THE LINKING BETWEEN EDUCATION AND KNOWLEDGE ON BPJS PARTICIPANT COLLECTIBILITY AND SATISFACTION: A STRUCTURAL EQUATION MODELING ANALYSIS

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Article Info	ABSTRACT
	This study aims to investigate the relationship between education and health knowledge, specifically in terms of service quality and premium amount, in the context of BPJS health in Makassar, using participant satisfaction as a mediating variable. This study employs a quantitative methodology, utilizing structural equation modeling (SEM) based on Smart-PLS. We collected data by administering questionnaires to 100 BPJS Kesehatan participants. We collected data by distributing online questionnaires through the Google Forms platform to participants who satisfied the research criteria. We conducted inferential statistical analysis using structural equation modeling (SEM) with the assistance of Smart-PLS analysis software. The results of the study indicate that there is a relationship between the education and knowledge of BPJS participants and their utilization of health services. Service quality has a significant effect on the level of collectibility and participant satisfaction. Higher service quality, such as efficiency, responsiveness, and professionalism, increases participant satisfaction, which in turn increases payment compliance. In addition, although the premium amount does not directly affect the level of collectibility, it significantly affects participant satisfaction. Perceived fair or affordable premiums enhance satisfaction, thereby mediating the influence on collectibility.

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1. INTRODUCTION

Education is crucial for the development of a wide range of knowledge and insight, as well as for the formation of attitudes, behaviors, and actions that foster a sense of progress in both individuals and groups (Palmer, 2002; Barth & Michelsen, 2013). An individual's level of education and knowledge often influences their attitude toward embracing new developments in the realm of progress (Stoliarchuk et al., 2023). Consequently, individuals with inadequate education and knowledge may develop a restrictive attitude and a slow acceptance of new government programs, such as the BPJS programs. The BPJS Health program's existence, implementation, benefits, and

other pertinent information will undoubtedly be challenging for individuals with limited education and knowledge to comprehend (Ratnawati & Kholis, 2020; Rantung et al., 2023).

Every citizen had the right to social security to meet their basic needs, as outlined in Law No. 40 of 2004 on the National Social Security System (Purnama & Fitriani, 2022). One of these basic needs was healthcare services. Article 34, paragraph 3 of this law emphasized that the state was responsible for providing adequate healthcare facilities and public services. Additionally, Law No. 36 of 2009 on Health further asserted that every citizen had the right to receive quality healthcare that was affordable and non-discriminatory and to choose the type of service they required. Thus, the government assumed its obligation to ensure the right to life for its citizens, which it realized through the health insurance program for all members of society (Dewi & Israhadi, 2021; Triono, 2021).

In an effort to realize the welfare of society in accordance with the mandate of the 1945 Constitution, the government administered the National Social Security System through mandatory health insurance mechanisms. Law No. 40 of 2004 regulated this program, designating BPJS Health as a public legal entity responsible for managing the National Health Insurance program through the Healthy Indonesia Card (Sahur et al., 2021; Ramadhani et al., 2021). Participants in Active BPJS health had the right to receive healthcare services based on medical indications from Primary Health Care Facilities, including community health centers, clinics, and dental practices, or from Referral Health Care Facilities, including hospitals and larger clinics (Handayani et al., 2021; Maharani et al., 2022). In addition, participants could also utilize supporting facilities, such as pharmacies and optical stores.

As of March 2024, the total number of JKN participants reached 269.49 million people, or 95.70% of the total population of Indonesia. Of this total, approximately 214.5 million people (79.6%) were active participants, while the remaining 54.99 million (20.4%) were inactive due to arrears in premium payments. Presidential Regulation No. 59 of 2024 suspended BPJS Kesehatan membership if participants failed to pay premiums by the end of the current month (Djamhari et al., 2020). Once the participant settles arrears, they can reactivate their membership status for up to 24 months.

Previous studies indicated the influence of various factors on BPJS participants' satisfaction. Suryani et al. (2020) identified that service quality, including accessibility and speed of service, had a significant impact on participant satisfaction. Another study by Mahardika et al. (2019) found that participants' perceptions of fairness in premium payments and service benefits were key factors in determining satisfaction levels and payment compliance. Furthermore, according to Susanto et al. (2021), the transparency of information and the professionalism of BPJS staff also greatly influenced participants' collectability rates. These studies emphasized the importance of synergy between quality service, effective communication, and premium management in improving participant satisfaction and active participation in BPJS.

