Strategy for Embracing Digital Technology at XYZ Life Insurance Company

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ABSTRACT: In the last two decades, insurance markets in industrialised countries have undergone significant transformation due to deregulation, increased competition and globalisation. This evolution has also impacted emerging markets such as Indonesia, where the insurance sector, particularly digital insurance, presents both challenges and opportunities. This study aims to explore the factors that influence customer adoption of digital insurance platforms in Indonesia, focusing on perceived ease of use, usability, customer experience, trust in technology, and innovativeness. The research employed both qualitative and quantitative methodologies, including thematic analysis of interviews and multiple linear regression analysis of survey data. The results showed that while perceived usefulness and innovativeness had a positive effect on adoption intention, perceived ease of use had a negative impact, indicating the need for a balance between simplicity and security. Trust in technology, while not directly impactful, is still important for building user confidence. This study highlights the importance of user education, strong data protection, and innovative features in driving digital insurance adoption. However, limitations such as the focus on certain factors and the cross-sectional nature of this study indicate the need for further research to cover a wider range of variables and longitudinal data.

KEYWORDS: Digital insurance adoption, Innovation in insurance, Perceived usefulness, Perceived ease of use, Technology trust.

INTRODUCTION
In the past two decades, insurance markets in many industrialised countries have undergone significant transformations driven by financial services deregulation, increased competition, and a shift towards globalisation in the industry (Akhvlediani, 2021; Fu et al., 2022). This evolution has led to the introduction of integrated risk management systems within insurance companies, which improves operational efficiency and customer service capabilities. In the realm of social security, social insurance signifies a country's commitment to building a "Welfare State". For example, Rwanda has made commendable progress in universal healthcare through the implementation of community-based health insurance (CBHI) (Rachana & H., 2023). Affordable healthcare is essential for sustainable societal growth, as alarming statistics from WHO (2023) highlight that approximately 2 billion people face economic hardship, with 344 million people pushed further into severe poverty due to healthcare-related costs.

In Indonesia, the establishment of BPJS Kesehatan and BPJS Ketenagakerjaan under Law No. 24 Year 2011 marked a significant step towards addressing healthcare challenges. BPJS Kesehatan manages health insurance for the public, while BPJS Ketenagakerjaan oversees various insurance programmes, including work accidents, old age, life, and pensions for formal and informal workers. The insurance market in Indonesia exhibits unique dynamics when comparing BPJS with private insurance. BPJS operates under a clear mandate to provide comprehensive social protection, while private insurance companies, regulated by the Financial Services Authority (OJK), offer a spectrum of products based on commercial principles. Apart from BPJS's reliance on mandatory public contributions and government subsidies, private insurance companies fund their operations through shareholders and premiums paid by customers.

The insurance sector in Indonesia, particularly for health and accident protection, has significant growth potential. Over the past eight years, per capita income has increased by around 5% per year, and around 5 million people enter the middle class each year, leading to greater demand for health and accident insurance. Despite this growth, insurance penetration is still low at 1.5%, highlighting a huge opportunity for expansion. The growing middle class, with increasing economic stability, increasingly values health protection and financial security, presenting many opportunities for insurers to cater to this demographic by providing personalised and high-quality services.

The rise of digital insurance is reshaping the industry, fuelled by technological advancements and the need to meet changing customer demands. Research has shown that digitalisation significantly improves the performance of insurance companies, allowing...
them to improve processes, develop new products, and provide superior customer service (Mueni & Angima, 2022). The COVID-19 pandemic has accelerated technology adoption, emphasising the importance of technology in maintaining competitiveness. Innovations such as artificial intelligence, machine learning, and blockchain technology are transforming the industry, offering more accurate risk assessment, more efficient claims processing, and increased customer confidence (Ching et al., 2020; Pisoni, 2021). However, concerns about the transparency of automated decision-making processes remain, requiring a balance between innovation and ethical considerations (Oghene & Amah, 2023).

Despite the potential of digital transformation, the insurance industry in Indonesia faces challenges in terms of market penetration and literacy, especially among low-income people. Insurance penetration rates are still low, and insurance literacy has declined over the years, indicating a need to increase awareness and accessibility (OJK, 2023). The emergence of InsurTech companies such as PasarPolis, Qoala, and Simas Insurtech aims to address these issues by utilising digital platforms to increase insurance penetration and literacy (Susanto, 2022). These initiatives focus on creating efficient digital solutions tailored to the needs of SMEs and underserved populations, aiming to build trust and increase customer knowledge.

The insurance market in Indonesia, characterised by a mix of public and private providers, presents a complex landscape. BPJS Kesehatan, a government entity, plays an important role in providing health insurance, primarily targeting low-income groups. In contrast, private insurance providers, including general insurance companies, focus more on the upper-middle class segment due to their financial stability and greater profit potential. Digital insurance services mainly cater to this segment, capitalising on their access to technology and demand for sophisticated products. However, expanding insurance coverage to underserved populations remains important to promote financial inclusion and community welfare.

With this context, this study aims to explore the factors that influence customer adoption of digital insurance platforms in emerging markets in Indonesia. The research seeks to identify the perceived risks and concerns associated with using digital insurance and analyse how these factors impact customer trust and adoption rates at XYZ Life. This research will provide insights into the interaction between brand awareness and technology adoption, highlighting the importance of education, customer support and a balanced approach to innovation in the digital insurance industry. By answering these research questions, this study aims to contribute to the understanding of digital insurance adoption and its implications for the industry in Indonesia.

