis helps to identify the demographic characteristics of the sample population, including gender, ethnicity and monthly household income, and provides a comprehensive overview of how individuals from different backgrounds express interest in the private health insurance (PHI) adoption.

The analysis includes the frequency distribution and percentages of the 539 respondents, presented through tables for better visualisation. Additionally, a separate table will display the means and standard deviations of the independent variables (IVs) and dependent variable (DV). This helps visualise the relationship and strength between the independent variables and the dependent variable, and supports observation of trends in how the IVs may influence the dependent variable.

4.1.1 Respondents' Profile

This part categorises the 539 respondents according to 11 demographic characteristics, including age group, gender, ethnicity, marital status, employment status, monthly household income, number of dependents, residential area, existing medical conditions, frequency of doctor or healthcare provider visits and insurance ownership by type, with percentages.

4.1.1.1 Age Group

Table 4.1: Descriptive Analysis for Age Group

Age Group	Frequency	Percentage (per cent)
22-30	200	37.1
31-40	200	37.1
41-50	58	10.8
51-60	59	10.9
Above 61	22	4.1
Total	539	100.00

Table 4.1 shows that the majority of respondents fall within the 22-30 and 31-40 age groups, each totalling 200 individuals, which accounts for 37.1 per cent. This is followed by the 51–60 age group, with 59 respondents (10.9 per cent), and the 41–50 age group, with 58 respondents (10.8 per cent). The smallest group is those above 61 years old, with only 22 respondents (4.1 per cent).

4.1.1.2 Gender

Table 4.2: Descriptive Analysis for Gender

Gender	Frequency	Percentage (per cent)
Female	280	51.9

Male	259	48.1
Total	539	100.00

According to Table 4.2, slightly more female respondents participated in the survey compared to male respondents. A total of 280 females took part, accounting for 51.9 per cent, while 259 males participated, making up 47.9 per cent.

4.1.1.3 Ethnicity

Table 4.3: Descriptive Analysis for Ethnicity

Ethnicity	**Frequency**	**Percentage (per cent)**
Chinese	285	52.9
Malay	148	27.5
Indian	106	19.7
Total	539	100.00

Table 4.3 indicates that the majority of participants were of Chinese ethnicity, numbering 285, which represents 52.9 per cent of the total sample. Malay respondents were the second largest group, with 148 individuals (27.5 per cent), while Indian participants comprised the smallest portion, totalling 106 individuals (19.7 per cent).

4.1.1.4 Marital Status

Table 4.4: Descriptive Analysis for Marital Status

Marital Status	**Frequency**	**Percentage (per cent)**
Single	111	20.6
Married	333	61.8
Divorced	64	11.9
Widowed	31	5.8

Total	539	100.0

From Table 4.4, it is observed that married individuals make up the largest proportion of marital status categories, with 333 respondents, accounting for 61.8 per cent. The second highest group is single individuals, totalling 111 respondents (20.6 per cent). In third place are those who are divorced, with 64 respondents (11.9 per cent), while the widowed category has the smallest number, with 31 respondents (5.8 per cent).

4.1.1.5 Employment Status

Table 4.5: Descriptive Analysis for Employment Status

Employment Status	**Frequency**	**Percentage (per cent)**
Employed (Private Sector)	289	53.6
Employed (Public Sector)	134	24.9
Self-employed	90	16.7
Unemployed	12	2.2
Retired	14	2.6
Total	539	100.00

Table 4.5 shows that respondents working in the private sector make up the majority, with 289 individuals, representing 53.6 per cent of the total. This is followed by those in the public sector, with 134 respondents (24.9 per cent). The number of self-employed and retired individuals is 90 (16.7 per cent) and 14 (2.6 per cent), respectively. Lastly, the unemployment group is the smallest, with only 12 respondents (2.2 per cent).

4.1.1.6 Monthly Household Income

Table 4.6: Descriptive Analysis for Monthly Household Income

Monthly Household Income	Frequency	Percentage (per cent)
Below RM 2,500.00	8	1.5
RM 2,500.00 – RM 4,999.00	101	18.7
RM 5,000.00 – RM 7,499.00	167	31.0
RM 7,500.00 – RM 9,999.00	172	31.9
RM 10,000.00 and Above	91	16.9
Total	539	100.00

Table 4.6 indicates that the majority of survey participants fall within the RM 7,500.00 – RM 9,999.00 income range. The second largest group belongs to the RM 5,000.00 – RM 7,499.00 bracket, with 167 respondents (31.0 per cent), followed closely by the RM 2,500.00 – RM 4,999.00 range, which includes 101 individuals (18.7 per cent). The RM 10,000.00 and above category accounts for 91 respondents (16.9 per cent), while the smallest group consists of those earning below RM 2,500.00, with only 8 participants (1.5 per cent).

4.1.1.7 Number of Dependents

Table 4.7: Descriptive Analysis for Number of Dependents

Number of Dependents	Frequency	Percentage (per cent)
0	11	2.0
1 – 3	125	23.2
4 – 6	264	49.0
7 or More	139	25.8
Total	539	100.00

Table 4.7 presents data on the number of dependents, such as children or family members requiring financial support. The majority of respondents, 264

individuals (49.0 per cent), reported financially supporting 4–6 dependents. This is followed by 139 respondents (25.8 per cent) who support 7 or more dependents. Additionally, 125 participants (23.2 per cent) reported supporting 1–3 dependents. Only 11 individuals (2.0 per cent) indicated that they do not have any dependents to support.

4.1.1.8 Residential Area

Table 4.8: Descriptive Analysis for Residential Area

Residential Area	Frequency	Percentage (per cent)
Kuala Lumpur	332	61.6
Selangor	207	38.4
Total	539	100.00

Table 4.8 shows that out of a total of 539 respondents, 332 individuals (61.6 per cent) reside in Kuala Lumpur, while 207 individuals (38.4 per cent) live in Selangor.

4.1.1.9 Existing Medical Conditions

Table 4.9: Descriptive Analysis for Existing Medical Conditions

Existing Medical Conditions	Frequency	Percentage (per cent)
Yes	484	89.8
No	55	10.2
Total	539	100.00

Table 4.9 shows whether the respondents have existing medical conditions. A significant majority, 484 individuals (89.8 per cent), reported having existing

medical conditions, while only 55 respondents (10.2 per cent) indicated that they do not have any medical conditions.

4.1.1.10 Frequency of Doctor or Healthcare Provider Visits

Table 4.10: Descriptive Analysis for Frequency of Doctor or Healthcare Provider Visits

Frequency of Doctor or Healthcare Provider Visits	Frequency	Percentage (per cent)
Rarely	33	6.1
Occasionally	46	8.5
Frequently	171	31.7
Very Frequently	289	53.6
Total	539	100.00

Table 4.10 indicates that 53.6 per cent of respondents, or 289 individuals, very frequently visit a doctor or healthcare provider (more than 5 times a year). This is followed by 31.7 per cent (171 respondents) who visit frequently (3–5 times a year). Additionally, 8.5 per cent (46 individuals) reported visiting occasionally (1–2 times a year), while only 6.1 per cent (33 respondents) stated they rarely visit a doctor or healthcare provider (less than once a year).

