

The Effect of Service Recovery Performance on Word of Mouth with the Mediation of Perceived Justice and Complaint Handling Satisfaction among Bpjs Ketenagakerjaan Participants

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ABSTRACT

This study aims to analyze the effect of service recovery performance (SRP) on word of mouth (WOM) with perceived justice (PJ) and complaint handling satisfaction (CHS) as mediating variables. The research employs an explanatory quantitative approach, involving participants who had previously submitted complaints through the comment section of BPJS Ketenagakerjaan's official Instagram account. Data were collected using a Likert-scale questionnaire and analyzed using structural equation modeling with partial least squares. The results show that SRP has a significant effect on PJ, CHS, and WOM. The strongest effect occurs in the relationship between SRP and PJ, indicating that fast responses, clear explanations, and empathetic interactions enhance participants' perceived justice. SRP also increases CHS. CHS shows a direct but weak effect on WOM, indicating that cognitive satisfaction alone may not be sufficient to encourage participants to recommend the service. The mediation analysis reveals that PJ significantly mediates the relationship between SRP and WOM, while CHS does not serve as a direct mediator. These findings emphasize that emotional and procedural fairness plays a more decisive role in generating positive WOM than satisfaction with the complaint-handling process itself. Thus, perceived justice emerges as a key psychological factor influencing participants' communication behavior. This study provides important implications for BPJS Ketenagakerjaan, highlighting the need to strengthen digital complaint-handling performance by improving response speed, clarity of information, empathetic communication, and procedural consistency. These efforts are essential to building perceived justice, enhancing participant trust, and fostering positive WOM in digital environments.

Keywords: service recovery performance; perceived justice; complaint handling satisfaction; word of mouth; social media complaints

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INTRODUCTION

The development of digital technology has changed the way people interact with public institutions (Alenezi, 2023; Alzoubi et al., 2025; Khalil et al., 2022; Popova et al., 2023; Wilson & Mergel, 2022). Social media has become an important platform for public interaction with institutions, convey aspirations, and assess the quality of services of government institutions. Platforms such as Instagram not only function as a medium for publishing information, but also as a two-way channel where participants actively voice their opinions, complaints, and appreciation for the services they receive (Alenzi & Miskon, 2024; Budjanovcanin & Yang, 2026; Lee & Alhabash, 2025; Palazón & López-López, 2023). This phenomenon shows a shift from one-way communication to participatory and open communication between institutions and the public (Hennig-Thurau et al., 2004).

BPJS Ketenagakerjaan as an employment social security provider is not exempt from this dynamic. The official Instagram account of @bpjs.ketenagakerjaan is a digital

representation of the institution in interacting with its participants. Based on data from HypeAuditor (2025), Instagram analytics report for @bpjs.ketenagakerjaan, the account has more than 809 thousand followers with a total of 3,698 uploads. However, the engagement rate remains relatively low, only 0.04%, with an average of 255 likes and 215 comments per upload. A like-to-comment ratio of 1.2, categorized as "needs improvement", indicates that comments that appear tend to contain complaints or expressions of dissatisfaction rather than positive appreciation.

Based on observations of these uploads, many participants submitted complaints about late responses, difficulties in communicating with branch offices, and unclear claims process (Meng et al., 2023; Napakol et al., 2022; Sadler et al., 2022). Based on observation of participant comments on the official Instagram account, one user wrote, "I have also contacted the relevant party via WhatsApp... no reply either," while another user wrote, "For more than a month there has been no WA info or email... Anything that needs to be brought to the branch." Expressions like this show the gap between participants' expectations of digital services and the operational realities they experience in the field.

In the context of public service, participant complaints are a form of natural feedback that is very valuable for the organization. According to Singh (1988), customer complaint behavior is an expression of dissatisfaction that can be an opportunity for improvement if handled appropriately. However, if complaints are not responded to quickly and satisfactorily, this condition can transform into a double deviation phenomenon, which is a service failure followed by a failure in service recovery. This phenomenon is very likely to occur in BPJS Ketenagakerjaan digital services when participants feel neglected after submitting complaints through official channels such as Instagram or WhatsApp.

Service recovery performance (SRP) is a crucial aspect in maintaining participant satisfaction and trust. Davidow (2000) and Liao (2007) explained that SRP consists of seven main dimensions, namely apology, explanation, response speed, compensation, attentiveness, problem solving, and the level of the person who handles. Effective recovery performance not only restores relationships, but also has the potential to turn negative experiences into positive ones. In the context of public institutions such as BPJS Ketenagakerjaan, the success of SRP can strengthen the institution's image as a responsive and participant-oriented institution.

In some studies, it is emphasized that good service quality has a positive influence on consumer behavior and loyalty. For example, in a study conducted with Prirafianti et al. (2023), it was found that service quality has a positive effect on purchase intention and customer satisfaction. These findings reinforce the idea that aspects of service performance, including recovery performance, have a significant impact on customer perception and behavior. Excellent service quality creates a fair and enjoyable experience, which ultimately encourages positive word of mouth (Prirafianti et al., 2023).

Furthermore, the concept of perceived justice is an important dimension in assessing the effectiveness of SRP. According to Tax et al. (1998), the perception of justice consists of three main aspects: distributive justice, procedural justice, and interactional justice. These three shaped the overall perception of the participants to the extent to which the institution treated them fairly during the complaint handling process. In digital services, for example, response speed reflects procedural justice, while officer empathy and politeness reflect interactional justice.

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Septiani et al. (2021) affirm that community-oriented marketing and customer values — such as fairness and trust — are key to building positive loyalty and recommendations. In the context of green marketing, he said that "the green marketing paradigm is building values, education building communities, and word-of-mouth marketing." This quote confirms that values-based relationships and trust result in positive communication between customers. Therefore, the perception of fairness in the complaint handling process can be an important foundation for the formation of positive communication in the digital space.

Customer satisfaction also plays an important mediating role in the relationship between SRP and word of mouth. According to Andreassen (2000), complaint handling satisfaction is a specific form of evaluation of an organization's response to customer complaints. Samudro in Candy et al. (2022) also emphasized that customer satisfaction is the main determinant that leads to customer loyalty. This means that in the context of BPJS Ketenagakerjaan, when participants are satisfied with the complaint handling process, they tend to maintain participation and provide positive testimonials on social media.

