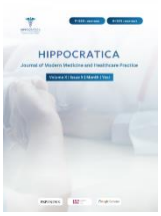

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The Relationship Between Types of Health Insurance (BPJS Kesehatan and Private Insurance) and Patient Satisfaction with Digitalization

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Abstract

The advancement of digital technology has transformed healthcare delivery in Indonesia, including the way patients access and evaluate services provided through BPJS Kesehatan and private insurance. This study aimed to examine the relationship between health insurance type and patient satisfaction in a digitally supported private hospital in Semarang City. A quantitative correlational analytical design was conducted from April to September 2026 among patients who had utilized digital healthcare services in 2025. From a population of 1,230 patients, 96 respondents were selected using purposive sampling. Data were collected through structured questionnaires measuring health insurance type and patient satisfaction and were analyzed using univariate analysis and the Spearman Rank test. Most respondents were aged 26–35 years (35.4%), female (56.3%), had higher education (51.0%), and used outpatient services (65.6%). The largest proportion had a moderate duration of insurance use (42.7%), while low healthcare utilization frequency was most common (45.8%). BPJS Kesehatan users represented 53.1% of respondents, and overall patient satisfaction was predominantly moderate (54.2%). Spearman Rank analysis demonstrated a statistically significant, strong, and positive relationship between health insurance type and patient satisfaction ($p = 0.000$; $r = 0.602$). The findings indicate that insurance type is meaningfully associated with differences in patient satisfaction and should be considered in efforts to strengthen equitable, patient-centered, and digitally supported healthcare services.

Keywords: *BPJS Kesehatan, Digital Transformation, Health Insurance, Patient Satisfaction, Private Insurance.*

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INTRODUCTION

Information technology has increasingly transformed the organization and delivery of healthcare services, particularly by shifting administrative processes, access mechanisms, communication, and patient engagement from predominantly face-to-face interactions toward digitally mediated systems. This transformation has positioned digitalization not merely as a technological instrument but as an important component of contemporary healthcare practice because patients increasingly expect services to be accessible, responsive, transparent, and convenient across different points of care. In Indonesia, this development is reflected in the adaptation of the National Health Insurance (Jaminan Kesehatan Nasional/JKN) system through the Mobile JKN application, which was introduced as part of the digital transformation of BPJS Kesehatan to facilitate participant access to administrative and healthcare-related services (Putra, A., Riza, & Akmalia, 2023). Through digital platforms, insured individuals can obtain membership information, manage administrative requirements, access healthcare-facility information, and perform selected transactions without being continuously constrained by physical location and operating hours. The expansion of digitalization has also occurred within private health insurance, where mobile applications and electronic platforms increasingly support policy acquisition, claims submission, medical consultation, customer communication, and other insurance-related activities (Marga, Haniwijaya, & Fajriyah, 2022). These developments indicate that the contemporary insurance experience is increasingly shaped not only by the substantive benefits of coverage but also by the accessibility, responsiveness, and usability of the digital channels through which insurance services are delivered.

The digital transformation of health insurance has created a more immediate relationship between technological accessibility and users' evaluations of service performance, because administrative convenience can influence how patients perceive the overall quality of their insurance experience. Evidence from the Indonesian context indicates that digital utilization among insurance policyholders has become substantial, with digital channels being used to obtain policy information, manage claims, and access related services more efficiently (Putra, Alfitman, & Verinita, 2022). Readiness to use integrated digital insurance platforms has also been reported at a high level, suggesting that users increasingly regard digital integration as a relevant component of contemporary insurance services rather than an optional supplementary feature (Fhadilah et al., 2025). The implications of this transition extend beyond administrative efficiency because the quality of digital interactions may affect perceived responsiveness, transparency, trust, and ultimately satisfaction with the healthcare system. Patient satisfaction itself reflects a comparison between expectations and experienced service performance, meaning that satisfaction may vary when patients encounter differences in accessibility, waiting time, communication, procedural complexity, and perceived service reliability (Alfarizi, Arifian, & Noer, 2024). This perspective is particularly important in Indonesia, where BPJS Kesehatan and private insurance operate within different institutional and service arrangements, potentially producing different patient experiences even when patients receive healthcare within the same provider environment. The question is therefore no longer limited to whether insured patients receive healthcare services, but increasingly concerns whether the insurance mechanism through which they access those services produces comparable and satisfactory experiences in an increasingly digitalized healthcare environment.

