 ISSN 3063-864X (E)

ANALYSIS OF CONTINUANCE INTENTION TO USE THE AJAIB APPLICATION USING THE EXPECTATION CONFIRMATION MODEL (ECM) WITH THE ADDITION OF THE HABIT VARIABLE

Aulina Naharul Kristanti[1)], I Kadek Dwi Nuryana[2)]

[1)]Sistem Informasi, Fakultas Teknik, Universitas Negeri Surabaya, Surabaya, Indonesia
Email: aulina.22095@mhs.unesa.ac.id
[2)]Sistem Informasi, Fakultas Teknik, Universitas Negeri Surabaya, Surabaya, Indonesia
Email: dwinuryana@unesa.ac.id

Abstract

App-based investing has widened access to Indonesia's capital market; however, attracting many users does not automatically translate into repeated platform use. This research investigates Ajaib users' intention to remain with the service by incorporating habit into the Expectation Confirmation Model (ECM). Questionnaire responses from 194 eligible users, recruited through purposive sampling, were analyzed with Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4. Statistical inference relied on a two-sided bootstrap test with 5,000 resamples. The model accounted for 46.3% of continuance intention. Confirmation strengthened perceived usefulness ($\beta = 0.400$; $p < 0.001$) and satisfaction ($\beta = 0.486$; $p < 0.001$), while habit was the only significant direct antecedent of continuance intention ($\beta = 0.506$; $p < 0.001$). No significant effect was identified from perceived usefulness to satisfaction or continuance intention, or from satisfaction to continuance intention. Thus, meeting prior expectations improves users' evaluations after adoption, whereas recurring usage patterns more directly sustain their willingness to keep using Ajaib. Incorporating habit therefore improves ECM's relevance for explaining continuance in digital investment services.

Keywords: Ajaib Application, Continuance Intention, Expectation Confirmation Model, Habit, PLS-SEM.

Abstrak

Investasi berbasis aplikasi telah memperluas akses ke pasar modal Indonesia; namun, berhasil menarik banyak pengguna tidak secara otomatis berujung pada penggunaan platform yang berulang. Penelitian ini menyelidiki niat pengguna Ajaib untuk tetap menggunakan layanan tersebut dengan memasukkan variabel kebiasaan (habit) ke dalam Expectation Confirmation Model (ECM). Respons kuesioner dari 194 pengguna yang memenuhi syarat, yang direkrut melalui purposive sampling, dianalisis menggunakan Partial Least Squares Structural Equation Modeling (PLS-SEM) dalam SmartPLS 4. Inferensi statistik mengandalkan uji bootstrap dua arah (two-sided bootstrap test) dengan 5.000 sampel ulang. Model ini mampu menjelaskan 46,3% dari niat keberlanjutan (continuance intention). Konfirmasi (confirmation) terbukti memperkuat persepsi kemanfaatan (perceived usefulness) ($\beta = 0.400$; $p < 0.001$) dan kepuasan (satisfaction) ($\beta = 0.486$; $p < 0.001$), sementara kebiasaan menjadi satu-satunya anteseden langsung yang signifikan terhadap niat keberlanjutan ($\beta = 0.506$; $p < 0.001$). Tidak ditemukan pengaruh yang signifikan dari persepsi kemanfaatan terhadap kepuasan maupun niat keberlanjutan, ataupun dari kepuasan terhadap niat keberlanjutan. Dengan demikian, memenuhi ekspektasi awal dapat meningkatkan evaluasi pengguna setelah mengadopsi aplikasi, sedangkan pola penggunaan yang berulang secara lebih langsung mempertahankan kesediaan mereka untuk terus menggunakan Ajaib. Oleh karena itu, penggabungan variabel kebiasaan dapat meningkatkan relevansi ECM dalam menjelaskan keberlanjutan pada layanan investasi digital.

Kata Kunci: Aplikasi Ajaib, Niat Keberlanjutan, Expectation Confirmation Model, Kebiasaan, PLS-SEM.

INTRODUCTION

Mobile technology has lowered practical barriers to capital-market participation by enabling investors to register, trade, retrieve market information, and supervise portfolios from a single application. Indonesia's growth illustrates this shift: capital-market investors increased from 12,168,061 in 2023 to 28,961,144 in June 2026, while the number of investors in shares and other securities rose from 5,255,571 to 9,913,999 over the same period [1]. This expansion creates opportunities for digital investment providers but also increases competitive pressure because users can readily compare alternative platforms and move between them. Long-term platform performance therefore rests on retaining users beyond their early transactions, rather than merely securing initial adoption.