Several empirical studies have strengthened the relationship between these variables. Simanjuntak and Hamimi (2019) found that satisfaction with the handling of complaints has a significant influence on word of mouth in the public service sector. Shaleha et al. (2021) show that the dimensions of apology and response speed in SRP contribute greatly to the improvement of perceived justice. Recent findings by Istanbuluoglu and Sakman (2024) confirm that fast and empathetic handling of complaints on social media increases trust and encourages repurchase intention and positive word of mouth.

In the context of BPJS Ketenagakerjaan, the aspect of service recovery performance becomes more complex because it involves interaction between digital and non-digital channels. For example, a complaint submitted through Instagram may require a follow-up via WhatsApp, email, or an in-person visit to the branch office. The integration and consistency of responses between channels is an important factor in creating a perception of fairness and participant satisfaction. Failure in coordination between channels can cause the impression of being "ignored" which has the potential to lower trust and reinforce negative WOM.

Another challenge faced by BPJS Ketenagakerjaan is maintaining the consistency of public communication amid high public expectations for fast and transparent services. Studies by Candy et al. (2022) show that perceived quality plays an important role in shaping customer satisfaction and customer loyalty. In the context of public institutions, perceived justice can be thought of as the conceptual equivalent of perceived quality — both describe participants' subjective judgments of the quality of treatment they receive. The fairer and more transparent the complaint handling process, the higher the level of participant satisfaction and loyalty.

Furthermore, digital interactions also create a reputation effect that spreads quickly. When participants feel satisfied with the handling of their complaints, they tend to share positive experiences on social media, resulting in a positive WOM effect that can strengthen the institution's image. On the contrary, negative experiences that spread virally can significantly reduce the credibility of the institution. This is in line with the findings of

Septiani et al. (2021) who stated that word of mouth is a strategic channel in building a loyal and value-oriented customer community.

Thus, it is important for BPJS Ketenagakerjaan to not only focus on speed or technical solutions in handling complaints, but also pay attention to the emotional dimension and perception of justice of participants. A responsive, empathetic, and transparent approach will result in higher satisfaction and strengthen positive communication between participants. In an era of digital openness, where public opinion is easily spreading, the success of complaint management has an impact not only on a single case, but also on the reputation of the institution as a whole.

This study's novelty lies in its integrative model, which simultaneously tests perceived justice and complaint handling satisfaction as parallel mediators between SRP and WOM in a public sector digital service context. By doing so, it seeks to move beyond simple satisfaction metrics to uncover the deeper psychological drivers of participant advocacy.

Although previous studies have examined service recovery performance and customer satisfaction, limited research has explored how service recovery performance in social media complaint contexts influences participants' word of mouth in public social security institutions. Furthermore, the mediating roles of perceived justice and complaint handling satisfaction remain underexplored in digital complaint environments, particularly in the context of BPJS Ketenagakerjaan. Therefore, this study aims to examine the effect of service recovery performance on word of mouth with the mediating roles of perceived justice and complaint handling satisfaction among participants who submitted complaints through Instagram.

Based on this description, this study aims to analyze the influence of service recovery performance on word of mouth, with perceived justice and complaint handling satisfaction as mediation variables in BPJS Ketenagakerjaan participants who submit complaints via Instagram. This research is expected to make a theoretical contribution in enriching the literature on post-complaint behavior in the context of public institutions, as well as providing practical recommendations for BPJS Ketenagakerjaan in designing a digital communication strategy that is more responsive, fair, and oriented towards participant satisfaction.

METHOD

Research Design

This study uses an explanatory quantitative approach that aims to test and explain the causal relationship between variables that affect the behavior of BPJS Ketenagakerjaan participants after submitting complaints through Instagram social media. The research design focused on testing the relationship between *service recovery performance* (SRP), *perceived justice* (PJ), *complaint handling satisfaction* (CHS), and *word of mouth* (WOM). In this design, SRP is set as an independent variable, PJ and CHS as a mediating variable, and WOM as a dependent variable. Testing of the relationship between variables was carried out empirically using *the Partial Least Squares – Structural Equation Modeling* (PLS-SEM) method, so that all variables were operationalized through measured indicators which were then tested for validity and reliability. The scope of the study was limited to participants who submitted complaints explicitly in the comments of the official account upload of

@bpjs.ketenagakerjaan. Data collection was carried out online through a questionnaire distributed via direct message on Instagram, according to the research criteria.

Research Materials and Tools

The main material of this study is a questionnaire instrument compiled based on SRP, PJ, CHS, and WOM variables. The instrument uses a five-point Likert scale to measure respondents' perceptions of each indicator. Research tools include computer or laptop devices to compile questionnaires, distribute survey links, and process and analyze data. Data collection was carried out using Google Form and Instagram social media, while statistical analysis was carried out using SmartPLS 4.0 software. Other supporting tools such as Microsoft Excel are used for the process of data *cleaning*, coding, and preparing data before processing in the SmartPLS application.

Data collection techniques

Data collection was carried out through an online questionnaire based on Google Form which was sent via direct message (DM) to participants who met the criteria. The instrument uses a five-point Likert scale to measure respondents' perception of each indicator of the research variable. Data were collected during the research period according to a predetermined schedule.

Data analysis techniques

The data analysis in this study began with a descriptive analysis to provide an overview of the characteristics of respondents and the distribution of answers in each variable indicator. Descriptive analysis includes the presentation of measures such as mean, standard deviation, percentage, and the tendency of respondents' answers to statements measured using the Likert scale. This stage is important to understand the data pattern, determine the level of respondents' perception of the research variables, and ensure that there are no anomalies in the data distribution before proceeding to the PLS-SEM analysis. The results of the descriptive analysis help provide an initial context for the interpretation of relationships between latent variables at a later stage.

The next stage was analysis using the PLS-SEM method through the SmartPLS 4.0 application, which was chosen because it was suitable for complex research models with relatively small to medium sample sizes. The first test carried out was the evaluation of the measurement model (*outer model*), which aims to assess the validity and reliability of the research instrument. The convergent validity was tested through the value of *factor loading* and *average variance extracted* (AVE), each with a minimum limit of 0.50, and supported by a t-statistical value of ≥ 1.96 or p-value < 0.05 . In the context of PLS-based explanatory research, indicators with a loading value between 0.60–0.70 can still be considered to be maintained if the construct as a whole still meets the validity and reliability through AVE and *construct reliability* (CR) values.