LITERATURE REVIEW

A. Diffusion of Innovation Theory

The theory of innovation diffusion (Rogers, 1962) classifies customers based on their willingness to embrace new technologies such as innovators, early adopters, early majority, late majority, and laggards (Ho, 2022). Researchers such as Lyytinen et al. (2001) and Walker et al. (2011) have emphasised multi-level analysis and practical diffusion drivers. Integrating new technologies increases brand awareness and reputation (Di Benedetto, 2015), attracting early adopters while risking the perception of innovation lag for non-adopters. Ying Li et al. (2011) and Gosling et al. (2003) underline the evolving and communicative nature of diffusion theory. Shibeika et al. (2015) highlight the complexity of digital innovation diffusion. Policy interventions Davies et al. (2011), extensive use in information systems Jha et al. (2016), and contextual aspects Silveira et al. (2001) further enrich the theory. Seifried et al. (2017) state that late adopters can prolong the diffusion process through reinvention. Overall, the theory has been extensively analysed for its applicability and contextual factors in understanding innovation diffusion and adoption.

1) SERVQUAL and Insurance

SERVQUAL, a service quality evaluation model, is particularly important in the insurance industry, which relies heavily on customer trust (Panigrahi et al., 2018; Tsoukatos & Rand, 2006). Implementing the five dimensions of SERVQUAL—Tangible, Reliability, Responsiveness, Assurance, and Empathy—can provide significant benefits for insurance companies (Bala et al., 2011; Meikanda et al., 2015). The 'Tangible' dimension emphasises the importance of facilities and staff appearance, which reflect the credibility and reliability of the company. 'Reliability' is at the core of the insurance business, as customers expect accurate and timely claims and services, with failures potentially damaging the company's reputation (Bala et al., 2011). 'Responsiveness' and 'Assurance' are essential for handling customer queries and problems, demonstrating the company's efficiency and care (Bala et al., 2011; Meikanda et al., 2015). 'Empathy' involves a personalised approach to service, is essential in addressing different individual needs, which can increase customer satisfaction and loyalty. Overall, the application of SERVQUAL helps insurance companies improve service quality, build stronger customer relationships, and achieve long-term business success by providing a systematic
framework for measuring and improving service performance, thereby creating a competitive advantage in a highly competitive market.

2) Technology Acceptance Model

The Technology Acceptance Model (TAM) is an influential theory used to understand consumers' willingness to adopt information and communication technology (ICT), focusing on perceived ease of use and perceived benefits (Venkatesh & Davis, 2000). TAM helps explain how these factors influence a person's decision to adopt a new technology. When a brand implements technology that is easy to use and useful, it can have a positive impact on consumer perceptions and enhance the brand's reputation (Venkatesh & Bala, 2008). Despite its widespread use, TAM has faced criticism and limitations. Researchers have made various modifications to address these issues. Malatji et al. (2020) suggested integrating TAM into a broader model that considers human and social change processes, highlighting the need to include additional factors beyond ease of use and usability. Legris et al. (2003) also emphasised the need to extend TAM to get a more comprehensive picture of technology acceptance.

Boakye et al. (2014) introduced modifications that focus on product quality to ensure customer satisfaction and perceived usefulness. Agrawal et al. (2009) demonstrated the adaptability of TAM to different contexts, such as hospital personnel, where the core constructs significantly influenced usage intention. The applicability of TAM across different cultural contexts is supported by (Ashraf et al., 2014), who found that its predictive power was consistent in Pakistan and Canada. Althuizen (2018) suggested a structural technology acceptance model to segment intended users, providing a nuanced understanding of technology acceptance. Sawg et al. (2011) applied TAM to mobile service usage behaviour in Korea, illustrating its usefulness in a specific service context.

3) Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) explains user intention to use an information system and subsequent usage behaviour by integrating elements from eight leading technology acceptance models (Venkatesh et al., 2016). Its core constructs include performance expectancy, effort expectancy, social influence, and facilitating conditions, all of which significantly predict behavioural intention and usage behaviour (Khechine et al., 2016).

Empirical studies show varying degrees of effectiveness in predicting technology adoption. For example, Al-Saedi et al., (2020) extended UTAUT by including perceived risk, trust, cost, and self-efficacy, finding performance expectancy and social influence to be strong predictors of usage intention, but perceived risk did not significantly affect behavioural intention. UTAUT2, an extension of UTAUT, includes additional constructs such as hedonic motivation, price value, and habit, which increases its predictive power in the context of consumer technology (Tamilmani et al., 2021). Despite its robustness, UTAUT faces criticism for its complexity and the need for context-appropriate modifications (Chang, 2012).

Researchers suggest adapting UTAUT to specific technological and cultural contexts. Fuad & Hsu, (2018) emphasised the need for contextualisation in developing countries, particularly in healthcare. (G. Dwivedi et al., 2017) highlighted the importance of incorporating cultural factors and psychological behaviours for more accurate predictions. Alghatrifi & Khalid, (2019) reiterated the importance of performance expectancy as a predictor of behavioural intention, advocating for the continued use of UTAUT2 due to its comprehensive nature. In summary, UTAUT is a versatile model that, while robust in its basic elements, requires contextual extension and adaptation to capture the nuances of technology adoption in various settings. This makes it a comprehensive tool for predicting and improving technology adoption across multiple domains and cultural contexts.

4) Consumer Decision-Making Model

The consumer decision-making model explains the stages that consumers go through in deciding to accept or reject products, including digital insurance. These stages are: need recognition, information search, evaluation of alternatives, purchase decision, and post-purchase behaviour (Smith & Ulu, 2012). Initially, consumers recognise a need or problem, such as the need for financial protection or easy management of insurance policies online (Lee et al., 2003). They then seek information from sources such as online reviews, company websites, and personal recommendations (Vishwanath & Goldhaber, 2003). Furthermore, they compare products based on criteria such as price, features, ease of use, and perceived value, with factors such as simplicity of user interface and reputation of insurance providers being significant for digital insurance (Boakye et al., 2018). Purchasing decisions are then influenced by perceived benefits and potential risks, including trust in the digital platform and data security issues (Stavrakas et al., 2019). Finally, post-purchase behaviour involves evaluating whether the product met expectations and deciding on continued use or recommendation, which is critical for customer loyalty and feedback (Ebenezer et al., 2018). This model provides a structured...
approach to understanding how consumers make decisions about digital insurance products, by integrating psychological, social, and economic factors.