The majority of the population in Makassar has completed secondary education. In the city of Makassar, every year the number of high school and college graduates is increasing. The data from 2005 to 2018 indicates an increase in the workforce based on high school education in the city of Makassar in 2005 (Nujum et al., 2020). The number of high school graduates in the city of Makassar reached 12,445 in 2005, and there was either an increase or decrease in the workforce in the following year. The city of Makassar has a workforce with a college education. In 2005, the number of college graduates in the workforce reached 31,222, but there was a decrease and an increase in the following year.

Based on the aforementioned problems, the author intends to conduct research on the relationship between education level factors and knowledge of BPJS participants, particularly in terms of service quality and premium amount, within the context of BPJS health.

2. METHOD

This study explored causal relationships, also known as a causal-comparative study. According to Sugiyono (2011), a causal relationship reflects a cause-and-effect nature. The research pinpointed independent variables that exert influence and dependent variables that receive influence. The researcher used purposive sampling, identifying potential respondents based on predetermined criteria (Sugiyono, 2013). We chose this method because the study required respondents who met specific criteria, particularly BPJS users in Makassar with at least one year of membership, which resulted in a sample size of 100 respondents.

The primary data used in this study were collected through the distribution of an online questionnaire via Google Forms platform to respondents who met the study criteria. We measured all variables in this study using a Likert scale. This scale had five response levels: a score of 5 for strongly agree, a score of 4 for agree, a score of 3 for neutral, a score of 2 for disagreement, and a score of 1 for strongly disagreement. We conducted inferential statistical analysis in this study using structural equation modeling (SEM) with the assistance of the Smart-PLS analysis software (Hair et al., 2021). We conducted validity and reliability tests for each statement item associated with the study variables prior to the analysis. Once we obtained all the data processing results, we conducted a discussion on the findings, leading to conclusions based on the analysis results.

3. RESULTS AND DISCUSSION
Results

In the model evaluation process, this study applied convergent validity analysis using the structural equation modeling (SEM) approach. This analysis compared the actual factor loading values with the standard factor loading values. An indicator was considered to meet the criteria for convergent validity if its outer loading exceeded 0.70.

We next assessed discriminant validity using the average variance extracted (AVE) method, requiring each indicator to have an AVE value greater than 0.5 for validity. Additionally, we classified a variable as meeting composite reliability if its composite reliability value exceeded 0.70. Finally, we determined a variable's reliability based on its Cronbach's Alpha value, considering it acceptable if it exceeded 0.70 (Ghozali, 2016). Figure 1 presents the following outer model.
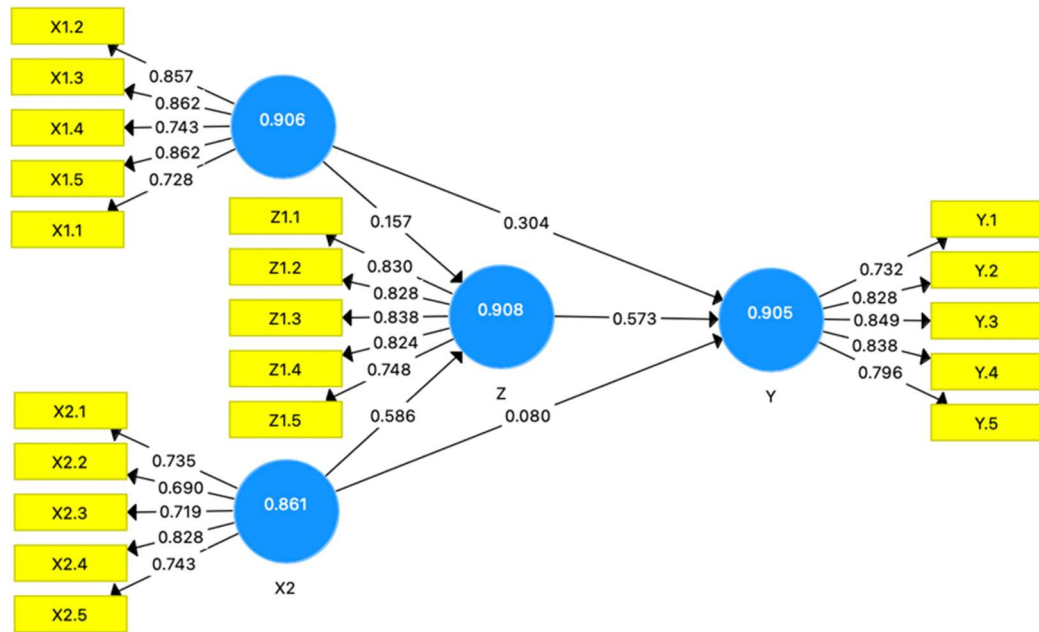