The formula for calculating *the construct reliability* (CR) value is as follows:

$$CR = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum \delta_i}$$

Where:

λ_i = the value of the loading factor of each indicator against the construct

δ_i = the number of measurement errors; (1 - square of the sum Loading factor)

The greater the CR value, the better the internal consistency of the construct in reflecting latent variables. In addition, the validity of the discriminant was tested using the Fornell-Larcker criteria as well as the Heterotrait-Monotrait Ratio (HTMT) value, with the HTMT requirement < 0.90 to ensure that each construct is completely different from each other and that there is no overlap of concepts between variables.

After the entire construct is declared valid and reliable, the analysis is continued with structural model testing (*inner model*). This stage aims to assess the causal relationship between latent variables through several important indicators, namely the R² value to assess the contribution of independent variables to the dependent variable, the F² value to measure the strength of the effect of each variable in the model, and the path coefficient to see the direction and magnitude of the influence between constructs. To test the significance of the hypothesis, this study used a bootstrapping technique with 5,000 subsamples using SmartPLS 4.0, with a significant criterion if the t-statistical value ≥ 1.96 at a significance level of 5%. This test includes the analysis of direct effects and indirect effects through the mediation variables of *perceived justice* and *complaint handling satisfaction*.

The final stage of the PLS-SEM analysis is the preparation of a hybrid SEM model that displays the results of the study of the outer model and the inner model as a whole. This model presents a visualization that illustrates the causal relationship between latent variables and the contribution of each construct in explaining the word of mouth of BPJS Ketenagakerjaan participants. With this series of analyses, the research is expected to provide a comprehensive understanding of the mechanism of the influence of *service recovery performance* on *word of mouth behavior*, as well as the role of fairness and satisfaction in handling complaints as mediators in these relationships.

RESULT AND DISCUSSION

Descriptive Analysis of Variables

The descriptive analysis of the indicators aims to show an overview of the average value and the distribution of answers on each instrument item (SRP, PJ, CHS, WOM). This data helps to interpret the general trends of respondents' perceptions before entering the reliability/validity analysis and hypothesis testing.

Table 1. Descriptive statistics of each indicator

Construct	Item	Mean	Median	SD	Skewness	TTB (%)
<i>Service Recovery Performance (SRP)</i>	SRP1 – Apology	3,426	4,000	1,024	-0,490	52,45
	SRP2 – Problem explanation	3,505	4,000	1,031	0,432	50,98
	SRP3 – Response speed	3,255	3,000	1,059	-0,076	38,24
	SRP4 – Service compensation	3,123	3,000	1,150	-0,125	40,69
	SRP5 – Institutional care	3,250	3,000	1,005	-0,228	40,20
	SRP6 – Precision solution	3,309	3,000	1,061	0,188	43,63
	SRP7 – Officer competence	3,250	3,000	1,116	0,183	44,12
<i>Perceived Justice (PJ)</i>	PJ1 – Income justice	3,186	3,000	1,045	0,198	41,18
	PJ2 – Fair process	3,245	3,000	1,014	-0,195	41,18

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		PJ3 – Interaction justice	3,392	3,000	1,040	0,001	45,59
<i>Complaint Handling Satisfaction (CHS)</i>		CHS1 - Handling satisfaction	3,221	3,000	1,085	-0,196	42,65
		CHS2 - Participant award	3,225	3,000	0,994	-0,195	39,71
		CHS3 - Increased trust	3,250	3,000	1,015	-0,179	40,69
<i>Word of Mouth (WOM)</i>		WOM1 - Direct recommendations	3,284	3,000	1,004	-0,215	44,12
		WOM2 - Sharing experiences	3,475	3,000	0,957	-0,031	46,08
		WOM3 - Online reviews	3,294	3,000	1,020	0,053	42,65

a. Service Recovery Performance

In general, the service recovery performance (SRP) variable shows a mean value in the range of 3.12–3.50, which reflects respondents' assessment at a fair to good level, but has not yet reached a very positive perception. The consistent median score of 3–4 reinforces that the majority of respondents give a mid-to-agree assessment. The standard deviation is in the range of 1.00–1.15, indicating that the variation in answers is still reasonable. The distribution of skewness is mostly close to zero, suggesting the answers tend to be symmetrical.

When viewed from the top two boxes (TTB) values, the indicator with the highest approval rate is SRP1 – Apology (52.45%), indicating that more than half of the respondents feel that the institution is quite quick to apologize when there is a service problem. This is the main strength of the institution in the restoration of services. SRP2 – Problem Explanation (50.98%) also showed a relatively strong positive perception, indicating that the explanation of the root of the problem was considered quite adequate.

However, some indicators show low TTB. SRP3 – Response Speed recorded the lowest score, at 38.24%, which shows that only one-third of respondents were satisfied with the speed of handling complaints. SRP4 – Service Compensation (40.69%) and SRP5 – Institutional Concern (40.20%) also showed significant room for improvement. Overall, the SRP illustrates that while initial communication and apologies are quite good, the aspects of responsiveness, compensation, and care need to be strengthened to improve the quality of service recovery.

b. Perceived Justice

The perceived justice (PJ) variable displayed a mean value in the range of 3.18–3.39, which shows that participants' perceptions of service fairness are in the category of adequate, but are not considered very satisfactory. The median value remained at 3, indicating that most respondents gave a neutral assessment. The standard deviation of around 1.01–1.05 also shows relatively diverse but not extreme perceptions. The skewness value is close to zero, signifying a balanced distribution of answers.

Based on TTB, the indicator with the best performance was PJ3 – Interaction Justice with 45.59%, indicating that participants felt sufficiently appreciated and treated with courtesy by the officers, including in communication during the complaint handling process. This shows the strength of the institution in the aspect of interpersonal interaction.

Meanwhile, PJ1 – Outcome Justice (41.18%) and PJ2 – Process Justice (41.18%) had the same TTB score, indicating that both the results and the complaint resolution

process were considered fairly fair, but not fully satisfactory. This shows potential barriers to the clarity of the procedure, the consistency of the handling mechanism, and the conformity of the results to the participants' expectations. Thus, it is necessary to strengthen the aspects of procedural and distributive justice to improve the perception of justice as a whole.

c. Complaint Handling Satisfaction

The mean value of the *complaint handling satisfaction* (CHS) variable is in the range of 3.22–3.25, which indicates a level of satisfaction that tends to be sufficient but not yet high. The median is at 3 for all indicators, indicating a neutral response tendency. The standard deviation of 0.99–1.09 also shows quite diverse perceptions but still within normal limits. A negative but small skewness indicates that slightly more respondents give a moderately positive, but not dominant, assessment.