Ajaib is one of Indonesia's major digital investment applications and provides access to stocks, mutual funds, bonds, and United States equities, supported by watchlists, analytical features, market information, and investor education. The platform reported more than seven million users in early 2026 [2]. Nevertheless, aggregate adoption figures cannot directly represent continuance intention because registration or occasional use may not develop into sustained engagement. Public app-store reviews reveal varied post-adoption experiences: some users value the application's accessibility and feature coverage, whereas others report login problems, delayed portfolio updates, reduced performance during trading hours, transaction constraints, or slow customer-service responses. These reviews are not treated as representative evidence, but they illustrate the practical distinction between attracting users and retaining them over time.

The Expectation Confirmation Model (ECM) provides a framework for understanding behavior after a system has been adopted [3]. It proposes that users assess their actual experience against what they expected before use, and this assessment informs whether they remain with the system. Confirmation captures the degree of alignment between expected and experienced performance. Within ECM, such alignment reshapes perceived usefulness and satisfaction, which may subsequently guide continuance intention. Researchers have applied the model to mutual-fund applications, peer-to-peer payment services, mobile wallets, electronic wallets, and QRIS [6]-[10]. Yet findings across these financial-technology contexts are not uniform, particularly for the direct roles of perceived usefulness and satisfaction. The model's explanatory strength may therefore vary with the service and the circumstances in which it is used.

Habit provides a theoretically relevant extension because repeated behavior can become automatic and less dependent on deliberate evaluation [4], [5]. Digital investment applications are commonly revisited to observe price movements, review portfolio performance, access market news, or conduct transactions. When these activities are repeatedly performed through the same platform, application use may become embedded in an investor's routine. Habit may therefore preserve continued use even when functional usefulness or satisfaction alone is insufficient to explain future intention. Although habit has been linked to continuance in other digital-payment settings [10], evidence concerning its role within ECM for a multi-asset investment application such as Ajaib remains limited.

Building on this reasoning, the proposed model tests six paths among confirmation, perceived usefulness, satisfaction, habit, and continuance intention. The analysis links confirmation to both perceived usefulness and satisfaction, examines whether usefulness predicts satisfaction and continuance intention, and assesses satisfaction and habit as direct predictors of continuance. In doing so, the study clarifies how fulfilled expectations shape users' post-adoption judgments and whether routine behavior adds explanatory value for an Indonesian multi-asset investment platform. The results are also expected to inform retention initiatives that respect voluntary and responsible investment practices.

THEORETICAL BACKGROUND AND HYPOTHESES

2.1 ECM Foundations

In ECM, the decision to keep using a system develops after users have accumulated direct experience with it [3]. Users determine whether observed performance meets their earlier expectations; favorable confirmation may then revise their judgment of usefulness and their level of satisfaction. In this study, perceived usefulness concerns Ajaib's contribution to investment-related activities, whereas satisfaction summarizes the user's overall evaluation of prior use. The framework therefore anticipates that confirmation improves both evaluations, that usefulness raises satisfaction and the willingness to continue, and that satisfaction further encourages future use. These theoretical arguments lead to H1-H5.

- H1: Greater confirmation increases perceived usefulness.
- H2: Greater confirmation increases satisfaction.
- H3: Higher perceived usefulness increases satisfaction.
- H4: Higher perceived usefulness strengthens continuance intention.
- H5: Higher satisfaction strengthens continuance intention.

2.2 Habit as an Antecedent of Continuance Intention

From a behavioral perspective, habit is a learned response that can be activated by familiar situational cues with limited conscious deliberation [4], [5]. Once a recurrent action becomes routinized, performing it relies less on renewed assessments of benefits or satisfaction. For Ajaib users, regularly monitoring prices, reviewing portfolios, reading market information, or completing transactions may link recurring investment needs to the same application. This repetition can lower the mental effort required to choose a platform and make future use more likely. Research on QRIS users similarly associates a stronger habit with a greater willingness to continue [10], providing the basis for H6.

H6: A stronger usage habit increases continuance intention.