Figure 1. Outer Model

(Source: Data processed by SmartPLS, 2024)

The Structural Equation Modeling (SEM) analysis of Figure 1 showed that all of the variables had loading factors greater than 0.70. This means that each indicator made a big difference to its own construct. We used the average variance extracted (AVE) method to assess discriminant validity, considering each indicator valid if its AVE value was greater than 0.5. This validity indicates that the variable was able to explain more than half of the variance of its indicators. Furthermore, we assessed a variable's reliability using composite reliability; we deemed it reliable if its composite reliability value exceeded 0.70. We also used Cronbach's Alpha to measure internal consistency, considering a variable reliable if its Cronbach's Alpha value exceeded 0.70. These testing results ensure that the model exhibits excellent validity and reliability. Table 1 presents the following average variance extracted (AVE) discriminant validity methods.

Table 1. Discriminant Validity Method Average Variance Extracted (AVE)

Variabel	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Service Quality	0.870	0.906	0.661
Premium Amount	0.798	0.861	0.554
Participant Satisfaction	0.868	0.905	0.655
Collectability Rate	0.873	0.908	0.663

Source: Data processed by SmartPLS, 2024

The data in Table 1 shows that the Average Variance Extracted (AVE) values for all variables exceeded 0.5, indicating adequate convergent validity. Furthermore, the data showed that the composite reliability values for all variables were greater than 0.7, suggesting good internal consistency. Additionally, the Cronbach's Alpha values for all variables were also greater than 0.7, which further strengthens the reliability of the constructs.

Chin (2009); Becker et al. (2023) outlined the use of the inner model to test the hypotheses regarding both direct and indirect effects. We conducted the inner model testing concurrently with the bootstrapping method to yield more accurate estimates. The visualization in Figure 2 below displays the results of this bootstrapping process.
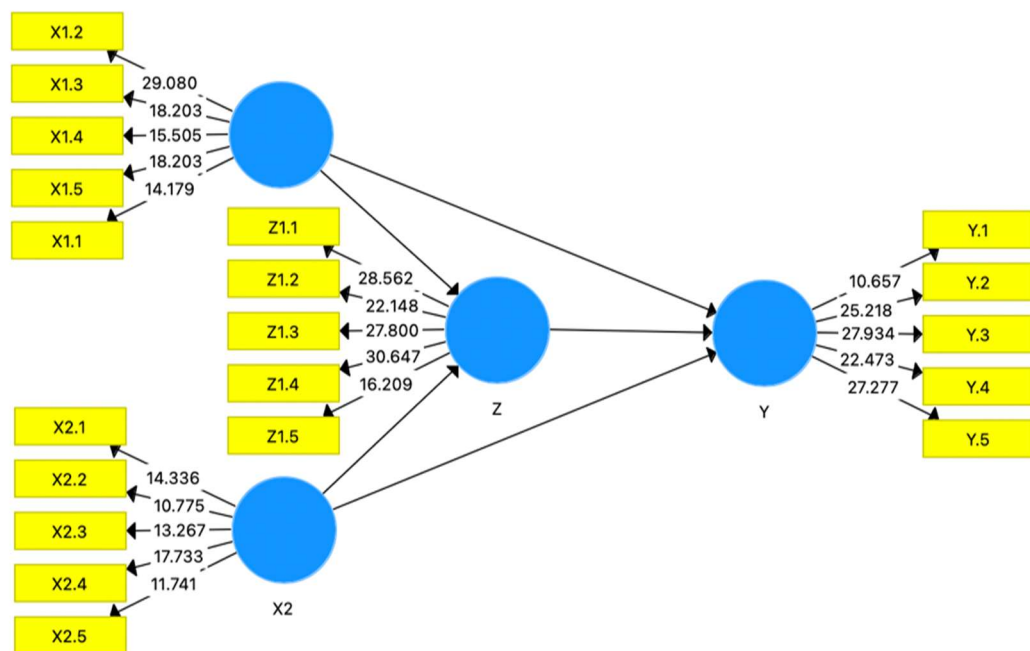