4.1.1.11 Insurance Ownership by Type with Percentages

Table 4.11 Descriptive Analysis for Insurance Ownership by Type with Percentages

Insurance Ownership by Type with Percentages	Frequency		Percentage (per cent)	
	Have	Do Not Have	Have	Do Not Have
General Insurance	448	91	83.1	16.9

Life Insurance	233	306	43.2	56.8
Medical / Health Insurance	245	294	45.5	54.6
Travel Insurance	395	144	73.3	26.7
Home Insurance	352	187	65.3	34.7
Vehicle Insurance (e.g. Motor / Car)	270	269	50.1	49.9
Personal Accident Insurance	420	119	77.9	22.1
Education Insurance	273	266	50.7	49.4
Third-Party, Fire and Theft Insurance	292	247	54.2	45.8

According to Table 4.11, respondents were allowed to select multiple types of insurance they currently hold. The most commonly held insurance is general insurance, selected by 448 individuals (83.1 per cent). This is followed by personal accident insurance, with 420 respondents (77.9 per cent), and travel insurance, chosen by 395 individuals (73.3 per cent).

Home insurance ranks fourth, with 352 respondents (65.3 per cent), followed by third-party, fire, and theft insurance with 292 individuals (54.2 per cent). Next is education insurance, held by 273 respondents (50.7 per cent), and vehicle insurance (e.g., motor or car), held by 270 individuals (50.1 per cent).

Medical or health insurance is held by 245 respondents (45.5 per cent), while life insurance is the least selected, with 233 individuals (43.2 per cent).

Overall, the descriptive analysis highlights that respondents were mainly younger, Chinese, privately employed, and frequent users of healthcare, with stable and reliable response patterns.

4.1.2 Measurement of Central Tendency and Dispersion for Constructs

4.1.2.1 Private Health Insurance Adoption (PHI)

Table 4.12 Descriptive Analysis for PHI Uptake

Dependent Variable	PHI1	PHI2	PHI3	PHI4	PHI5	PHI6
Sample Size	539	539	539	539	539	539
Mean	3.84	3.75	3.78	3.79	3.87	3.80
Standard Error of Mean	0.041	0.045	0.045	0.042	0.044	0.045
Standard Deviation	0.947	1.047	1.056	0.982	1.012	1.038
Variance	0.896	1.096	1.115	0.964	1.024	1.077
Range	4	4	4	4	4	4

Source: IBM SPSS 29 Result

The average scores of PHI1 to PHI6 according to 539 responses are given in Table 4.12 and are in the range of 3.75 to 3.87. The standard error of the mean is between 0.041 and 0.045, which is the difference between the sample mean and the population mean. PHI1 also reports a standard deviation of 0.947 and variance of 0.896, whereas PHI2 is slightly higher (SD = 1.047, variance = 1.096). The PHI3 is also more varying (SD = 1.056, variance = 1.115) and PHI4 is less varying (SD = 0.982, variance = 0.964). PHI5 and PHI6 have SD = 1.012 and variance = 1.024 and SD = 1.038 and variance = 1.077, respectively. On the whole, there is a range of 4 in all six items.

4.1.2.2 Socioeconomic Factors (SF)

Table 4.13 Descriptive Analysis for SF

Variable	Sample Size	Mean	Standard Error of Mean
SF1	539	3.75	0.045
SF2	539	3.66	0.045
SF3	539	3.80	0.043

SF4	539	3.84	0.044
SF5	539	3.48	0.050
SF6	539	3.77	0.043

Source: IBM SPSS 29 Result

Table 4.13 shows that the means for SF1 to SF6 range from 3.48 to 3.84. The standard error of the mean for these items falls between 0.043 and 0.050. A lower standard error of the mean indicates greater reliability, as it reflects a smaller margin of error between the sample estimate mean and the actual population mean. In other words, the lower the standard error, the more dependable the sample mean is as an estimate of the population parameter.

4.1.2.3 Health Factors (HF)

Table 4.14 Descriptive Analysis for HF

Variable	Sample Size	Mean	Standard Error of Mean
HF1	539	3.83	0.043
HF2	539	3.48	0.050
HF3	539	3.82	0.044
HF4	539	3.83	0.045
HF5	539	3.85	0.041
HF6	539	3.45	0.052

Source: IBM SPSS 29 Result

Table 4.14 presents the means for HF1 to HF6, which range from 3.48 to 3.85. The Standard Error of the Mean for these items lies between 0.041 and 0.052. This indicates that the margin of error between the sample estimate mean and the population mean is relatively small, ranging only from 0.041 to 0.052, thus suggesting that the sample means are reasonably accurate representations of the population parameters.

4.1.2.4 Financial and Insurance-Related Factors (FIF)

Table 4.15 Descriptive Analysis for FIF

Variable	Sample Size	Mean	Standard Error of Mean
FIF1	539	3.71	0.045
FIF2	539	3.83	0.043
FIF3	539	3.78	0.042
FIF4	539	3.81	0.046
FIF5	539	3.68	0.046
FIF6	539	3.67	0.046

Source: IBM SPSS 29 Result

Table 4.15 displays the means for FIF1 to FIF6, which range from 3.67 to 3.83. The standard error of the mean for these items falls between 0.042 and 0.046. This narrow range suggests that the margin of error between the sample estimate mean and the population mean is minimal, indicating that the sample means of financial and insurance-related factors (FIF) are highly stable and reliable.

4.1.2.5 Awareness and Accessibility Factors (AAF)

Table 4.16 Descriptive Analysis for AAF

Variable	Sample Size	Mean	Standard Error of Mean
AAF1	539	3.50	0.048
AAF2	539	3.79	0.044
AAF3	539	3.78	0.032
AAF4	539	3.73	0.033
AAF5	539	3.72	0.033
AAF6	539	3.72	0.032

Source: IBM SPSS 29 Result

Table 4.16 presents the means for AAF1 to AAF6, which range from 3.50 to 3.79. The Standard Error of the Mean for these items falls between 0.032 and

0.048. This indicates that the margin of error between the sample estimate mean and the population mean is relatively small, suggesting that the sample means of AAF are consistent and dependable.

4.2 Scale Measurement

4.2.1 Reliability Test

Table 4.17 Cronbach's Alpha value for dependent variables (DV) and independent variables (IV)

Variable	Measurement	Cronbach's Alpha
PHI	PHI1, PHI2, PHI3, PHI4, PHI5, PHI6	0.788
SF	SF1, SF2, SF3, SF4, SF5, SF6	0.807
HF	HF1, HF2, HF3, HF4, HF5, HF6,	0.800
FIF	FIF1, FIF2, FIF3, FIF4, FIF5, FIF6,	0.815
AAF	AAF1, AAF2, AAF3, AAF4, AAF5, AAF6,	0.904

Source: SPSS 29 Result

Table 4.17 presents the results of the reliability test, which includes the dependent variable and four independent variables. The Cronbach's Alpha value for PHI is 0.788, which is considered acceptable. The Cronbach's Alpha values for the other three independent variables of SF, HF, and FIF are 0.807, 0.800, and 0.815, respectively, indicating good reliability. Meanwhile, the Cronbach's Alpha value for AAF is 0.904, which reflects excellent internal consistency. These reliability scores indicate that the items under each construct, such as the six questions under SF, are individually distinct yet demonstrate a degree of internal coherence, supporting the consistency of the scale.

In summary, the reliability test confirms that all constructs used in the study are consistent and dependable.