The TTB value clarifies this picture. The indicator with the highest level of satisfaction was CHS1 – Handling Satisfaction (42.65%), indicating that only about 4 out of 10 respondents were truly satisfied with the overall complaint handling process. CHS2 – Participant Award (39.71%) is the indicator with the lowest TTB, indicating that respondents still do not feel sufficiently appreciated or cared for by the institution when submitting complaints. Meanwhile, CHS3 – Increased Trust (40.69%) also reflects that complaint resolution has not been able to restore or strengthen trust significantly.

Overall, these findings show that CHS is not strong enough to be a service force, so it is necessary to improve the quality of response, officer empathy, and personal attention so that participant satisfaction can increase.

d. Word of Mouth

The mean value of the *word of mouth* (WOM) variable ranged from 3.28–3.47, indicating a tendency for WOM behavior at a fairly positive level, but had not yet achieved strong support from respondents. The consistent median at number 3 shows that many respondents still tend to give neutral answers. Standard deviation in the range of 0.96–1.02 indicates reasonable variation in answers, while skewness near zero indicates a symmetrical distribution of the data.

The indicator with the highest TTB was WOM2 – Positive Stories (46.08%), indicating that participants were relatively easier to convey positive experiences to others in the form of stories or informal narratives. However, this proportion is still not high and shows that the service experience has not been enough to drive a very strong WOM.

For WOM1 – Direct Recommendation (44.12%), not many respondents actively recommend the institution to others in direct conversation. Meanwhile, WOM3 – Online reviews (42.65%) show that the desire to provide positive reviews on digital platforms is also not too great. Overall, WOM is in the fair category, but improved SRP and complaint handling satisfaction can be an important lever to strengthen WOM in the future.

Evaluation of Measurement Models (*Outer Model*)

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Evaluation of the outer model includes outer loading, construct reliability (Cronbach's Alpha and Composite Reliability), convergent validity (AVE), and discriminant validity (Fornell-Larcker and HTMT).

a. Outer Loading

Outer loading analysis was carried out to evaluate the contribution of each indicator in representing latent constructs in the measurement model. A good outer loading value indicates that the indicator is able to explain latent variables consistently. In general, the recommended outer loading value is ≥ 0.70 , although in studies with an exploration-based PLS-SEM approach, values between 0.60–0.70 are still acceptable if the construct as a whole meets the reliability and validity criteria (Hair et al., 2021).

Based on the results of data processing, an evaluation was carried out on the outer loading value of all indicators in the research construct. Some early indicators showed values below 0.70, namely PJ3 (0.556) and WOM2 (0.486), so they were considered for deletion (drop) because of their low contribution to the measured construct. The decision to remove the indicator was made to improve the quality of the measurement model and maintain the consistency of convergent validity.

Table 2. The initial *outer loading value* of the indicator against its construct

Construct	Indicator	Outer Loading
<i>Service Recovery Performance (SRP)</i>	SRP1 – Apology	0,603
	SRP2 – Problem explanation	0,721
	SRP3 – Response speed	0,735
	SRP4 – Service compensation	0,723
	SRP5 – Institutional care	0,704
	SRP6 – Precision solution	0,756
	SRP7 – Officer competence	0,774
<i>Perceived Justice (PJ)</i>	PJ1 – Income justice	0,834
	PJ2 – Fair process	0,832
	PJ3 – Interaction justice	0,556
<i>Complaint Handling Satisfaction (CHS)</i>	CHS1 - Handling satisfaction	0,840
	CHS2 - Participant award	0,821
	CHS3 - Increased trust	0,828
<i>Word of Mouth (WOM)</i>	WOM1 - Direct recommendations	0,834
	WOM2 - <i>Sharing</i> experiences	0,486
	WOM3 - Online reviews	0,809

After PJ3 and WOM2 were removed, *the outer loading* retest showed a significant improvement in the model structure. All remaining indicators have *an outer loading* value above 0.70, with the exception of SRP1 (0.603) which is maintained because it is still within the acceptance tolerance limit and has important theoretical relevance in explaining the concept of *service recovery performance*.

Table 3. Outer loading *values* after PJ3 and WOM2 removal

Construct	Indicator	Outer Loading
<i>Service Recovery</i>	SRP1 – Apology	0,603

<i>Performance (SRP)</i>	SRP2 – Problem explanation	0,724
	SRP3 – Response speed	0,732
	SRP4 – Service compensation	0,726
	SRP5 – Institutional care	0,705
	SRP6 – Precision solution	0,755
	SRP7 – Officer competence	0,773
	<i>Perceived Justice (PJ)</i>	PJ1 – Income justice
PJ2 – Fair process		0,872
<i>Complaint Handling Satisfaction (CHS)</i>	CHS1 - Handling satisfaction	0,839
	CHS2 - Participant award	0,824
	CHS3 - Increased trust	0,825
<i>Word of Mouth (WOM)</i>	WOM1 - Direct recommendations	0,850
	WOM3 - Online reviews	0,858

In addition to increasing the outer loading value, the elimination of indicators with low values also had a positive impact on the increase in *the average variance extracted* (AVE) value in the PJ and WOM constructs. The increased AVE value indicates that the proportion of indicator variants successfully described by latent constructs becomes larger, so that the convergent validity of the construct is stronger. Thus, the increase in AVE after *the drop* of the indicator is evidence that the decision improves the quality of the instrument and strengthens the reliability of the measurement.

Overall, the evaluation results show that the measurement model has met the criteria of convergent validity and is feasible to use at the stage of the internal analysis of the model for testing the relationship between latent constructs. The elimination of indicators that do not meet standards also contributes to improving the stability of the instrument and provides a stronger basis for the interpretation of research results.

b. Construct Reliability and Validity

Construct reliability and validity *evaluation* is carried out to ensure that the research construct has adequate internal consistency and good convergent validity. The reliability test is carried out through *Cronbach's alpha* value and *construct reliability* (CR), while convergent validity is tested through the AVE value. A construct is said to be reliable if the CR value is ≥ 0.70 and *Cronbach's alpha* is in the range of ≥ 0.70 as the minimum acceptance limit (Hair et al., 2021). Meanwhile, the AVE value of ≥ 0.50 indicates the ability of the construct to adequately explain the variance of the indicators.

Based on the results of data processing, all constructs in this study have met the criteria of reliability and convergent validity. The CHS construct has a *cronbach's alpha* value of 0.774 and a CR of 0.869, indicating a strong internal consistency. An AVE value of 0.689 also indicates that more than 68.9% of the indicator's variance can be explained by the CHS construct, so that the convergent validity is well met.