Previous research has consistently demonstrated that insurance status can be associated with differences in patient satisfaction, although the magnitude and dimensions of these differences are not uniform across healthcare settings. A comparative study reported significant differences between BPJS users and patients using other forms of insurance in the reliability and responsiveness dimensions, with private insurance users exhibiting higher satisfaction and the most pronounced disparity occurring in reliability (Marga, Haniwijaya, & Fajriyah, 2022). Similar evidence has shown that patients covered by BPJS may experience lower satisfaction in particular aspects of healthcare delivery, especially when administrative procedures, referral mechanisms, and waiting processes increase the perceived complexity of accessing care (Hidayat et al., 2025). Research examining BPJS patients has also demonstrated that satisfaction is closely associated with the quality of services received, indicating that insurance coverage alone does not determine whether patients perceive their healthcare experience positively. The literature further suggests that service quality should be interpreted through multidimensional constructs, including reliability, responsiveness, assurance, empathy, and tangibles, because patient evaluations are formed through a combination of technical, administrative, interpersonal, and environmental experiences (Hamzeh, Hozarmoghadam, & Ghanbarzadeh, 2023). These dimensions become increasingly consequential when services are mediated by digital systems, since failures in information accessibility, response speed, system reliability, or administrative transparency can become part of the patient's overall evaluation of service quality. Patient satisfaction is therefore better understood as an outcome of the interaction between institutional arrangements, service quality, individual expectations, and the mechanisms through which healthcare services are accessed.

The distinction between BPJS Kesehatan and private insurance becomes particularly relevant because the two forms of coverage may expose patients to different administrative pathways, financial arrangements, referral procedures, and expectations concerning service speed and convenience. BPJS participants may benefit from broad financial accessibility, yet the tiered referral structure can require patients to pass through primary healthcare facilities before receiving higher-level services, potentially increasing the perceived duration and complexity of the healthcare process (Aryanti, Khairunnisa, & Andrika, 2025). Studies of BPJS patients have similarly indicated that satisfaction may be influenced by the organization of services and the extent to which administrative procedures correspond with patients' expectations (Gustina et al., 2022). Private insurance, in contrast, is frequently associated with perceptions of greater flexibility, shorter administrative processes, cashless mechanisms, and faster access, although these advantages do not automatically guarantee superior satisfaction across all patient groups. Evidence concerning private and public insurance arrangements suggests that patients' evaluations are shaped by more than the nominal type of insurance because demographic characteristics,

service encounters, and perceived quality can also influence satisfaction (Ayuningtias et al., 2024). This creates an important analytical issue because an observed difference in satisfaction between insurance groups may reflect the insurance mechanism itself, the quality of the healthcare provider, or the interaction between insurance arrangements and patients' expectations. A digitalized healthcare environment further complicates this relationship because technology may reduce administrative barriers for some patients while simultaneously introducing new sources of difficulty for others, making the relationship between insurance type and satisfaction an empirical question that cannot be inferred solely from the presumed advantages of either insurance model.

Despite the growing body of research on insurance-related patient satisfaction, several conceptual and empirical limitations remain evident in the existing literature. Much of the Indonesian literature has focused on conventional service quality, administrative procedures, referral systems, or comparisons between BPJS and non-BPJS patients, while comparatively less attention has been given to how insurance type relates to satisfaction within a healthcare environment increasingly mediated by digital technologies. Studies of patient satisfaction have also frequently examined particular service dimensions or specific insurance populations, limiting the ability to determine whether differences in satisfaction systematically correspond to the type of insurance when patients are considered within a common hospital setting (Puspitasari, Pertiwiwati, & Rizany, 2020). Other research has demonstrated that patient characteristics and perceived healthcare quality are related to satisfaction, suggesting that insurance status should not be treated as an isolated determinant without considering the broader service context (Atmaja et al., 2024). The literature consequently provides strong evidence that satisfaction varies across healthcare experiences, but it remains less conclusive regarding whether BPJS Kesehatan and private insurance are systematically associated with different levels of patient satisfaction when digitalization is incorporated into the analytical context. This gap has both scientific and practical significance because healthcare providers increasingly rely on digital systems to organize registration, communication, information access, and administrative services, while patients evaluate these processes as part of their overall care experience. Addressing this gap is particularly important for private hospitals that simultaneously serve patients with different insurance arrangements and therefore need evidence-based understanding of whether digitalized service delivery contributes to equitable patient experiences across insurance groups.

Against this background, the present study positions itself at the intersection of health insurance arrangements, patient satisfaction, and digital transformation in contemporary healthcare practice. Rather than examining insurance satisfaction solely through administrative efficiency or conventional service-quality dimensions, this research investigates whether the type of health insurance—BPJS Kesehatan or private insurance—is related to patient satisfaction within a private hospital context where healthcare interactions increasingly involve digitalized processes. The study is conducted among adult patients aged 18 years and above in a private hospital in Semarang, providing an empirical setting in which different insurance mechanisms can be examined within the same institutional environment. The analytical approach employs a correlational design to identify the relationship between insurance type and patient satisfaction while treating digitalization as an important contextual feature of the contemporary healthcare service experience. This positioning responds to the limitation of previous studies that have predominantly emphasized differences in service outcomes without explicitly connecting insurance arrangements to patient satisfaction within an increasingly digital healthcare environment. The study aims to determine the relationship between the type of health insurance, specifically BPJS Kesehatan and private insurance, and patient satisfaction in a digitalized healthcare service context. Theoretically, the study contributes to the healthcare service-quality and patient-experience literature by clarifying how insurance arrangements may intersect with satisfaction under conditions of digital transformation, while methodologically it provides empirical evidence from a common hospital setting that can support more context-sensitive comparisons of insurance-based patient experiences and inform strategies for equitable, responsive, and digitally integrated healthcare delivery.