4.3 Preliminary Data Screening

4.3.1 Validity Test

Table 4.18: Kaiser-Meyer-Olkin (KMO) and Bartlett's test

Statistical Method	Statistic	P-value
Kaiser-Meyer-Olkin (KMO)	0.913	
Bartlett's test	2706.093	<0.001

Source: SPSS 29 Result

The independent variables (DF, SF, HF, FIF, and AAF) and dependent variable (PHI) were selected on the basis of statistical tests as they were found to be in the right form. A value of 0.913 was obtained as the KMO measure is rated as excellent (Nkansah, 2018), which confirms that there is sufficient sample size and shared variance of variables. The Test of Sphericity of Bartlett gave the chi-square value of 2706.093, which has p = 0.001. This means that the correlation matrix is not an identity matrix, and there are enough correlations to do the factor analysis (Shrestha, 2021). These findings confirm the applicability of going ahead with the factor analysis to scrutinise the structure of PHI and the associated variables.

4.3.2 Multicollinearity Test

Table 4.19: Tolerance Value and Variance Inflation Factor (VIF)

Independent Variables	Collinearity statistic	
	VIF	Tolerance
DF	1.001	0.999
SF	3.708	0.270
HF	3.544	0.282
FIF	3.732	0.268
AAF	4.206	0.238

Source: SPSS 29 Result

All the values of VIF of DF (1.001), SF (3.708), SF (3.541), FIF (3.732) and AAF (4.203) are within the range of 1-5, which are considered moderate. As indicated by the DATAtab Team (2025), the high VIFs can indicate high multicollinearity when the levels exceed 5, and a severe problem that can undermine the results of the regression equation when they exceed 10 (Investopedia Team, 2024). Next, there are no negative values among the tolerance values, and their value is greater than 0.2, which once again confirms that there is no multicollinearity. Thus, it is indicated in the evidence that there is no multicollinearity issue among the independent variables and thus there can be an interpretation of the regression results confidently.

4.3.3 Heteroscedasticity Test

Table 4.20: Breusch-Pagan Test

Statistic Method	Statistic	P-value
Breusch-Pagan Test	**0.007**	**0.935**

Source**:** SPSS 29 Result

The Breusch-Pagan test was used to test the heteroscedasticity in the PHI regression model with its independent variables. Bobbitt (2020) states that a p-value of less than 0.05 shows heteroscedasticity. The result of the test was 0.007 with a p-value of 0.935, which is highly above 0.05. This proves that the model is not heteroscedastic but homoscedastic, that is, residual variance is the same. In this way, the estimated values of coefficients are comparable and stable (Hayes, 2024).

Thus, the preliminary data screening confirmed that the dataset was suitable for further inferential analysis.

4.4 Inferential Analysis

4.4.1 Bivariate (Pearson) Correlation Coefficient

Table 4.21: Correlation between PHI and SF, HF, FIF, AAF

		DF	SF	HF	FIF	AAF
PHI	Pearson Correlation	-0.042	0.782**	0.797**	0.827**	0.817**
	Sig (2-retail)	0.331	<0.001	<0.001	<0.001	<0.001
	N	539	539	539	539	539

Note: **Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS 29 Result

According to Table 4.21, there is a positive correlation between the dependent variable, which is PHI and the independent variables, which are DF, SF, HF, FIF and AAF. Firstly, the correlation coefficient between PHI and SF is 0.782, which shows a strong correlation as the figure falls between the range of 0.70 – 0.89. Hence, it indicates that SF can strongly influence the PHI adoption. Other than that, these two variables are highly significant (P<0.001), which is at the 0.01 level.

Secondly, PHI and HF indicate a strong correlation, as the figure is 0.829, which falls between 0.70 and 0.89. As one of the factors, HF can significantly affect the decision to purchase PHI. Besides that, these two variables are highly significant (P < 0.001), which is at the 0.01 level.

Thirdly, PHI and FIF also show a strong correlation with a figure of 0.895, which falls between 0.70 and 0.89. Therefore, it indicates that FIF have a huge influence on the decision of buying PHI. These two variables are highly significant as the P < 0.001, which is at the 0.01 level.

Fourthly, the correlation coefficient between PHI and AAF is 0.845, which indicates a strong correlation. Hence, it shows that the AAF can significantly affect the PHI

adoptions. Other than that, these two variables are highly significant as the P < 0.001, which is at the 0.01 level.

Lastly, the correlation coefficient of PHI and DF is -0.042, indicating that there is a very weak negative association between the two variables because the number is less than the range of 0.10. Moreover, these variables have no statistical significance (p = 0.331), higher than the value of 0.05. Therefore, the demographics of PHI adoption do not play a leading role.

4.4.2 Multiple Linear Regression Analysis

ANOVA

Table 4.22: ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Regression	207.698	5	41.540	364.763	<0.001
Residual	60.698	533	0.114		
Total	268.396	538			

Source: SPSS 29 Result

Coefficients

Table 4.23: Coefficient Result

	Standardized Coefficients Beta	Sig.
(Constant)		0.436
DF	-0.050	0.016
SF	0.130	0.001
HF	0.215	<0.001
FIF	0.344	<0.001
AAF	0.263	<0.001

Source: SPSS 29 Result

Model Summary

Table 4.24: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.880	0.774	0.772	0.33746214586

Source: SPSS 29 Result

According to the ANOVA result, the regression model is statistically significant ($p < 0.001$), which indicates that the independent variables have a significant effect on the dependent variable. Besides that, according to the coefficient table (Table 4.23), all five independent variables, which are DF, SF, HF, FIF and AAF, are statistically significant predictors of the dependent variable.

Assume that other variables are constant, for every one-unit increase in DF, the overall intention will decrease by 0.050. Assume that other variables are constant, for every one-unit increase in SF, the overall intention will increase by 0.130. For every one-unit increase in HF, the overall intention will increase by 0.215, assuming other variables are constant. For every one-unit increase in FIF, the overall intention will increase by 0.344, assuming other variables are constant. For every one-unit increase in AAF, the overall intention will increase by 0.263, assuming other variables are constant.

Lastly, according to the model summary, the R Square value of 0.774 indicates that 77.4 per cent of the variance in the dependent variable can be explained by the regression model, demonstrating a strong model fit. The Adjusted R Square of 0.772 means that even after adjusting for degrees of freedom, the model still explains 77.2 per cent of the variance in the dependent variable.

Overall, the inferential analysis shows that all four factors significantly influence PHI adoption, with FIF having the strongest effect.

4.5 Conclusion

In this research, SPSS version 29 was employed to analyse and summarise the collected data. The factor analysis results confirmed that the variables were suitable for further analysis, as indicated by a high KMO value and a significant Bartlett's test. The survey data were also found to be valid and reliable. Furthermore, preliminary tests confirmed that the dataset had no issues of multicollinearity or heteroscedasticity. Based on the multiple regression analysis, all five independent variables, namely DF, SF, HF, FIF and AAF, were statistically significant predictors of PHI adoption. The regression model was also statistically significant ($p < 0.001$), with an Adjusted R Square of 0.772, indicating a strong model fit.

CHAPTER 5: DISCUSSION, CONCLUSION, AND IMPLICATIONS

5.0 Introduction

This paper examines the predictors of private health insurance (PHI) in Klang Valley, Malaysia. The increasing healthcare expenses, premium increases, and lack of accessibility are limiting PHI adoption, particularly in vulnerable groups. The study will address the question of how demographic (DF), socioeconomic (SF), health (HF), financial and insurance (FIF), and awareness and accessibility (AAF) affect PHI adoption, with implications for policy makers, insurers, and health care providers to improve coverage and affordability.

