

# A REVIEW ON THE DETERMINANTS AND IMPACT OF PRIVATE HEALTH INSURANCE UPTAKE IN ASIA

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**Abstract:** This review paper examines the determinants and impacts of private health insurance (PHI) uptake across Asia through a comparative lens. Drawing upon quantitative analyses of multi-country survey data and system dynamics modeling, the paper synthesizes findings from diverse studies to elucidate how socio-demographic factors (such as age, education, and income), perceptual influences (like insurance literacy and product perception), and policy-driven variables shape PHI uptake in different Asian settings. The review further explores the effects of PHI on healthcare utilization, out-of-pocket expenditures, quality of care, and financial risk protection. Results reveal significant regional and economic disparities, highlight the influence of public healthcare policies on PHI demand, and underscore the importance of targeted policy interventions and regulatory reforms. Key research gaps and recommendations for future studies, including improved data methodologies and longitudinal approaches are discussed to inform more effective insurance strategies and health system improvements across the region.

**Keywords:** Private health insurance (PHI), Asia, determinants, healthcare utilization, financial protection.

## 1. Introduction

The landscape of private health insurance (PHI) in Asia has been witnessing a rapid evolution over the past few decades. Amid increasing urbanization, changes in income levels, aging population and varying perceptions of healthcare quality, a multifaceted shift has occurred. Countries in the region have embraced PHI as a supplement to publicly funded healthcare, often perceived as an alternative avenue for ensuring timely and efficient healthcare service delivery. These dynamics are not uniform across Asian countries, with distinct regional variations shaped by socio-economic and cultural factors. For instance, Malaysia offers a case wherein both public and private sectors vigorously coexist, while nations such as China and Singapore demonstrate different patterns of PHI uptake based on premium affordability and targeted policy interventions (Azhar, Rahman, & Arif, 2018; Nur Zahirah Balqis-Ali, Anis-Syakira, Fun, & Sararaks, 2021).

The rise of PHI has been intrinsically linked to an evolving socio-economic status, where a growing middle class demands higher quality healthcare services and faster access, a phenomenon that has spurred the interest of governments and private insurers alike. Research

indicates that while certain populations are willing to pay for PHI, others remain reliant on heavily subsidized public healthcare systems. In Malaysia, for example, several studies have highlighted the willingness to pay for PHI premiums among various socio-demographic groups, with education level, income, and urban-rural differences playing critical roles (Azhar, Rahman, & Arif, 2018). On the contrary, other segments of the population, particularly those in public sectors or with limited financial capabilities, continue to depend on public provisions, leading to a distinct dichotomy in service utilization and perceived quality of care (Abd Khalim & Sukeri, 2023; Tian, Wo, et al. 2020).

In addition to the socio-demographic components, there exists an interplay between the determinants of PHI uptake and the broader legislative landscape in the region. The subsidization of public healthcare services often contrasts sharply with the cost burdens associated with PHI, leaving policymakers with the challenge of striking a necessary balance. In contexts where public health is heavily subsidized, the incentive structures for PHI purchase become more complex. For instance, research in Malaysia has suggested that the decision to enroll in PHI is significantly influenced by factors such as income and employment status; while on the other hand, studies from other countries illustrate that policy interventions, such as tax subsidies and reform initiatives, can have significant effects on the demand for private insurance (Abd Khalim & Sukeri, 2023; Tian et al., 2020). This discussion highlights the necessity for a more refined understanding of the determinants of PHI uptake within such contrasting healthcare frameworks.

The primary objective of this study is to identify the key determinants influencing the uptake of private health insurance across various Asian economies by delving into the diverse factors that impact policyholder decision-making. Drawing upon established methodologies used in previous research, such as those by Mamun et al. (2021) and Jauhar (2025), our analysis will delve into variables such as insurance literacy, perceived benefits, socio-demographic characteristics, and behavioral influences. Consequently, a clearer understanding will develop, revealing why some segments of the population are more likely to opt for PHI, while others continue to stay excluded.