RESEARCH METHODS

This study employed an empirical quantitative research design using an analytical correlational approach to examine the relationship between health insurance type, specifically BPJS Kesehatan and private health insurance, and patient satisfaction in a digitally transformed healthcare service

environment. The study was conducted at a private hospital in Semarang City, Indonesia, from April to September 2026, with the target population comprising patients who had utilized healthcare services through BPJS Kesehatan or private health insurance within the digital healthcare environment during 2025, totaling 1,230 patients. A sample of 96 respondents was selected using purposive sampling to ensure that participants met the characteristics required for examining the relationship between insurance type and patient satisfaction. The inclusion criteria were patients aged ≥18 years who had received healthcare services at the study hospital, were registered as BPJS Kesehatan or private insurance users, had experienced digitally supported healthcare services, and were willing to participate voluntarily, whereas patients who were unable to complete the questionnaire or submitted incomplete responses were excluded. Data were collected directly from eligible respondents using structured questionnaires after the researchers explained the study objectives, procedures, confidentiality provisions, and voluntary nature of participation, considering that patient characteristics may influence perceptions of healthcare service quality (Atmaja et al., 2024). The sampling and data-collection procedures were also designed to capture differences in patient experiences associated with BPJS Kesehatan and private insurance, as previous evidence has identified variations in satisfaction between these insurance categories (Marga, Haniwijaya, & Fajriyah, 2022), while studies of BPJS patients have emphasized the importance of service quality in shaping satisfaction (Gustina et al., 2022).

The research instruments consisted of a structured health insurance questionnaire used to classify respondents into BPJS Kesehatan and private insurance groups and a patient satisfaction questionnaire used to assess perceptions of healthcare services received within the digitalized service environment. The patient satisfaction instrument was conceptually based on multidimensional service-quality dimensions, including reliability, responsiveness, assurance, empathy, and tangibles, which are relevant for evaluating satisfaction among health-insurance users (Hamzeh, Hozarmoghadam, & Ghanbarzadeh, 2023). Before analysis, all completed questionnaires were examined for completeness, coded, and entered into the research dataset to minimize data-entry errors and ensure consistency across observations. Univariate analysis was conducted to describe the distribution of respondents according to health insurance type and patient satisfaction, while bivariate analysis was performed using the Spearman Rank correlation test to examine the relationship between the study variables without assuming normally distributed data. The interpretation of the relationship was considered alongside previous evidence indicating that patient satisfaction can differ between BPJS and non-BPJS patients based on perceived nursing service quality (Puspitasari, Pertiwiwati, & Rizany, 2020). Ethical principles were maintained throughout the study through informed consent, voluntary participation, confidentiality and anonymity of respondents, restricted use of collected data for research purposes, and respect for participants' right to withdraw without consequences for their healthcare access, consistent with ethical considerations in research examining BPJS patient satisfaction (Nurmayanty, Elfindri, & Yunita, 2023).

RESULTS AND DISCUSSION

Patient Characteristics at the Private Hospital in Semarang City

The demographic and service-related characteristics of the 96 respondents provide an important basis for interpreting patient satisfaction within the digitally supported healthcare environment examined in this study. As presented in Table 1, the largest age group was 26–35 years, comprising 34 respondents (35.4%), followed by those aged 36–45 years at 22.9%, while the smallest proportions were observed among respondents aged 18–25 years and >55 years, each accounting for 12.5%. Female respondents constituted a slightly larger proportion than male respondents, with 54 respondents (56.3%) compared with 42 respondents (43.8%). Respondents with higher education represented the largest educational category, accounting for 49 participants (51.0%), whereas outpatient users represented 63 respondents (65.6%), indicating that routine or non-hospitalized healthcare encounters constituted the dominant service context. Regarding insurance experience, respondents with a moderate duration of use (1–5 years) accounted for the largest proportion at 42.7%, while low-frequency users who accessed insurance services 1–2 times per year represented the largest utilization category at 45.8%. This composition is relevant because patient characteristics can shape perceptions of healthcare quality and satisfaction, making demographic and utilization profiles important contextual factors when interpreting patient-reported service outcomes (Atmaja et al., 2024).

