DAFTAR PUSTAKA

[1] X. D. and Z. Yu, "A meta-analysis and systematic review of the effect of *chatbot* technology use in sustainable education," *Sustainability*, vol. 15, no. 4, p. 3153, Feb. 2023. [Online]. Available: http://dx.doi.org/10.3389/fpsyg.2025.1524645.

[2] A. Ahdiat, "Proporsi Responden yang Menggunakan Artificial Intelligence Berdasarkan Jenis Layanan/Aktivitas (2024)," *Databoks*, 30-Jan-2025. [Online]. Available: https://databoks.katadata.co.id/layanan-konsumen-kesehatan/statistik/679b51a605dce/ini-jenis-layanan-ai-yang-banyak-digunakan-masyarakat-indonesia.

[3] *Data Pengguna AI di Indonesia Update Terbaru*, Garuda Website, 27-Jan-2025. [Online]. Available: https://www.garuda.website/blog/data-pengguna-ai-indonesia/.

[4] P. Sasikala and R. Ravichandran, "Study on the impact of artificial intelligence on student learning outcomes," *Journal of Digital Learning and Education*, vol. 4, no. 2, pp. 145–155, Aug. 2024. [Online]. Available: http://dx.doi.org/10.52562/jdle.v4i2.1234.

[5] R. Malik, A. Sharma, S. Trivedi, and R. Mishra, "Adoption of *chatbot*s for learning among university students: Role of perceived convenience and enhanced performance," *International Journal of Emerging Technologies in Learning*, vol. 16, 2021. [Online]. Available: https://doi.org/10.3991/ijet.v16i18.24315.

[6] T. Kingchang, P. Chatwattana, and P. Wannapiroon, "Artificial Intelligence Chatbot Platform for Educational Recommendations in Higher Education," International Journal of Information and Education Technology, vol. 14, no. 1, pp. 89–96, Jan. 2024. [Online]. Available: https://doi.org/10.18178/ijiet.2024.14.1.1940

[7] K. Aleksandra and B. Tatiana, "Students' intention to learn and academic performance in the blended learning environment: The role of artificial intelligence *chatbot*s," *International Journal of Information and Education Technology*, vol. 14, 2024. [Online]. Available: https://www.ijiet.org/vol14/IJIET-V14N6-2105.pdf.

[8] P. Vanichvasin, "Impact of *chatbot*s on student learning and satisfaction in the entrepreneurship education programme in higher education context,"

International Education Studies, vol. 15, Nov. 21, 2022. [Online]. Available: https://doi.org/10.5539/ies.v15n6p15.

[9] F. A. Bravo and J. M. C.-B., "Engineering education in the age of AI: Analysis of the impact of *chatbot*s on learning in engineering," *Education Sciences*, vol. 14, p. 484, 2024. [Online]. Available: https://doi.org/10.3390/educsci14050484.

[10] S. Rifky, "Dampak penggunaan artificial intelligence bagi pendidikan tinggi," *Indonesian Journal of Multidisciplinary on Social and Technology*, vol. 2, no. 1, pp. 37–42, 2024. [Online]. Available: https://journal.ilmudata.co.id/index.php/ijmst.

[11] J. Huang, S. Saleh, and Y. Liu, "A review on artificial intelligence in education," *Academic Journal of Interdisciplinary Studies*, vol. 10, no. 3, May 10, 2021. [Online]. Available: https://doi.org/10.36941/ajis-2021-0077.

[12] M. D. L. Roca, M. M. Chan, A. G. Cabot, E. G. Lopez, and H. A. Salvatierra, "The impact of a *chatbot* working as an assistant in a course for supporting student learning and engagement," *ResearchGate Publication*, May 21, 2024. [Online]. Available: https://www.researchgate.net/publication/380501810.

[13] L. Chen, P. Chen, and Z. Lin, "Artificial intelligence in education: A review," *IEEE Access*, vol. 8, 2020. [Online]. Available: https://doi.org/10.1109/ACCESS.2020.2988510.

[14] A. Shahid, D. K. Hayat, Z. Iqbal, and I. Jabeen, "Comparative analysis: ChatGPT vs traditional teaching methods," *Pakistan Journal of Society, Education and Language (PJSEL)*, vol. 9, Jul. 2023. [Online]. Available: https://www.researchgate.net/publication/374675434.