 ISSN 3063-864X (E)

2.3 Research Model

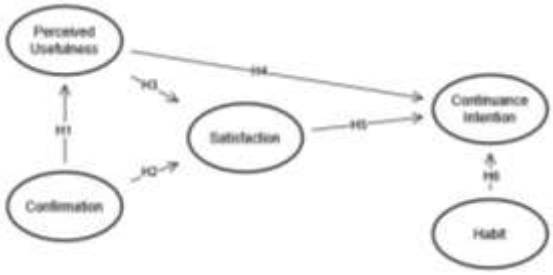

Figure 1. Research Model

METHODS

A quantitative explanatory design was selected to evaluate the causal paths in the extended ECM [13]. The population comprised Ajaib users in Indonesia, although the exact number meeting the eligibility requirements was unavailable. Sample sufficiency was therefore calculated with the Lemeshow approach [15]. Using a 95% confidence level, a population proportion of 0.50, and a 10% precision level yielded 96.04 cases; this figure was rounded to 100, and the recruitment target was expanded to 150. Participants were chosen purposively and had to be at least 17 years old, hold an Ajaib account, have completed an investment transaction, have used the application for one month or longer, and return a complete questionnaire.

Data were collected through a Google Forms questionnaire circulated on WhatsApp, Instagram, and other online channels between 22 and 26 July 2026. Responses to every statement were recorded on a five-category scale, with 1 indicating strong disagreement and 5 indicating strong agreement. The initial reflective instrument contained 16 items: three measuring confirmation, four perceived usefulness, two satisfaction, three habit, and four continuance intention. The items drew on the original ECM, established measures of habit, and the questionnaire developed by Hamid et al. [3]-[5], [10], with wording adjusted to the digital investment setting.

Prior to estimation, submissions were checked for missing information, compliance with the eligibility rules, duplicate entries, implausible response patterns, and inconsistent data formats. The resulting 194 valid observations were processed in SmartPLS 4 using PLS-SEM. Assessment of the reflective constructs considered indicator loadings, average variance extracted (AVE), composite reliability, Cronbach's alpha, cross-loadings, the Fornell-Larcker criterion, and the heterotrait-monotrait ratio (HTMT) [11], [12]. An item loading between 0.40 and 0.708 was removed only when doing so improved construct quality without weakening content coverage. The principal benchmarks were AVE >= 0.50, composite reliability between 0.70 and 0.95, and HTMT < 0.90.

Evaluation of the structural component used R-squared to represent explained variance, f-squared to indicate effect magnitude, and standardized path estimates to describe the relationships. Statistical decisions were obtained from a two-tailed bootstrap analysis with 5,000 resamples at alpha = 0.05. Support was assigned to a hypothesis when its coefficient was in the proposed direction, t exceeded 1.96, and p was below 0.05 [11]. Together, these tests provided evidence about both the model's explanatory capacity and each hypothesized path.

RESULTS AND DISCUSSION

4.1 Respondent Characteristics

The final dataset contained 194 complete responses, all of which met the inclusion criteria. Participants aged 17-25 formed the largest age group (54.1%), followed by the 26-35 group (38.1%). By occupation, students accounted for 45.4% and private-sector employees for 29.4%. Ajaib had been used for 6-12 months by 36.1% of respondents and for more than one year by 37.6%. Consequently, 73.7% had at least six months of usage experience, allowing them to evaluate the application after adoption and report their intention to use it in the future. The complete distribution appears in Table 1.

Table 1. Demographic and Usage Profile (n = 194)

Characteristic	Category	%
Age	17–25 years	54,1
	26–35 years	38,1
	>35 years	7,7
Occupation	Student	45,4
	Private employee	29,4
	Entrepreneur	10,8
	Freelancer	7,7
	Civil servant	5,2
	Homemaker	0,5
	Daily worker	0,5
Use duration	1–6 months	26,3
	6–12 months	36,1
	>12 months	37,6

4.2 Measurement Model Assessment

Initial estimation identified three perceived-usefulness indicators below the recommended loading of 0.708: PU1 (0.644), PU2 (0.681), and PU4 (0.692). PU1 and PU2 were sequentially removed because they were the weakest indicators and their exclusion improved the construct's convergent validity and internal consistency. PU4 was retained to preserve the conceptual coverage of perceived usefulness; following re-estimation, its loading increased to 0.885. The refined measurement model therefore comprised 14 indicators, with final loadings ranging from 0.701 to 0.885. Although CI1 was slightly below 0.708, it was retained because its value was close to the threshold and the continuance-intention construct met the AVE and reliability criteria.