B. Conceptual Framework

Perceived usefulness (PU) is an important determinant in technology adoption, reflecting the belief that using a system will improve job performance (Davis, 1989). It significantly influences consumer behaviour towards digital insurance, as research shows that PU impacts behavioural intentions and actual technology use (Gefen et al., 2000; Hsu & Lin, 2018). For digital insurance, PU includes efficiency, service improvement, and convenience (Gharakhani & Pourhashemi, 2020).

H1: Perceived usefulness affects Digital Insurance Adoption Intention

Perceived ease of use (PEOU), a core concept in the Technology Acceptance Model (TAM), affects the likelihood of technology adoption (Davis, 1989). Studies confirm that PEOU affects users' intention to adopt new technologies, including digital insurance (Gebert-Persson et al., 2019; Naicker & Van Der Merwe, 2018). Simplifying the interface and ensuring ease of use can increase adoption rates (Featherman & Pavlou, 2003; Toukabri & Ettis, 2021).

H2: Perceived Ease of Use affects Digital Insurance Adoption Intention

Customer experience (CX) in digital insurance involves ease of use, perceived quality, and satisfaction from digital interactions. High perceived digital quality improves CX, which leads to higher satisfaction and loyalty (Méndez-Aparicio et al., 2020; Pisoni, 2021). Digital adoption positively affects firm performance and customer satisfaction (Mueni & Angima, 2022).

H3: Customer Experience affects Digital Insurance Adoption Intention

Trust in technology is essential to overcome uncertainty and perceived risk, thus driving acceptance and adoption intention (AlHogail, 2018; Gebert-Persson et al., 2019). Ensuring ease of use, usability, and strong security measures will build trust and drive adoption (Kanojia & Lal, 2019; Mubarak & Petraite, 2020).

H4: Trust in Technology affects Digital Insurance Adoption Intention

Innovativeness affects the adoption of new digital insurance platforms. Consumers who seek novelty are more likely to explore and adopt digital insurance early (Manning et al., 1995). Companies that adopt digital technologies achieve higher performance and competitive advantage (Blichfeldt & Faullant, 2021; Mueni & Angima, 2022). Therefore, we hypothesise:

H5: Innovativeness affects Digital Insurance Adoption Intention

These elements are interrelated and collectively contribute to the adoption of digital insurance services. The relationship between these factors is visually represented in the conceptual framework shown in Figure 1.

METHODOLOGY

C. Research Design

When addressing a business problem, research design integrates analytical and methodological dimensions. At first, the business problem is identified and defined, establishing the proper focus for the research. The literature review provides context and identifies the unique contribution of the research. The company context is assessed using methodologies such as SWOT analysis to identify strengths, weaknesses, opportunities and threats. An internal examination evaluates the company's digital insurance policy and its effect on business issues. In addition, the PESTEL analysis assesses the macro-environmental variables that affect the issue. Thematic analysis looked at recurring themes in the qualitative data, complemented by a questionnaire designed to collect primary data aligned with the research objectives and hypotheses. The research design includes framework testing, where hypotheses undergo empirical testing to verify findings, leading to strategic recommendations and appropriate decision-making.
Figure 1. Conceptual Framework

PESTEL analysis is essential to examine the low level of digital insurance literacy in Indonesia. This framework assesses the Political, Economic, Socio-Cultural, Technological, Environmental, and Legal factors that influence the adoption of digital insurance. For example, political policies and government initiatives affect people's adoption, while economic factors affect access and affordability. Socio-cultural attitudes, education levels, and cultural perceptions of risk determine openness to digital insurance. Technological advancements and digital platforms are critical to user engagement, and environmental considerations shape product demand. Legal frameworks governing data protection and cybersecurity are critical in building trust. This analysis helps develop targeted strategies to increase digital insurance literacy and adoption, such as educational campaigns, infrastructure improvements, and regulatory reforms.

Internal analysis of digital insurance companies involves qualitative and quantitative methods to understand consumer perceptions and brand positioning. Quantitative methods include surveys to collect measurable data on brand awareness, frequency of interaction, preferences, and perceived service value. Statistical analyses reveal patterns and correlations, such as the relationship between brand awareness and customer loyalty. Qualitative methods, including interviews, focus groups, and content analysis of social media and review sites, explore the reasons behind the numbers. This approach uncovers the thoughts, feelings and experiences of customers, providing a deeper understanding of the consumer narrative. Integrating qualitative and quantitative data offers a multi-dimensional view of brand awareness, helping companies identify strengths and weaknesses to inform strategic planning.

D. Data Collection

In the research that focuses on digital insurance for the upper middle class, data collection through interviews is prioritized to deeply understand how technological innovations in digital insurance are received. Interview questions will explore the impact of these innovations on consumer choice, brand awareness, and company reputation. Participants for the interviews were selected using purposive sampling, targeting three groups: insurance policyholders, insurance executives, and the general public with knowledge of insurance. The interviews were conducted on 29 February 2024, at the Sudirman Office Tower. The questions asked aimed to measure awareness and perceptions of life insurance, focusing on digital interactions, preferences for digital services and marketing channels, and the impact of these factors on purchasing decisions.

Meanwhile, quantitative data collection involves the systematic collection of numerical data for statistical analysis. The research variables were derived from a literature review, and the survey items were developed based on interview insights. The questionnaire targeted insurance customers, professionals, and the general public, evaluating customer experience, the effectiveness of digital
technology in insurance, and the propensity for digital insurance adoption. Each segment of the questionnaire comes with a rating scale for ease of completion and accurate measurement of responses. The questionnaire collected demographic information including age, gender, occupation, insurance policy ownership, digital technology usage, and annual income. As for the segment, the questionnaire evaluates customer experience, perceived ease of use, perceived usefulness, trust in technology, innovativeness, adoption intention towards digital insurance, insurance product offering preference, and interest in purchasing insurance products on digital channels. Data analysis will follow Hair et al. (2019) guidelines, which require data collection of at least five times the number of sub-variables to ensure statistical validity and reliability. For this study, 95 data points are required.