[15] W. Qiu, C. L. Su, N. B. Jamil, M. Thway, S. S. H. Ng, L. Zhang, F. S. Lim, and J. W. Lai, "A systematic approach to evaluate the use of *chatbot*s in educational contexts: Learning gains, engagements and perceptions," *ResearchGate*, Aug. 8, 2024. [Online]. Available: http://dx.doi.org/10.35542/osf.io/7yga3.

[16] T. T. T. M. T. N. H. and K. T. Nguyen, "Artificial intelligent based teaching and learning approaches: A comprehensive review," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 12, no. 4, Dec. 2023. [Online]. Available: https://doi.org/10.11591/ijere.v12i4.26623.

[17] A. Prastyono, B. H. Gautama, and I. Zhafranianto, “Penggunaan *chatbot* artificial intelligence dan pembangunan karakter mahasiswa: Sebuah studi empiris,” *Jurnal Minfo Polgan*, vol. 12, no. 2, Dec. 28, 2023. [Online]. Available: https://doi.org/10.33395/jmp.v12i2.13316.

[18] O. C. Atalaya, M. H. Godoy, V. D. Herrera, Y. C. Telada, R. A. Anco, H. H. Mamani, A. V. Diaz, and D. B. Mares, "Application of the *Chatbot* in University Education: A Systematic Review on the Acceptance and Impact on Learning," *International Journal of Learning, Teaching and Educational Research*, vol. 22, no. 9, pp. 156–178, Sep. 2023. [Online]. Available: https://doi.org/10.26803/ijlter.22.9.9.

[19] M. S. Meiriza, G. B. Sembiring, M. Sitorus, V. Wardana, and N. Sakinah, "Pengaruh Penggunaan AI terhadap Minat Belajar di Kalangan Mahasiswa: Studi Kasus pada Generasi Z," *Journal of Education and Learning Evaluation*, vol. 1, Dec. 2024. [Online]. Available: http://dx.doi.org/10.57235/arrumman.v1i2.4019.

[20] F. L. Tuhuteru, F. Sampe, A. M. A. Ausat, and H. R. Hatta, "Analysing the Role of ChatGPT in Improving Student Productivity in Higher Education," *Journal on Education*, vol. 5, no. 4, pp. 14886–14891, Apr. 6, 2023. [Online]. Available: http://jonedu.org/index.php/joe.

[21] M. N. R. N. Suryono, R. E. Bhagaskara, M. A. Pratama, and A. Pratama, "Analysis of The Effect of ChatGPT on Student Productivity," in *Proc. Seminar Nasional Teknologi dan Sistem Informasi (SITASI)*, 2023. [Online]. Available: https://doi.org/10.33005/sitasi.v3i1.511.

[22] N. S. García, "Optimizing Student Support: A Review of the Use of AI *Chatbot*s in Higher Education," *European Public & Social Innovation Review*, Jul. 3, 2024. [Online]. Available: https://doi.org/10.31637/epsir-2024-324.

[23] “Analisis Pemanfaatan Artificial Intelligence (AI) Menggunakan Chat GPT Terhadap Kualitas Akademik Mahasiswa,” *Journal of International Multidisciplinary Research*, vol. 2, pp. 96-105, Nov. 2024, doi: 10.62504/jimr967. [Online]. Available: http://dx.doi.org/10.62504/jimr967.

[24] I. Anugrah, J. D. Putri, and M. Z. Munthe, "Potensi dan tantangan penerapan artificial intelligence dalam bidang pendidikan," *ZENIUSI JOURNAL*, vol. 1, no. 1, 11 Sep. 2024, doi: 10.70821/zj.v1i1.9. [Online]. Available: https://doi.org/10.70821/zj.v1i1.9.

[25] C. W. Okonkwo and A. A. Ibijola, "*Chatbot*s applications in education: A systematic review," *Computers and Applications in Engineering Education*, Sep. 2021, doi: 10.1016/j.caeai.2021.100033.

[26] S. A. Aprialdo and S., "Optimasi *chatbot* dengan pemanfaatan natural language processing," *Jurnal Komputer Terapan*, vol. 10, no. 1, pp. 17–26, May 2024, doi: 10.35143/jkt.v10i1.6181. [Online]. Available: https://doi.org/10.35143/jkt.v10i1.6181.

[27] I. W. Hasdiansa, H. Dewantara, A. Ramadhan, A. A. Kautsar, and A. M. Bahmar, "Analisis pengetahuan mahasiswa tentang penggunaan *chatbot* berbasis AI pada proses pembelajaran," *JUPITER*, vol. 2, May 2024, doi: 10.61255/jupiter.v2i1.213.