Figure 2. Inner Model
(Source: Data processed by SmartPLS, 2024)

Direct effect testing using the bootstrapping analysis technique provides valuable insights into the significance level of the influence between independent and dependent variables. In this analysis, the obtained t-statistic values serve as the basis for determining the significance of the relationships. If the t-statistic value reaches or exceeds 1.96 (corresponding to TINV(0.05), the t-table value for a 5% significance level), then the effect is considered significant. Additionally, Ghozali (2015) accepts the hypothesis if the produced P-value for each variable is less than 0.05. Tables 2 and 3 present the results of the direct effect and mediation tests, respectively.

Table 2. Direct Effect Testing

Variable	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics |O/STDEV|	P Values
Service Quality -> Collectibility Level	0.304	0.3	0.074	4.097	0.000
Service Quality -> Participant Satisfaction	0.157	0.147	0.091	5.044	0.041
Premium Amount -> Collectibility Level	0.08	0.085	0.099	0.808	0.420
Premium Amount -> Participant Satisfaction	0.586	0.596	0.082	7.150	0.000
Participant Satisfaction -> Collectibility Level	0.573	0.571	0.068	8.490	0.000

Source: Data processed by SmartPLS, 2024

Table 3. Mediation Testing

Variable	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics |O/STDEV|	P Values
Service Quality -> Participant Satisfaction > Collectability Rate	0.090	0.083	0.052	5.694	0.000
Premium Amount -> Participant Satisfaction -> Collectability Rate	0.336	0.340	0.063	5.345	0.000

Source: Data processed by SmartPLS, 2024

Discussion

The analysis results show education has a close relationship with health knowledge. This supports the findings of previous studies stating that a strong education may be important in both navigating health (Van Der Heide et al., 2013; Zimmerman & Woolf, 2014) Furthermore, service quality has a significant impact on the collectability rate, with a t-statistic value of 4.097 (greater than 1.96) and a p-value of 0.000 (less than 0.05). Improvements in service quality, such as operational efficiency, responsiveness, and the professionalism of human resources, have proven to positively affect the effectiveness of BPJS Health payment collection management in Makassar. This study is consistent with the findings of Sari & Hidayat (2020), who reported that ease of access, claims settlement speed, and staff friendliness influenced participant satisfaction and compliance. Zhang et al. (2020) also emphasized the importance of staff professionalism in improving collectability.

Additionally, the quality of the education knowledge service significantly influences participant satisfaction, as evidenced by a t-statistic value of 5.044 (greater than 1.96) and a p-value of 0.041 (less than 0.05). We have shown that enhanced responsiveness, service reliability, care, and ease of access to BPJS Health services in Makassar enhance participant satisfaction. Satisfied participants tend to have a positive perception of BPJS Health. This finding is consistent with Bentum-Micah et al. (2020) research, which

showed that empathy, reliability, and assurance in service significantly influenced participant satisfaction. Rahmawati & Santoso (2019) also emphasized that the speed of claim settlement and the clarity of information from staff significantly increased participant satisfaction.

The analysis results show that the premium amount does not have a significant relationship with the collectability rate in BPJS Health Makassar in the context of education. A t-statistic value of 0.808 (less than 1.96) and a p-value of 0.420 (greater than 0.05) demonstrate this. Therefore, the premium amount does not directly affect BPJS's ability to collect contributions. Conversely, perceptions of the benefits received, ease of service access, and trust in fund management may have a greater influence on collectability. Simanjuntak's (2018) study in the Greater Jakarta area, which found that service aspects like staff responsiveness and the ease of the payment process more significantly influence collectability, aligns with this result. Participants who experience difficulties accessing services or payment information are more likely to fall behind on payments, regardless of the premium amount set.