5.1 Summary of Statistical Analysis

Table 5.1: Summary of the Statistical Findings

Independent Variables	Beta-coefficients	P-Value	Result
DF	-0.050	0.016	Significant (Negative effect)
SF	0.130	0.001	Significant
HF	0.215	<0.001	Significant
FIF	0.344	<0.001	Significant
AAF	0.263	<0.001	Significant

Note: Developed for this research

According to Table 5.1, DF has a significant negative relationship with the dependent variable, SF, HF, FIF and AAF have a significant positive relationship with the private health insurance (PHI) adoption. Among these, FIF has the strongest influence, followed by AAF, HF, and SF, while DF demonstrates the weakest influence with a negative effect. Hence, these results confirm that all five variables are significant factors that affect the PHI adoption in Klang Valley.

5.2 Discussion Major Findings

5.2.1 Demographic Factors

The outcome of the regression indicates that the negative relationship between the DF and PHI adoption is noteworthy in the Klang Valley. It means that age, gender, and marital status can predispose the potential to purchase PHI.

This is contrary to the past research, whereby the older ones, married individuals, and women tend to purchase insurance more (Bayked, Kahissay, and Workneh, 2021; Balqis-Ali, Anis-Syakira, Fun, and Sararaks, 2021; Yego, Nkurunziza, and Kasozi, 2023). In contrast to their positive results, the present study shows a negative relationship.

As such, DF are also still important, but as limiting, as driving forces in PHI adoption in the Klang Valley. This difference underscores the difficulty of demographic impacts. Health Insurance Demand Theory (HIDT) states that the perceived need to have insurance is determined by DF, but in this research case, these factors may seem to impede adoption.

5.2.2 Socioeconomic Factors

It is revealed that SF are strongly positively correlated with PHI adoption in Klang Valley. The purchasing decisions of PHI are greatly affected by income, level of education and employment. As an example, the more income one has, the more affordable it becomes and the more one is educated on the benefits of insurance, the more likely he/she is to get it. This is consistent with Batbold and Pu (2021), who correlated economic capacity and medical expenses to PHI uptake, and Khelfaoui et al. (2022), Wan, Peng, Shi, and Coyte (2020), and Vasudeva et al. (2024), who focused on education, and Abd Khalim and Sukeri (2023), who focused on employment.

In general, a high correlation between the socioeconomic variables and PHI demand is in line with prior studies as well as the Health Insurance Demand Theory (HIDT), which posits that the financial capability and education level not only enhance cost-effectiveness but also awareness, thus leading to adoption.

5.2.3 Health Factors

The results indicate that there is a strong positive correlation between HF and PHI adoption in the Klang Valley. The poorer the health of a person, the greater the medical needs and the more that person is frequently hospitalised, the more he/she is likely to buy PHI. That is backed by Tuolong, Alatinga, and Yendaw (2024), pointing to the effect of health risks, high medical expenditure, and access to facilities, and by Kapur (2020), who connects poor health to adverse selection. Equally, Al-Sanaani et al. (2022) observe that chronically ill patients pursue the uninterrupted quality care through the lenses of private insurance, whereas Savitha and Banerjee (2021) emphasise the role of illness experience in prompting insurance demand.

Generally, the findings affirm that undergoing sickness, health status, and access to healthcare are potent determinants of PHI uptake. As postulated by the Health Insurance Demand Theory (HIDT), HF are the primary one, and HF is one of the most valuable contributors to PHI adoption.

5.2.4 Financial and Insurance Factors

Based on the regression findings, the FIF have a strong correlation with PHI adoption in the Klang Valley. The respondents who had a greater level of financial and insurance literacy and trust towards insurers had higher chances of purchasing PHI. According to Kopplin (2024), financial literacy eliminates the risk of not receiving treatment because of the cost, whereas according to Mamun, Rahman, Munikrishnan and Permarupan (2021), insurance literacy became a driving factor among Malaysian workers.

Comparatively, Tam, Tyquin, Mehta, and Larkin (2021) discovered that insurer trust enhances uptake.

To conclude, the results are consistent with the existing literature, as they support the significance of financial literacy and insurer trust in PHI adoption. In line with the Theory of Planned Behaviour (TPB), these factors influence the perceptions of control and attitude towards PHI, which makes FIF a powerful determinant of adoption.

5.2.5 Awareness and Accessibility Factors

The findings of the regression analysis indicate that AAF are some of the main factors that affect PHI adoption in Klang Valley. The more the respondents had information on the insurance and perceived the risks of lacking PHI, the more they were prone to buying it. Adeniran et al. (2024) mention the importance of media channels, including newspapers, radio, TV, and social media, whereas Sondergeld and Ammar (2023) mention that young consumers are dependent on digital sources to a great extent. Equally, Tam, Tyquin, Mehta, and Larkin (2021) conclude that the view of the absence of PHI as a severe issue enhances the adoption intentions.

Altogether, awareness and accessibility are the main determinants of PHI uptake, as is congruent with previous research and the Theory of Planned Behaviour (TPB). Increased exposure to information and awareness of the dangers of a lack of PHI positively influence the attitudes and intentions, which in turn foster adoption.

5.3 Implications of the Study

This section explains the implications of the research findings regarding the adoption of PHI and recommends the ways in which the concerned departments and stakeholders can prepare plans and initiate more specific interventions so as to effectively encourage the adoption of PHI in Malaysia.

5.3.1 Policymakers

The results show that DF, SF, HF, FIF, and AAF play a significant part in the adoption of PHI in Malaysia. These factors should be taken into consideration by policymakers to minimise inequalities in PHI. As an example, low-income households and individuals can be targeted that can be designed to subsidise or premium support programs, since SF significantly represent the presence of financial barriers to afford the PHI is quite potent among this socioeconomic group.

Moreover, the significant financial and insurance-related factors imply that the government must play a large role in promoting financial and insurance literacy through the means of a public education campaign. This plays a significant role in ensuring that rural and less educated members of the population get access to PHI despite their understanding of the benefits that PHI can bring. Transparency in measure pricing and claims, affordability among the at-risk groups, especially the elderly and the rural population, are some of the factors that can boost trust towards PHI. Also, policymakers elevate the importance of PHI and are more aggressive in regulating the insurance. Case in point, the sudden rise in insurance premiums as a result of the rise in expenses incurred by insurers this year, as a result of the medical inflation, resulted in a higher burden on the consumer levels. This resulted in the intervention of the government. In case the government plays an active role in policing PHI, this event would not damage the confidence of the people in PHI.

5.3.2 Private Health Insurers

In the case of insurance companies, the significant SF indicate that the company should ensure its products are designed to meet the needs of various demographic and socioeconomic strata. The premiums of the insurance should be flexible and of a tiered nature to suit those with different income levels, family sizes, and employment types. Family-based plans or micro insurance models can practically accommodate the needs of large families with small financial means. It is also important that insurers amplify confidence in PHI. This involves making prompt claims settlements, convenient

services and carrying out awareness campaigns. The high awareness and AAF prove that engagement of digital platforms and social media in spreading insurance news can successfully spread the coverage, especially to younger and urban consumers, where online resources are always sought.

Moreover, the predatory pricing practice, which involves charging exceptionally expensive premiums to the elderly or those who have pre-existing conditions, should be discouraged by the insuring companies because this kind of practice promotes inequality and decreases the adoption of the PHI market. Insurers, on the other hand, should provide affordable premiums to the elderly and patients with previous conditions and also enhance proficiency in the claims system that decreases cost and creates a financial security net to vulnerable populations.

5.3.3 Healthcare Providers

Healthcare providers, especially the group of private hospitals and clinics, hold an equally determinative role when shaping the demand for PHI. The significance of HF underscores the value of the location of the premises of the private hospitals and clinics, as it is supposed to be efficiently chosen in order to prevent overcrowding. More so, through partnership with the insurance companies, the healthcare providers are able to provide bundle packages that bring together the preventive cash out of pocket, chronic management disease services and hospital services combined. These partnerships help to identify clearly the association between insurance cover and access to and quality of healthcare services, hence making the products of PHI more attractive.