[28] geeksforgeeks, "Bayesian Optimization in Machine Learning," Aug. 2024. [Online]. Available: https://www.geeksforgeeks.org/bayesian-optimization-in-machine-learning/#what-is-bayesian-optimization.

[29] dqlab, "Teknik analisis data CRISP-DM dalam data mining," Nov. 2022. [Online]. Available: https://dqlab.id/teknik-analisis-data-crisp-dm-dalam-data-mining.

[30] A. W. Services, "Apa itu Python?," 2024. [Online]. Available: https://aws.amazon.com/id/what-is/python/.

[31] N. Rohaizam, "CHATGPT: Between opportunities and challenges in increasing academic productivity," *Jurnal Perpustakaan Universitas Airlangga: Media Informasi dan Komunikasi Kepustakawanan*, vol. 14, no. 1, 28 Jun. 2024, doi: 10.20473/jpua.v14i1.2024.54-60.

[32] dqlab, "Jupyter Notebook: Tools penting data scientist," Jan. 2023. [Online]. Available: https://dqlab.id/jupyter-notebook--tools-penting-data-scientist.

[33] M. N. M. A. Ayanwale, "Investigating factors of students' behavioral intentions to adopt *chatbot* technologies in higher education: Perspective from expanded diffusion theory of innovation," *Computers in Human Behavior Reports*, 2024. [Online]. Available: https://www.sciencedirect.com/journal/computers-in-human-behavior-reports.

[34] L. M. E. Adamopoulou, "*Chatbot*s: History, technology, and applications," *Machine Learning with Applications*, 2020. [Online]. Available: http://www.elsevier.com/locate/mlwa.

[35] M. Laun and F. Wolff, "*Chatbot*s in education: Hype or help? A meta-analysis," *Learning and Individual Differences*, vol. 119, Art. no. 102646, 2025. doi: 10.1016/j.lindif.2025.102646.

[36] Ş. Gökçearslan, C. Tosun, and Z. G. Erdemir, "Benefits, challenges, and methods of artificial intelligence (AI) *chatbot*s in education: A systematic literature review," *International Journal of Technology in Education*, vol. 7, no. 1, pp. 19–39, 2024, doi: 10.46328/ijte.600.

[37] N. F. Davar , M. A. A. Dewan and X. Zhang, "AI *Chatbot*s in Education: Challenges and Opportunities," *Information*, vol. 16, 17 March 2025.

[38] A. Bozkurt , "Generative artificial intelligence (AI) powered conversational educational agents: The inevitable paradigm shift," *Asian Journal of Distance Education*, vol. 18, April 2023.

[39] L. Major, G. A. Francis, and M. Tsapali, "The effectiveness of technology-supported personalised learning in low- and middle-income countries: A meta-analysis," *British Journal of Educational Technology*, Apr. 2021. [Online]. Available: http://dx.doi.org/10.1111/bjet.13116.

[40] M. M. Sanaky, L. M. Saleh, and H. D. Titaley, "Analisis faktor-faktor penyebab keterlambatan pada proyek pembangunan gedung asrama MAN 1 Tulehu Maluku Tengah," *Jurnal Simetrik*, vol. 11, no. 1, Jun. 2021. [Online]. Available: https://ejournal-polnam.ac.id/index.php/JurnalSimetrik/article/view/615/453.

[41] S. University, "Validitas dan reliabilitas: Arti, perbedaan, dan contoh," 2022. [Online]. Available: https://www.sampoernauniversity.ac.id/id/news/validitas-dan-reliabilitas-arti-perbedaan-dan-contoh.

[42] N. M. Janna, "Konsep uji validitas dan reliabilitas dengan menggunakan SPSS," OSF, 2021, doi: 10.31219/osf.io/v9j52.

[43] S. M. A, "Sampling dalam penelitian," Unit Pengelola Jurnal Ilmiah, 7 Dec. 2023. [Online]. Available: https://uptjurnal.umsu.ac.id/mengenal-sampling-dalam-penelitian/.

[44] H. and M. Wadud, "The effect of budget planning, remuneration and compensation on the performance of community health center employees in Ogan Ilir," *Management Studies and Entrepreneurship Journal*, vol. 5, no. 2, 2024. [Online]. Available: http://journal.yrpipku.com/index.php/msej.

[45] A. S. Fadhillah, M. D. Febrian, M. C. Prakoso, M. Rahmaniah, S. D. Putri, and R. S. Nurlaela, "Sistem pengambilan contoh dalam metode penelitian," Jun. 2024, doi: 10.30997/karimahtauhid.v3i6.14047.