Table 1. Distribution of Patient Characteristics at a Private Hospital in Semarang City

Variable	Frequency	Percentage
Age 18–25 years	12	12.5
Age 26–35 years	34	35.4
Age 36–45 years	22	22.9
Age 46–55 years	16	16.7
Age >55 years	12	12.5
Gender: Male	42	43.8
Gender: Female	54	56.3
Education: Basic (elementary/junior high school or equivalent)	14	14.6
Education: Secondary (senior high school or equivalent)	33	34.4
Education: Higher (Diploma/Bachelor's/Master's degree)	49	51
Type of service: Outpatient	63	65.6
Type of service: Inpatient	33	34.4
Duration of use: New (<1 year)	20	20.8
Duration of use: Moderate (1–5 years)	41	42.7
Duration of use: Long (6–10 years)	35	36.5
Frequency of use: Low (1–2 times/year)	44	45.8
Frequency of use: Moderate (3–5 times/year)	30	31.3
Frequency of use: High (>5 times/year)	22	22.9
Total	**96**	**100**

The predominance of respondents aged 26–35 years suggests that the study population was concentrated within an economically and socially active age group that may have relatively frequent interaction with formal healthcare and insurance systems. This age distribution is comparable with findings reported among users of health insurance services, where adults aged 26–35 years constituted a substantial proportion of respondents (Ramisa, Ilyas, & Zamli, 2024). Individuals in this age range may possess greater familiarity with administrative technologies and digital communication channels because these tools are commonly integrated into their daily activities. Such familiarity can influence how patients evaluate digital registration, appointment information, electronic communication, and other technology-supported processes. At the same time, younger adults may place stronger emphasis on speed, accessibility, and convenience, meaning that delays or inconsistencies in digital services can become particularly salient in their assessment of healthcare experiences. Patient age should therefore be considered not simply as a demographic descriptor but as a contextual factor that may influence expectations, technology interaction, and interpretations of service performance. Previous research has also indicated that sociodemographic characteristics can be associated with variations in patient satisfaction, reinforcing the importance of considering age when interpreting satisfaction outcomes (Myshketa, Kalaja, & Kurti, 2022).

The slightly higher proportion of female respondents, at 56.3%, indicates that women constituted the dominant gender group in the study population, although the difference from male respondents was not substantial. This pattern is consistent with research on BPJS healthcare utilization in which women represented a considerable proportion of patients seeking and evaluating healthcare services (Makmun & Saleh, 2021). A higher representation of women may reflect differences in patterns of healthcare utilization, health-seeking behavior, and engagement with preventive or routine healthcare services. The presence of a relatively balanced distribution between male and female respondents nevertheless provides a broader basis for interpreting satisfaction rather than concentrating the analysis exclusively on one gender. Differences in healthcare experiences can emerge from the interaction between individual characteristics and the quality of communication, accessibility, and responsiveness encountered during service delivery. Patient characteristics have been shown to contribute to variations in perceptions of healthcare service quality, indicating that demographic composition should be acknowledged when evaluating patient-reported outcomes (Atmaja et al., 2024). In the present study, gender was treated as a descriptive characteristic rather than as an independent explanatory variable, because the principal analytical focus remained the relationship between health insurance type and patient satisfaction.

Educational attainment was dominated by respondents with higher education, who accounted for 51.0% of the sample, followed by respondents with secondary education at 34.4% and basic education at 14.6%. This distribution suggests that a substantial proportion of participants possessed educational resources that could facilitate comprehension of healthcare information, administrative procedures, and digital service instructions. Educational attainment may influence how patients process information and evaluate the consistency between expected and experienced healthcare services, particularly when healthcare access increasingly depends on digital information and administrative interfaces. Evidence from primary healthcare settings indicates that education can be associated with patient satisfaction because educational background may influence patients' expectations and their ability to assess the services they receive (Mulia, Novaryatiin, & Azkyannisa, 2025). Patients with higher education may also have greater capacity to compare available healthcare options and critically assess waiting times, communication, information transparency, and administrative efficiency. However, higher educational attainment does not necessarily imply higher satisfaction because more informed patients may simultaneously develop more demanding expectations concerning service quality and digital accessibility. The educational profile of the respondents therefore provides an important contextual consideration when interpreting satisfaction levels and should not be interpreted as a direct determinant of the relationship between insurance type and satisfaction.

Outpatient services represented the largest healthcare utilization category, with 63 respondents (65.6%), while 33 respondents (34.4%) received inpatient services. The predominance of outpatient encounters indicates that most participants evaluated healthcare services based on relatively shorter episodes of interaction involving registration, consultation, examination, treatment, payment, and follow-up processes. In such settings, administrative efficiency and waiting time can become particularly visible components of the patient experience because patients often interact with multiple service points within a limited period. Research examining outpatient satisfaction has identified service quality, registration procedures, waiting processes, and the responsiveness of healthcare personnel as relevant elements in patients' evaluations of care (Sumiyati & Fauziyah, 2025). Digitalization may intensify the importance of these elements because online registration, electronic queues, appointment systems, and digital information can either reduce administrative burdens or create additional difficulties when systems are unreliable or poorly integrated. The relatively high proportion of outpatient users therefore provides an appropriate context for examining satisfaction in relation to insurance type within a digitally supported hospital environment. The distinction between outpatient and inpatient experiences remains important because the intensity and duration of patient–provider interaction may differ considerably between these service categories.