E. Data Analysis

1) Thematic Analysis

Thematic analysis is a method for identifying, analyzing and reporting patterns (themes) in data, providing rich and detailed reports (Braun & Clarke, 2006). This method is fundamental in qualitative research, fostering basic skills that can be applied to other qualitative analyses (Holloway & Todres, 2003). The stages of thematic analysis are:

1. Data Recognition, immersing oneself in the data by reading transcripts and listening to interviews, while taking notes to identify meaningful aspects.
2. Initial Coding, categorising segments of data with labels that summarise each piece of data, which serve as building blocks for themes.
3. Searching for Themes, identifying patterns across the data set that become broader themes.
4. Reviewing Themes, ensuring themes work in relation to code extracts and the overall data set.
5. Defining and Naming Themes, analysing each theme in detail and relating it to existing knowledge.
6. Producing the Report, writing up the analysis, combining the narrative and data extracts to provide a comprehensive report.

2) Quantitative Analysis

Multiple linear regression (MLR) uses several explanatory variables to predict a response variable, modeling the linear relationship between them. The formula is, $y_i=\beta_0+\beta_1x_{i1}+\beta_2x_{i2}+...+\beta.px_{ip}+\epsilon$, where, for $i=n$ observations:

- $y_i=$dependent variable
- $x_i=$explanatory variables
- $\beta_0=y$-intercept (constant term)
- $\beta_p=$slope coefficients for each explanatory variable
- $\epsilon=$the model’s error term (also known as the residuals)

MLR relies on key assumptions: linearity, independence, homoscedasticity, and normality. Coefficients are estimated using the Ordinary Least Squares (OLS) method, minimizing the sum of the squares of the differences between observed and predicted values. Model evaluation involves metrics like $R^2$ (variance explained by independent variables), adjusted $R^2$, $F$-tests (model significance), and $T$-tests (individual coefficients). Predictions are made by inserting values for independent variables into the regression equation. Despite its utility, MLR has limitations, including susceptibility to overfitting and the assumption of linear relationship.

RESULTS AND DISCUSSION

A. Qualitative Analysis

1) Thematic Analysis Result

The interview results, reveal significant insights into consumer preferences and concerns regarding digital insurance. The effectiveness of digital services was mentioned most frequently (6 times), highlighting a strong preference for efficient and easy digital platforms for insurance transactions. This underscores the importance of digital marketing and claims services in influencing consumer purchasing decisions. The presence of insurance products on marketplaces also received a high frequency (6 mentions), indicating consumers' appreciation for the convenience of comparing and purchasing insurance products online. Company reputation was the most mentioned theme (7 times), emphasising the important role of trust and credibility in the insurance industry. Concerns about the security of digital service systems (3 mentions) reflect concerns about data misuse and privacy, indicating that while digital platforms are favoured for their convenience, security remains an important consideration.
In addition, the concept of insurance as a tertiary need appeared three times (3 mentions), which indicates that some consumers still view insurance as an unimportant service. This perception may be related to the low level of understanding (4 times) about the importance of insurance in financial planning. In addition, direct interaction with agents was mentioned three times (3 times), indicating that some consumers still value the personal touch and advice from experts, which suggests that a hybrid model that combines digital efficiency with personal interaction could be effective.

Feature comprehensiveness and policy monitoring were highlighted as important aspects of digital platforms (2 mentions each), indicating that users are looking for comprehensive services that facilitate easy policy purchase and management. Digital claims services were also mentioned frequently (5 times), reinforcing the need for an easy-to-use and reliable digital claims process. Finally, service preferences (5 mentions) and the role of websites (3 mentions) in marketing insurance products were also mentioned, emphasising the diverse factors that influence consumer decisions in the digital insurance landscape.

a) SWOT Analysis

The SWOT analysis for the digital insurance industry in Indonesia highlights the strategic position and operational dynamics of the sector (Table 1). Strengths include the effectiveness of digital services, which are valued for their efficiency and ease of use, and a strong market presence that simplifies the comparison and purchase of insurance products. In addition, the strong reputation of established insurance companies fosters trust and reliability among consumers. The downside is significant, with digital security concerns, data misuse concerns, and privacy potentially hampering consumer trust and adoption. The generally low level of insurance understanding among the public poses a barrier to deeper market penetration. In addition, there is a persistent preference among some consumers to interact directly with insurance agents. Opportunities for growth include improving digital literacy to expand the adoption of digital services and developing innovative features using advanced technologies such as AI and blockchain. There is also potential to integrate hybrid service models that combine digital efficiency with personalised interactions, catering to a wider range of consumer preferences. However, the sector faces threats from intense market competition and a fluctuating regulatory environment, which requires an agile and strategic response. Economic uncertainty poses additional risks, potentially affecting consumer spending and investment in insurance products.

Table 1. SWOT Analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Marketplace Presence (ease of comparing and purchasing insurance products)</td>
<td>2. Low Understanding (low level of understanding of the role of insurance)</td>
</tr>
<tr>
<td>3. Company Reputation (trusted and widely used well-known companies)</td>
<td>3. Preference for Direct Interaction (some consumers still value agent interactions)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Increased Digital Literacy (increase public awareness and education on the usability and safety of digital services)</td>
<td>1. Competition in the Market (high competition in the digital insurance market, both from new and existing companies)</td>
</tr>
<tr>
<td>2. Digital Service Innovation (development of innovative new features with advanced technologies such as AI and blockchain)</td>
<td>2. Regulatory Changes (changing regulations may affect the operations and policies of insurance companies)</td>
</tr>
<tr>
<td>3. Hybrid Model Integration (combining digital efficiency with personalized interactions to fulfil consumer needs)</td>
<td>3. Economic Uncertainty (economic fluctuations that can affect consumers’ insurance purchasing decisions)</td>
</tr>
</tbody>
</table>

b) PESTLE Analysis

The PESTLE analysis, which is based on thematic insights from the interviews, provides a comprehensive understanding of the strategic positioning and challenges faced by digital insurance providers in Indonesia. Politically, the sector operates within a sensitive regulatory framework where compliance with government regulations and maintaining good relations with bodies such as the Financial Services Authority (OJK) is crucial. National policies on digital transformation and data protection are critical to foster consumer confidence and operational legitimacy. Economically, the industry must navigate market penetration, consumer
purchasing power, and economic stability, all of which affect strategic pricing models and consumer decisions. The emphasis on premium fees and price comparison on digital platforms further underscores these economic considerations.