Moreover, AAF emphasises the additional educational points of contact in the healthcare sector through consultations and appointments, through which healthcare professionals can educate patients on the utility of PHI and develop awareness regarding patient problem-recognition among patients living with chronic conditions that may encounter extended care benefits.

5.4 Limitations of the Study

There are a number of limitations of this study that should be considered. To start with, the geographic area was restricted to the Klang Valley, which includes Kuala Lumpur and Selangor. Although this area is the most urbanised and economically advanced part of Malaysia, the results might not be the same as those of other people living in less developed or rural regions, as their access to healthcare, affordability of insurance, and socioeconomic status vary greatly.

Secondly, the research was based on self-administered questionnaires. This approach relies on the integrity, dependability and recall capability of respondents, which can be biased. The accuracy of the data could also be misinterpreted because of the questions or socially desirable responses.

Lastly, the cross-sectional type of study makes the analysis limited to a single time. This design, though useful in the identification of relationships, is not able to establish causal relationships or changes over time. Other factors that may be of interest, including cultural norms, family medical history, or changing government healthcare policy, would not be captured as such.

5.5 Recommendations for Future Research

Depending on the findings and limitations of the present study, future research can make some recommendations. To begin with, although the scope of this research was limited to the Klang Valley with reasons connected to the economic and urban importance it holds as the largest economic and urban centre in Malaysia, future studies can consider expanding the study to other areas of Malaysia and other states, not to mention the countryside. This would enable the comparison of the urban and rural populations and give a more complete national picture of the uptake of the PHI.

Second, a mixed-method approach of integrating quantitative surveys with qualitative interviews or focus group discussions might provide further information about motivations, perceptions, and obstacles that stimulate insurance choices, which might not be brought out well using quantitative data alone.

Finally, regarding the fact that the cross-sectional design and restricted variables are used altogether, the future study could clarify this using a longitudinal design by tracing respondents longitudinally and a set of additional variables. These may include cultural, psychological, and policy-related issues, the effect of recent changes when it comes to healthcare among the various factors, to facilitate the determination of causality associations and offer a more complete viewpoint on the deciding factors that impact the acceptance of personal health insurance in Malaysia.

5.6 Conclusion

Finally, the chapter explained the results of the study as it described the results of the descriptive, reliability, preliminary, and inferential analyses that affirmed what the researcher cited as being the key factors that play a significant role in adopting the use of PHI in Malaysia, in the form of the SF, HF, FIF, and AAF. It produced a robust regression with 85.3 per cent of variance accounted by PHI adoption, with 10 financial/ insurance factors as the most significant predictor. Such results have implications yielding the critical role of policy makers, insurers and healthcare providers in filling gaps in affordability, awareness, and accessibility to promote greater adoption of PHI. Irrespective of insight: geographical focus limitation, self-reported and cross-sectional survey design, the undertaking can assist one to gain meaningful insight; however, it would be recommended to conduct further studies to widen the scope, incorporate mixed methods, and utilise longitudinal research designs to gain a better insight.

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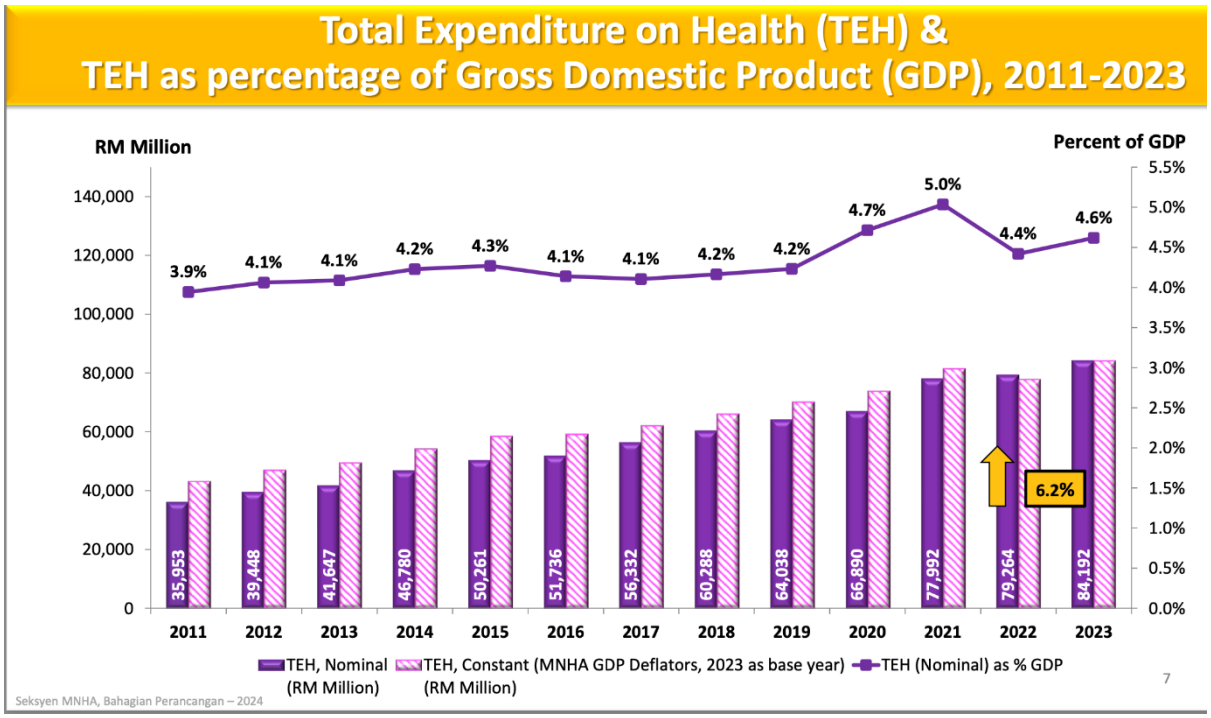
APPENDICES

Appendix 1.1: Malaysia Import Medical Instrument, 2018-2023

Year	Medical Instrument ($ in billion)
2018	0.699
2019	0.805
2020	0.743
2021	0.847
2022	0.930
2023	1.030