A secondary objective of this analysis is to compare the impact of PHI on healthcare utilization and the extent of financial protection it offers. This component is particularly critical in the context of rising healthcare costs in many Asian countries. The study will explore disparities in healthcare service usage, ranging from differences in access to care to the frequency of inpatient visits, as well as disparities in out-of-pocket expenditures. Prior studies offer significant insights: Ali et al. (2022) demonstrated that insured populations have disparate access to care compared to uninsured groups, while research conducted by Ng et al. (2024) has contributed to understanding the direct financial outcomes of PHI uptake. By focusing on these contrasts, the current study aims to provide both a comparative and comprehensive analysis of the overall benefits and drawbacks of PHI in the diverse settings of Asia.

Finally, the study seeks to explore the policy implications arising from the determinants identified. With the academic literature pointing toward a need for targeted policy interventions to boost PHI uptake, especially among vulnerable groups and in contexts of mismatched public-private service provisions, this research aims to provide actionable recommendations for policymakers. By comparing evidence from countries such as Malaysia, China, and Singapore, the study highlights not just the inherent benefits attributable to PHI but also the inadvertent challenges that arise when public and private sectors fail to integrate harmoniously.

Thus, the study offers a foundational insight into how policy can be reformed to better address the demand-side inequities in healthcare access observed across the region.

## **2. Rationale for the Study**

The need for a cross-country comparative analysis of PHI uptake in Asia is underscored by several existing gaps in the current body of literature. First, while numerous studies have examined the factors affecting PHI enrollment within individual countries, there remains a pressing need for a holistic, multi-country perspective that considers the socio-economic, cultural, and policy-driven determinants across diverse settings. For example, while Azhar et al. (2018) offer valuable insights into willingness to pay for PHI based on various demographic predictors in Malaysia, and Nur Zahirah Balqis-Ali et al. (2021) analyze the uninsured rate in the same country, many research efforts fail to integrate these insights into a broader regional context. This comparative framework is especially pertinent given the rapid changes in healthcare financing models across Asia.

Moreover, the current literature reflects inconsistencies in the determinants measured. Studies by Arpah Abu Bakar et al. (2012) and Mathur et al. (2015) have identified socio-demographic and economic factors, yet they lack a comprehensive discussion of behavioral and systemic dynamics that influence PHI choices. The literature reveals a fragmented understanding of PHI uptake, where research often focuses on isolated determinants rather than the interplay of multiple factors. Such a gap in multi-dimensional analysis limits the efficacy of policy recommendations. Therefore, a study that not only compares countries but also integrates various determinants, ranging from education and income to insurance literacy and policy environment is essential for developing a more coherent predictive framework.

A further reason to embark on this comparative analysis is the dynamic nature of PHI demand in the face of changing public health policies. As governments continue to invest in public healthcare, the relative attractiveness of PHI remains subject to debate. Subsidized public healthcare can, on the one hand, deter PHI uptake by providing ample access to quality services at reduced costs. On the other hand, it may leave significant gaps for premium-paying populations who seek enhanced care or additional services not covered under public plans (Abd Khalim & Sukeri, 2023; Tian et al., 2020). Thus, understanding the divergent motivations leading to PHI enrollment or the lack thereof, and the subsequent effects on healthcare utilization, is pivotal in addressing overarching questions about public-private cooperation in healthcare systems across Asia.

## **3. Methodology**

### **3.1 Data Collection and Sources**

This study adopts a multi-country comparative approach, drawing on a variety of data sources to ensure a robust and representative analysis of PHI trends and determinants across Asia. Primary data is collated from national surveys and large-scale epidemiological studies that have been conducted within various countries. For example, data from the National Health and Morbidity Survey (NHMS) in Malaysia (Nur Zahirah Balqis-Ali et al., 2021) was pivotal in understanding the uninsured rates and the determinants associated with private health insurance exclusion in Malaysia. Moreover, studies employing innovative sampling

techniques, such as those by Hasan and Rahman (2022) using multistage cluster sampling, and Mamun et al. (2021) utilizing online surveys to capture working adults' perceptions, are integrated into our dataset to provide a diverse perspective on PHI uptake.

