Understanding Continuance Intention toward Indonesia's National Health Insurance Mobile Application (Mobile JKN): Integrating Innovation Resistance and UTAUT Perspectives

Arif Hartono

Universitas Islam Indonesia, Yogyakarta, Indonesia

* Corresponding author: arif.hartono@uii.ac.id

Abstract: Digital transformation in public healthcare has accelerated the development of mobile service platforms designed to enhance accessibility, efficiency, and transparency. In Indonesia, Mobile JKN was introduced as a national digital innovation to support the National Health Insurance system. Despite extensive population coverage, active application usage remains substantially lower than total membership, indicating challenges in sustaining digital engagement. This study examines the determinants of continuance intention and its impact on word-of-mouth (WOM) and intention to recommend among Mobile JKN users. Drawing on Innovation Resistance Theory (IRT) and selected UTAUT constructs, this study proposes a hybrid framework incorporating usage barriers, value barriers, traditional barriers, performance expectancy, effort expectancy, social influence, and facilitating conditions as predictors of continuance intention. Continuance intention, the user's intention to continue using a service or product, is modeled as a mediator that influences word-of-mouth (WOM) and recommendation behavior. Using a quantitative causal-explanatory design and Partial Least Squares Structural Equation Modeling, the findings indicate that value and traditional barriers significantly reduce continuance intention, while enabling factors enhance sustained usage. Continuance intention positively influences WOM and intention to recommend. This study extends IRT into digital public healthcare contexts and provides strategic insights for policymakers seeking to enhance digital service retention and citizen advocacy.

Keywords: IRT; UTAUT; Continuance Intention; Mobile JKN; Intention to Recommend

INTRODUCTION

Digital transformation has significantly reshaped service delivery in both private and public sectors, including healthcare, where mobile technologies enhance efficiency, transparency, and citizen engagement (Raimo et al., 2022; Iyanna et al., 2022). However, the sustainability of digital public services depends not only on initial adoption but also on users' willingness to continue using them.

Indonesia provides relevant context through Mobile JKN, a national digital health application developed by BPJS Kesehatan to support the National Health Insurance (JKN) program. Although JKN covers approximately 267 million citizens, active Mobile JKN users remain around 21 million (Wulandari et al., 2024). This gap indicates that large-scale implementation does not automatically ensure sustained digital engagement.

Although prior studies have examined Mobile JKN and similar m-health platforms in

Indonesia, most existing research has focused on system quality, service effectiveness, and user satisfaction (Khusna et al., 2021; Hakim et al., 2024; Rizqulloh et al., 2023). While these studies offer substantial information about adoption and implementation outcomes, they primarily focus on service performance and organizational effectiveness rather than post-adoption behavioral mechanisms. Specifically, limited attention has been paid to continuance intention and its behavioral consequences, such as word-of-mouth (WOM) and intention to recommend.

Moreover, despite the widespread application of Innovation Resistance Theory (IRT) in digital services and e-health research (Kaur et al., 2020; Ray et al., 2022; Santos & Ponchio, 2021; Nel & Boshoff, 2020), its integration into the context of large-scale public digital healthcare systems such as Mobile JKN remains underexplored. Prior IRT-based studies have demonstrated that functional barriers (usage, value) and psychological barriers (tradition, image) significantly influence resistance and discontinuance behavior (Jin et al., 2022; Chen et al., 2022; Talwar et al., 2021). However, empirical examination of these barriers within Indonesia's digital ecosystem for national health insurance remains limited.

Furthermore, previous Mobile JKN research has not comprehensively examined the mediating role of continuance intention in the relationship between innovation resistance and user advocacy outcomes. Continuance intention has been shown to be a critical determinant of positive WOM and recommendation behaviors in digital services (Nasir, 2021; Nguyen et al., 2022; Jo, 2023; Hameed, 2024; Gupta et al., 2020), yet this mechanism has not been tested within the Mobile JKN context.

Given the significant gap between total JKN membership (approximately 267 million citizens) and active Mobile JKN users (around 21 million) (Wulandari et al., 2024), understanding resistance-driven continuance behavior and its impact on advocacy is theoretically and practically essential. Therefore, this study addresses the gap by integrating Innovation Resistance Theory and UTAUT constructs to explain continuance intention and its influence on WOM and the intention to recommend on a national digital healthcare platform.

This study contributes to the literature in several important ways. First, it extends Innovation Resistance Theory (IRT) into the domain of digital public healthcare services. While IRT has been widely applied in fintech, mobile payments, and digital commerce (Kaur et al., 2020; Ray et al., 2022; Migliore et al., 2022; Kautish et al., 2023), its empirical application in large-scale public health platforms remains limited. By validating usage, value, and traditional barriers within Mobile JKN, this study confirms the explanatory power of IRT in a quasi-mandatory public service context (Spinelli et al., 2024; Jin et al., 2022).

Second, this research advances post-adoption theory by emphasizing continuance intention as a mediating construct. Prior studies have demonstrated that continuance intention is shaped by satisfaction, perceived value, and trust (Kaur et al., 2020; Kwangsawad & Jattamart, 2022; Bergman & Macada, 2023). However, limited research has positioned continuance intention as a mediator between innovation resistance and advocacy behavior in digital public services.

Third, by integrating IRT with constructs from the Unified Theory of Acceptance and Use of Technology (UTAUT) (performance expectancy, effort expectancy, social influence, facilitating conditions), this study proposes a hybrid framework that captures both inhibitory and enabling forces in technology continuance behavior (Talwar et al., 2020; Kaur et al., 2020; Ray et al., 2022). This integration contributes to a more balanced understanding of the

sustainability of digital services.

Finally, this study contributes to digital public transformation literature (Raimo et al., 2022; Iyanna et al., 2022) by linking continuance intention to WOM and intention to recommend, thereby extending marketing advocacy concepts (Donthu et al., 2021; Gupta et al., 2020; Wang et al., 2023) into public healthcare ecosystems.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Innovation Resistance Theory (IRT)

Innovation Resistance Theory (IRT), developed by Ram and Sheth (1989), explains why consumers resist innovations despite their potential benefits. Unlike traditional adoption theories that emphasize acceptance, IRT focuses on the psychological and functional barriers that inhibit users from embracing or continuing to use new technologies (Spinelli et al., 2024). Resistance is viewed as a rational response resulting from users' evaluation of whether an innovation disrupts existing habits, values, or routines (Chen et al., 2022).