The duration of insurance use was concentrated in the 1–5-year category, representing 41 respondents (42.7%), followed by long-term users of 6–10 years at 36.5% and new users of less than one year at 20.8%. This distribution indicates that most respondents had accumulated sufficient experience with their insurance arrangements to form perceptions regarding administrative procedures, service accessibility, and healthcare utilization. Repeated exposure to insurance procedures can shape expectations because patients may compare current encounters with previous experiences when evaluating the quality and convenience of services. Long-term interaction with an insurance system may also increase familiarity with referral procedures, claims mechanisms, digital platforms, and hospital administrative requirements. At the same time, frequent exposure can make recurring administrative problems more noticeable because experienced users are more capable of recognizing inconsistencies between expected and actual service processes. The frequency distribution further shows that low utilization, defined as 1–2 times per year, was the largest category at 45.8%, followed by moderate utilization at 31.3% and high utilization at 22.9%. These patterns indicate that insurance experience in the sample was not determined solely by duration of membership, making it necessary to distinguish between length of enrollment and actual frequency of healthcare utilization when interpreting patient satisfaction.

Distribution of Health Insurance Types and Patient Satisfaction

The distribution of health insurance types indicates that BPJS Kesehatan remained the most frequently used financing scheme among patients receiving services at the private hospital in Semarang City. Of the 96 respondents, 51 patients (53.1%) were BPJS Kesehatan participants, while 45 patients (46.9%) used private health insurance. The relatively close proportion between the two groups indicates

that the hospital served patients with diverse insurance arrangements rather than being dominated by a single financing mechanism. This pattern is relevant because insurance status may shape patients' experiences of administrative procedures, service access, perceived benefits, and expectations toward healthcare delivery. Previous research has shown that differences in health insurance schemes can be associated with variations in patients' perceptions of service efficiency and satisfaction (Marga et al., 2022). The distribution therefore provides an important empirical basis for examining whether the financing mechanism is related to differences in patient satisfaction.

Table 2. Distribution of Health Insurance Types

Type of Insurance	Frequency	Percentage
BPJS	51	53.1
Private	45	46.9
Total	**96**	**100**

As presented in Table 2, BPJS Kesehatan users accounted for 53.1% of the respondents, representing a slightly larger proportion than private insurance users at 46.9%. The difference of 6.2 percentage points suggests that the two insurance groups were relatively balanced within the study sample. Such a distribution allows comparison of satisfaction patterns without one insurance category overwhelmingly dominating the respondent composition. BPJS Kesehatan has broad participation within the Indonesian healthcare system, making its substantial representation consistent with the important role of JKN in healthcare financing and utilization (Nurmayanty et al., 2023). At the same time, the considerable proportion of private insurance users indicates that private financing remains relevant within hospital-based healthcare utilization. The coexistence of these two groups creates an appropriate empirical context for assessing whether differences in insurance arrangements correspond to differences in patients' evaluations of healthcare services.

Patient satisfaction in the study was concentrated in the moderate and high categories, with 52 respondents classified as moderately satisfied and 44 respondents classified as highly satisfied. The moderate satisfaction category represented 54.2% of the sample, whereas high satisfaction accounted for 45.8%. The larger proportion of moderate satisfaction indicates that favorable perceptions of healthcare services had not consistently reached the highest satisfaction category among the respondents. This finding suggests that positive service experiences may coexist with aspects of healthcare delivery that remain insufficient to produce a uniformly high evaluation. Previous research has demonstrated that patient satisfaction among BPJS users can be influenced by perceived service quality and patients' assessment of healthcare delivery (Gustina et al., 2022). Patient satisfaction should therefore be interpreted as a multidimensional outcome involving patients' evaluations of reliability, responsiveness, assurance, empathy, and tangible aspects of service delivery.

Table 3. Distribution of Patient Satisfaction

Patient Satisfaction	Frequency	Percentage
Moderate	52	54.2
High	44	45.8
Total	**96**	**100**

Table 3 shows that moderate satisfaction was reported by 54.2% of respondents, while high satisfaction was reported by 45.8%. The difference between the two categories was relatively limited, amounting to 8.4 percentage points, indicating that patient evaluations were distributed across both satisfaction levels rather than concentrated exclusively in one category. This pattern supports the perspective that satisfaction reflects the interaction between patients' expectations and their actual experiences during healthcare utilization (Hamzeh et al., 2023). In the context of insurance-based healthcare, patients may evaluate not only clinical encounters but also administrative processes, accessibility, communication, and perceived responsiveness throughout the service pathway. Previous research comparing BPJS and general patients has demonstrated that differences in satisfaction can

emerge from patients' perceptions of service quality and the characteristics of the healthcare financing scheme (Puspitasari et al., 2020). The observed distribution consequently indicates that satisfaction assessment needs to consider the broader service experience rather than focusing exclusively on the clinical treatment received.