[46] Z. Bobbitt, "What is Slovin's formula? (Definition & Example)," 20 Jan. 2023. [Online]. Available: https://www.statology.org/slovins-formula/.

[47] A. I. C. Indonesia, "Algoritma machine learning: Jenis dan contoh," 14 Jun. 2024. [Online]. Available: https://aici-umg.com/article/algoritma-machine-learning/.

[48] A. Roihan, P. A. Sunarya, and A. S. Rafika, "Pemanfaatan machine learning dalam berbagai bidang: Review paper," *Indonesian Journal on Computer and Information Technology*, vol. 5, no. 1, 2020. [Online]. Available: https://creativecommons.org/licenses/by-sa/4.0/.

[49] F. K, "Essential regression evaluation metrics: MSE, RMSE, MAE, R^2, and adjusted R^2," 31 Oct. 2024. [Online]. Available: https://farshadabdulazeez.medium.com/essential-regression-evaluation-metrics-mse-rmse-mae-r%C2%B2-and-adjusted-r%C2%B2-0600daa1c03a.

[50] O. Yorkinov, "Regression Model Accuracy (MAE, MSE, RMSE, R-squared) Check in R," *DataTechNotes*, 14 Feb. 2019. [Online]. Available: https://www.datatechnotes.com/2019/02/regression-model-accuracy-mae-mse-rmse.html

[51] N., *Statistika Terapan Univariat dan Multivariat (Teori dan Aplikasi Dalam Bidang Pendidikan dan Sosial Sains)*. Alauddin University Press, 2020. [Online]. Available: https://repositori.uin-alauddin.ac.id/21625/1/Statistika%20Terapan%20Univariat%20dan%20Multivariat.pdf

[52] S. Yuliana and Ega, "Analisis Kinerja Algoritma Apriori dan Algoritma ECLAT dalam Pembentukan Aturan Asosiasi (Studi Kasus: Toko ATK M Aji)," Bachelor Thesis, Universitas Multimedia Nusantara, 2022. [Online]. Available: https://kc.umn.ac.id/id/eprint/22255/

[53] H. Dorojatun, "CRISP DM Sebagai Salah Satu Standard untuk Menghasilkan Data Driven Decision Making yang Berkualitas," *DJKN*

Kemenkeu, 22 Jun. 2022. [Online]. Available: https://www.djkn.kemenkeu.go.id/artikel/baca/15134/

[54] GeeksforGeeks, "Python Introduction," 25 Feb. 2025. [Online]. Available: https://www.geeksforgeeks.org/introduction-to-python/

[55] S. U. Patil and S. U. Patil, "A Review on Python the Fastest Growing Programming Language," *Int. J. Multidiscip. Res. (IJFMR)*, vol. 6, no. 3, 2024. [Online]. Available: https://www.ijfmr.com/research-paper.php?id=23112

[56] P. A. Maurya, R. Jagtap, K. Jadhav, A. Patil, and M. Tripathi, "Python: The Most Advanced Programming Language for Computer Science Applications," *Int. J. Adv. Res. Sci. Commun. Technol. (IJARSCT)*, vol. 3, no. 2, 2023. [Online]. Available: https://ijarsct.co.in/Paper13828.pdf

[57] P. Central, "The Python Programming Language – Essential Features And Primary Benefits," 23 Jan. 2022. [Online]. Available: https://www.pythoncentral.io/the-python-programming-language-essential-features-and-primary-benefits/

[58] A. Polańczyk and W. Sadowy, "Why is the Python programming language so popular?," *CodiLime*, 2022. [Online]. Available: https://codilime.com/blog/why-is-the-python-programming-language-so-popular/

[59] A. Sharma, F. Khan, D. Sharma, and D. S. Gupta, "Python: The Programming Language of Future," *Int. J. Innov. Res. Technol.*, vol. 6, no. 12, 2020. [Online]. Available: https://ijirt.org/publishedpaper/IJIRT149340_PAPER.pdf

[60] A. Nur and P. R. Cahyani, "Evaluasi Pengguna Jupyter Notebook Pada Python Dalam Pembelajaran Data Science (Studi Kasus: Kapal Titanic)," *J. Multidisiplin Saintek*, vol. 4, Oct. 2024, doi: 10.8734/Kohesi.v1i2.365