IRT categorizes resistance into functional barriers and psychological barriers. Functional barriers include usage and value barriers, whereas psychological barriers include tradition and image barriers (Jin et al., 2022). In digital public services such as Mobile JKN, resistance may emerge when users perceive applications as complex, less beneficial than expected, or inconsistent with established service habits.

Previous studies have indicated that resistance to innovation significantly affects post-adoption behavior in digital services and e-health contexts (Kaur et al., 2020; Ray et al., 2022). High resistance reduces user satisfaction and discourages continued system use, ultimately weakening advocacy behaviors such as recommendations and positive word-of-mouth (Kwangsawad & Jattamart, 2022).

Usage Barrier and Continuance Intention

Usage barrier refers to perceived difficulties arising when an innovation is incompatible with users' routines, skills, or technological familiarity (Chen & Chang, 2022). When digital platforms are perceived as complex or difficult to operate, users experience cognitive burden and discomfort, leading to reduced willingness to continue usage. Continuance intention represents a user's intention to maintain technology usage after initial adoption, shaped by perceived ease, satisfaction, and trust (Bergman & Macada, 2023). Empirical research shows that technological complexity and low usability significantly reduce continuance intention on digital platforms (Kaur et al., 2020; Ray et al., 2022; Sadiq, 2021). In the Mobile JKN context, usability challenges and navigation difficulties may discourage sustained engagement. Therefore:

H1: Usage barrier negatively affects continuance intention.

Value Barrier and Continuance Intention

A value barrier arises when users perceive that the benefits of an innovation do not justify the effort, cost, or behavioral change required (Migliore et al., 2022; Kautish et al., 2023). Users evaluate whether digital services deliver efficiency, convenience, or improved outcomes

compared with traditional alternatives. Studies consistently show that perceived low value reduces users' motivation to continue using digital services (Ray et al., 2022). When users fail to recognize meaningful advantages, continuance intention declines despite initial adoption. Within Mobile JKN, a perceived lack of service effectiveness or limited added value may weaken long-term engagement. Hence:
H2: The value barrier negatively affects the intention to continue.

Traditional Barriers and Continuance Intention

Traditional barriers represent psychological resistance arising from attachment to established habits, cultural norms, or familiar service processes (Chen et al., 2022). Users often prefer conventional face-to-face services because they are perceived as more reliable or trustworthy. Research indicates that strong dependence on traditional practices significantly lowers continuance intention toward digital innovations (Himel, 2021; Sadiq, 2021). When innovation disrupts existing behavioral routines, users tend to revert to familiar systems. In public healthcare services, many users still prefer offline administrative procedures, reflecting persistent traditional resistance toward digital platforms. Therefore:
H3: Tradition barrier negatively affects continuance intention.

Performance Expectancy and Continuance Intention

Performance expectancy refers to the degree to which individuals believe that using a technology will help them achieve gains in task performance or improve efficiency (Venkatesh et al., 2003). In digital service contexts, performance expectancy reflects users' perceptions that a system enhances productivity, convenience, and service effectiveness.

Prior studies consistently demonstrate that performance expectancy is one of the strongest predictors of technology usage and post-adoption behavior. When users perceive that digital platforms provide clear functional benefits, such as faster service access, improved information availability, and reduced administrative effort, they are more likely to continue using the system (Talwar et al., 2020; Kaur et al., 2020). In mobile health applications, perceived usefulness strengthens satisfaction and reinforces users' commitment to sustained usage (Bergman & Macada, 2023).

Within the Mobile JKN context, features such as digital membership cards, online consultations, and administrative automation are expected to enhance the efficiency of healthcare services, thereby encouraging continued use. Therefore, higher perceived performance benefits should increase users' intention to continue using the application.
H4: Performance expectancy positively affects continuance intention.

Effort Expectancy and Continuance Intention

Effort expectancy refers to the degree of ease associated with using a technology (Venkatesh et al., 2003). Technologies perceived as easy to learn and operate reduce cognitive effort and increase user comfort, which strengthens continued engagement. Empirical studies indicate that ease of use significantly influences continuance intention, particularly in mobile applications and digital public services (Talwar et al., 2020; Ray et al., 2022). When users experience intuitive interfaces and simple navigation, they develop positive usage experiences that encourage long-term adoption (Kwangsawad & Jattamart, 2022). Conversely, complicated systems increase frustration and reduce sustained usage behavior. In Mobile JKN, usability and

navigation simplicity are essential because users vary widely in digital literacy. Thus, perceived ease of use is expected to reinforce users' willingness to continue using the application.
H5: Effort expectancy positively affects continuance intention.

Social Influence and Continuance Intention

Social influence refers to the extent to which individuals perceive that important others believe they should use a particular technology (Venkatesh et al., 2003). In digital ecosystems, recommendations from peers, family members, and social networks significantly shape technology usage decisions. Research shows that social influence positively affects continued technology use because users tend to conform to social expectations and rely on trusted opinions when evaluating digital services (Kaur et al., 2020; Nguyen et al., 2022). Positive experiences shared by others reduce uncertainty and strengthen confidence in continued usage. In public digital services such as Mobile JKN, social encouragement from family, colleagues, and healthcare communities may reinforce continued engagement, especially when users observe widespread adoption within their social environment.
H6: Social influence positively affects continuance intention.

Facilitating Conditions and Continuance Intention

Facilitating conditions refer to users' perceptions that organizational and technical infrastructure exist to support technology use (Venkatesh et al., 2003). These include system availability, technical assistance, internet access, and user support services. Studies indicate that facilitating conditions significantly influence continuance intention by reducing operational barriers and increasing perceived control over technology usage (Talwar et al., 2020; Ray et al., 2022). When users believe adequate support and resources are available, they feel more confident in maintaining usage behavior. In the Mobile JKN ecosystem, factors such as reliable system performance, accessible customer support, and stable digital infrastructure are crucial to sustaining usage across diverse geographic regions in Indonesia. Hence:
H7: Facilitating conditions positively affect continuance intention.