The simultaneous presence of moderate and high satisfaction levels suggests that the hospital generated generally favorable evaluations, although the intensity of satisfaction varied among respondents. This variation may reflect differences in patients' expectations, previous experiences, perceived service quality, and interactions with healthcare providers. Patient satisfaction can also vary according to sociodemographic and contextual characteristics, meaning that the same healthcare environment may be evaluated differently by patients with different backgrounds (Myshketa et al., 2022). Within insurance-based healthcare, differences in perceived access, administrative convenience, and service responsiveness may further contribute to variations in satisfaction between patient groups. Evidence from studies of national health insurance schemes indicates that patient satisfaction is closely connected with how users perceive accessibility, service processes, and the quality of healthcare interactions (Mwambazi & Qutieshat, 2024). These considerations provide a conceptual basis for examining the distribution of satisfaction according to BPJS Kesehatan and private insurance membership.

The descriptive distributions also demonstrate the importance of distinguishing between the prevalence of an insurance category and the satisfaction profile associated with that category. A higher proportion of BPJS respondents in the sample does not by itself indicate that BPJS users were more satisfied than private insurance users, because the frequency distribution only describes the composition of respondents. The comparison of satisfaction across insurance groups requires examination of the cross-tabulated data and the corresponding statistical association. This distinction is important because previous studies have reported differences in satisfaction between BPJS and general patients depending on perceived service quality and the healthcare setting (Mulyani, 2022). The present descriptive findings therefore establish the distributional foundation for evaluating whether insurance type is associated with patient satisfaction in the subsequent analysis. Such an approach prevents the descriptive proportion of respondents from being incorrectly interpreted as evidence of a causal effect of insurance type on satisfaction.

Relationship Between Health Insurance Type and Patient Satisfaction

The analysis identified a statistically significant relationship between health insurance type and patient satisfaction among patients receiving healthcare services at the private hospital in Semarang City. The Spearman Rank test produced a p-value of 0.000, which is below the significance threshold of 0.05, indicating that the observed relationship was statistically significant. The correlation coefficient was 0.602, demonstrating a strong positive association between the two variables. In practical terms, the distribution of satisfaction differed systematically according to whether respondents used BPJS Kesehatan or private health insurance. This finding is consistent with previous evidence showing that insurance arrangements can influence patients' perceptions of healthcare service quality and satisfaction (Marga et al., 2022). The statistical result provides empirical evidence that insurance type should be considered an important factor when evaluating patient satisfaction within a digitally supported hospital service environment.

The cross-tabulation provides a clearer description of how satisfaction was distributed across the two insurance groups. Among 51 BPJS Kesehatan users, 42 respondents (80.8%) reported moderate satisfaction, whereas 9 respondents (20.5%) reported high satisfaction. In contrast, among 45 private insurance users, 10 respondents (19.2%) reported moderate satisfaction and 35 respondents (79.5%) reported high satisfaction. The substantially different distribution indicates that high satisfaction was more frequently observed among private insurance users, while moderate satisfaction predominated among BPJS Kesehatan users. Previous research has also identified differences in satisfaction between BPJS and non-BPJS or general patients, particularly in relation to perceived quality of nursing and healthcare services (Puspitasari et al., 2020). The observed pattern therefore warrants closer interpretation of how insurance-related service experiences may shape patients' evaluations.

Table 4. Relationship Between Health Insurance Type and Patient Satisfaction

Health Insurance Type	Moderate Satisfaction f	Moderate %	High Satisfaction f	High %	Total f	Total %
BPJS	42	80.8	9	20.5	51	53.1
Private	10	19.2	35	79.5	45	46.9
Total	**52**	**100**	**44**	**100**	**96**	**100**

As shown in Table 4, the satisfaction distribution differs markedly between BPJS Kesehatan and private insurance users. The proportion of BPJS users with moderate satisfaction reached 80.8%, compared with only 19.2% among private insurance users. Conversely, 79.5% of respondents with high satisfaction were private insurance users, while BPJS users accounted for 20.5% of respondents in the high-satisfaction category. These differences indicate that the relationship identified by the Spearman analysis is also visible in the descriptive distribution of the respondents. Similar differences have been reported in studies examining satisfaction among BPJS and other insurance users, suggesting that the type of financing may be associated with variations in perceived healthcare service experiences (Mastuti et al., 2021). The consistency between the cross-tabulation and inferential test strengthens the interpretation that insurance type is meaningfully associated with patient satisfaction in the study population.

The positive correlation coefficient of 0.602 indicates that the relationship between insurance type and patient satisfaction was relatively strong based on the statistical interpretation applied in this study. The direction of the association should be understood according to the coding of the insurance variable, because a positive coefficient reflects the relationship between the numerical categories assigned to BPJS Kesehatan and private insurance and the satisfaction categories. The statistical finding does not establish that insurance type directly causes higher or lower satisfaction, particularly because the study employed a correlational design. Instead, it demonstrates that differences in insurance classification were accompanied by systematic differences in satisfaction levels among the respondents. This interpretation is important because patient satisfaction is influenced by multiple factors, including service quality, accessibility, communication, and patients' expectations of healthcare delivery (Hamzeh et al., 2023). The finding therefore supports an association-based interpretation rather than a causal conclusion regarding the effect of insurance type.