Table 2. Reflective Measurement Results

Construct	Indicators (loading)	AVE	CR	Alpha
Confirmation	C1 (0,760); C2 (0,780); C3 (0,813)	0,615	0,828	0,691
Continuance intention	CI1 (0,701); CI2 (0,808);	0,615	0,864	0,791

 ISSN 3063-864X (E)

	CI3 (0,797); CI4 (0,826)			
Habit	H1 (0,768); H2 (0,871); H3 (0,807)	0,666	0,857	0,750
Perceived usefulness	PU3 (0,842); PU4 (0,885)	0,746	0,854	0,661
Satisfaction	S1 (0,799); S2 (0,883)	0,709	0,830	0,595

Note: CR = composite reliability; PU1 and PU2 were excluded during measurement-model refinement.

Table 2 shows that AVE exceeded 0.50 for every construct, indicating adequate convergence of each set of indicators. Internal consistency was also supported because composite reliability fell between 0.828 and 0.864. In addition, each item loaded most strongly on its designated construct, every square root of AVE was larger than the relevant inter-construct correlations, and no HTMT ratio reached 0.90; the maximum was 0.839 for habit and continuance intention. Taken together, these checks confirm convergent and discriminant validity. Cronbach's alpha met the conventional level for habit and continuance intention and was considered usable for exploratory analysis for confirmation and perceived usefulness. Although satisfaction produced a marginal alpha of 0.595, its composite reliability (0.830) and AVE (0.709) justified retaining the construct. Paths involving satisfaction should nevertheless be interpreted carefully.

4.3 Structural Model Assessment

Explained variance reached 0.463 for continuance intention, 0.335 for satisfaction, and 0.160 for perceived usefulness. These values indicate weak-to-moderate explanatory performance for the first two endogenous constructs and weak performance for perceived usefulness. The f-squared results showed medium contributions from confirmation to perceived usefulness (0.191) and satisfaction (0.299), as well as from habit to continuance intention (0.275). In contrast, perceived usefulness and satisfaction contributed little or no additional variance to continuance intention. Habit therefore supplied most of the model's direct explanatory contribution to users' intention to continue.

Table 3. Explained Variance of Endogenous Constructs

Endogenous construct	R-squared	Adjusted R-squared	Interpretation
Continuance intention	0.463	0.446	Weak-moderate
Perceived usefulness	0.160	0.152	Weak
Satisfaction	0.335	0.321	Weak-moderate

Table 4. Summary of Hypothesis Tests

H	Relationship	β	t	p	Decision
H1	Confirmation -> Perceived usefulness	0.400	4.539	<0.001	Supported
H2	Confirmation -> Satisfaction	0.486	4.689	<0.001	Supported
H3	Perceived usefulness -> Satisfaction	0.175	1.673	0.094	Not supported
H4	Perceived usefulness -> Continuance intention	0.116	1.147	0.251	Not supported
H5	Satisfaction -> Continuance intention	0.163	1.546	0.122	Not supported
H6	Habit -> Continuance intention	0.506	4.244	<0.001	Supported

Note: two-tailed test; 5,000 bootstrap subsamples; significance level = 5%.

4.4 Interpretation of Findings

4.4.1 Confirmation Effects

H1 received support because confirmation predicted perceived usefulness ($\beta = 0.400$, $t = 4.539$, $p < 0.001$). Thus, respondents who experienced Ajaib in line with their earlier expectations tended to judge the application as more beneficial for investment activities. This pattern accords with ECM [3] and findings for peer-to-peer payments, mobile wallets, and QRIS [7], [8], [10]. Ajaib can strengthen this evaluation by ensuring that transactions, portfolio monitoring, information access, and navigation perform as users were led to expect.

A comparable result emerged for satisfaction: confirmation produced $\beta = 0.486$ ($t = 4.689$, $p < 0.001$), so H2 was supported. Satisfaction was therefore higher when users perceived consistency between their expectations and the features, performance, and services they actually received. The result supports ECM and evidence from mutual-fund applications, peer-to-peer payments, and QRIS [3], [6], [7], [10], while differing from the nonsignificant result reported for mobile wallets [8]. For Ajaib, service claims and operational delivery should consequently remain aligned.