The t-statistic value of 7.150 (higher than 1.96) and the p-value of 0.000 (less than 0.05) demonstrate the correlation between the premium amount and participant satisfaction. This indicates that the premium amount affects participant satisfaction with the services received regarding educational knowledge. Participants are more satisfied if the premium is considered appropriate relative to the benefits and service quality. Conversely, an imbalance between the premium and services decreases satisfaction. This research highlights the importance of transparency in premium determination and effective communication regarding premium benefits. This result aligns with Ratnawati & Kholis (2020), which showed that participant satisfaction is influenced by the perception of fair premiums, especially when accompanied by quality services, such as facility access, service speed, and staff support.

There is a significant relationship between participant satisfaction and the collectability rate, in the context of educational knowledge, with a t-statistic value of 8.490 (greater than 1.96) and a p-value of 0.000 (less than 0.05). Participant satisfaction directly influences timely payment compliance. Factors affecting satisfaction include service speed, simple access, medical service quality, and administrative support. When participants feel that the services they receive are worth the contributions paid, their motivation to fulfill payment obligations increases, thus improving collectability. This research is consistent with Erickson et al.'s (2021), which stated that participants who are satisfied with administrative services, such as rapid claim processing and clear information, have higher payment compliance. Participants who feel prioritized by staff are also more likely to settle their obligations on time.

Education knowledge Service quality affects the collectability rate through participant satisfaction as a mediator. Better service quality, with a t-statistic value of 5.694 (greater than 1.96) and a p-value of 0.000 (less than 0.05), improves participant satisfaction, which in turn encourages timely contributions, thereby improving collectability. BPJS Health must continue to enhance service quality to maintain participant satisfaction and ensure the success of contribution collection. These findings

are consistent with Aburayya et al. (2020) research, which showed that service quality influences customer loyalty through the mediation of satisfaction. The better the service quality, the higher the satisfaction and loyalty, which results in better collectability. This study underscores the importance of participant satisfaction as the key link in creating a sustainable positive impact on customer behavior.

The premium amount influences the collectability rate through participant satisfaction, acting as a mediator in the context of educational knowledge. A t-statistic value of 5.345 (greater than 1.96) and a p-value of 0.000 (less than 0.05) provide evidence of this. The more appropriate or affordable the premium is relative to the participant's ability, the higher their satisfaction with the services. This satisfaction encourages participants to be more compliant with payment obligations, thus improving collectability. This research emphasizes the importance of adjusting the premium amount to match the participants' ability and expectations so that they feel valued and satisfied with the service. Statistics have proven that participant satisfaction significantly mediates the relationship between the premium amount and collectability. Strategies focusing on participants in premium and collectability management are crucial for the success of contribution collection. These findings align with Abdel Fattah et al.'s (2021) research, which states that affordable premiums and service quality significantly influence collectability, with satisfaction as a strong mediator. The customer satisfaction dimension becomes a key factor in improving timely payments and the success of premium collectability (Arkorful et al., 2021; Kautish & Arorazb, 2022). This study strengthens the importance of synergy between education knowledge, fair premiums, quality services, and participant satisfaction in supporting the sustainability of the BPJS Health payment system.

4.   CONCLUSION

The results of this study indicate that there is a relationship between the education and knowledge of BPJS participants and their utilization of health services. Service quality has a significant impact on both the collectability rate and participant satisfaction in BPJS Health. Improvements in service quality, such as operational efficiency, responsiveness, and staff professionalism, directly increase participant satisfaction. This satisfaction plays an important role as a mediator between service quality and collectability. Satisfied participants tend to be more compliant in making regular contributions, which ultimately improves BPJS's collectability. Although the premium amount does not directly affect collectability, this study found that premiums considered appropriate or affordable by participants significantly impact their satisfaction. When participants feel that the premium is worth the benefits and quality of service they receive, their satisfaction increases, which in turn encourages payment compliance.

Therefore, strategies to adjust the premium amount according to participants' ability and expectations become crucial in supporting the success of contribution collection and educational knowledge. Additionally, participant satisfaction mediates the relationship between service quality, premium amount, and collectability. BPJS Health must continue to

improve service quality and ensure transparency and effective communication regarding premium benefits to maintain participant satisfaction.

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