[61] B., "Sejarah dan Manfaat Bahasa Pemrograman Python," *IDMetafora*, 31 Aug. 2022. [Online]. Available: https://idmetafora.com/news/read/691/

[62] M. T. A. L. Sayeth Saabith, "Python Current Trend Applications – An Overview," *Int. J. Adv. Eng. Res. Dev.*, vol. 6, no. 10, Oct. 2019. [Online]. Available: https://www.researchgate.net/publication/344569950

[63] B. M. Randles, I. V. Pasquetto, M. S. Golshan, and C. L. Borgman, “Using the Jupyter Notebook as a Tool for Open Science: An Empirical Study,” in *Proc. JCDL*, 2017, doi: 10.1109/JCDL.2017.7991618

[64] J. P. Ono, J. Freire, C. T. Silva, and J. Comba, “Interactive Data Visualization in Jupyter Notebooks,” *Comput. Sci. Eng.*, Mar. 2021, doi: 10.1109/MCSE.2021.3052619

[65] GeeksforGeeks, “Data Visualization in Jupyter Notebook,” 26 Sep. 2023. [Online]. Available: https://www.geeksforgeeks.org/data-visualization-in-jupyter-notebook/

[66] GeeksforGeeks, “How to Work in Jupyter Notebook with Multiple Languages,” 16 Oct. 2023. [Online]. Available: https://www.geeksforgeeks.org/how-to-work-in-jupyter-notebook-with-multiple-languages/

[67] H. Saputro, “Membangun Sistem Informasi Presensi Pengunjung Perpustakaan Universitas Mahakarya Asia Dengan Memanfaatkan QR Code Menggunakan Codeigniter 3,” *J. Inform. dan Komputer (JIK)*, vol. 12, 2021. [Online]. Available: https://journal.unmaha.ac.id/index.php/jik/article/download/74/57/361

[68] V. Suram, “Live Share and collaborate using VS Code,” *Medium*, 22 Dec. 2022. [Online]. Available: https://medium.com/@vamshisuram/live-share-and-collaborate-using-vs-code-1eb74b9f2dfa

[69] N. Sutisna, “Panduan Lengkap Belajar Coding HTML untuk Pemula,” *Dicoding*, 8 Jun. 2024. [Online]. Available: https://www.dicoding.com/blog/panduan-lengkap-belajar-coding-html-untuk-pemula/

[70] W3Schools, “HTML Tutorial.” [Online]. Available: https://www.w3schools.com/html/

[71] D. Flanagan, *JavaScript: The Definitive Guide*, 7th ed. O’Reilly, 2020. [Online]. Available: https://www.oreilly.com/library/view/javascript-the-definitive/9781491952016/

[72] B. Nagaraj dan K. B. Malagi, “Boosting the accuracy of optimisation *chatbot* by random forest with halving grid search hyperparameter tuning,” *ICTACT Journal on Soft Computing*, vol. 13, no. 3, hlm. 3007, April 2023, doi: 10.21917/ijsc.2023.0423

[73] A. N. Rachmi, “Implementasi Metode Random Forest dan XGBoost Pada Klasifikasi Customer Churn,” 2020. [Online]. Available: https://dspace.uii.ac.id/123456789/30082

[74] L. Setiyani, “Increasing the Effectiveness of Higher Education Academic Services Through the Implementation of the *Chatbot* Platform Using the SVM Machine Learning Algorithm,” *J. Pedagogi dan Pembelajaran*, vol. 6, pp. 231–237, 2023, doi: 10.23887/jp2.v6i2.62611

[75] IBM, “Apa itu Support Vector Machines (SVM)?,” 27 Dec. 2023. [Online]. Available: https://www.ibm.com/id-id/think/topics/support-vector-machine

[76] GeeksforGeeks, “How to Calculate Mean Absolute Error in Python?,” 2 Nov. 2024. [Online]. Available: https://www.geeksforgeeks.org/how-to-calculate-mean-absolute-error-in-python/

[77] DQLab, “Kriteria Jenis Teknik Analisis Data dalam Forecasting,” 14 Jan. 2022. [Online]. Available: https://dqlab.id/kriteria-jenis-teknik-analisis-data-dalam-forecasting

[78] N. C. Sastya and I. Nugraha, “Penerapan Metode CRISP-DM dalam Menganalisis Data untuk Menentukan Customer Behavior di MeatSolution,” *J. Pendidik. dan Apl. Ind.*, vol. 10, 2023. [Online]. Available: https://ejournal.unis.ac.id/index.php/UNISTEK/article/view/3079