4.4.2 Perceived Usefulness Effects

The path from perceived usefulness to satisfaction remained positive but did not attain statistical significance ($\beta = 0.175$, $t = 1.673$, $p = 0.094$); H3 therefore did not receive support. This differs from the original ECM prediction and the QRIS result [3], [10], but resembles evidence from mutual-fund and peer-to-peer payment applications [6], [7]. In investment services, useful functions may be insufficient to

generate satisfaction independently because users also judge system stability, transaction security, service responsiveness, and experiences associated with market volatility. As these factors were not measured, they remain plausible contextual interpretations rather than empirically tested explanations.

H4 also did not receive support: perceived usefulness did not provide a significant direct prediction of continuance intention ($\beta = 0.116$, $t = 1.147$, $p = 0.251$). The outcome agrees with the QRIS study [10] but contrasts with several other financial-technology investigations [6]-[8]. Comparable trading and monitoring features across investment applications may cause usefulness to function as a basic expectation rather than a compelling reason to stay with one provider. Future use may instead be shaped by trust, security, perceived risk, service quality, switching costs, and alignment with personal investment strategies, which were outside the present model.

4.4.3 Satisfaction and Habit as Predictors of Continuance

The satisfaction-to-continuance path was positive but nonsignificant ($\beta = 0.163$, $t = 1.546$, $p = 0.122$), so H5 was not supported. After perceived usefulness and habit were considered simultaneously, respondents' favorable prior evaluations did not explain a unique share of their future-use intention. This outcome may also relate to the two-item satisfaction measure and its marginal Cronbach's alpha. The result should therefore be understood as a lack of evidence for an independent effect in this sample, rather than proof that satisfaction has no relevance.

In contrast, H6 was supported because habit strongly predicted continuance intention ($\beta = 0.506$, $t = 4.244$, $p < 0.001$). This was the largest coefficient among its direct predictors, and the associated medium effect size indicates a meaningful contribution. Regularly checking market movements, viewing portfolios, obtaining investment information, or trading through Ajaib may connect recurring cues with the automatic choice of the same platform. As the routine becomes established, less conscious effort is required to select an application, increasing the likelihood of continued use. The finding confirms the importance of habit in post-adoption models for frequently accessed financial technologies [4], [5], [10].

4.4.4 Implications for Theory and Practice

Taken together, the findings distinguish two post-adoption mechanisms. Confirmation primarily strengthens cognitive and affective evaluations by increasing perceived usefulness and satisfaction, whereas habit directly sustains future-use intention. The habit extension therefore complements ECM by capturing routine-based behavior that is not fully explained by conscious evaluations. At the same time, the nonsignificant paths from perceived usefulness and satisfaction indicate that relationships established in the original ECM should not be assumed to operate uniformly across digital investment services.

From a managerial perspective, Ajaib should maintain consistency between communicated promises and actual service performance while enabling voluntary routines. Configurable portfolio summaries, relevant watchlists, user-controlled reminders, reliable market monitoring, and continuing investor education can encourage repeated use without promoting excessive trading. Because habit was the strongest direct predictor, retention initiatives should emphasize stable and meaningful recurring interactions rather than relying solely on feature expansion. Such initiatives must preserve user autonomy, data security, and responsible-investment principles.

CONCLUSION

Using responses from 194 Ajaib users, this research assessed ECM after adding habit and found support for three of the six hypotheses. Confirmation increased both perceived usefulness and satisfaction, indicating that users' evaluations after adoption depend substantially on the fit between expected and experienced performance. Habit, meanwhile, was the strongest direct predictor of continuance intention. The proposed effects of perceived usefulness on satisfaction and continuance intention were not supported, nor was the effect of satisfaction on continuance intention. For this sample, routine use consequently provided a more direct explanation of continued engagement with Ajaib than conscious judgments of usefulness or satisfaction.

By distinguishing expectation-based evaluations from routine-driven behavior, these findings show why habit adds explanatory value to ECM in digital investing. Managers should combine realistic service promises, dependable performance, and user-controlled features that facilitate healthy routines. Several limitations remain: purposive online recruitment, a predominantly young sample, a cross-sectional design, and the use of only two satisfaction indicators with a marginal alpha. Continuance intention had an R-squared of 0.463, indicating that other factors such as trust, perceived security and risk, service quality, user experience, switching costs, and financial literacy warrant investigation. Later research could use broader or probability-based samples, refine the satisfaction scale through pilot testing, compare multiple investment applications, and apply longitudinal or mixed-method designs to examine how routines and continuance evolve.