Continuance Intention and Word of Mouth

Word of mouth (WOM) refers to informal communication among users regarding their experiences with a product or service (Donthu et al., 2021). In digital environments, WOM plays a critical role in shaping public perception and influencing adoption decisions. Users with strong continuance intention typically experience satisfaction and trust, which motivate them to share positive experiences (Nasir, 2021; Jo, 2023). Empirical studies confirm that sustained usage significantly increases positive WOM behavior (Nguyen et al., 2022; Hameed, 2024). Since Mobile JKN depends on public trust and voluntary promotion, the intention to continue using the service is a key driver of positive communication behavior. Therefore: H8: Continuance intention positively affects word of mouth.

Continuance Intention and Intention to Recommend

Intention to recommend reflects users' willingness to advocate a service to others based on accumulated positive experiences (Wang et al., 2023). In relationship marketing theory,

continued usage strengthens emotional attachment and loyalty, which, in turn, promotes recommendation behavior. Prior research demonstrates that users who intend to continue using a service are more likely to recommend it to others (Octavius, 2021; Barata, 2021; Ferreira, 2023). Positive long-term experiences reinforce confidence in service quality and encourage voluntary advocacy (Gupta et al., 2020). In digital public services, recommendation intention contributes to broader adoption through social influence mechanisms. Hence:
H9: Continuance intention positively affects intention to recommend.

The Proposed Research Model

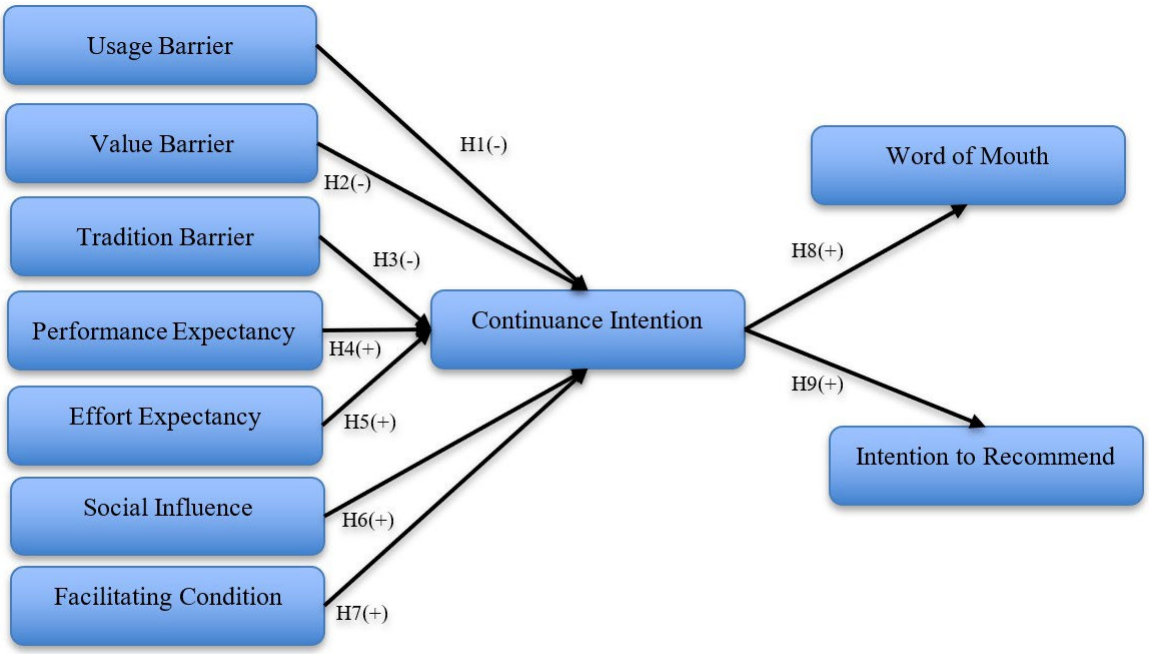

Diagram 1. The Proposed Research Model

RESEARCH METHODOLOGY

Research Design and Approach

This study adopts a quantitative, causal-explanatory research design to examine the structural relationships between innovation resistance factors (usage barrier, value barrier, and tradition barrier), technology acceptance factors (performance expectancy, effort expectancy, social influence, and facilitating conditions), continuance intention, word of mouth, and intention to recommend in the context of Mobile JKN. A quantitative approach is appropriate because the study aims to test theoretically grounded hypotheses and evaluate causal relationships among

latent constructs using statistical modeling. The study is cross-sectional in nature, meaning it analyzes data collected at a single point in time, from users of Mobile JKN, which is a health insurance program, across Indonesia. The conceptual framework integrates Innovation Resistance Theory (IRT) and selected constructs from the Unified Theory of Acceptance and Use of Technology (UTAUT) to explain post-adoption behavior in digital public healthcare services.

Population and Sampling Technique

The target population consists of Indonesian citizens who have used or are currently using the Mobile JKN application to access services related to the National Health Insurance (JKN) program. Mobile JKN is implemented nationally; therefore, the population is geographically dispersed across Indonesia. The study employs non-probability sampling, specifically convenience sampling, due to:

1. The large and dispersed user base of Mobile JKN,
2. The online nature of data collection,
3. The exploratory-predictive objective of the study.

Respondents were selected based on the following criteria:

- Indonesian citizen
- Aged 17 years or older
- Has used Mobile JKN at least once
- Willing to participate voluntarily

Following Hair et al. (2021), PLS-SEM requires a minimum sample size of:

- 10 times the maximum number of structural paths directed at a construct, or
- 5–10 times the number of indicators.

Given the model's complexity and the number of indicators, the recommended minimum sample size is 150–250 respondents to ensure adequate statistical power and model stability.

Data Collection Procedure

Primary data were collected using a self-administered online questionnaire developed via Google Forms. The survey link was distributed through WhatsApp, Instagram, Telegram, and online community groups.
The data collection process followed these steps:

- Questionnaire development based on validated prior scales
- Content validity review by academic experts
- Pilot testing ($n \approx 30–50$ users) to ensure clarity and reliability
- Revision based on pilot feedback
- Nationwide online distribution

Participation was voluntary, anonymous, and confidential. We informed the respondents about the purpose of the research, data confidentiality, the academic use of the results, and the ethical

considerations maintained throughout the study.

