



## The Influence of E-Servqual and Brand Image on Loyalty Mediated by BPJS Customer Trust in Malang Raya

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### Abstract

Indonesia's National Health Insurance (JKN) program, administered by BPJS, faces challenges in retaining independent participants (PBPU), with >20% inactivity in Malang Raya. While prior studies link E-Servqual and brand image to loyalty, the role of trust in this context remains underexplored. This study investigates how E-Servqual and brand image influence loyalty, mediated by trust, among JKN participants. An explanatory research design was employed, surveying 200 PBPU participants in Malang Raya via questionnaires. Data were analyzed using validity/reliability tests and hypothesis testing (Slovin's formula, Cronbach's  $\alpha > 0.7$ ). E-Servqual and brand image positively affect trust, which in turn drives loyalty. However, the direct E-Servqual-loyalty link is insignificant, and trust does not mediate the brand image-loyalty relationship. Participants perceived BPJS's digital services as reliable but not pivotal for loyalty, emphasizing trust's centrality. BPJS should enhance digital platforms (e.g., UX, AI personalization) and address trust barriers (e.g., transparency in contributions). Future research should explore demographic/cultural moderators and multi-platform comparisons.

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**Keywords:** E-Servqual, Brand Image, Trust

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### INTRODUCTION

According to Parasuraman et al. (2005), e-service quality is the extent to which a website facilitates efficient and effective shopping, purchasing, and delivery. Basically, e-service quality is a function of ICT (Information and Communication Technology) that enables customer satisfaction, increases repeat purchases, and builds customer trust. According to Zeithaml et al. (2009), e-service quality (E-Servqual) is defined as the extent to which a website facilitates efficient and effective shopping, purchasing, and delivery (Oktaviani et al., 2024; Onyedikachi & Emmanuel, 2020; Pradnyadewi & Giantari, 2022).

A brand is a sign of trust for all activities that evoke intangible trust, and the absence of human touch can become a symbol of quality and assurance to build trust (Karim et al., 2018; Marwanah & Shihab, 2022; Salim, 2020; Tanzil & Lestari, 2023). Brand image can more clearly depict the products provided by the company to customers. A brand consists of design, name, and symbols, and it gives a particular product or organization a lasting and distinct advantage (Rane et al., 2023). Customers use product information to build a relationship with the brand, which is called brand image (Prayogi & Nursaidah, 2021; Putra & Dewi, 2019). Additionally, customers can obtain information from the brand image to analyze product quality and stimulate the intention to purchase the product afterwards. (Yang, 2017). Brand image has a specific impact on loyalty intentions, namely the intention to repurchase by customers. Social, confident, and unique brand images positively impact loyalty intentions (Sulibhavi & Shivashankar, 2017).

Trust is the willingness of a company to rely on business partners and depends on several interpersonal and inter-organizational factors such as ability, integrity, honesty, and kindness. (Kotler & Armstrong, 2018). According to Kotler and Keller (2016), customer trust is the willingness of consumers to rely on a particular product or brand.

Kotler & Armstrong (2018) state that loyalty is the key to increasing the profitability and long-term growth of the company. It is explained that loyalty can be built through positive consumer experiences with products or services, as well as effective communication with consumers (Sriyanto & Utami, 2016; Syah & Yanuar, 2013; Tamimi et al., 2015; Zeithaml & Bitner, 2002).

This study investigates how E-Servqual and brand image influence loyalty, mediated by trust, among JKN participants. This study advances existing literature by examining the unique mediating role of trust in the relationship between E-Servqual, brand image, and loyalty among independent JKN participants in Malang Raya, Indonesia—a context underexplored in prior studies (e.g., Zeithaml et al., 2009; Keller, 1993). While prior research Sulibhavi (2017); Kotler & Keller (2016) established direct links between brand image and loyalty, this study reveals the insignificant direct effect of E-Servqual on loyalty, contrasting with Parasuraman et al. (2005), and highlights trust as the critical mediator. Additionally, it identifies the non-significant mediating role of trust in the brand image–loyalty relationship, a finding not reported in earlier works. The focus on BPJS’s digital services (website) and its impact on trust and loyalty in a mandatory health insurance system (JKN) also distinguishes this study from generic e-service or private-sector contexts (Bart et al., 2005; Yang et al., 2017).

## METHOD

H-1: E-servqual and brand image have a significant positive effect on customer loyalty.

H-2: E-servqual and brand image have a significantly positive effect on customer trust.

H-3: Trust has a significant positive effect on customer loyalty.

H-4: E-servqual and brand image have a significant positive effect on customer loyalty mediated by trust.