The relationship observed in this study can also be understood through differences in the service expectations and experiences associated with health insurance arrangements. Private insurance users may encounter service pathways that differ from those experienced by BPJS users in terms of administrative procedures, perceived flexibility, and expectations concerning service access, although these mechanisms were not directly measured in the present study. Previous comparative research has emphasized that BPJS and private insurance can differ in service efficiency and the competitive dimensions of healthcare delivery (Aryanti & Andrika, 2025). Differences in perceived service processes may subsequently contribute to how patients evaluate reliability, responsiveness, assurance, empathy, and tangible service attributes. Research on supplementary health insurance has likewise demonstrated that satisfaction among insured patients is connected with their perceptions of how effectively insurance arrangements support healthcare utilization (Hamzeh et al., 2023). The present findings are therefore compatible with a broader understanding of insurance type as a contextual factor that may shape the patient experience.

From a healthcare management perspective, the significant association between insurance type and satisfaction highlights the importance of ensuring equitable service experiences across different financing mechanisms. The predominance of moderate satisfaction among BPJS users suggests that this group may require particular attention in areas of service delivery that influence their overall evaluation, although the specific causal factors cannot be determined from the current correlational analysis. At the same time, the high proportion of private insurance users reporting high satisfaction indicates that their service experiences provide a relevant comparison for evaluating differences in perceived healthcare delivery. Previous studies have emphasized the importance of service quality and patient-centered healthcare processes in improving satisfaction across insurance groups (Ramadhan et al., 2023). In a digitally supported healthcare environment, administrative and communication processes may become increasingly important components of patients' overall experiences. The statistical evidence

consequently supports the need for further evaluation of insurance-specific service pathways while maintaining consistent standards of quality and patient-centered care.

Clinical and Digital Healthcare Implications of Insurance-Based Satisfaction Differences

The significant relationship between health insurance type and patient satisfaction has implications for both clinical service management and digital healthcare development. The different satisfaction profiles between BPJS Kesehatan and private insurance users indicate that patients may perceive their healthcare experiences differently according to the financing mechanism used. From a clinical perspective, these differences are important because patient satisfaction reflects not only treatment outcomes but also perceptions of communication, responsiveness, assurance, empathy, and service reliability. Previous research has demonstrated that healthcare service quality is closely associated with patient satisfaction and that patient characteristics can influence evaluations of healthcare services (Atmaja et al., 2024). The predominance of moderate satisfaction among BPJS users provides an important signal for hospitals to evaluate the service processes experienced by this group. Such evaluation should focus on potential differences in administrative procedures, communication, waiting processes, and service responsiveness rather than assuming that insurance type directly determines satisfaction. A patient-centered approach requires these service components to be managed consistently across different insurance groups.

The findings also have implications for the equitable organization of clinical services in hospitals that accommodate both national and private insurance patients. The higher proportion of private insurance users reporting high satisfaction should not be interpreted as evidence that private insurance inherently produces superior healthcare outcomes. Instead, the pattern indicates that differences in patients' experiences deserve closer assessment within the hospital service pathway. Previous research has identified differences in patient satisfaction between BPJS and other patient groups and has linked these differences to perceived service quality (Puspitasari et al., 2020). Clinical personnel should maintain consistent standards of responsiveness, communication, empathy, and assurance regardless of the patient's insurance status. Administrative staff also have an important role because interactions during registration, verification, and service coordination can contribute to patients' overall evaluation of healthcare. Improving these processes may strengthen patients' perceptions of fairness and responsiveness without compromising the clinical standards applied to different patient groups.

Table 5. Synthesis of Clinical and Digital Healthcare Implications of Insurance-Based Satisfaction Differences

Aspect	Clinical Implication	Digital Healthcare Implication	Recommended Improvement
Service Equity	Maintain consistent clinical service standards across insurance groups	Provide comparable access to digital registration, information, and communication	Standardize service pathways across insurance categories
Responsiveness	Strengthen communication and timely responses to patient needs	Optimize digital registration, queue monitoring, and notification systems	Establish responsive and transparent patient-service channels
Administrative Experience	Simplify explanations of insurance-related procedures during care	Integrate digital verification and administrative information	Reduce administrative complexity and uncertainty
Patient-Centered Care	Apply consistent empathy, assurance, and communication regardless of insurance type	Develop accessible digital communication between patients and providers	Integrate patient-centered principles into digital service design

Satisfaction Monitoring	Monitor satisfaction differences as part of clinical quality improvement	Use digital dashboards to identify patterns by insurance category	Conduct periodic insurance-specific satisfaction evaluation

As summarized in Table 5, the clinical and digital implications are closely interconnected because patients experience healthcare as a continuous service pathway rather than as isolated clinical encounters. Service equity should remain a central principle because differences in financing mechanisms should not result in inconsistent standards of clinical attention or communication. Digital platforms can support this principle by providing comparable access to registration, service information, communication, and administrative updates for different insurance groups. The integration of digital feedback mechanisms can also help hospital management identify recurring concerns and monitor patient experiences more systematically. Previous research has demonstrated that patient satisfaction is influenced by multiple dimensions of healthcare service, making comprehensive service evaluation important for quality improvement (Hamzeh et al., 2023). Insurance-specific satisfaction monitoring can therefore be incorporated into routine hospital quality-management activities without treating insurance status as a determinant of clinical treatment quality. Such an approach enables hospitals to identify service gaps while maintaining equitable standards of patient care.