Measurement and Instrument

All constructs were measured using multi-item scales adapted from prior validated studies and adjusted to the Mobile JKN context. A six-point Likert scale (1 = strongly disagree to 6 = strongly agree) was used to eliminate neutral responses and encourage directional responses. Regarding the constructs, the following list includes each construct along with its corresponding source: Usage Barrier (Kaur et al., 2020); Value Barrier (Ray et al., 2022); Traditional Barrier (Kaur et al., 2020); Performance Expectancy (Venkatesh et al., 2003; Talwar et al., 2020); Effort Expectancy, Social Influence, Facilitating Conditions (Venkatesh et al., 2003); Continuance Intention (Pham et al., 2024); Word of Mouth (Viralta et al., 2023); and Intention to Recommend (Gupta et al., 2020).

The measurement model was evaluated through:

- Factor loadings (> 0.70 preferred; > 0.50 acceptable)
- Composite Reliability (CR ≥ 0.70)
- Cronbach's Alpha (≥ 0.70)
- Average Variance Extracted (AVE ≥ 0.50)
- Discriminant validity using HTMT criterion (< 0.90)

Data Analysis Technique

The collected data will be analyzed using SPSS 26.0 for descriptive statistics and SmartPLS 4.0 for hypothesis testing via SEM–PLS. The analysis process will involve:

1. Assessment of measurement model: reliability (Cronbach's Alpha, Composite Reliability), convergent validity (AVE), and discriminant validity (Fornell-Larcker and HTMT).
2. Assessment of structural model: path coefficients, R^2, Q^2, and predictive relevance.
3. Mediation testing will be performed using bootstrapping to assess the indirect effects of perceived trust on the relationship between predictors and purchase intention.

RESULTS

Respondent Profile

Table 1 presents the demographic characteristics of the 200 respondents who participated in this study. Overall, the sample reflects a relatively balanced gender distribution, diverse socio-economic backgrounds, and varied usage patterns of the Mobile JKN application.

Table 1: Respondent Demographic (200 respondents)

Category		Freq.	%
Gender	Male	89	44.50
	Female	111	45.50
Age (Years)	17 – 22	13	6.5
	23 – 28	54	27
	29 – 33	68	34
	34 – 39	22	11
	> 40	43	21.50
Origin	Yogyakarta	151	75.50
	Bandung	17	8.50
	Jakarta	10	5.00
	Surabaya	8	4.00
	Semarang	7	3.50
	Medan	2	1.00
	Surakarta	2	1.00
	Magelang	1	0.50
	Wonosobo	1	0.50
	Purwakarta	1	0.50
Education	Junior school	0	0
	High school	55	27.50
	Diploma/Bachelor	118	59.00
	Master	25	12.50
	Doctor	2	1.00

Category		Freq.	%
Monthly Income	< 3	38	19
(IDR millions)	4 – 9	138	69
	10 – 15	16	8
	> 15	8	4
Reason for Using The JKN App	Online Registration	38	19
	Members' profile adjustment	33	16.50
	Regular payment	41	20.50
	Health providers locator	28	14.00
	Online consultation	11	5.50
	Membership checking	49	24.50
Frequency for Using The JKN App	1 – 3 per week	146	73.00
	4 – 6 per week	43	21.50
	7 – 9 per week	11	5.50
Occupation	Private Sector	69	34.50
	Students	35	17.50
	Enterpreneur	35	17.50
	Civil Servant	39	19.50
	Doctor	1	0.50
	Housewife	20	10.00
	Retirement	1	0.50

The sample consists of 111 female respondents (55.5%) and 89 male respondents (44.5%), indicating a slightly higher representation of female users. This suggests that female users may actively engage with Mobile JKN services, possibly due to their role in managing family health needs. This finding aligns with prior studies showing that women tend to be more involved in healthcare decision-making and digital health usage. Regarding age, most respondents fall within the productive age groups, particularly 29–33 years (34%) and 23–28 years (27%). This indicates that Mobile JKN is predominantly used by young and middle-aged adults, who are generally more familiar with digital technologies. Meanwhile, respondents aged over 40 years account for 21.5%, suggesting that older users remain underrepresented, likely due to lower digital literacy or a

preference for conventional services. In terms of education, most respondents possess relatively high educational attainment: a diploma/bachelor's degree (59%) and a master's degree (12.5%). This suggests that Mobile JKN adoption is higher among well-educated individuals, who are better able to navigate digital applications. Lower participation among less-educated groups may indicate a digital divide, which could contribute to resistance to innovation, particularly due to barriers to use and effort.

The majority of respondents are from Yogyakarta (75.5%), followed by smaller proportions from Bandung, Jakarta, and other cities. This concentration indicates that the sample is regionally skewed, which should be considered when generalizing the findings. However, Yogyakarta is known for its relatively high levels of digital literacy and education, making it an appropriate context for studying the adoption of digital public services. In terms of income level, most respondents fall within the middle-income category (IDR 4–9 million: 69%), followed by low-income (< IDR 3 million: 19%) and higher-income (> IDR 10 million: 12%). This suggests that Mobile JKN is widely used among middle-class users, who are typically more active in using digital services. Income level may also influence perceived value and facilitating conditions, which are important constructs in this study. In terms of respondents' occupations, they come from diverse backgrounds: private-sector employees (34.50%), students (17.50%), entrepreneurs (17.50%), and civil servants (19.50%). This diversity indicates that Mobile JKN usage spans multiple professional groups, reflecting its role as a national public service platform. However, the dominance of private-sector employees suggests greater adoption among economically active individuals.

Lastly, the table displays mobile JKN usage behavior, including frequency and reasons for use. Most respondents use the application 1–3 times/week (73%), followed by 4–6 times/week (21.50%) and 7–9 times/week (5.50%). This indicates that most respondents use the mobile JKN application only occasionally, suggesting it is primarily used for specific administrative purposes rather than for ongoing interaction. The proportions of reasons for use are as follows: membership checking (24.50%), regular payment (20.50%), online registration (19.00%), and profile adjustment (16.50%). This pattern suggests that Mobile JKN is predominantly used for administrative and transactional functions, while more advanced digital health features remain underutilized.

Outer Model Testing: Validity and Reliability

The validity assessment in this study comprises convergent and discriminant validity, while reliability is evaluated using composite reliability (CR). Convergent validity is established when the average variance extracted (AVE) exceeds the threshold of 0.50, indicating that a construct explains more than half of the variance of its indicators (Hair et al., 2017). Discriminant validity is assessed using the Fornell–Larcker criterion (Fornell & Larcker, 1981), where the square root of AVE for each construct should be greater than its correlations with other constructs. Based on Tables 2 and 3, all constructs meet the required thresholds for validity and reliability, indicating that the measurement model is adequate for further analysis.