The population in this study consists of PBPU (Non-Wage Recipient Participants) JKN participants at BPJS (Social Security Agency) Malang Raya, which includes the cities of Malang, Kepanjen, and Batu. BPJS is an organizing body that manages social insurance for the community through participation in the JKN (National Health Insurance) program (Maryuni & Eka, 2019; Yuditia et al., 2021). JKN participants are members of the community who have registered as JKN participants and fulfill the obligation to pay contributions with personal funds, also known as independent participants who meet the contributions with personal finances without assistance from the central or regional government. PBPU-type JKN participants are obliged to pay contributions according to the specific class they choose, in order to activate their card and receive health services.

According to Sukmadinata (2006), the population is the entire group of subjects that will be the object of the research. The population in this study consists of every member of the community in Malang Raya, including the city of Malang, Malang Regency, and Batu City, who are already participants in the JKN program as PBPU/self-participants. The population of Malang Raya amounts to 618,893 (BPJS Kesehatan Malang 2024). From the total population of participants, a sample calculation was conducted using Slovin's formula. This method requires a sample size of 100 – 200, and subsequently, the selected sample is determined through purposive random sampling in 3 areas, namely the city of Malang and Malang Regency. The distribution of the number of JKN participant research populations in each region of Malang Raya is as shown in Table 1.

**Table 1. Number of PBPU-type JKN Participants in Malang Raya (BPJS, 2024).**

No	Location	Number of JKN Participants PBPU
1	Batu City	36.511
2	Malang City	111.493
3	Malang Regency	470.889

Total	618.893
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So that the sample size taken can be representative, it is calculated using the Slovin formula as follows:

$$n = \frac{N}{1 + N e^2}$$

Exp:

$n$  = sample size

$N$  = population size

$e$  = error

Using a 7% error rate, the sample calculation results are as follows:

$$n = \frac{618.893}{1 + 618.893 \times (0.07)^2} \sim 200$$

After being calculated using the Slovin formula, the rounded result is a total of 200 samples. In the data collection, the number of samples in each region was determined using the formula for proportional allocation based on the population of each area, as shown in Table 5. This was further determined based on the comparison of the population of JKN PBPB participants in the Malang Raya region as follows: 1:2:3, which means: the number 1 for the population of Batu City, the number 2 for the population of Malang City, and the number 3 for the population of Malang Regency. Therefore, the number of samples calculated based on the formula is as follows: Batu City =  $n_1 = n/6 \times 1 = 200/6 \times 1 = 33.3$  (rounded to: 34), Malang City =  $n_2 = n/6 \times 2 = 200/6 \times 2 = 66$ , and Malang Regency =  $n_3 = n/6 \times 3 = 200/6 \times 3 = 99.9$  (rounded to: 100) (Sugiyono, 2006). With rounding, the sample distribution is as shown in Table 2:

**Table 2. Sample Distribution in the Malang Raya Region**

No	Location	Sample Distribution
1	Batu City	34
2	Malang City	66
3	Malang Regency	100
	Total	200

The sample was taken based on incidental or spontaneous factors, meaning that every member of the community participating in JKN as Non-Wage Recipient Participants (PBPB) or referred to as independent participants in fulfilling their premium payments, residing in the Malang Raya area, Batu City, Malang City, and Malang Regency.

Validity or authenticity involves understanding the alignment between concepts and empirical reality. Arikunto (2006) defines validity as a measure that indicates the degree of accuracy of an instrument. An instrument is declared valid if it is able to measure what is intended and accurately reveal the data of the variables being studied. The validity test in this study was conducted using the Pearson's product-moment correlation technique, which involves correlating the scores obtained from each question item with the total score. Sugiyono (2006) states that an item is considered valid if it can measure what is desired from the variable data.

$$r = \frac{n(\sum xy) - (\sum x \sum y)}{\sqrt{\{(n\sum x^2 - (\sum x)^2)\} \{n\sum y^2 - (\sum y)^2\}}}$$

Exp:

$r$  = Correlation coefficient

$n$  = Number of respondents

$x$  = Score of each item response

y = Total score

Singarimbun & Effendi (2005), "Reliability is a term used to indicate the extent to which the results of a measurement are relatively consistent when the measurement is repeated two times or more." A measuring instrument is said to be reliable if it consistently measures different phenomena to the extent that the instrument can be trusted and relied upon. Arikunto (2006), "An instrument is said to be reliable if the Alpha Cronbach value is greater than or equal to 0.6." Whereas the Alpha Cronbach formula is as follows:

$$n = \left[ \frac{K}{k-1} \right] \left[ 1 - \frac{\sum \sigma b^2}{\sigma t^2} \right]$$

Exp:

- n = Instrument reliability
- k = the number of question items
- $\sum \sigma b^2$  = total item variance
- $\sigma t^2$  = total variance

## RESULTS AND DISCUSSION

### Respondents based on Gender

Based on the results of the data entry in the questionnaire, the identity data of the respondents participating in BPJS (JKN Mandiri) in Malang Raya by gender is as follows:

**Table 3. Characteristics of Respondents Based on Gender (Primary data 2024).**

No	Gender	Total	Percent (%)
1.	Male	97	48,5
2.	Female	103	51,5
	Total	200	100

Based on the gender data in Table 3, the number of female respondents is higher, with 103 compared to 97 males out of a total of 200 BPJS (JKN Mandiri) participants in Malang Raya.

### Respondents based on Age

Based on the results of the data entry from the questionnaire, the data of BPJS participants (Independent JKN) in Malang Raya by age is as follows:

**Table 4. Characteristics of Respondents Based on Age (Primary data 2024).**

No	Age	Count	Percent (%)
1.	16 – 21	22	11
2.	22 – 27	29	14,5
3.	28 – 33	23	11,5
4.	34 – 39	31	15,5
5.	40 – 45	27	13,5
6.	46 – 51	31	15,5
7.	52 – 57	27	13,5
8.	58 – 63	10	5

9.	64 – 69	0	0
Total		200	100

The age data of the respondents in Table 9 can be explained by the fact that the majority of the respondents are in the age groups of 34 to 39 years and 46 to 51 years, each accounting for 31% of the total 200 BPJS (JKN Mandiri) participants in Malang Raya.

**Respondents based on Highest Education Level**

Based on the results of the data entry from the questionnaire, the data of BPJS participants (Independent JKN) in Malang Raya, according to the last education level, is as follows:

**Table 5. Characteristics of Respondents Based on Highest Education Level (Primary data 2024).**

No	Education	Count	Percent (%)
1.	Senior / Vocational High School	82	41
2.	Diploma / Bachelor	117	58,5
3.	Master	1	0,5
Total		200	100

Based on the data about the respondents' education as shown in Table 10, it indicates that the majority of BPJS respondents (JKN Mandiri) have their highest education level as a university degree, totaling 117 out of 200 respondents in Malang Raya.

**Respondents based on job type**

**Table 6. Characteristics of Respondents Based on Type of Occupation**

No	Work Type	Count	Percent (%)
1.	Entrepreneur	33	16,5
2.	Employee	86	43
3.	Unemployed	81	40,5
Total		200	100

Based on the data about the types of jobs held by respondents as shown in Table 6, it indicates that the majority of BPJS (JKN Mandiri) respondents have private sector jobs, accounting for 43% of the total 200 respondents in Malang Raya.

**Respondents based on Membership Class**

**Table 7. Characteristics of Respondents Based on Membership Class**

No	Class Membership Type	Count	Percent (%)
1.	Klas-1	17	8,5
2.	Klas-2	88	44
3.	Klas-3	95	47,5
Total		200	100

Based on the data about the types of participation classes as shown in Table 7, it indicates that the majority of BPJS (JKN Mandiri) respondents are in class-3, which is 47.5% of the total

200 respondents in Malang Raya. The basis for the validity statement is that all items in the instrument have a p-value less than 0.05.

**Table 7. Reliability Test of the Research Instrument (Primary data 2024).**

Variable	Alpha Cronbach ( <i>based on standardized items</i> )	Note
E-Servqual	0.816	Reliable
Brand Image	0.766	Reliable
Trust	0.775	Reliable
Loyalty	0.833	Reliable

With reference to the reliability criteria explained in Arikunto (2002), the reliability coefficient from the calculations is considered reliable, with the reliability criteria deemed adequate if the Alpha coefficient is 0.60-0.70. Thus, in Table 13, it shows that all instruments from the 4 variables, namely e-servqual, brand image, trust, and loyalty, can be declared reliable with a Cronbach's alpha value  $> 0.7$ .

### **E-servqual and brand image towards customer loyalty**

Based on the results of the hypothesis test, it is concluded that e-servqual does not have a significant direct effect on Loyalty. This indicates that the high and low levels of e-servqual do not significantly affect loyalty, meaning that the BPJS website has not yet become a necessity for JKN or BPJS participants. The average value of the e-servqual variable is 4.13, which indicates that respondents agree that the e-servqual indicators are contributed by reliability, responsiveness, user security, personalization, and ease of understanding (information & easy to use). However, it does not affect the loyalty attitude of JKN participants in following the BPJS program. This is evidenced by the insignificant hypothesis test results between e-servqual and loyalty, with a p-value  $> 0.05$ , which means that the level of e-servqual does not affect loyalty.