From the clinical perspective, the findings emphasize the need to ensure that insurance-related administrative differences do not translate into differences in perceived clinical responsiveness. Patients evaluate healthcare through a continuous experience that can include registration, waiting, communication with staff, clinical consultation, treatment, and follow-up. Research on healthcare quality has shown that service characteristics and patients' perceptions are important components of satisfaction assessment (Pratama et al., 2023). Hospitals can strengthen this experience by establishing clear communication standards and ensuring that patients receive understandable information about procedures associated with their insurance coverage. Consistent communication may reduce uncertainty and improve patients' confidence in the healthcare organization. These measures are particularly relevant when patients interact with several service units during a single episode of care. Clinical quality improvement should therefore incorporate both direct patient-provider interactions and the administrative processes surrounding clinical care.

Digital healthcare systems can further strengthen these efforts by enabling hospitals to monitor patient experiences more systematically. Digital dashboards can be designed to identify satisfaction patterns according to insurance category, service type, and other relevant operational indicators. Patient feedback systems can provide timely information about administrative difficulties, communication problems, or delays that may affect satisfaction. The integration of digital records and service information can also support more efficient coordination between registration, insurance verification, clinical units, and follow-up services. Digital systems should nevertheless remain complementary to interpersonal healthcare because technological convenience cannot fully replace communication and empathy between healthcare professionals and patients. Research on healthcare insurance services has emphasized the importance of trust and satisfaction, reinforcing the need to preserve the relational dimension of healthcare alongside technological development (Ramadhan et al., 2023). A balanced integration of digital and interpersonal services can therefore improve service efficiency while maintaining patient-centered care.

The findings ultimately indicate that insurance-based differences in patient satisfaction should be incorporated into broader hospital quality-management and digital transformation strategies. The significant correlation identified in this study does not establish a causal mechanism, but it provides empirical evidence that patients with different insurance arrangements may evaluate healthcare services differently. Future quality-improvement initiatives can use insurance-specific satisfaction monitoring to identify service components requiring closer evaluation while avoiding assumptions that one insurance scheme inherently produces better clinical outcomes. Digital dashboards, structured patient feedback, and periodic comparative evaluations can support evidence-based monitoring of these differences at the hospital level. At the clinical level, standardized service principles can help ensure that responsiveness, communication, assurance, empathy, and access to information remain consistent across financing groups. These strategies are consistent with the importance of patient-centered service quality in strengthening healthcare satisfaction (Ramisa et al., 2024). The integration of equitable

clinical practices with responsive digital systems can ultimately support a more consistent and patient-centered healthcare experience across insurance categories.

CONCLUSION

The study concludes that patients at a private hospital in Semarang City were predominantly female (56.3%), aged 26–35 years (35.4%), and had higher education levels (51.0%). Most respondents accessed outpatient services (65.6%), had a moderate duration of insurance use (42.7%), and reported a low frequency of healthcare utilization (45.8%). BPJS Kesehatan was the most commonly used health insurance scheme, accounting for 53.1% of respondents, while private insurance accounted for 46.9%. Overall patient satisfaction was predominantly classified as moderate, representing 54.2% of the respondents, while 45.8% reported high satisfaction. The cross-tabulation further showed that moderate satisfaction was more prevalent among BPJS Kesehatan users, whereas high satisfaction was more prevalent among private insurance users. These findings indicate that patient satisfaction varied according to the type of health insurance used to access healthcare services. The distribution also highlights the importance of considering insurance characteristics when evaluating patients' experiences within private hospital settings.

The Spearman Rank analysis demonstrated a statistically significant, strong, and positive relationship between health insurance type and patient satisfaction, with a p-value of 0.000 (<0.05) and a correlation coefficient of 0.602. This result indicates that differences in health insurance classification were significantly associated with differences in patient satisfaction among the respondents. The finding supports the view that insurance arrangements represent an important contextual factor in understanding patients' perceptions of healthcare services. The relationship should be interpreted as an association rather than a causal effect because the study used a correlational design. From a healthcare management perspective, the findings emphasize the importance of maintaining equitable, responsive, patient-centered, and transparent services for both BPJS Kesehatan and private insurance users. Digital healthcare systems can further support this objective through integrated registration, verification, communication, queue management, and patient-feedback mechanisms that improve the consistency of patients' service experiences. Future studies may examine specific clinical, administrative, and digital service factors that explain differences in satisfaction between insurance groups.

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