Convergent validity and reliability were assessed using factor loadings, average variance extracted (AVE), and composite reliability (CR). The results indicate that all indicator loadings exceed the recommended threshold of 0.70, demonstrating strong indicator reliability. Furthermore, all AVE values exceed 0.50, confirming that each construct explains more than half of the variance in its indicators, thereby satisfying the requirement for convergent validity (Hair et al., 2017). In addition, the CR values for all constructs exceed 0.70, indicating high internal consistency. These findings collectively suggest that the measurement model has adequate convergent validity and reliability, and all constructs are measured consistently and accurately.

Discriminant validity was evaluated using the Fornell–Larcker criterion, which requires that the square root of AVE for each construct be greater than its correlations with other constructs (Fornell & Larcker, 1981). The results show that all diagonal values (square roots of AVEs) exceed the corresponding inter-construct correlations, indicating that each construct is empirically distinct from the others. This confirms that the model does not suffer from multicollinearity or construct overlap issues and that each variable captures a unique concept within the proposed framework. Therefore, the measurement model demonstrates satisfactory discriminant validity.

Table 2 Outer Model Test

Items		Loading	AVE	CR	Means
Factor 1: Continuance Intention (CI)	CI1	0,790	0,692	0,871	4,130
	CI2	0,849			4,020
	CI3	0,855			4,140
Factor 2: Effort Expectancy (EE)	EE1	0,787	0,632	0,873	4,425
	EE2	0,814			4,475
	EE3	0,787			4,480
	EE4	0,793			4,480
Factor 3: Facilitating Conditions (FC)	FC1	0,840	0,687	0,868	4,430
	FC2	0,783			4,435
	FC3	0,862			4,430
Factor 4: Intention to Recommend (ITR)	ITR1	0,875	0,747	0,899	4,255
	ITR2	0,858			4,175
	ITR3	0,860			4,350
Factor 5: Performance Expectancy (PE)	PE1	0,841	0,716	0,883	4,445
	PE2	0,844			4,405
	PE3	0,853			4,430
Factor 6: Social Influence (SI)	SI1	0,850	0,741	0,896	4,340
	SI2	0,849			4,435
	SI3	0,882			4,325
Factor 7: Tradition Barrier (TB)	TB1	0,864	0,787	0,917	4,445
	TB2	0,886			4,385
	TB3	0,911			4,385
Factor 8: Usage Barrier (UB)	UB1	0,886	0,781	0,914	4,480
	UB2	0,861			4,405
	UB3	0,903			4,395
Factor 9: Value Barrier (VB)	VB1	0,912	0,854	0,921	4,420
	VB2	0,936			4,470
Factor 10: Word of Mouth (WOM)	WoM1	0,881	0,818	0,900	4,245

	WoM2	0,927			4,280

Table 3 Discriminant Validity

	Continuance Intention	Effort Expectancy	Facilitating Condition	Intention to Recommend	Performance Expectancy	Social Influence	Tradition Barrier	Usage Barrier	Value Barrier	Word of Mouth
Continuance Intention	**0,832**									
Effort Expectancy	0,403	**0,795**								
Facilitating Condition	0,383	0,362	**0,829**							
Intention to Recommend	0,509	0,478	0,416	**0,864**						
Performance Expectancy	0,345	0,423	0,335	0,418	**0,846**					
Social Influence	0,329	0,288	0,291	0,333	0,303	**0,861**				
Tradition Barrier	0,384	0,438	0,331	0,424	0,392	0,216	**0,887**			
Usage Barrier	0,228	0,236	0,171	0,199	0,244	0,297	0,275	**0,884**		
Value Barrier	0,316	0,325	0,230	0,424	0,210	0,122	0,374	0,115	**0,924**	
Word of Mouth	0,439	0,374	0,386	0,442	0,271	0,229	0,315	0,110	0,328	**0,904**

Inner Model Testing: Structural Model

Based on Table X, the R^2 value for Continuance Intention is 0.310 (Adjusted R^2 = 0.284), indicating a moderate level of explanatory power. This suggests that innovation resistance factors (usage barrier, value barrier, and tradition barrier) together with UTAUT variables (performance expectancy, effort expectancy, social influence, and facilitating conditions), explain approximately 31.0% of the variance in continuance intention. For the intention to recommend, the R^2 value is 0.259 (Adjusted R^2 = 0.256), which falls within the weak-to-moderate range. This indicates that continuance intention explains about 25.9% of the variance in users' intention to recommend Mobile JKN. Similarly, the R^2 value for Word of Mouth is 0.193 (Adjusted R^2 = 0.189), indicating a relatively weak explanatory power, where continuance intention explains 19.3% of the variance in word-of-mouth behavior. Overall, these results indicate that while the model has acceptable explanatory power, there are likely additional factors beyond the current model that influence users' advocacy behaviors.

Table 4. Results of R-Square

	R Square	R Square Adjusted
Continuance Intention	0,310	0,284
Intention to Recommend	0,259	0,256
Word of Mouth	0,193	0,189

The predictive relevance of the model was assessed using the Stone–Geisser Q^2 value, obtained through the blindfolding procedure. A Q^2 value greater than zero indicates that the model has predictive relevance (Hair et al., 2021). As shown in Table 5, all endogenous constructs have Q^2

values greater than zero, specifically continuance intention ($Q^2 = 0.197$), intention to recommend ($Q^2 = 0.186$), and word of mouth ($Q^2 = 0.151$). These values indicate that the model demonstrates adequate predictive relevance for all endogenous variables. According to common guidelines (0.02 = small, 0.15 = medium, 0.35 = large), the Q^2 values suggest that the model has moderate predictive relevance, particularly for continuance intention and intention to recommend.