Socially, the sector faces challenges due to low levels of understanding of the importance of insurance and its perception as a tertiary need. This indicates an urgent need for public education and awareness campaigns to elevate insurance as an essential component of financial security. Technologically, the digital insurance industry relies heavily on innovation to enhance service offerings, with cybersecurity measures critical to address concerns about data misuse and privacy. Legally, the industry must comply with strict data protection laws and evolving regulations governing digital transactions, which are critical to maintaining trust and compliance. Although environmental factors are not directly mentioned, the shift towards digital operations offers opportunities to reduce the environmental impact of traditional insurance processes, in line with broader sustainability goals.

2) Questionnaire Development
Based on the interview result researcher developed the questionnaire item that can be seen in Table 2. The purpose is to distribute them to a broader sample.

Table 2. Survey Items

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sub-Variable</th>
<th>Likert Scale Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insurance Image</td>
<td>Positive Image</td>
<td>The insurance product is necessary for my needs</td>
</tr>
<tr>
<td></td>
<td>Brand Trust</td>
<td>Insurance product gives valuable benefit for me and my family</td>
</tr>
<tr>
<td></td>
<td>Loyalty</td>
<td>Based on my experience or knowledge, I feel safe to own insurance product</td>
</tr>
<tr>
<td>Customer Engagement</td>
<td>Digital Interaction</td>
<td>I often use the digital platform to get information of product or services</td>
</tr>
<tr>
<td></td>
<td>Service Satisfaction</td>
<td>I am satisfied with the ease and speed of the digital services provided by most provider company</td>
</tr>
<tr>
<td></td>
<td>Participation</td>
<td>I am active in giving feedback or participating in digital activities organized by the provider company</td>
</tr>
<tr>
<td>Perceived Quality</td>
<td>Information Quality</td>
<td>Information about products presented digitally is accurate and easy to understand</td>
</tr>
<tr>
<td></td>
<td>Service Quality</td>
<td>Digital services meet my needs well and efficiently</td>
</tr>
<tr>
<td></td>
<td>Interaction Quality</td>
<td>My interaction with the company through digital channels provides a positive experience</td>
</tr>
<tr>
<td>Digital Insurance Adoption Intention</td>
<td>Willingness to Purchase</td>
<td>I am open to purchase insurance products that provide complete and easy-to-use digital services</td>
</tr>
<tr>
<td></td>
<td>Perceived Benefits</td>
<td>I see many benefits in using digital access to insurance products, such as ease of access and efficiency,</td>
</tr>
<tr>
<td></td>
<td>Perceived Barriers</td>
<td>I am concerned about the security of personal data and potential difficulties in using digital insurance services.</td>
</tr>
<tr>
<td></td>
<td>Adoption of AI</td>
<td>I feel service supported by AI, such as chatbots, can improve efficiency and satisfaction to insurance service</td>
</tr>
<tr>
<td></td>
<td>Satisfaction with Cross-Platform Integration</td>
<td>Smooth ability to access the insurance service in all digital devices can improve my experience</td>
</tr>
</tbody>
</table>

B. Quantitative Analysis
1) Assessment of measurement models
To ensure the reliability and validity of the model, a series of statistical measurements were conducted. The first step involved a comprehensive evaluation using statistical descriptions. The results show that most indicators fall into the "High" (5.3 - 6.1) and "Very High" (6.1 - 7) categories, especially in the "Perceived Ease of Use" (PEU) and "Perceived Usefulness" (PU) categories.
However, some indicators in the "Technology Trust" (TT) category recorded lower mean scores, reflecting concerns that may need further attention. Furthermore, reliability. Reliability was initially measured by evaluating the loadings of each indicator, with values less than 0.7 considered unreliable. Multicollinearity was addressed using the Variance Inflation Factor (VIF), with the threshold set at 5. Reliability and construct validity were assessed using Cronbach Alpha (CA) and Composite Reliability (CR), with a benchmark value of 0.7, as well as Average Variance Extracted (AVE), with a minimum value of 0.5. Discriminant validity was measured using the Fornell-Larcker Criterion (FLC). Table 3 outlines the results of the outer model testing, Table 4 details construct reliability and validity, and Table 5 shows the Fornell-Larcker Criterion values.