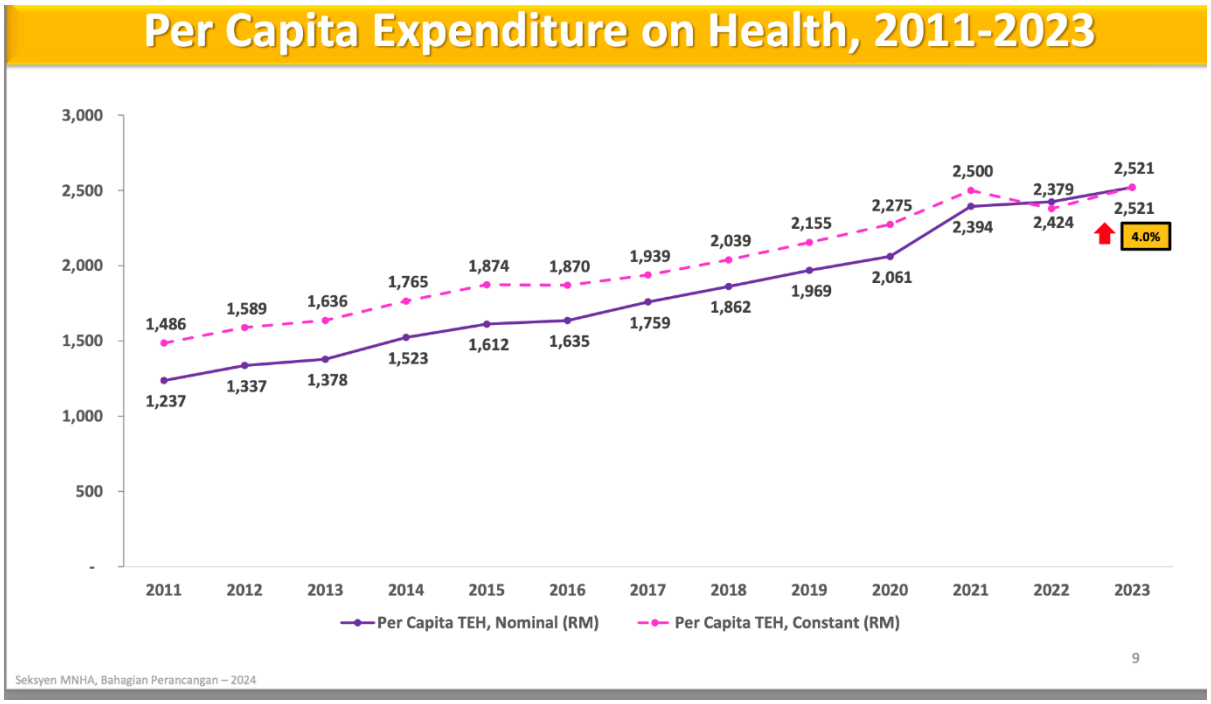
Source: Observatory of Economic Complexity (2025)

Appendix 1.2: Total Expenditure on Health (TEH) & TEH as percentage of Gross Domestic Product (GDP), 2011-2023



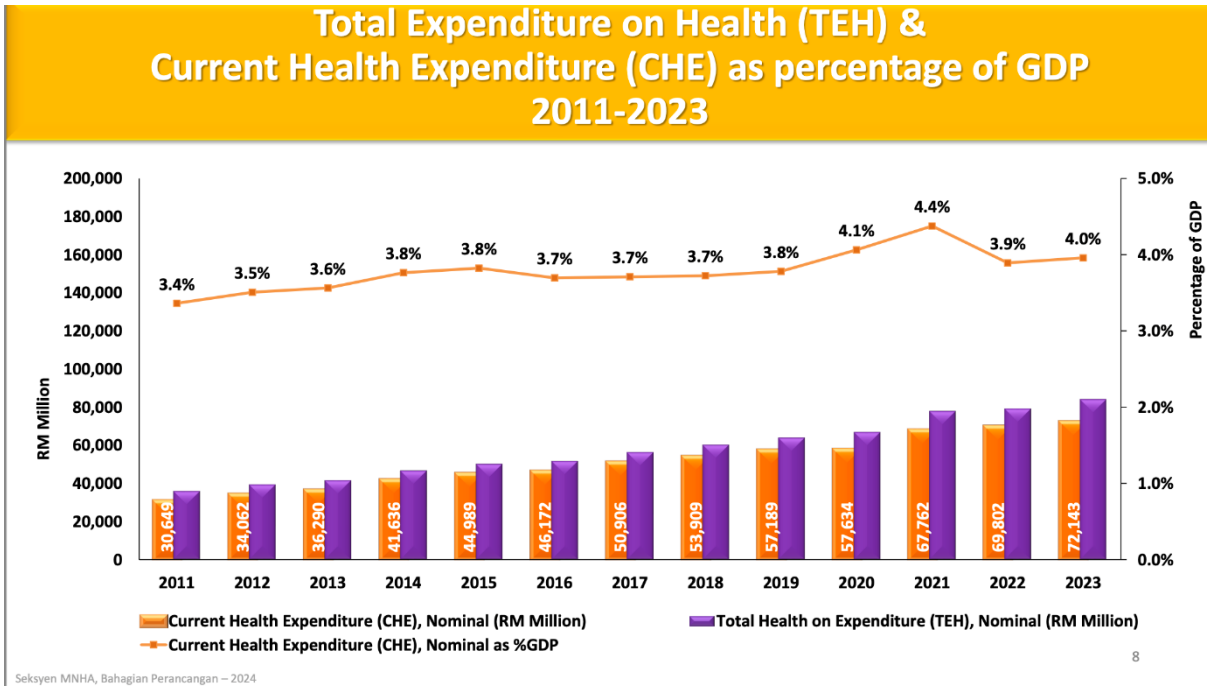
Source: Ministry of Health Malaysia (2024b)

Appendix 1.3: Per Capita Expenditure on Health, 2011-2023



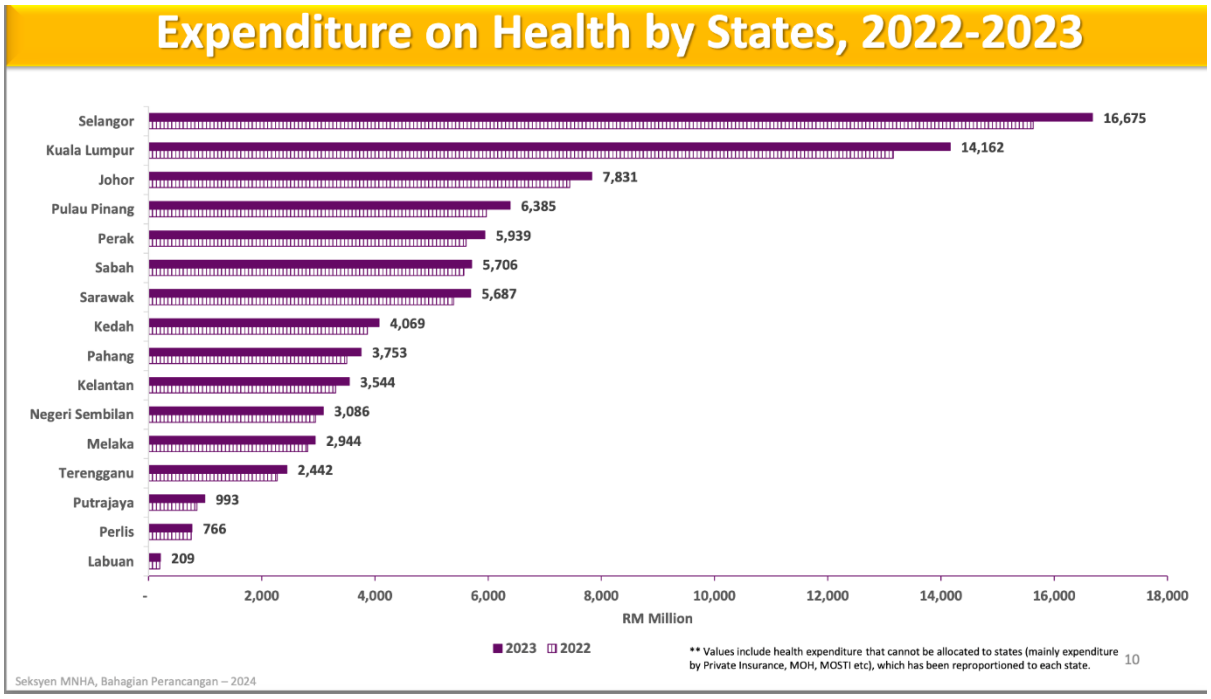
Source: Ministry of Health Malaysia (2024b)