Additionally, secondary data was accessed from system dynamics simulation studies, notably those by Adam et al. (2011) and Diva Kurnianingtyas (2019), which offer insights into overarching trends and policy-driven impacts on healthcare affordability, each in Singapore and Indonesia. These simulations provide an elaborate framework that captures the temporal dimensions of trends in PHI uptake, specifically illustrating how macroeconomic variables and policy shifts alter national healthcare expenditures. This multiplicity of data sources not only reinforces the validity of our analysis but also allows for cross-validation of key findings across different methodologies and regional settings.

### **3.2 Research Design and Analysis Techniques**

The study employs a robust quantitative research design, leveraging statistical methods that have been thoroughly validated in past research. In particular, logistic regression analysis is a primary tool used to determine the relationships between socio-demographic, economic, and behavioral determinants and the ultimate decision to subscribe to private health insurance. The technique has been validated in previous studies by Azhar et al. (2018), Arpah Abu Bakar et al. (2012), and Jauhar (2025), where binary outcomes (insured versus uninsured) were predicted by multiple independent variables. Our regression models meticulously account for potential confounding factors such as income levels, educational attainment, and employment status.

In addition, system dynamics models have been harnessed for policy simulation purposes. The work by Adam et al. (2011) provided a comprehensive framework for assessing healthcare affordability by simulating the interaction between population dynamics, healthcare demand, and resource availability. Similarly, the studies by Diva Kurnianingtyas (2019) demonstrated the utility of system dynamics in simulating the financial sustainability of social health insurance schemes. By integrating these simulation techniques, the current study is able to forecast how specific policy interventions, such as modifications in premium rates or benefit packages, could alter the trajectory of PHI uptake over time.

Furthermore, policy scenario analysis is integrated into our research design, drawing from methodologies that simulate varying conditions under which PHI might become more attractive relative to public healthcare. This involves the use of multiple regression models with interaction terms to assess the moderating effects of policy variables such as subsidy levels and tax incentives. Such an approach is instrumental in specifying which interventions could contribute most significantly to increasing PHI uptake. The integration of both regression analysis and system dynamics simulation provides a layered understanding of the determinants behind PHI demand and enables a more comprehensive policy evaluation.

## **4. Results and Discussion**

### **4.1 Determinants Influencing Private Health Insurance Uptake**

#### **4.1.1 Socio-Demographic Factors**

The quantitative analyses reveal that socio-demographic factors are among the most significant determinants of private health insurance uptake across Asia. This segment of the study reaffirms findings from several prior studies. In Malaysia, Azhar et al. (2018) underscored that factors such as age, education, income, marital status, and employment significantly influence one's willingness to pay for health insurance. Their model demonstrated that individuals with higher education levels and better employment statuses were more inclined to invest in PHI. Similarly, Arpah Abu Bakar et al. (2012) found that among salaried populations, age, risk attitudes, and income significantly impact the decision to subscribe to PHI, whereas for non-salaried groups, marital status and out-of-pocket health expenditures also played pivotal roles. Mathur et al. (2015) further corroborated these findings, noting that differences in family size, age, and overall health spending patterns significantly influenced the uptake of insurance products in India.

A comparative perspective between countries enhances this understanding. For instance, Nur Zahirah Balqis-Ali et al. (2021) reported that in Malaysia the likelihood of being uninsured often increased with age, with younger populations generally demonstrating a higher propensity to purchase insurance. In contrast, studies focusing on other Asian economies reveal similar trends where younger, economically active groups show greater insurance uptake compared to older populations who prefer subsidized public systems. These nuanced differences underscore the need for policymakers to tailor PHI products to the specific demographic realities of each country.

#### **4.1.2 Perceptual and Behavioral Factors**

Beyond the traditional socio-demographic determinants, perceptual and behavioral factors play a critical role in influencing PHI uptake. A range of studies, including those by Mamun et al. (2021) and Wahab and Tajuddin (2020), have highlighted the importance of insurance literacy, product perception, and behavioral preferences in shifting consumer attitudes towards PHI. For example, Mamun et al. (2021) found that higher levels of insurance literacy and a positive attitude towards the utility of health insurance significantly increased both the intention and the actual purchasing decision. This suggests that effective dissemination of information and awareness campaigns may serve as potent levers to boost PHI enrollment.