Table 3. Outer model testing result

<table>
<thead>
<tr>
<th>Indicators</th>
<th>1st iteration</th>
<th>2nd iteration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Outer loadings</td>
<td>Outer loadings</td>
</tr>
<tr>
<td>AIDI1</td>
<td>0.849</td>
<td>0.848</td>
</tr>
<tr>
<td>AIDI2</td>
<td>0.861</td>
<td>0.862</td>
</tr>
<tr>
<td>AIDI3</td>
<td>0.727</td>
<td>0.73</td>
</tr>
<tr>
<td>AIDI4</td>
<td>0.897</td>
<td>0.896</td>
</tr>
<tr>
<td>AIDI5</td>
<td>-0.048</td>
<td></td>
</tr>
<tr>
<td>CE1</td>
<td>0.74</td>
<td>0.788</td>
</tr>
<tr>
<td>CE2</td>
<td>0.789</td>
<td>0.866</td>
</tr>
<tr>
<td>CE3</td>
<td>0.818</td>
<td>0.896</td>
</tr>
<tr>
<td>CE4</td>
<td>0.687</td>
<td></td>
</tr>
<tr>
<td>CE5</td>
<td>0.854</td>
<td>0.818</td>
</tr>
<tr>
<td>CE6</td>
<td>0.435</td>
<td></td>
</tr>
<tr>
<td>CE7</td>
<td>0.644</td>
<td></td>
</tr>
<tr>
<td>INN1</td>
<td>0.869</td>
<td>0.874</td>
</tr>
<tr>
<td>INN2</td>
<td>0.894</td>
<td>0.894</td>
</tr>
<tr>
<td>INN3</td>
<td>0.868</td>
<td>0.868</td>
</tr>
<tr>
<td>INN4</td>
<td>-0.062</td>
<td></td>
</tr>
<tr>
<td>INN5</td>
<td>-0.069</td>
<td></td>
</tr>
<tr>
<td>PEU1</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>PEU2</td>
<td>0.877</td>
<td>0.877</td>
</tr>
<tr>
<td>PEU3</td>
<td>0.922</td>
<td>0.922</td>
</tr>
<tr>
<td>PEU4</td>
<td>0.877</td>
<td>0.877</td>
</tr>
<tr>
<td>PEU5</td>
<td>0.76</td>
<td>0.76</td>
</tr>
<tr>
<td>PU1</td>
<td>0.883</td>
<td>0.883</td>
</tr>
<tr>
<td>PU2</td>
<td>0.894</td>
<td>0.894</td>
</tr>
<tr>
<td>PU3</td>
<td>0.888</td>
<td>0.888</td>
</tr>
<tr>
<td>PU4</td>
<td>0.887</td>
<td>0.887</td>
</tr>
<tr>
<td>PU5</td>
<td>0.859</td>
<td>0.858</td>
</tr>
<tr>
<td>TT1</td>
<td>0.926</td>
<td>0.93</td>
</tr>
<tr>
<td>TT2</td>
<td>0.041</td>
<td></td>
</tr>
<tr>
<td>TT3</td>
<td>0.903</td>
<td>0.908</td>
</tr>
<tr>
<td>TT4</td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td>TT5</td>
<td>0.009</td>
<td></td>
</tr>
</tbody>
</table>
In the first iteration, some indicators had outer loadings below 0.7 and were removed. The second iteration showed significant improvement with all metrics being within acceptable ranges, indicating a robust and reliable model. The R-square analysis for Digital Insurance Adoption Intention (AIDI) shows a value of 0.727, indicating that 72.7% of the variance in AIDI is explained by the independent variables in the model. The adjusted R-square value of 0.72 confirmed the robustness of the model, indicating minimal overfitting and strong explanatory power.

2) Hypothesis Testing

Hypothesis testing was conducted using a bootstrapping algorithm with 10,000 sub-samples and a two-tailed test to assess the significance and strength of the relationship between the various variables. Table 6 illustrates the bootstrapping results.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Path</th>
<th>Path Coefficient</th>
<th>T Statistics</th>
<th>P values</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>PEU -&gt; AIDI</td>
<td>-0.245</td>
<td>2.614</td>
<td>0.009</td>
</tr>
<tr>
<td>H2</td>
<td>PU -&gt; AIDI</td>
<td>0.605</td>
<td>5.84</td>
<td>0</td>
</tr>
<tr>
<td>H3</td>
<td>CE -&gt; AIDI</td>
<td>0.09</td>
<td>1.515</td>
<td>0.13</td>
</tr>
<tr>
<td>H4</td>
<td>TT -&gt; AIDI</td>
<td>0.065</td>
<td>1.066</td>
<td>0.286</td>
</tr>
<tr>
<td>H5</td>
<td>INN -&gt; AIDI</td>
<td>0.361</td>
<td>3.423</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Hypothesis 1 (H1), Perceived Ease of Use (PEU) negatively affects Digital Insurance Adoption Intention (AIDI) with a path coefficient of -0.245, a T statistic of 2.614, and a P value of 0.009. This shows a significant negative effect, indicating that when perceived ease of use decreases, the adoption intention also decreases.

Hypothesis 2 (H2), Perceived usefulness (PU) has a positive effect on AIDI with a path coefficient of 0.605, a T statistic of 5.84, and a P value of 0. This indicates a strong positive relationship, indicating that the more useful digital insurance is perceived, the higher the likelihood of adoption.

Hypothesis 3 (H3), Customer Experience (CE) has a low and statistically insignificant impact on AIDI, with a path coefficient of 0.09, a T statistic of 1.515, and a P value of 0.13, leading to the rejection of H3.
Hypothesis 4 (H4), Technology Trust (TT) has no significant effect on AIDI, with a path coefficient of 0.065, a T statistic of 1.066, and a P value of 0.286, leading to the rejection of H4.

Hypothesis 5 (H5), Innovativeness (INN) has a positive effect on AIDI with a path coefficient of 0.361, a T-statistic of 3.423, and a P-value of 0.001. This confirms that higher innovativeness has a positive impact on adoption intention.

Overall, the bootstrapping results show that perceived usefulness and innovativeness significantly drive adoption intention for digital insurance, while customer experience and technology trust have less impact in this framework.