Appendix 1.4: Total Expenditure on Health (TEH) & Current Health Expenditure (CHE) as percentage of GDP, 2011-2023



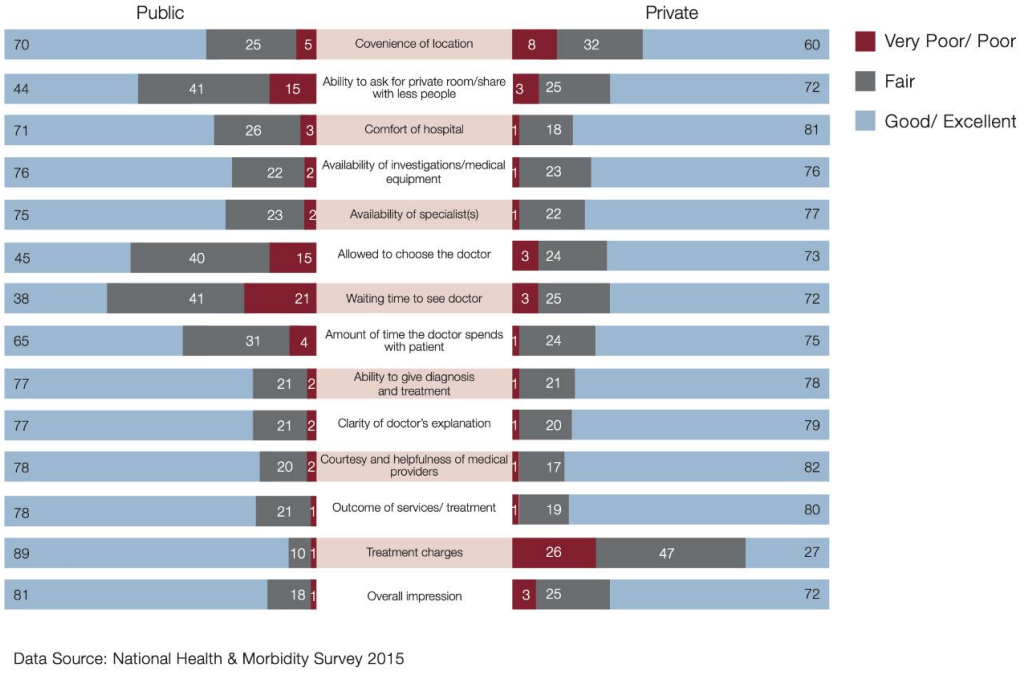
Source: Ministry of Health Malaysia (2024b)

Appendix 1.5: Expenditure on Health by States, 2022-2023



Source: Ministry of Health Malaysia (2024b)

Appendix 1.6: Reported Satisfaction with Public and Private Hospitals, 2015



Source: Atun, Berman, Hsiao, and Myers (2016)

Appendix 3.1: Survey Questionnaire

PERSONAL DATA PROTECTION STATEMENT

Please be informed that in accordance with Personal Data Protection Act 2010 ("PDPA") which came into force on 15 November 2013, Universiti Tunku Abdul Rahman ("UTAR") is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

Notice:

1. The purposes for which your personal data may be used are inclusive but not limited to:-
   - For assessment of any application to UTAR
   - For processing any benefits and services
   - For communication purposes
   - For advertorial and news
   - For general administration and record purposes
   - For enhancing the value of education
   - For educational and related purposes consequential to UTAR
   - For the purpose of our corporate governance
   - For consideration as a guarantor for UTAR staff/ student applying for his/her scholarship/ study loan

2. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

3. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

4. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:

1. By submitting this form you hereby authorise and consent to us processing (including disclosing) your personal data and any updates of your information, for the purposes and/or for any other purposes related to the purpose.

2. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

3. You may access and update your personal data by writing to us at leongleong@1utar.my

Acknowledgment of Notice

[ ] I have been notified by you and that I hereby understood, consented and agreed per UTAR above notice.

[ ] I disagree, my personal data will not be processed.

……
Name:
Date:

Section A: Socio-Demographic Respondent Details

1. Age

◯ 22 – 30
◯ 31 – 40
◯ 41 – 50
◯ 51 - 60
◯ Above 61

2. Gender

◯ Male
◯ Female

3. Ethnicity

◯ Malay
◯ Chinese
◯ Indian
◯ Other: _____

4. Marital Status

◯ Single
◯ Married
◯ Widowed
◯ Divorced

5. Employment Status

◯ Employed (Public Sector)
◯ Employed (Private Sector)
◯ Self-Employed
◯ Unemployed
◯ Retired
◯ Other: _____

6. Monthly Household Income (MYR)

- ◯ Below RM 2,500
- ◯ RM 2,500 – RM 4,999
- ◯ RM 5,000 – RM 7,499
- ◯ RM 7,500 – RM 9,999
- ◯ RM 10,000 and above

7. Number of Dependents (Children or family members financially supported)

- ◯ 0
- ◯ 1 - 3
- ◯ 4 - 6
- ◯ 7 or more

8. Residential Area

- ◯ Kuala Lumpur
- ◯ Selangor

9. Current Insurance Policy that You Have (Can Tick more than One Choice)

- ◯ General Insurance
- ◯ Life Insurance
- ◯ Medical/Health Insurance
- ◯ Travel Insurance
- ◯ Home Insurance
- ◯ Vehicle Insurance (e.g., Motor/Car)
- ◯ Personal Accident Insurance
- ◯ Education Insurance
- ◯ Third-Party, Fire and Theft Insurance
- ◯ Other: _____

10. Do you have any existing medical conditions?

- ◯ Yes
- ◯ No

11. How often do you visit a doctor or healthcare provider (on average)?

- ◯ Rarely (less than once a year)
- ◯ Occasionally (1 – 2 times a year)
- ◯ Frequently (3 – 5 times a year)
- ◯ Very Frequently (more than 5 times a year)

Section B: Dependent Variable – Private Health Insurance (PHI) Adoption

The following questions are acquired from Balqis-Ali, Anis-Syakira, Fun and Sararaks. (2021), OECD (2022), Maurya et al. (2023) and Ng, Choo, Ng, and Hairi (2024).

This section is to obtain your opinion regarding the private health insurance adoption. You are required to read the statements and indicate your degree of agreement using the following scale.

1 = "Strongly Disagree"
2 = "Disagree"
3 = "Neither Agree or Disagree"
4 = "Agree"
5 = "Strongly Agree"

PHI1: I believe purchasing private health insurance is a wise decision for managing healthcare needs.

1 2 3 4 5
Strongly Disagree Strongly Agree

PHI2: I think private health insurance provides better access to quality healthcare compared to public healthcare services.

1 2 3 4 5
Strongly Disagree Strongly Agree

PHI3: I prefer using private health insurance to minimise my out-of-pocket medical expenses.

1 2 3 4 5
Strongly Disagree Strongly Agree

PHI4: I would be more likely to use private health insurance if the government provided more subsidies or tax incentives.

1 2 3 4 5
Strongly Disagree Strongly Agree

PHI5: I think private health insurance is necessary due to the increasing demand and congestion in public hospitals.

1 2 3 4 5
Strongly Disagree Strongly Agree

PHI6: I am likely to purchase or continue using private health insurance in the near future.

1 2 3 4 5
Strongly Disagree Strongly Agree

Section C: Independent Variable – Socioeconomic Factors (SF)

The following questions are acquired from Al-Sanaani et al. (2022) and Adeniran et al. (2024).

This section is obtaining your opinion regarding the factors affecting PHI adoption in Kuala Lumpur and Selangor. You are required to read the statements and indicate your degree of agreement using the following scale.