Table 5. Results of Q-Square

	Q^2
Continuance Intention	0,197
Intention to Recommend	0,186
Word of Mouth	0,151

Figure 1 Inner Model Test

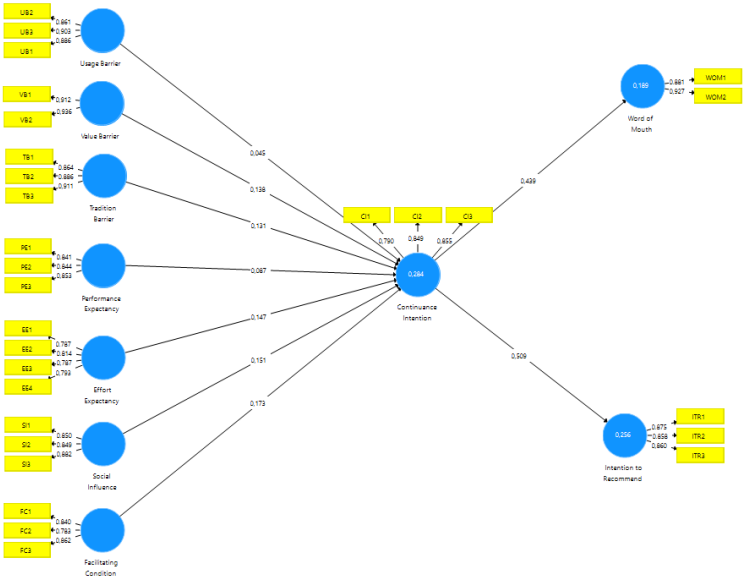

Table 6 presents the results of hypothesis testing using the PLS-SEM approach. The significance of each relationship is evaluated using p-values (< 0.05) and t-statistics (> 1.96 or <- 1.96). The findings indicate that all proposed hypotheses (H1–H9) are supported, demonstrating that both innovation resistance factors and UTAUT variables significantly influence continuance intention, which subsequently drives user advocacy behavior.

Table 6. Results of Hypothesis Testing

	Original Sample (O)	**T Statistics (O/STDEV)**	**P Values**	**Conclusion**
Usage Barrier → Continuance Intention	-0,045	-2,664	0,007	H1 supported
Value Barrier → Continuance Intention	-0,138	-2,052	0,041	H2 supported
Tradition Barrier → Continuance Intention	-0,131	-1,984	0,045	H3 supported
Performance Expectancy → Continuance Intention	0,087	2,094	0,044	H4 supported
Effort Expectancy → Continuance Intention	0,147	1,975	0,049	H5 supported
Social Influence → Continuance Intention	0,151	2,170	0,031	H6 supported
Facilitating Condition → Continuance Intention	0,173	2,802	0,005	H7 supported
Continuance Intention → Word of Mouth	0,439	7,230	0,000	H8 supported
Continuance Intention → Intention to Recommend	0,509	9,929	0,000	H9 supported

The results show that all innovation resistance variables have significant negative effects on

continuance intention:

- Usage Barrier → Continuance Intention (H1) (β = -0.045, p = 0.007) indicates that difficulties in using the Mobile JKN application reduce users' willingness to continue using it.
- Value Barrier → Continuance Intention (H2) (β = -0.138, p = 0.041) suggests that when users perceive low value or insufficient benefits, their continuance intention decreases.
- Tradition Barrier → Continuance Intention (H3) (β = -0.131, p = 0.045) implies that preference for conventional healthcare services negatively affects continued usage.

These findings confirm that innovation resistance plays a critical inhibitory role in sustaining digital public service usage.

All UTAUT variables show positive and significant effects on continuance intention:

- Performance Expectancy → Continuance Intention (H4) (β = 0.087, p = 0.044) indicates that perceived usefulness contributes to continued usage, although its effect is relatively small.
- Effort Expectancy → Continuance Intention (H5) (β = 0.147, p = 0.049) shows that ease of use significantly enhances users' intention to continue using the application.
- Social Influence → Continuance Intention (H6) (β = 0.151, p = 0.031) highlights the importance of social encouragement in shaping continued usage behavior.
- Facilitating Conditions → Continuance Intention (H7) (β = 0.173, p = 0.005) demonstrates the strongest positive influence among UTAUT variables, indicating that system support and infrastructure are crucial for sustaining usage.

Continuance intention significantly influences user advocacy behavior:

- Continuance Intention → Word of Mouth (H8) (β = 0.439, p = 0.000) shows a strong positive effect, indicating that users who continue using Mobile JKN are more likely to share positive experiences.
- Continuance Intention → Intention to Recommend (H9) (β = 0.509, p = 0.000) represents the strongest relationship in the model, suggesting that sustained usage strongly encourages users to recommend the application to others.

Theoretical Implications

This study offers several important theoretical contributions to the literature on digital public services, technology adoption, and post-adoption behavior. First, this research extends Innovation Resistance Theory (IRT) by validating its applicability to digital public healthcare services, particularly Mobile JKN. While prior studies have predominantly applied IRT in commercial settings such as fintech and e-commerce, this study demonstrates that barriers related to usage, value, and tradition remain significant determinants of continuance intention even in a government-supported, quasi-mandatory service environment. This finding reinforces the robustness of IRT and suggests that resistance mechanisms persist regardless of whether a service is public or private.

Second, this study advances the Unified Theory of Acceptance and Use of Technology (UTAUT) by confirming that its core constructs—performance expectancy, effort expectancy, social influence, and facilitating conditions—remain relevant in explaining post-adoption behavior, not only initial acceptance. Notably, facilitating conditions emerge as the strongest predictor among

UTAUT variables, highlighting the importance of system support and infrastructure in sustaining usage. This extends UTAUT's explanatory power from adoption to continuance intention in digital public service contexts.

Third, this study contributes to integrating IRT and UTAUT, offering a dual-perspective framework that simultaneously captures inhibitory (resistance) and enabling (acceptance) mechanisms. This integrated approach provides a more comprehensive understanding of user behavior, addressing a limitation in prior studies that tend to focus exclusively on either barriers or drivers. The findings suggest that continuance intention is shaped by a dynamic interplay between resistance and acceptance factors, rather than a single theoretical perspective.

Fourth, the study strengthens the post-adoption and continuance intention literature by empirically demonstrating that continuance intention functions as a central mediating construct linking antecedents to behavioral outcomes. Specifically, continuance intention significantly influences both word-of-mouth and intention to recommend, confirming its role as a key mechanism by which user experience translates into advocacy behavior. This extends prior research by positioning continuance intention not only as an outcome variable but also as a predictor of downstream behavioral consequences.

Finally, this study contributes to the emerging literature on digital public service sustainability by shifting the focus from initial adoption to long-term engagement and citizen advocacy. The relatively moderate R^2 values indicate that while the proposed model captures essential determinants, additional constructs—such as trust, satisfaction, or perceived risk—may further enhance explanatory power. This opens avenues for future research to develop more comprehensive models of digital public service usage.