The PJ construct has a CR value of 0.868 and an AVE of 0.767, which indicates an excellent level of convergent reliability and validity. Although *Cronbach's alpha* value at PJ of 0.697 is slightly below the ideal limit of 0.70, it is still acceptable in exploratory studies because CR has exceeded 0.70 and AVE shows the strength of the indicator's contribution to latent variables.

In the SRP construct, *the Cronbach's alpha* value of 0.843 and *the composite reliability* of 0.881 indicate a high level of consistency. The AVE value of 0.516 is

above the minimum limit of 0.50, so the SRP can be declared to meet the convergent validity.

Meanwhile, the WOM construct shows a CR value of 0.844 and AVE of 0.730, which indicates good convergent reliability and validity. Although *Cronbach's alpha* WOM of 0.629 is slightly below the ideal limit, this value is acceptable given that CR and AVE have met the criteria and the number of indicators is relatively small after the removal of WOM2.

Table 4. Reliability and validity of construction

Construct	<i>Cronbach's Alpha</i>	<i>Construct reliability</i>	AVE
<i>Complaint Handling Satisfaction (CHS)</i>	0,774	0,869	0,689
<i>Perceived Justice (PJ)</i>	0,697	0,868	0,767
<i>Service Recovery Performance (SRP)</i>	0,843	0,881	0,516
<i>Word of Mouth (WOM)</i>	0,629	0,844	0,730

Based on these results, all constructs in this study meet the requirements of *construct reliability* and *convergent validity* so that they are suitable for use in further analysis on structural models (*inner models*). These results show that the research instrument has good measurement capabilities and can provide accurate estimates in hypothesis testing.

c. Fornell-Larcker Criterion

Discriminant validity *testing* is carried out to ensure that each construct in the research model measures different concepts and that there is no overlap between latent variables. The method used is the Fornell-Larcker criterion, which is to compare the value of the square root of AVE on the diagonal with the correlation value between constructs located in the outer position of the diagonal. *Discriminant validity* is stated to be fulfilled if the square root value of AVE is greater than the correlation value between constructs.

Based on the table of Fornell-Larcker test results below, it can be seen that the value of the square root of AVE on the diagonal is higher than the correlation between constructs, thus showing that each construct is able to distinguish itself well from other constructs. The square root value of AVE for CHS (0.830) is higher than its correlation with the constructs PJ (0.743), SRP (0.823), and WOM (0.653). Similarly, the square root value of AVE for PJ of 0.876 was higher than its correlation with CHS (0.743), SRP (0.775), and WOM (0.644). For the SRP construct, the square root value of AVE of 0.719 is greater than its correlation with WOM (0.677), although it is relatively close to the correlation to CHS (0.823). However, the diagonal value remains greater than the highest correlation value in the WOM construct and the construct reliability results show good stability, so the discriminant validity is still conceptually acceptable. Meanwhile, the square root value of AVE WOM of 0.854 is higher than its correlation with all other constructs.

Tabel 5. Fornell-Larcker criterion

Construct	CHS	PJ	SRP	WOM
<i>Complaint Handling Satisfaction (CHS)</i>	0,830			
<i>Perceived Justice (PJ)</i>	0,743	0,876		
<i>Service Recovery Performance (SRP)</i>	0,823	0,775	0,719	
<i>Word of Mouth (WOM)</i>	0,653	0,644	0,677	0,854

Thus, the test results show that the entire construct meets the Fornell-Larcker criteria, which means that the measurement model has good discriminant validity and is suitable for use at the structural model analysis stage (*inner model*).

d. Cross Loading

Cross loading *tests* were used to assess the validity of discriminators at the indicator level in the PLS-SEM model. The validity of the discriminant is stated to be fulfilled if the loading value of an indicator to the original construct is higher than the loading value of another construct. In other words, each indicator must be able to explain the latent variable it represents predominantly compared to the other latent variables in the model.

Table 6. Cross loading results

Construct	Indicator	SRP	PJ	CHS	WOM
<i>Service Recovery Performance (SRP)</i>	SRP1 – Apology	0,603	0,468	0,450	0,417
	SRP2 – Problem explanation	0,724	0,581	0,546	0,505
	SRP3 – Response speed	0,732	0,527	0,608	0,466
	SRP4 – Service compensation	0,726	0,560	0,554	0,448
	SRP5 – Institutional care	0,705	0,513	0,612	0,444
	SRP6 – Precision solution	0,755	0,601	0,682	0,568
	SRP7 – Officer competence	0,773	0,630	0,656	0,540
<i>Perceived Justice (PJ)</i>	PJ1 – Income justice	0,661	0,880	0,674	0,589
	PJ2 – Fair process	0,698	0,872	0,627	0,540
<i>Complaint Handling Satisfaction (CHS)</i>	CHS1 - Handling satisfaction	0,678	0,590	0,839	0,536
	CHS2 - Participant award	0,692	0,626	0,824	0,538
	CHS3 - Increased trust	0,677	0,631	0,825	0,552
<i>Word of Mouth (WOM)</i>	WOM1 - Direct recommendations	0,572	0,560	0,531	0,850
	WOM3 - Online reviews	0,585	0,541	0,584	0,858

Based on the *cross loading* table above, all indicators show the highest loading value on the construct where it is located. As an example of an SRP construct, the SRP1–SRP7 indicator also shows the highest loading value to the SRP construct, with values ranging from 0.603–0.773. This shows that despite a moderate correlation with CHS and PJ (e.g. SRP7 with CHS = 0.656), the indicator remains more dominant in explaining its original construct, so that the discriminant validity at the indicator level is maintained.

The CHS1, CHS2, and CHS3 indicators have the highest loading against CHS constructs of 0.839, 0.824, and 0.825, respectively, higher than loading against other constructs such as PJ, SRP, and WOM. Likewise, the PJ1 and PJ2 indicators have the largest loading in the PJ construct, which is 0.880 and 0.872, thus showing the ability of

the indicator to explain the PJ variables well. Meanwhile, in the WOM construct, the WOM1 and WOM3 indicators have the highest loading values for WOM, 0.850 and 0.858, respectively, compared to loading for other constructs.