[79] I. K. Sukesa, “CRISP DM Sebagai Salah Satu Standard untuk Menghasilkan Data Driven Decision Making yang Berkualitas,” *J. Teknol. Inform.*, 22 Jun. 2022. [Online]. Available: https://ejurnal.ars.ac.id/index.php/jti/article/view/1051

[80] M. N. A., “CRISP-DM: Tahapan, Studi Kasus, Kelebihan, dan Kekurangan,” *Dicoding*, 19 Jun. 2024. [Online]. Available: https://www.dicoding.com/blog/crisp-dm-tahapan-studi-kasus-kelebihan-dan-kekurangan/

[81] W. A. Wahyudi *et al.*, *Metode Penelitian (Dasar Praktik dan Penerapan Berbasis ICT)*, S. Ervi Novitasari, Ed. Mifandi Mandiri Digital, 2023, pp. 159–173. [Online]. Available: https://www.researchgate.net/publication/373189798

[82] N. Fatma, N. F. Irfan, dan I. F. Latiep, "Analisis Keputusan Pembelian Produk Menggunakan Persepsi Harga dan Kualitas Produk," *SEIKO:*

Journal of Management & Business, vol. 4, no. 2, pp. 533–540, 2021. [Online]. Available: https://doi.org/10.37531/sejaman.v5i1.1674

[83] Q. V. J. Tambayong, *Rancang Bangun Aplikasi Penawaran Kerja Paruh Waktu Berbasis Web Menggunakan Metode User Centered Design dan Algoritma Collaborative Filtering*, Bachelor thesis, Universitas Multimedia Nusantara, 2022. [Online]. Available: https://kc.umn.ac.id/id/eprint/22109/

[84] M. Iqbal, G. I. Marthasari, dan I. Nuryasin, "Penerapan Metode UCD (User Centered Design) pada Perancangan Aplikasi Darurat Berbasis Android," *REPOSITOR*, vol. 2, no. 2, pp. 201–214, Feb. 2020. [Online]. Available: https://www.researchgate.net/publication/343196751_Penerapan_Metode_UCD_User_Centered_Design_pada_Perancangan_aplikasi_Darurat_Berbasis_Android/fulltext/5f1b8e0f45851515ef478ad2/Penerapan-Metode-UCD-User-Centered-Design-pada-Perancangan-aplikasi-Darurat-Berbasis-Android.pdf

[85] R. D. Cahyani dan A. D. Indriyanti, "Penerapan Metode User Centered Design dalam Perancangan Ulang Desain Website MAN 1 Pasuruan," *JEISBI (Journal of Emerging Information Systems and Business Intelligence)*, vol. 3, no. 2, 2022. [Online]. Available: https://ejournal.unesa.ac.id/index.php/JEISBI/article/view/46197

[86] A. Wijaya, *Rancang Bangun Sistem Informasi Obat Berbasis Web di Apotek Bintang Jaya dengan Metode First in First Out*, Skripsi Sarjana, Universitas Multimedia Nusantara, 2022. [Online]. Tersedia: https://kc.umn.ac.id/id/eprint/28115/

[87] V. H. Pranatawijaya, W. Widiatry, R. Priskila, and P. B. A. A. Putra, "Penerapan skala likert dan skala dikotomi pada kuesioner online," *Jurnal Sains dan Informatika*, vol. 5, no. 2, pp. 128–137, 2019. [Online]. Available: https://doi.org/10.34128/jsi.v5i2.185

[88] R. Handayani and E. Maria, "Usability of the GrabMerchant Application: An Evaluation using the System Usability Scale and the Retrospective Think Aloud Method," *Sistemasi: Jurnal Sistem Informasi*, vol. 14, no. 4, pp. 1749–1762, 2025. [Online]. Available: http://sistemasi.ftik.unisi.ac.id

[89] M. A. Azis, H. M. Az-Zahra, and L. Fanani, "Evaluasi dan Perancangan User Interface Aplikasi Mobile Layanan Pengaduan Masyarakat Online Menggunakan Human-Centered Design," *Jurnal Pengembangan Teknologi*

Informasi dan Ilmu Komputer, vol. 3, no. 1, pp. 529–537, Jan. 2019. [Online]. Available: http://j-ptiik.ub.ac.id

[90] . M. Barnum, *Usability Testing Essentials: Ready, Set…Test!*, 2nd ed. Cambridge, MA: Morgan Kaufmann, 2020.