Managerial Implications

The findings of this study provide several actionable insights for BPJS Kesehatan and policymakers responsible for managing and improving the Mobile JKN application as part of Indonesia's digital public healthcare transformation.

First, the significant negative effects of barriers related to usage, value, and tradition indicate the need to reduce user resistance. From a usability perspective, BPJS Kesehatan should simplify the application interface, improve navigation flow, and provide clearer guidance for key features. Introducing user-friendly tutorials, onboarding assistance, and multilingual support can help reduce perceived complexity, especially for older and less digitally literate users. In addition, efforts should be made to increase perceived value, for example, by enhancing service reliability, reducing system errors, and integrating more personalized healthcare features. Addressing traditional barriers may require behavioral change strategies, such as promoting digital literacy campaigns and encouraging users to shift from offline to online services through targeted communication.

Second, the positive effects of UTAUT variables highlight the importance of strengthening technology enablers. Among these, facilitating conditions emerge as the most influential factor, suggesting that BPJS Kesehatan should prioritize improving technical infrastructure, system stability, and customer support services. Ensuring fast response times, minimal downtime, and accessible help desks will enhance users' confidence in the system. Furthermore, improving effort expectancy through intuitive design and seamless user experience can significantly increase continuance intention.

Third, the role of social influence suggests that BPJS Kesehatan can leverage community-based and social marketing strategies. Encouraging satisfied users to share their experiences, collaborating with healthcare providers, and utilizing influencers or community leaders can

amplify positive perceptions of Mobile JKN. Social campaigns highlighting real user success stories can further strengthen trust and encourage broader adoption.

Fourth, the strong impact of continuance intention on word-of-mouth and intention to recommend suggests that user retention should be a strategic priority. Rather than focusing solely on increasing downloads, BPJS Kesehatan should aim to build long-term engagement. Satisfied and loyal users can serve as organic promoters, reducing the need for costly promotional efforts. Therefore, enhancing user experience and ensuring consistent service quality are critical to fostering advocacy behavior.

Finally, given the model's moderate explanatory power, managers should consider incorporating additional factors, such as trust, perceived risk, and user satisfaction, into future system improvements. Continuous monitoring of user feedback and data-driven decision-making will be essential for refining digital services and ensuring their long-term sustainability.

DISCUSSION

This study set out to explain continuance intention and its downstream effects on advocacy behaviors in a public digital health context by integrating Innovation Resistance Theory (IRT) and UTAUT. The findings reveal a consistent dual mechanism: resistance factors inhibit continued use, while enabling factors facilitate it, with continuance intention serving as the central conduit to word-of-mouth (WOM) and intention to recommend.

First, all three IRT dimensions, such as usage, value, and tradition barriers, exert significant negative effects on continuance intention. This confirms that even in a government-backed, quasi-mandatory system, perceived complexity (usage barrier), insufficient benefits (value barrier), and attachment to offline routines (tradition barrier) remain salient inhibitors. Among these, the value barrier shows the strongest negative influence, suggesting that users' cost–benefit evaluation is decisive in sustaining engagement. This extends IRT to public digital healthcare by demonstrating that perceived value deficits can outweigh institutional push factors, thereby limiting long-term usage.

Second, all UTAUT constructs, performance expectancy, effort expectancy, social influence, and facilitating conditions, have positive and significant effects on continuance intention. Notably, facilitating conditions emerge as the most influential enabler, underscoring the importance of infrastructure reliability, system stability, and accessible support in a nationwide service. Effort expectancy also plays a meaningful role, indicating that ease of use is critical for heterogeneous users with varying digital literacy. While performance expectancy is significant, its relatively smaller coefficient suggests that perceived usefulness alone is insufficient without seamless execution and support. Social influence further reinforces continuance, implying that peer endorsement and normative pressure help reduce uncertainty and sustain usage.

Third, continuance intention has strong, significant effects on both WOM and intention to recommend, with the latter showing the strongest relationship in the model. This indicates that retained users become advocates, translating satisfactory ongoing experiences into positive communication and referrals. Hence, continuance intention is not merely an outcome of prior perceptions but a key driver of advocacy behavior, aligning with relationship marketing and post-adoption theories.

Fourth, the R^2 results indicate moderate explanatory power for continuance intention and lower but acceptable levels for WOM and recommendation. This suggests that while the integrated IRT–UTAUT model captures core determinants, additional constructs, such as trust, satisfaction, perceived risk, and service quality, may further enhance explanatory power, particularly for advocacy outcomes. The Q^2 values confirm moderate predictive relevance, supporting the model's

usefulness in predicting user behavior in the Mobile JKN context.

Lastly, the findings highlight that sustained use of digital public services depends on simultaneously minimizing resistance and strengthening enabling conditions, and that continuance intention is the critical bridge from use to advocacy.

CONCLUSIONS

This study investigates the determinants of continuance intention and its effects on user advocacy behavior in the context of Mobile JKN, Indonesia's national digital health application. By integrating Innovation Resistance Theory (IRT) and UTAUT, the study provides a comprehensive framework that captures both inhibitory and enabling mechanisms influencing post-adoption behavior.

The results demonstrate that barriers related to usage, value, and tradition significantly reduce continuance intention, whereas performance expectancy, effort expectancy, social influence, and facilitating conditions significantly enhance it. Among these, facilitating conditions are the strongest positive driver, and the value barrier is the most influential negative factor. Furthermore, continuance intention strongly predicts both word-of-mouth and intention to recommend, confirming its pivotal role in translating user experience into advocacy behavior.

These findings contribute to theory by extending IRT to digital public healthcare, validating UTAUT in a post-adoption context, and proposing an integrated model that simultaneously explains both resistance and acceptance. Practically, the study emphasizes that digital public service success depends not only on adoption but on sustained engagement, which in turn drives organic promotion through users.

Despite its contributions, the study has limitations. The moderate R^2 values indicate that other factors not included in the model may also influence continuance and advocacy. Future research should incorporate variables such as trust, satisfaction, perceived risk, and service quality, and explore longitudinal designs to better capture behavioral changes over time. Additionally, broader and more geographically balanced samples would enhance generalizability.

In conclusion, this study underscores that achieving sustainable digital transformation in public healthcare requires a balanced strategy: reducing user resistance, strengthening system support, and fostering long-term engagement to convert users into advocates.