REFERENCES

PT Kustodian Sentral Efek Indonesia, Statistik Pasar Modal Indonesia: Juni 2026. Jakarta, Indonesia: KSEI, 2026. [Online]. Available: https://web.ksei.co.id/files/Statistik_Publik_Juni_2026.pdf

A. Febrian, "Pengguna Ajaib tembus 7 juta investor, mayoritas dari generasi produktif," Kontan, Mar. 15, 2026. [Online]. Available: https://keuangan.kontan.co.id/news/pengguna-

ajaib-tembus-7-juta-investor-mayoritas-dari-generasi-produktif

A. Bhattacherjee, "Understanding information systems continuance: An expectation-confirmation model," MIS Quarterly, vol. 25, no. 3, pp. 351-370, 2001, doi: 10.2307/3250921.

M. Limayem, S. G. Hirt, and C. M. K. Cheung, "How habit limits the predictive power of intention: The case of information systems continuance," MIS Quarterly, vol. 31, no. 4, pp. 705-737, 2007, doi: 10.2307/25148817.

V. Venkatesh, J. Y. L. Thong, and X. Xu, "Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology," MIS Quarterly, vol. 36, no. 1, pp. 157-178, 2012, doi: 10.2307/41410412.

I. Puspitasari, F. Utami, and I. K. Raharjana, "Determinants of continuance intention to use mutual fund investment apps: The changing of user behavior during the pandemic crisis," in Proc. 9th Int. Conf. Behavioural and Social Computing (BESC), 2022, doi: 10.1109/BESC57393.2022.9995170.

B. Savitha, I. T. Hawaldar, and K. N. Kumar, "Continuance intentions to use FinTech peer-to-peer payments apps in India," Heliyon, vol. 8, no. 11, Art. no. e11654, 2022, doi: 10.1016/j.heliyon.2022.e11654.

S. Tripathi, "Determinants of continuance intention to use mobile wallets technology in the post-pandemic era: Moderating role of perceived trust," Journal of International Technology and Information Management, vol. 31, no. 3, pp. 128-170, 2023, doi: 10.58729/1941-6679.1570.

F. R. Prawira, N. T. Prakoso, P. W. Handayani, and N. C. Harahap, "The influence of information security factors on the continuance use of electronic wallet," Procedia Computer Science, vol. 234, pp. 1467-1475, 2024, doi: 10.1016/j.procs.2024.03.147.

N. Hamid, M. S. Maksar, Y. Swastika, and A. M. Z. Tenripadang, "An analysis of the continuance intention of QRIS users in Southeast Sulawesi using the Expectation Confirmation Model (ECM)," Jurnal Manajemen dan Kewirausahaan, vol. 13, no. 1, pp. 68-78, 2025, doi: 10.26905/jmdk.v13i1.15557.

J. F. Hair Jr., G. T. M. Hult, C. M. Ringle, M. Sarstedt, N. P. Danks, and S. Ray, Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook. Cham, Switzerland: Springer, 2021, doi: 10.1007/978-3-030-80519-7.

J. Henseler, C. M. Ringle, and M. Sarstedt, "A new criterion for assessing discriminant validity in variance-based structural equation modeling," Journal of the Academy of Marketing Science, vol. 43, pp. 115-135, 2015, doi: 10.1007/s11747-014-0403-8.

J. W. Creswell and J. D. Creswell, Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, 5th ed. Thousand Oaks, CA, USA: Sage, 2018.

Sugiyono, Metode Penelitian Kuantitatif, Kualitatif, dan R&D, 25th ed. Bandung, Indonesia: Alfabeta, 2017.

S. Lemeshow, D. W. Hosmer, J. Klar, and S. K. Lwanga, Adequacy of Sample Size in Health Studies. Chichester, U.K.: John Wiley & Sons, 1990.

P. C. Susanto, D. U. Arini, L. Yuntina, J. P. Soehaditama, and Nuraeni, "Konsep penelitian kuantitatif: Populasi, sampel, dan analisis data (sebuah tinjauan pustaka)," Jurnal Ilmu Multidisiplin, vol. 3, no. 1, 2024, doi: 10.38035/jim.v3i1.