### Table 7. Hypothesis Conclusion

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Relationship</th>
<th>Coefficient</th>
<th>t-Value</th>
<th>p-Value</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>PEU -&gt; AIDI</td>
<td>-0.245</td>
<td>2.614</td>
<td>0.009</td>
<td>Rejected (Negative Impact)</td>
</tr>
<tr>
<td>H2</td>
<td>PU -&gt; AIDI</td>
<td>0.605</td>
<td>5.84</td>
<td>0.000</td>
<td>Accepted (Positive Impact)</td>
</tr>
<tr>
<td>H3</td>
<td>CE -&gt; AIDI</td>
<td>0.090</td>
<td>1.515</td>
<td>0.130</td>
<td>Rejected (No significant impact)</td>
</tr>
<tr>
<td>H4</td>
<td>TT -&gt; AIDI</td>
<td>0.065</td>
<td>1.066</td>
<td>0.286</td>
<td>Rejected (No significant impact)</td>
</tr>
<tr>
<td>H5</td>
<td>INN -&gt; AIDI</td>
<td>0.361</td>
<td>3.423</td>
<td>0.001</td>
<td>Accepted (Positive Impact)</td>
</tr>
</tbody>
</table>

Statistical analysis shows that hypotheses H2 (PU -> AIDI) and H5 (INN -> AIDI) are accepted with a positive impact, indicating that perceived usefulness and innovation significantly influence AI-based innovation. In contrast, hypothesis H1 (PEU -> AIDI) was rejected due to its negative coefficient, and hypotheses H3 (CE -> AIDI) and H4 (TT -> AIDI) were also rejected as they showed no statistically significant effect. From these statistical results, it can be seen that there is a relationship between Perceived Ease of Use and Innovativeness and its impact on Adoption Intention for Digital Insurance. Perceived Ease of Use refers to the extent to which potential users believe that using a digital insurance platform will be easy. Innovativeness represents the perceived novelty in digital insurance offerings, which influences the decision to adopt. Both factors are critical to the acceptance of digital insurance services, highlighting their importance in the decision-making process for potential adopters.

### C. Business Solution

1) **Challenges and Opportunities for Digital Insurance Adoption in the Indonesian Emerging Market**

In the Indonesian emerging market, challenges include the negative impact of perceived ease of use (H1 - PEU -> AIDI), which suggests that simplification may not be enough if users equate it with insufficient security (Haji, 2015; Oliveira et al., 2017). Service providers must balance ease of use with security to build trust. However, opportunities arise from the positive impact of perceived usefulness (H2 - PU -> AIDI) and innovativeness (H5 - INN -> AIDI), which highlights the need to communicate practical benefits and innovative features (Davis, 1989; Rogers et al., 2019). An effective marketing strategy should focus on these aspects to attract potential users. To increase adoption, digital insurance providers should emphasise security measures and innovative features. For example, integrating AI for personalisation and using big data for customised policies can demonstrate innovation and usability. Cultural and socio-economic factors also affect adoption, requiring consumer education and targeted marketing campaigns (Anderson & Simester, 2013; Choudhury & Harrigan, 2014). Utilising technological innovations such as blockchain can increase transparency and trust (Khan et al., 2022).

2) **Trust in Technology and its Effect on Digital Insurance Adoption Intention**

Despite the insignificant impact of technology trust on adoption intention (H4 - TT -> AIDI), trust remains important in Indonesia, where digital literacy is developing (Gefen et al., 2003; Kesharwani & Bisht, 2012). Concerns about the security of digital services underscore the need to balance ease of use with robust security measures. Companies should integrate security into their digital products and highlight these measures in marketing efforts (Mithas et al., 2011). Innovations, such as AI and blockchain, can improve security and personalisation, increasing user trust and adoption (Huang & Rust, 2018). XYZ Life should focus on advanced data security, transparency, and user education to build trust. Implementing blockchain for transparency and using AI for personalised services can differentiate them from competitors. Addressing social and cultural factors is also important for successful technology adoption (Y. K. Dwivedi et al., 2019).
3) Impact of Ease of Use and Perceived Usefulness on Willingness to Adopt

Mixed impact analysis—the negative effect of perceived ease of use (H1 - PEU -> AIDI) and the positive effect of perceived usefulness (H2 - PU -> AIDI)—shows a complex relationship in digital insurance adoption (Davis, 1989). Users may perceive overly simple platforms as unsafe (Yousafzai et al., 2009). Service providers must balance ease of use with security and rigour. Demonstrating tangible benefits is essential, which can be achieved through targeted marketing and user testimonials (Kotler, 2016). XYZ Life should emphasise security while maintaining ease of use, integrate advanced data security technologies, and educate users about these measures. Innovations such as real-time policy management and automated claims services can highlight the usability of the platform (Rogers et al., 2019). Simplifying processes and increasing transparency will further strengthen user trust and adoption (Kim & Park, 2013; Zhou, 2012).

4) Customer Experience and Service Innovation Influencing Acceptance

Customer experience and service innovation are key to digital insurance acceptance. Positive experiences and efficient services increase satisfaction and adoption intentions (Thompson et al., 2013). XYZ Life should focus on intuitive design and innovative features such as AI and blockchain for better service and security (Cheng & Krumwiede, 2012; Huang & Rust, 2018). Strong security and transparency measures are essential for building trust (Wu et al., 2014). Integrating digital technologies to improve customer interactions and using advanced analytics for personalised services can increase relevance and appeal (Lambrecht & Tucker, 2019). Platform integration and effective customer education campaigns can further drive adoption (Brynjolfsson et al., 2014; Okazaki et al., 2017).

5) Differential Effects of Innovation and Customer Experience on Digital Insurance Adoption

Innovation significantly affects adoption, while customer experience factors such as cost effectiveness do not (Danneels & Kleinschmidt, 2001; Rogers et al., 2019). XYZ Life should integrate technological innovations to add value to the customer experience. Applying AI for customer queries and blockchain for secure transactions can increase user trust (Huang & Rust, 2018; Martin & Murphy, 2017). Hybrid approaches that combine digital technology with human interaction can fulfil traditional expectations and increase acceptance of digital platforms (Payne & Frow, 2014). Ensuring digital security and transparency, as recommended by (Crosnier et al., 2013), is critical. XYZ Life should adopt a comprehensive security framework and risk-based approach to protect customer data (Belanger & Crosnier, 2011; Romanosky, 2016). Integrating these strategies will strengthen user trust and position XYZ Life as a market leader in digital insurance.