Overall, the results of this *cross loading* show that each indicator is more representative of the latent variable measured than the other constructs, so that the criteria of discriminant validity are met. These results support the structure of the measurement model (*outer model*) empirically and show that the indicator has functioned in accordance with the operationalization design of the variables in the study.

e. HTMT (Heterotrait-Monotrait Ratio)

Based on the results of the discriminant validity test using the HTMT approach, it was found that several construct pairs, namely CHS–SRP and CHS–PJ, had HTMT values that slightly exceeded the maximum limit of 0.90. HTMT values are 1.013 and 1.010, respectively, which indicate a very strong relationship between latent constructions. Methodologically, these values can indicate a potential lack of separation between constructs in the measurement model (Henseler, Ringle & Sarstedt, 2015). Nevertheless, the interpretation of discriminant validity cannot be based solely on HTMT values, but rather must be comprehensively evaluated by considering other criteria such as Fornell–Larcker and *cross loading*.

Tabel 7. Heterotrait–monotrait ratio

Construct	CHS	PJ	SRP	WOM
<i>Complaint Handling Satisfaction (CHS)</i>				
<i>Perceived Justice (PJ)</i>	1,010			
<i>Service Recovery Performance (SRP)</i>	1,013	1,009		
<i>Word of Mouth (WOM)</i>	0,935	0,973	0,926	

The results of the evaluation based on the Fornell–Larcker criteria showed that the square root value of each construct was higher than the correlation value between other constructs, which means that the discriminant validity was still met (Fornell & Larcker, 1981). In addition, *the results of cross loading* showed that all indicators had the highest loading on their original constructs compared to other constructs, so that the indicators of each construct were still able to distinguish the concepts being measured (Hair, 2021). Thus, empirically, the measurement model in this study still shows an adequate quality of discriminant validity.

From a theoretical point of view, a very strong relationship between SRP, PJ, and CHS can be conceptually justified. The service recovery experience influences the customer's assessment of procedural, distributive, and interactional fairness, which in turn shapes complaint handling satisfaction (Tax, 1998). In addition, *the service recovery paradox* phenomenon explains that effective service recovery can produce even higher levels of satisfaction than conditions without service failures. Therefore, the high correlation between the constructs in this study is logical and realistic in the context of public services.

Attempts to remove the low-loading indicator were indeed able to lower the HTMT value, but the action left the remaining construct having only one indicator, which is methodologically not allowed in PLS-SEM because reflective constructs require a minimum of two indicators for estimating validity and reliability (Hair et al., 2021). Thus, removing the indicators further weakens the conceptual model but also violates the basic principles of structural modeling.

Taking into account these theoretical foundations, empirical evidence, and methodological principles, the model remains feasible even if the HTMT value is slightly above the tolerance limit. The measurement model still shows acceptable discriminant validity, and can be used for structural model analysis without serious risk of multicollinearity. These findings also open up opportunities for further research, for example by using a *second-order construct* approach or adding new indicators to strengthen the separation of concepts.

Evaluation of Structural Models (*Inner Model*)

The evaluation of the inner model includes *r-square*, *f-square*, *goodness of fit*, and *path coefficients* and their significance.

a. *R-Square* (Coefficient of Determination)

The *r-square value* is used to measure the strength level of the predictive ability of the structural model in PLS-SEM. According to Hair et al. (2021), the *r-square* value is categorized as strong if it is above 0.67, moderate if it is in the range of 0.33–0.67, and weak if it is below 0.33. Thus, the higher the *r-square value* indicates the greater the proportion of endogenous construct variation that can be explained by exogenous constructs within the research model.

Table 8. Value of the determination coefficient (R-Square)

Variable endogenous	R-Square	R-Square Adj	Category
<i>Complaint Handling Satis-faction</i> (CHS)	0,704	0,702	Strong
<i>Perceived Justice</i> (PJ)	0,601	0,599	Strong
<i>Word of Mouth</i> (WOM)	0,508	0,501	Medium

In the CHS variable, the *r-square* value was 0.704 and the *r-square adjusted* value was 0.702. This shows that 70.4% of CHS variations can be explained by the SRP and PJ variables, while the remaining 29.6% are influenced by other factors outside the study model. Thus, the predictive ability of the model on CHS variables is included in the strong category, which means that exogenous variables have a substantive influence in explaining changes in CHS.

Furthermore, the PJ variable has an *r-square* value of 0.601 and an *adjusted r-square value* of 0.599. This means that PJ can be explained by 60.1% by the SRP variable, while 39.9% is influenced by other factors outside the model. This value is in the strong category, so it can be concluded that SRP has a significant contribution in shaping the perception of fairness of respondents regarding the service recovery process.

Meanwhile, the WOM variable has an *r-square* value of 0.508 and an *adjusted r-square* of 0.501. Thus, 50.8% of WOM variability can be explained by the influence of

CHS, PJ, and SRP, while 49.2% is determined by other constructs that have not been included in the research model. This value is in the medium category, which means that even though the model has good predictive capabilities, there is still room for development through the addition of other exogenous variables such as general customer satisfaction, trust, and customer loyalty.

Overall, *the r-square* value of the three endogenous variables shows that the constructed structural model has good predictive capabilities, so it can be trusted as the basis for testing the relationship between variables in this study.

b. F-Square (Value of Effect Size)

The effect size (*f-square*) is used to determine the contribution of each predictor variable to the endogenous variable in the structural model. According to Hair et al. (2021), the *value of f-square* is interpreted with three categories, namely 0.02 = small, 0.15 = medium, and 0.35 = large, which shows the strength of the influence of predictor constructs on endogenous variables. The larger *value of f-square* indicates that the construct makes an important contribution in explaining the predicted variation of the construct.

Table 9. The value of the determination effect measure (F-Square)

Variable Predictor	CHS	PJ	SRP	WOM
Complaint Handling Satisfaction (CHS)	–	–	–	0,029
Perceived Justice (PJ)	0,093	–	–	0,043
Service Recovery Performance (SRP)	0,518	1,507	–	0,051
Word of Mouth (WOM)	–	–	–	–

Based on the table above, it can be seen that SRP has the largest *effect size* on the PJ construct with a value of *f-square* = 1.507, which indicates a very large category. This means that the quality of service recovery contributes significantly to explaining the variation in customers' perceptions of fairness towards the services received. This supports the argument that fair, transparent, and responsive treatment in service restoration will shape customers' perceptions of *fairness* in the complaint handling process. For the influence of SRP on CHS it also shows the value *f-square* = 0.518, which belongs to the large category. These findings indicate that the success of organizations in restoring services is a dominant factor in increasing customer satisfaction over handling complaints.