1 = "Strongly Disagree"
2 = "Disagree"
3 = "Neither Agree or Disagree"
4 = "Agree"
5 = "Strongly Agree"

SF1: I believe that people with higher education levels are more aware of the benefits of private health insurance.

1 2 3 4 5
Strongly Disagree Strongly Agree

SF2: I believe that my income level significantly affects my ability to afford private health insurance.

1 2 3 4 5
Strongly Disagree Strongly Agree

SF3: My employment status influences my decision to purchase private health insurance.

1 2 3 4 5
Strongly Disagree Strongly Agree

SF4: Managing healthcare costs is a priority for me due to the size of my household and the number of dependents.

1 2 3 4 5
Strongly Disagree Strongly Agree

SF5: I consider private health insurance a necessary investment regardless of my current income.

1 2 3 4 5
Strongly Disagree Strongly Agree

SF6: The current cost of private health insurance is a major concern for me and my family.

1 2 3 4 5
Strongly Disagree Strongly Agree

Section D: Independent Variable – Health Factors (HF)

The following questions are acquired from Wo et al. (2020), Balqis-Ali, Anis-Syakira, Fun and Sararaks. (2021) and Adeniran et al. (2024).

HF1: I consider myself to be in good overall health.

1 2 3 4 5
Strongly Disagree Strongly Agree

HF2: I have a chronic illness or medical condition that requires regular treatment.

1 2 3 4 5
Strongly Disagree Strongly Agree

HF3: I believe having private health insurance gives me peace of mind about future health risks.

1 2 3 4 5
Strongly Disagree Strongly Agree

HF4: I worry about unexpected medical emergencies and the cost of treatment.

1 2 3 4 5
Strongly Disagree Strongly Agree

HF5: My past experience with healthcare services has influenced my decision to consider private health insurance.

1 2 3 4 5
Strongly Disagree Strongly Agree

HF6: I am concerned about the quality and speed of treatment in public hospitals.

1 2 3 4 5
Strongly Disagree Strongly Agree

Section E: Independent Variable – Financial and Insurance Factors (FIF)

The following questions are acquired from Wo et al. (2020), Maurya et al. (2023) and Adeniran et al. (2024).

FIF1: I can afford to pay the monthly premiums for private health insurance.

1 2 3 4 5
Strongly Disagree Strongly Agree

FIF2: The cost of private health insurance is too high for my current financial situation.

1 2 3 4 5
Strongly Disagree Strongly Agree

FIF3: I understand the benefits and coverage provided by most private health insurance plans.

1 2 3 4 5
Strongly Disagree Strongly Agree

FIF4: I believe that private health insurance is a worthwhile financial investment.

1 2 3 4 5
Strongly Disagree Strongly Agree

FIF5: I would be more likely to purchase private health insurance if there were more affordable options available.

1 2 3 4 5

Strongly Disagree Strongly Agree

FIF6: My decision to buy private health insurance depends on the value I perceive from the coverage provided.

1 2 3 4 5

Strongly Disagree Strongly Agree

Section F: Independent Variable – Awareness and Accessibility Factors (AAF)

The following questions are acquired from Maurya et al. (2023), Kessy, Tibenderana, Gimonge, and Moshi (2024), Mohammed et al. (2024) and Ng, Choo, Ng, and Hairi (2024).

AAF1: I am aware of the private health insurance options available in Malaysia through the internet, social media networks, family and friends or agents.

1 2 3 4 5

Strongly Disagree Strongly Agree

AAF2: I have sufficient knowledge to purchase private health insurance.

1 2 3 4 5

Strongly Disagree Strongly Agree

AAF3: I have access to sufficient information to compare different private health insurance plans.

1 2 3 4 5

Strongly Disagree Strongly Agree

AAF4: I find it easy to access agents or online platforms that offer private health insurance.

1 2 3 4 5

Strongly Disagree Strongly Agree

AAF5: Lack of information prevents me from purchasing private health insurance.

1 2 3 4 5

Strongly Disagree Strongly Agree

AAF6: I believe that more public awareness campaigns about private health insurance would encourage adoption.

1 2 3 4 5

Strongly Disagree Strongly Agree

Appendix 3.2: Chi-Square Distribution Table (Right-Tail Probabilities)

	Significance level (α)							
Degrees of freedom (*df*)	.99	.975	.95	.9	.1	.05	.025	.01
1	-------	0.001	0.004	0.016	2.706	3.841	5.024	6.635
2	0.020	0.051	0.103	0.211	4.605	5.991	7.378	9.210
3	0.115	0.216	0.352	0.584	6.251	7.815	9.348	11.345
4	0.297	0.484	0.711	1.064	7.779	9.488	11.143	13.277
5	0.554	0.831	1.145	1.610	9.236	11.070	12.833	15.086
6	0.872	1.237	1.635	2.204	10.645	12.592	14.449	16.812
7	1.239	1.690	2.167	2.833	12.017	14.067	16.013	18.475
8	1.646	2.180	2.733	3.490	13.362	15.507	17.535	20.090
9	2.088	2.700	3.325	4.168	14.684	16.919	19.023	21.666
10	2.558	3.247	3.940	4.865	15.987	18.307	20.483	23.209
11	3.053	3.816	4.575	5.578	17.275	19.675	21.920	24.725
12	3.571	4.404	5.226	6.304	18.549	21.026	23.337	26.217
13	4.107	5.009	5.892	7.042	19.812	22.362	24.736	27.688
14	4.660	5.629	6.571	7.790	21.064	23.685	26.119	29.141
15	5.229	6.262	7.261	8.547	22.307	24.996	27.488	30.578
16	5.812	6.908	7.962	9.312	23.542	26.296	28.845	32.000
17	6.408	7.564	8.672	10.085	24.769	27.587	30.191	33.409
18	7.015	8.231	9.390	10.865	25.989	28.869	31.526	34.805
19	7.633	8.907	10.117	11.651	27.204	30.144	32.852	36.191
20	8.260	9.591	10.851	12.443	28.412	31.410	34.170	37.566
21	8.897	10.283	11.591	13.240	29.615	32.671	35.479	38.932
22	9.542	10.982	12.338	14.041	30.813	33.924	36.781	40.289
23	10.196	11.689	13.091	14.848	32.007	35.172	38.076	41.638
24	10.856	12.401	13.848	15.659	33.196	36.415	39.364	42.980
25	11.524	13.120	14.611	16.473	34.382	37.652	40.646	44.314
26	12.198	13.844	15.379	17.292	35.563	38.885	41.923	45.642
27	12.879	14.573	16.151	18.114	36.741	40.113	43.195	46.963
28	13.565	15.308	16.928	18.939	37.916	41.337	44.461	48.278
29	14.256	16.047	17.708	19.768	39.087	42.557	45.722	49.588
30	14.953	16.791	18.493	20.599	40.256	43.773	46.979	50.892
40	22.164	24.433	26.509	29.051	51.805	55.758	59.342	63.691
50	29.707	32.357	34.764	37.689	63.167	67.505	71.420	76.154
60	37.485	40.482	43.188	46.459	74.397	79.082	83.298	88.379
70	45.442	48.758	51.739	55.329	85.527	90.531	95.023	100.425
80	53.540	57.153	60.391	64.278	96.578	101.879	106.629	112.329
100	61.754	65.647	69.126	73.291	107.565	113.145	118.136	124.116
1000	70.065	74.222	77.929	82.358	118.498	124.342	129.561	135.807

Source: Turney (2023)