The following explanation is the influence of brand image on loyalty, which concludes that there is a significant positive direct effect between brand image and loyalty. This means that the higher the Brand Image, the greater the increase in Loyalty. Shows that the average value of the brand image variable is 4.05, which means the brand image variable has been supported by the indicators of association benefits, association strength, and brand association uniqueness. According to the average respondents on the brand image indicator, they agree, which means the brand image is a variable that reflects high strength and has been trusted by JKN and BPJS participants.

### **E-servqual and brand image on customer trust**

The electronic services of BPJS on the website provide explanations that are useful and relevant to the needs of participants, related to various information about membership, the development of new BPJS programs, as well as the rights and obligations of participants. In addition, participants can also easily use the BPJS website facilities when needed.

The hypothesis test results show that trust is directly influenced by the quality of electronic services (E-Servqual) and brand image, with a p-value  $> 0.05$ . This means that the

high and low levels of E-Servqual are also followed by the high and low levels of trust. Next, it can be explained that JKN participants have become aware of the information sources on the BPJS website, which has led to the emergence of trust towards BPJS. There are indicators of integrity, benevolence, and ability that also make JKN participants trust the BPJS program and feel that it can meet their information needs about the BPJS program. All E-Servqual indicators have been proven, as shown by the respondents' answers in the questionnaire, with an average score of 4, which means they agree with the statements of all indicators.

### **Trust in customer loyalty**

Trust that comes from the participants' beliefs is important because it will support the formation of participants' loyalty. Indicators related to trust include honesty, excellence, and capability, so BPJS has convinced participants, thereby forming trust. JKN participants believe that BPJS has been able to implement the program honestly, with sincerity, and possesses the ability to manage it according to the needs of JKN participants. This statement has been proven by the respondents' answers in the questionnaire, with an average score of 4, indicating that participants agree with all the trust indicator statements.

To determine the direct effect of trust on loyalty, a hypothesis test has been conducted. Based on the results of the hypothesis test, it can be concluded that there is a significant positive direct effect of trust on loyalty, with a  $p$ -value  $>0.05$ . The results indicate that the level of trust affects the level of loyalty. This situation has been supported by the fact that JKN participants have self-confidence and integrity, as stated in the questionnaire selected by JKN BPJS participants as respondents.

### **E-servqual and brand image towards loyalty mediated by customer trust**

Brand image is suspected to be related to trust that mediates loyalty. Overall, the indicators of trust and loyalty have been agreed upon by the respondents as stated in the questionnaire. Furthermore, trust is an attitude that will build the loyalty of JKN participants. To achieve that state, concrete efforts are needed from the company, namely BPJS, one of which is to provide honest and high-quality communication facilities that can enhance the trust of JKN participants.

Based on the hypothesis test of the indirect effect of Brand Image on Loyalty mediated by Trust, the results are not significant with a  $p$ -value  $>0.05$ . This means that the level of brand image is not followed by the level of loyalty. JKN participants have a positive perception of BPJS, as the only social security program in Indonesia, but it has not yet been able to influence loyalty mediated by trust. Brand image is the perception or opinion of JKN participants about BPJS, as evidenced by the responses to statements in the questionnaire. The brand image of BPJS has not yet been able to instill a sense of trust among JKN participants towards the social security administrator, which has a health financing service program for the entire population of Indonesia.

In reality, the brand image has not yet been able to significantly and positively influence customer loyalty mediated by trust. Loyalty is an attitude that is partly determined by the obligation to pay dues. This has been the cause all along and has become an obstacle for JKN participants in following the BPJS program because they are required to pay contributions.

## CONCLUSION

This study concluded that JKN participants demonstrate loyalty through repeat engagement, referrals, and retention, influenced by E-Servqual (reliability, responsiveness, privacy, etc.), positive brand image (benefits, uniqueness), and trust (integrity, competence). While E-Servqual and brand image indirectly boost loyalty via trust, the direct E-Servqual–loyalty link is insignificant. BPJS’s digital services foster trust by meeting user needs, reinforcing loyalty. Future research should explore: (1) mediating/moderating factors (e.g., UX design, demographics) in the E-Servqual–loyalty relationship; (2) platform comparisons (apps, chatbots); (3) longitudinal/crisis-based trust dynamics; (4) AI-driven personalization; (5) cultural/socioeconomic influences; (6) brand advocacy (word-of-mouth, CSR); and (7) behavioral economics (nudges, incentives). Trust remains central, warranting deeper investigation into digital trust-building strategies for sustained loyalty.

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Journal of Management, Economic and Financial

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