The effect of PJ on CHS has a value of *f-square* = 0.093, which belongs to the small to close to medium category. This illustrates that the perception of fairness remains important in shaping customer satisfaction, although its contribution is not as great as the effect provided by SRP. Meanwhile, the effect of CHS on WOM shows a value of *f-square* = 0.029, and the effect of PJ on WOM is 0.043, both of which are in the small category. This means that while complaint handling satisfaction and the perception of fairness still contribute to encouraging positive customer communication behavior, the strength is relatively weak. This may indicate that customers in the context of public institutions prioritize the successful aspect of service restoration rather than

the emotional aspect of satisfaction when deciding to deliver recommendations or WOMs in their communities. The effect of SRP on WOM shows a value of *f-square* = 0.0515, which is also in the subcategory, thus confirming that WOM is more influenced by the overall service experience than a single component in the recovery process.

c. Goodness of Fit

Goodness of Fit (GoF) is a comprehensive measure developed to assess the overall suitability of models in the PLS-SEM approach. GoF combines two main components, namely the convergent validity of the measurement model (*outer model*) through the AVE value and the predictive power of the structural model (*inner model*) through the *r-square* value. Thus, GoF provides a comprehensive overview of the extent to which the built model is able to explain research phenomena empirically and theoretically. A high GoF value indicates that the model has a combination of good measurement quality and strong structural relationships between latent variables.

In this study, the GoF value was calculated using the formula proposed by Tenenhaus et al. (2005), namely:

$$GoF = \sqrt{\overline{AVE} \times \overline{R^2}}$$

Description:

\overline{AVE} = average value *Average Variance Extracted* the whole construct

$\overline{R^2}$ = average value *R-square* of endogenous variables

Based on the calculation results, the average AVE value is 0.675 and the average *r-square* is 0.604, so that a GoF value of 0.639 is obtained. In terms of criteria, the GoF value of 0.10 is categorized as small, 0.25 medium, and 0.36 large. Therefore, a GoF value of 0.603 falls into the large category, which indicates that this research model has a high level of global suitability. This means that the model not only explains the relationships between constructs strongly, but also has good internal consistency between the measurement of the indicator and the latent variables it represents.

These findings suggest that the research model has a good *overall fit* and is feasible to use to explain the empirical phenomenon being studied. The high GoF value indicates that the proposed model is able to capture data variability well and support the fit between theory and empirical results. Thus, the combination of adequate AVE values and strong *r-squares* confirms that the constructs used have high validity and reliability, while the relationships between the latent variables are structurally descriptive. Overall, the results of this GoF strengthen the validity of the model as a solid conceptual representation in testing the relationship between *service recovery performance*, *perceived justice*, *complaint handling satisfaction*, and *word of mouth*.

d. Path Coefficients

The results of hypothesis testing were carried out to determine the causal relationship between variables in the structural model using the PLS-SEM approach through SmartPLS software. Tests were conducted on eight hypotheses that described *direct* and *indirect effects* between SRP, PJ, CHS, and WOM. The interpretation of the results of the *path coefficient analysis* aims to explain the direction of the relationship,

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the strength of influence, and the level of significance of the influence between constructs, as well as to test the empirical support for the theory used in the development of the research model.

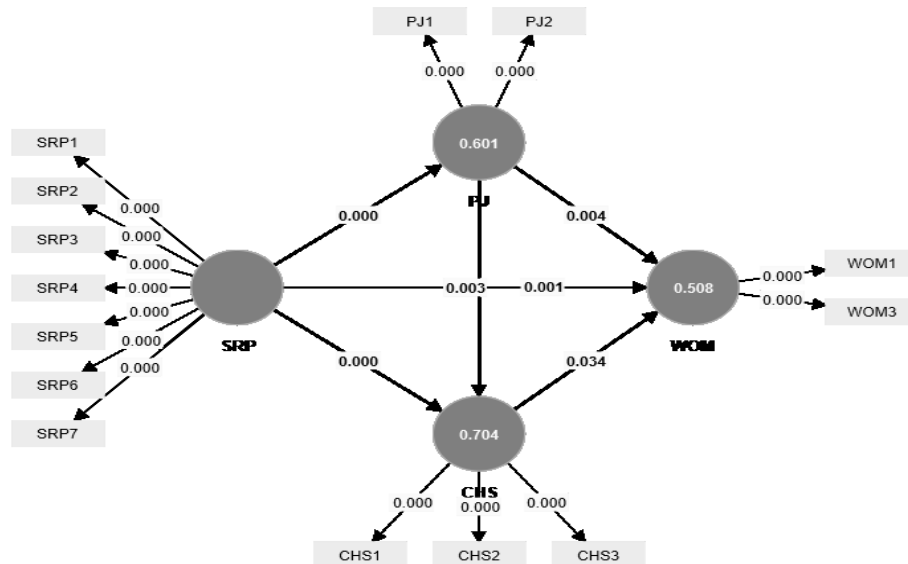


Figure 1. SmartPLS processing results, 2025

The interpretation of the results of this test aims to explain the direction, strength, and significance of the relationship between variables, as well as assess the extent to which empirical findings support the theories that are the basis of the research. Thus, the following discussion provides an in-depth understanding of the dynamics of the influence of service restoration on the perception of justice, satisfaction with handling complaints, and communication behavior of participants in public institutions providing employment social security.

The results of the structural model analysis showed that *service recovery performance* (SRP) had a positive and significant effect on *perceived justice* (PJ), *complaint handling satisfaction* (CHS), and *word of mouth* (WOM). These findings reinforce the theory that effective service recovery plays an important role in maintaining customer satisfaction and loyalty (Davidow, 2000; Liao, 2007). In the context of BPJS Ketenagakerjaan, this finding confirms that the effectiveness of handling complaints on digital channels, especially Instagram, is the main key in shaping participants' experiences and perceptions of public institutions.

The relationship between SRP and WOM was shown to be significant with a path coefficient value of 0.310 (p -value = 0.003). This shows that the better the performance of BPJS Ketenagakerjaan in handling participant complaints, the higher the tendency of participants to convey positive experiences to others, both directly and through social media. In public institutions, WOM has a strategic significance because it can strengthen the reputation and legitimacy of institutions in the digital space (Istanbulluoglu & Sakman, 2024). The quick and solutive response from social media admins has proven to be an important stimulus in shaping positive public perception.