Acknowledgments or Notes

The authors would like to express their sincere gratitude to the Pusat Pengembangan Manajemen (PPM), Department of Management, Faculty of Business and Economics, Universitas Islam Indonesia, for their valuable support and facilitation in implementing this research project. The institutional support provided by PPM has significantly contributed to the successful completion of this study, particularly through academic guidance, research resources, and an enabling scholarly environment.

References

Barata, A. (2021). Continuance intention and willingness to recommend digital services: The role of perceived value and satisfaction. *Journal of Retailing and Consumer Services,* 59, 102375. https://doi.org/10.1016/j.jretconser.2020.102375

Bergman, R., & Macada, A. C. G. (2023). Understanding continuance intention in digital platforms: The role of perceived usefulness and satisfaction. *Information Systems and e-Business Management,* 21(2), 345–362. https://doi.org/10.1007/s10257-022-00578-4

Chen, C. C., & Chang, Y. C. (2022). Innovation resistance in digital services: Examining functional and psychological barriers. *Technological Forecasting and Social Change,* 174, 121224. https://doi.org/10.1016/j.techfore.2021.121224

Donthu, N., Kumar, S., Pandey, N., Pandey, N., & Mishra, A. (2021). Mapping the electronic word-of-mouth (eWOM) research: A systematic review and bibliometric analysis. *Journal of Business Research,* 135, 758–773. https://doi.org/10.1016/j.jbusres.2021.07.015

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics,* 5(1), 1–4. https://doi.org/10.11648/j.ajtas.20160501.11

Ferreira, J. J. (2023). Digital service loyalty and recommendation intention: The mediating role of continuance intention. *Journal of Services Marketing,* 37(4), 455–468. https://doi.org/10.1108/JSM-05-2022-0193

Gupta, A., Dogra, N., & George, B. (2020). What determines tourist adoption of smartphone apps? An analysis based on the UTAUT-2 framework. *Journal of Hospitality and Tourism Technology,* 11(1), 50–64. https://doi.org/10.1108/JHTT-02-2019-0024

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2019). A primer on partial least squares structural equation modeling (PLS-SEM) (2nd ed.). Sage Publications.

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). Partial least squares structural equation modeling (PLS-SEM) using R: A workbook. Springer. https://doi.org/10.1007/978-3-030-80519-7

Hameed, I. (2024). The impact of continuance intention on electronic word-of-mouth behavior in digital services. *Computers in Human Behavior Reports,* 9, 100289. https://doi.org/10.1016/j.chbr.2023.100289

Himel, S. (2021). Traditional barriers and digital financial service adoption. *International*

Journal of Bank Marketing, 39(6), 1024–1042. https://doi.org/10.1108/IJBM-01-2021-0024

Jin, X., Zhang, J., & Li, Y. (2022). Understanding innovation resistance in digital transformation: Evidence from service platforms. *Journal of Business Research,* 144, 34–45. https://doi.org/10.1016/j.jbusres.2022.01.056

Jo, H. (2023). Digital loyalty and word-of-mouth intention: The moderating role of trust. *Electronic Commerce Research,* 23(2), 567–589. https://doi.org/10.1007/s10660-021-09514-8

Kaur, P., Dhir, A., Singh, N., Sahu, G., & Almotairi, M. (2020). An innovation resistance theory perspective on mobile payment solutions. *Journal of Retailing and Consumer Services,* 55, 102059. https://doi.org/10.1016/j.jretconser.2020.102059

Kautish, P., Paul, J., & Sharma, R. (2023). Value barrier and digital adoption resistance: A systematic analysis. *Technological Forecasting and Social Change*, 189, 122327. https://doi.org/10.1016/j.techfore.2023.122327

Kwangsawad, A., & Jattamart, A. (2022). Continuance intention in mobile applications: The role of satisfaction and perceived value. *Sustainability,* 14(9), 5307. https://doi.org/10.3390/su14095307

Migliore, G., Talwar, S., & Dhir, A. (2022). Innovation resistance and digital services usage. *Journal of Retailing and Consumer Services,* 64, 102789. https://doi.org/10.1016/j.jretconser.2021.102789

Nasir, S. (2021). Customer continuance intention and positive word-of-mouth behavior in digital platforms. *Information Technology & People,* 34(8), 2345–2367. https://doi.org/10.1108/ITP-03-2020-0172

Nguyen, T. T. H., Nguyen, T. H., & Nguyen, T. H. (2022). Continuance intention and electronic word-of-mouth: The mediating role of satisfaction. *Journal of Retailing and Consumer Services,* 67, 102987. https://doi.org/10.1016/j.jretconser.2022.102987

Octavius, G. S. (2021). Understanding intention to recommend digital services: The role of loyalty and continuance intention. *International Journal of Information Management Data Insights,* 1(2), 100040. https://doi.org/10.1016/j.jjimei.2021.100040

Ram & Sheth (1989). Consumer resistance to innovations: the marketing problem and its solutions. *The Journal of Consumer Marketing*, 6(2), 5 – 14

Ray, S., Dhir, A., Bala, P. K., & Kaur, P. (2022). Why do people resist digital innovations? Aninnovation resistance theory perspective. *Technological Forecasting and Social Change*, 182, 121851. https://doi.org/10.1016/j.techfore.2022.121851

Sekaran, U., & Bougie, R. (2016). Research methods for business: A skill-building approach (7th ed.). Wiley.

Spinelli, R., Migliore, G., & Dhir, A. (2024). Innovation resistance theory in digital ecosystems: A systematic review. *Journal of Business Research*, 167, 114219. https://doi.org/10.1016/j.jbusres.2023.114219

Talwar, S., Dhir, A., Khalil, A., Mohan, G., & Islam, A. K. M. N. (2020). Point of adoption and beyond: Initial trust and mobile payment adoption using UTAUT2. *Journal of Retailing and Consumer Services,* 55, 102086. https://doi.org/10.1016/j.jretconser.2020.102086

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478. https://doi.org/10.2307/30036540

Viralta, M., García-Murillo, M., & Annabi, H. (2023). Electronic word-of-mouth in public digital services. *Government Information Quarterly*, 40(2), 101782. https://doi.org/10.1016/j.giq.2023.101782

Wang, Y., Wang, J., & Li, X. (2023). Intention to recommend in digital service platforms: The role of user experience. *Computers in Human Behavior*, 141, 107610. https://doi.org/10.1016/j.chb.2022.107610