D. Indonesian Context

The adoption of digital insurance in Indonesia, a potentially large emerging market, faces challenges such as low public trust in technology and inadequate infrastructure (Ministry of Health of the Republic of Indonesia, 2021). The Financial Services Authority (2023) highlights the need for ownership and commitment to the strategic plan. Opportunities exist to increase awareness and education about digital insurance and improve infrastructure and regulatory conditions. Service providers should balance ease of use with functionality, ensuring a user-friendly platform for different levels of digital literacy while offering secure features. Given the low digital literacy in Indonesia, intuitive interface design and clear navigation are essential.

While technical confidence does not directly impact adoption intentions, it is still important. Service providers should implement strong data protection measures, transparent communication regarding security protocols, and establish partnerships with trusted institutions. Addressing user concerns about security, reliability and privacy is critical to fostering an environment more conducive to service growth. Innovation is key to attracting users. Utilising technologies such as AI, blockchain, and IoT can improve user experience and appeal to a young, tech-savvy population. While cost-effectiveness is important, a satisfactory customer experience is crucial. Service providers must ensure their services are affordable and provide real added value, thus supporting wider adoption among Indonesian consumers (Lestari & Rofianto, 2020). Focusing on security, support, innovation, and a rich user experience will help digital insurance providers thrive in the competitive Indonesian market.

E. Digital Technology Adoption Strategy for Insurance

XYZ Life can increase the acceptance and growth of their services in the Indonesian market through a comprehensive digital technology strategy. This strategy should focus on innovation, security, user education, and customer experience. First, XYZ Life should prioritise user education and awareness of the benefits of digital insurance by developing educational content that can be accessed across various digital platforms. Effective education can increase user trust and comfort in using digital services (Mendoza-
Tello et al., 2018). Second, implementing high security standards is essential. This includes data encryption, multi-factor authentication, and compliance with local data protection regulations. Trust and security are critical to the acceptance of fintech (Liébana-Cabanillas et al., 2018).

Third, innovation should be at the centre of XYZ Life's strategy. Leveraging AI for personalised insurance offerings and integrating IoT and blockchain can improve claims and policy services, increase operational efficiency and customer satisfaction (W. Kim et al., 2020). Fourth, focusing on superior customer experience through intuitive user interfaces and simplified claims processes is essential. Providing responsive and personalised customer support can increase satisfaction and loyalty (Hollebeek et al., 2019). Finally, using data analytics to understand customer needs and behaviour can guide product development and marketing strategies. Advanced analytics help identify behavioural patterns for more effective decision-making. By implementing these strategies, XYZ Life can increase the acceptance of digital insurance services in Indonesia and position itself as a market leader in digital insurance innovation. A structured digital technology adoption framework (Figure 2) will assist in the planning, implementation, and evaluation of these strategies to meet the specific needs of the Indonesian market.

Figure 2. Digital Technology Adoption for Insurance

CONCLUSION

The analysis of digital insurance adoption in Indonesia highlights the complex interplay of factors that influence user acceptance. The negative impact of perceived ease of use on adoption intentions underscores the need for service providers to balance simplicity with comprehensive features and security measures, especially in markets with relatively low levels of digital literacy. Conversely, the positive influence of perceived usability and innovation presents a significant opportunity. Service providers should focus on developing and promoting innovative features that offer tangible benefits and a superior user experience. Leveraging advanced technologies such as AI, blockchain and IoT can create personalised, secure and efficient solutions for Indonesia's young, tech-savvy population.

While technical trust does not directly impact adoption intentions, it is still important in building user trust. Service providers should prioritize strong data protection, transparent communication and reputable partnerships to address security and privacy concerns. Cost-effectiveness, while not a significant factor, should not be overlooked. Providing a seamless and engaging customer experience through easy-to-use interfaces, streamlined processes, and personalised support can improve service perception and foster loyalty. Offering superior value through innovation and convenience can drive adoption more effectively than cost savings alone.

To succeed in the Indonesian digital insurance market, service providers must develop a comprehensive strategy that includes platform development, trust building, marketing, and customer experience optimisation. Aligning efforts with market dynamics and user preferences can drive widespread adoption, establish a strong market presence, and lay the foundation for long-term growth and
success. In conclusion, the future of digital insurance in Indonesia is promising. By prioritising innovation, trust, ease of use, and customer experience, service providers can unlock market potential and revolutionise insurance services in Indonesia. To increase the adoption of digital insurance in Indonesia, service providers must develop innovative features and services that clearly differentiate their offerings from traditional products. Leveraging AI, blockchain, and IoT can create personalised, secure, and efficient solutions for a tech-savvy society. Building trust through strong data protection, transparent security communication, and reputable collaboration is essential. Service providers should design easy-to-use interfaces and offer resources to support different levels of digital literacy, balancing simplicity with functionality. Targeted marketing and engagement strategies that highlight the benefits and innovative features of digital insurance can educate and attract potential users. Utilising social media, content marketing, and collaboration with influencers can effectively reach audiences. Continuous user feedback and insights are essential for platform optimisation, supported by a strong customer service infrastructure. Fostering a culture of innovation and collaborating with supervisory authorities to create an enabling environment for digital insurance growth are also key.

However, this study has limitations, including a focus on certain factors such as perceived ease of use, usability, technical confidence, cost-effectiveness, and innovativeness, which may overlook other relevant factors such as social influence, regulatory environment, and cultural considerations. These findings may not be generalisable to other regions with different socio-economic and cultural contexts. The quantitative approach used may not capture the full complexity of user behaviour and attitudes; qualitative methods can provide deeper insights. Cross-sectional studies offer a snapshot of current conditions, but the rapidly evolving digital insurance landscape would benefit from longitudinal studies to track changes over time. The sample used may not fully represent Indonesia’s diverse population. Future research should cover broader demographics and explore the impact of specific digital insurance product categories and external factors such as economic conditions, regulatory changes, and technological advancements on adoption intentions.

REFERENCES


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Additional References