In addition, SRP has a significant effect on PJ with a path coefficient of 0.775 (p-value = 0.000). These results show that speed, accuracy, and empathy in responding to participants' complaints are the main factors in the formation of a perception of justice. Participants who feel that they have been openly explained, responded to politely, and treated equally will consider the service process to be fair. This is in line with the concepts of *distributive*, *procedural*, and *interactional justice* (Tax et al., 1998), which explain that perceived justice comes not only from the end result but also from the process and way of interaction.

The test results also showed that SRP had a positive and significant influence on CHS (coefficient 0.620; p-value = 0.000). These findings support the results of Trilakshmi et al.'s (2021) research which confirms that the quality of complaint handling determines the level of customer satisfaction. Satisfaction is not only influenced by the end result, but also by the experience of interaction during the recovery process (Andreassen, 2000). This shows that fast, friendly, and informative handling of complaints plays an important role in increasing participants' satisfaction with the institution. CHS also contributes to WOM (coefficient 0.218; p-value 0.034), although its effect is relatively lower than that of PJ. This is consistent with the comments of some respondents, who consider satisfaction with the resolution of complaints as an obligation of the institution, so that it does not always encourage them to actively recommend the institution to others.

Some respondents said they were satisfied that their complaints were responded to quickly and the problem resolved, but they considered it an institutional obligation, not something extraordinary. This shows that satisfaction is felt as part of the expectation of public service, not as a privileged experience that deserves to be shared with others. On the contrary, the perception of justice turns out to give rise to a stronger emotional reaction than mere satisfaction. Some participants stated that although they initially felt disappointed due to the delay in service, the polite explanation, accompanied by an apology and commitment to completion from BPJS Ketenagakerjaan, made them feel appreciated and treated fairly. This sense of justice encourages participants to submit positive comments or uploads that show appreciation for the institution's services. These findings show that procedural and interactional fairness have a significant role in transforming negative perceptions into positive support.

Furthermore, the path analysis showed that PJ had a positive effect on WOM with a coefficient of 0.242 and a p-value of 0.004. Participants who felt fairness in resolving complaints were more likely to share positive experiences, both through informal communication and social media. The interview findings support this, where respondents state that when they are treated fairly and claims settlement procedures are clear, they voluntarily recommend BPJS Ketenagakerjaan services to colleagues or family. These results confirm that PJ is an important mediation pathway, strengthening the relationship between SRP and the participants' advocacy behavior.

Mediation analysis showed that PJ significantly mediated the relationship between SRP and WOM (coefficient 0.187; p-value 0.005), while mediation through CHS was insignificant (p-value 0.054). The analysis of the dual mediating pathways of SRP → PJ → CHS → WOM was also insignificant (coefficient 0.044; p-value 0.061), confirming that the main influence on WOM still comes from the perception of justice. These findings emphasize that strategies to improve participant advocacy should focus on procedural fairness, process transparency,

and empathetic communication, rather than relying solely on participants' cognitive satisfaction with claims settlement outcomes.

This phenomenon is also in line with BPJS Ketenagakerjaan's *customer satisfaction index* (CSI) and *net promoter score* (NPS) data for the 2018-2023 period. The consistently high CSI score, even reaching 95.50% in 2019, shows the satisfaction of participants with procedural aspects and service results. However, the fluctuation in NPS values that fell to 29.31% in 2020 indicates that administrative satisfaction is not always followed by increased loyalty or positive recommendations. This illustrates the gap between cognitive satisfaction and emotional loyalty.

In the context of public institutions, WOM has an important social function as a form of public legitimacy. When participants feel that there is justice in the service, they are more likely to participate in creating a positive narrative about the institution. Process transparency, willingness to apologize, and empathy in communication have been proven to build a perception of justice and strengthen *the emotional connection* between institutions and participants.

Some participants also assessed that real forms of responsibility, such as explanations of the causes of the delay, concrete follow-ups, and politely delivered apologies, were the main reasons they turned negative perceptions into positive support. This means that interactional justice shown through an empathetic attitude and open communication plays a big role in fostering the intention to share positive experiences (*positive WOM*).

These findings confirm that in public institutions, service justice has a stronger social and moral dimension than just administrative satisfaction. Participants not only assess the final outcome of the service, but also how they are treated during the process. Therefore, the strategy of increasing public trust should not only focus on procedural efficiency, but also on the quality of human interaction that fosters a sense of respect and fairness.

The consistency between structural model results, CSI–NPS data, and interview findings reinforces the view that cognitive satisfaction does not necessarily drive advocacy behavior. On the contrary, the perceived perception of justice creates a deeper emotional bond, so that it is able to turn negative experiences into positive narratives. These findings support the view of Río-Lanza et al. (2009) that the perception of fairness and customer emotions have more influence on *customer advocacy* than rational satisfaction alone.

Thus, the strategy to increase positive WOM in public institutions such as BPJS Ketenagakerjaan needs to be focused not only on achieving administrative satisfaction, but also on the formation of *service fairness* which includes transparency, empathy, and responsibility in every process of handling participant complaints.

CONCLUSION

This study was conducted to understand the characteristics of BPJS Ketenagakerjaan participants who submitted complaints via Instagram and analyze the influence of service recovery performance on perceived justice, complaint handling satisfaction, and word of mouth in the context of social media-based public services. In addition, this study aims to examine the role of perceived justice and complaint handling satisfaction as mediation

variables and formulate complaint handling strategies that can encourage the formation of positive word of mouth. Based on the results of the research, several conclusions were obtained as follows:

This study shows that BPJS Ketenagakerjaan participants who submit complaints through Instagram are dominated by women, young productive age (18–39 years old), medium to high education, and have medium incomes. This profile reflects a group of users who are digitally active, tech-savvy, and have high expectations for the quality of online services. Service recovery performance has a significant effect on perceived justice, complaint handling satisfaction, and word of mouth. This emphasizes that the quality of handling complaints on social media is the main determinant of the formation of participants' perceptions and responses. Perceived justice has been shown to be a significant mediator in the relationship between service recovery performance and word of mouth, showing that perceptions of justice—both distributive, procedural, and interactional—are the main factors that drive participants to make positive recommendations. Meanwhile, complaint handling satisfaction does not play a significant mediator, although it still has a direct influence on word of mouth. These findings confirm that in the context of digital public services, the perception of justice has a more dominant role than the satisfaction of resolving complaints in shaping participants' word of mouth. The strategic implications show that strengthening apology, explanation, response speed, compensation, attentiveness, problem solving, and level of handler are the keys to improving perceived justice and WOM of participants.

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