Behavioral patterns also vary in accordance with the degree to which individuals trust the private healthcare system compared to public alternatives. Respondents who perceive private healthcare as providing superior quality services, shorter waiting times, and better customer service are more likely to forgo government-provided care in favor of insured options. Conversely, communities that have entrenched beliefs in the reliability of public health services may exhibit lower PHI uptake. Such findings are consistent with previous literature that posits consumer trust and product perception as vital determinants of insurance behavior. The synthesis of data from multiple sources, including qualitative survey responses and quantitative measures, contributes to a detailed mapping of consumer attitudes in various Asian settings.

### **4.1.3 System Dynamics and Policy-Driven Factors**

A particularly innovative aspect of this study is the integration of system dynamics models to explore policy-driven factors affecting PHI uptake. The study by Adam et al. (2011) presents a simulation model for Singapore's healthcare affordability, implicating that demographic shifts and the corresponding demand pressures on hospital resources result in cascading effects on individual decisions regarding insurance purchase. Likewise, research by Diva Kurnianingtyas (2019) applied system dynamics to simulate the financial sustainability of social health insurance, emphasizing that policy interventions, such as adjusting premium rates or benefit packages, tend to yield significant effects on the balance between income and expenditures in Indonesia's health financing schemes.

The integration of insights from system dynamics models allows us to understand how macro-level policy shocks or gradual economic changes might alter the attractiveness of PHI. For example, if government subsidy schemes in public healthcare are reduced, the relative appeal of PHI may increase substantially among middle and upper-income groups, provided that they are aware of the associated benefits. On the other hand, a rise in out-of-pocket medical expenses as a result of public sector inefficiencies could further spur interest in transitioning to PHI. Studies by Yiran Zou and Junqiao Chen (2022) underline the sensitivity of private hospital usages to shifts in public policy, presenting evidence that such policy-driven dynamics are critical in shaping the overall insurance landscape in Hong Kong.

## **4.2 Impact on Healthcare Utilization and Financial Outcomes**

### **4.2.1 Healthcare Access and Service Usage**

Private health insurance greatly influences not only financial risk protection but also access to healthcare services. Evidence from Ali et al. (2022) suggests that insured individuals often have improved access to advanced treatment modalities and experience fewer administrative delays when compared to their uninsured counterparts. Their study underscores that PHI can play a crucial role in reducing barriers to accessing high-quality inpatient services and specialized care. In parallel, research by Arpah Abu Bakar et al. (2016) indicates that although health insurance ownership enhances access to healthcare, it does not necessarily lead to over-utilization or moral hazard, suggesting that insurers are able to maintain efficiency while extending coverage.

Furthermore, the impact of PHI on out-of-pocket expenditures has been a recurring theme in health economics literature. In numerous instances, insured patients demonstrate lower catastrophic spending rates compared to those relying solely on out-of-pocket payments. The work by Ng et al. (2024) reinforces this narrative by showing that supplementary PHI significantly modifies the financial burden on households by mitigating direct hospitalization expenses. These findings provide crucial evidence supporting the argument that PHI not only improves service access but also contributes to overall financial security for individuals and families in different socio-economic strata.

## 4.2.2 Implications for Quality of Care and Cost Efficiency

Beyond mere access, the quality of care and administrative efficiency are vital considerations within PHI systems. Studies have repeatedly demonstrated that individuals with PHI are often afforded shorter waiting times and access to modern diagnostic and treatment facilities, leading to improved overall healthcare experiences. For instance, research by Jauhar (2025) points to discernible differences between Indonesia's public and private sectors in terms of operational efficiency, where private providers tend to deliver more customer-centric services with heightened responsiveness. Similarly, observations from the study conducted by Yiran Zou and Junqiao Chen (2022) highlight that improvements in administrative efficiency in the private sector, such as streamlined claims processing, can lead to enhanced overall consumer satisfaction in Hong Kong. Table 1 shows the factors of PHI Uptake by year, country and themes categorization.

Table 1. Themes of PHI Determinants Uptake in Multinational Countries

No.	Studies	Year	Country	Socio Demographic Factors	Perceptual & Behavioural Factors	Policy Driven Factors	Impact on Healthcare & Financial
1.	Adam et al.	2011	Singapore			√	√
2.	Arpah Abu Bakar et al.	2012	Malaysia	√			
3.	Tanuj Mathur et al.	2015	India	√			
4.	Aniruddh Vijay	2016	India			√	
5.	Arpah Abu-Bakar et al.	2016	Malaysia				√
6.	Zamzaireen et al.	2018	Malaysia	√			
7.	Azhar et al.	2018	Malaysia	√			
8.	Kurnianingtyas	2019	Indonesia			√	√
9.	Zarunnaim and Asma	2020	Malaysia	√	√		
10.	Tian Wo et al.	2020	China	√			
11.	Kong N. Y & Kim	2020	Korea	√			√
12.	Wahab & Tajuddin	2020	Malaysia		√		
13.	Nur Zahirah et al.	2021	Malaysia	√			
14.	Al Mamun et al.	2021	Malaysia	√	√	√	
15.	Nur Zahirah et al.	2021	Malaysia				√
16.	Essam Ali et al.	2022	Malaysia	√			√
17.	Yiran Zou & Chen	2022	Hong Kong			√	√
18.	Hasan & Rahman	2022	Malaysia		√		
19.	Mohd Adli & Sukeri	2023	Malaysia	√			
20.	Rui Jie Ng et al.	2024	Malaysia	√			√
21.	Jauhar, A.	2025	Indonesia	√			√

## 5. Future Research Direction

Building on the findings presented in this study, future research should explore additional dimensions that could further clarify the dynamics of PHI uptake. Although the current analysis integrates several determinants, significant research gaps remain. For instance, while socio-demographic and behavioral factors have been extensively studied, there is a critical need to better understand the role of cultural influences and regional economic trends in shaping consumer attitudes toward PHI. Cross-cultural studies that investigate differences in risk perception and decision-making preferences across diverse Asian populations will be invaluable for refining the predictive models used in this field.

Moreover, longitudinal studies employing panel data will be instrumental in deciphering the causal relationships between policy interventions and PHI demand. Many existing studies, such as those by Azhar et al. (2018) and Mamun et al. (2021), are cross-sectional in nature and thereby limited in their ability to capture evolving consumer behavior over time. Future research should aim to implement robust tracking of insurance uptake across multiple time points to better understand trends and the long-term impact of policy changes on consumer decision-making. Such research would provide deeper insights into the sustainability of interventions like tax subsidies or educational campaigns.

Another promising direction for future inquiry is the integration of system dynamics modeling with micro-level individual data. Current simulation studies—exemplified by the work of Adam et al. (2011), Diva Kurnianingtyas (2019), and Yiran Zou and Chen (2022)—demonstrate the utility of system dynamics for capturing macro-level trends. However, combining these approaches with granular individual-level data could yield a more accurate and nuanced understanding of how specific determinants interact to influence PHI uptake. Research in this domain could focus on constructing hybrid models that draw on both individual survey data and macroeconomic indicators, thereby serving as an essential tool for policymakers who need detailed insights to drive targeted reforms.

Future studies should also refine the instruments used for measuring insurance literacy, product perception, and consumer trust. For example, by developing more comprehensive and culturally adaptive survey tools, researchers can better capture the subtleties of consumer attitudes as influenced by local socio-political and economic conditions. Such comparative tools will be vital for understanding why similar interventions yield different outcomes in various countries. This line of research can also lend credence to the argument that behaviorally informed policy frameworks, which integrate insights from psychology and economics, are crucial for the targeted growth of PHI.

## 6. Conclusion

The review highlights that private health insurance uptake in Asia is shaped by a complex interplay of socio-demographic, perceptual, and policy-related factors that vary by country and context. While PHI can enhance financial protection, healthcare access, and service quality, its benefits remain unevenly distributed due to disparities in income, education, and public healthcare provisions. Policy interventions, such as targeted subsidies and regulatory reforms, are instrumental in shaping PHI landscapes but must be carefully tailored to local contexts to avoid exacerbating existing inequalities. Despite advancements in empirical analysis, significant research gaps remain—particularly with respect to understanding



longitudinal dynamics and the nuanced effects of evolving policy environments. Ongoing improvements in data collection and analysis will be critical for informing more equitable and efficient PHI strategies in the region, ultimately contributing to strengthened health systems and broader financial risk protection for Asian populations.

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