

DAFTAR PUSTAKA

- Abdul-Majid, M., Zahari, S., Othman, N., & Nadzri, S. (2024). Influence of technology adoption on farmers' well-being: Systematic literature review and bibliometric analysis. *Heliyon*, *10*, e24316. <https://doi.org/10.1016/j.heliyon.2024.e24316>
- Abdulai, Abdul-Rahim, KC, Krishna Bahadur, & Fraser, Evan. (2022). What factors influence the likelihood of rural farmer participation in digital agricultural services? experience from smallholder digitalization in Northern Ghana. *Outlook on Agriculture*, *52*(1), 57–66. <https://doi.org/10.1177/00307270221144641>
- Abiri, R., Rizan, N., Balasundram, S. K., Shahbazi, A. B., & Abdul-Hamid, H. (2023). Application of digital technologies for ensuring agricultural productivity. *Heliyon*, *9*(12). <https://doi.org/10.1016/j.heliyon.2023.e22601>
- Adeni, S., Yusnita, T., & Harahap, M. A. (2023). Rural Community Leaders and Development Messages in the Digital Age. *International Journal of Social Science and Human Research*, *6*(09). <https://doi.org/10.47191/ijsshr/v6-i9-34>
- Ahmad, F., & Karim, M. (2019). Impacts of knowledge sharing: a review and directions for future research. *Journal of workplace learning*, *31*(3), 207–230. <https://doi.org/10.1108/JWL-07-2018-0096>
- Aina, A. T. (2021). *Probability Sampling*. https://www.academia.edu/50775082/Probability_Sampling#:~:text=Stratified random sampling is also,to perform simple random sampling.
- Akbar, W., Subiyantoro, H., & Sidik, M. (2023). Factors Influencing Rice Import Activities in Indonesia. *Ekonomis: Journal of Economics and Business*, *7*(2), 782–786. <https://doi.org/https://doi.org/10.33087/ekonomis.v7i2.1095>
- Akber, N., Paltasingh, K. R., Mishra, A. K., & Goyari, P. (2024). Land Ownership Security, Farm Investment, and Investment Risk in Indian Agriculture: Evidence from Nationally Representative Survey. *Journal of Agricultural and Applied Economics*, *56*(2), 278–296. <https://doi.org/DOI: 10.1017/aae.2024.9>
- Aker, J. C. (2011). Dial “A” for agriculture: a review of information and communication technologies for agricultural extension in developing countries. *Agricultural economics*, *42*(6), 631–647. <https://doi.org/https://doi.org/10.1111/j.1574-0862.2011.00545.x>
- Alam, M. J., Sarma, P. K., Begum, I. A., Crase, L., Tama, R. A. Z., & Kader, M. A. (2024). Impact of agricultural extension services on rice productivity and profitability in Bangladesh. *Outlook on Agriculture*, *53*(4), 376–389.
- Amina, W., Warraich, N. F., & Rafiq, M. (2025). Factors Influencing Farmers' satisfaction and Adoption Of Mobile Phone Applications For

- Agricultural Purposes: A Systematic REVIEW. *Journal of Agricultural Research (JAR)*, 63(2), 171–186. <https://doi.org/10.58475/2025.63.2.1145>
- Anang, B. T., & Ayambila, S. N. (2020). Participation in agricultural extension and labor productivity: a case study of smallholder farmers in Ghana. *International Journal on Food System Dynamics*, 11(3), 297–306. <https://doi.org/https://doi.org/10.18461/ijfsd.v11i3.55>
- Anggraini, F. D. P., Aprianti, A., Setyawati, V. A. V., & Hartanto, A. A. (2022). Pembelajaran statistika menggunakan software SPSS untuk uji validitas dan reliabilitas. *Jurnal basicedu*, 6(4), 6491–6504. <https://doi.org/10.31004/basicedu.v6i4.3206>
- Ankur, J., Kale, S., Chandel, S., & Pal, D. K. (2015). Likert Scale: Explored and Explained. *Current Journal of Applied Science and Technology*, 7(4 SE-Opinion Article), 396–403. <https://doi.org/10.9734/BJAST/2015/14975>
- Annafi, S. N., Riyanto, S., & Aulia, T. (2023). Fungsi Kepemimpinan Ketua Kelompok Tani dalam Percepatan Proses Difusi Inovasi (Kasus: Kelompok Tani di Desa Sindanglaya, Kecamatan Cipanas, Kabupaten Cianjur). *Jurnal Sains Komunikasi dan Pengembangan Masyarakat [JSKPM]*, 7(1 SE-Articles), 114–124. <https://doi.org/10.29244/jskpm.v7i1.1128>
- Annicchiarico, P. (2002). *Genotype x environment interaction: challenges and opportunities for plant breeding and cultivar recommendations*. Food and Agriculture Organization of the United Nations. <https://www.fao.org/4/y4391e/y4391e00.htm#Contents>
- Aragón, F. M., Restuccia, D., & Rud, J. P. (2022). Are small farms really more productive than large farms? *Food Policy*, 106, 102168. <https://doi.org/https://doi.org/10.1016/j.foodpol.2021.102168>
- Arangurí, M., Mera, H., Noblecilla, W., & Lucini, C. (2025). Digital Literacy and Technology Adoption in Agriculture: A Systematic Review of Factors and Strategies. In *AgriEngineering* (Vol. 7, Nomor 9). <https://doi.org/10.3390/agriengineering7090296>
- Arvianti, E. Y., Masyhuri, M., Waluyati, L. R., & Darwanto, D. H. (2019). Gambaran krisis petani muda Indonesia. *Agriekonomika*, 8(2), 168–180. <https://doi.org/10.21107/agriekonomika.v8i2.5429>
- Asnamawati, L., Rasoki, T., & Herawati, I. E. (2020). Perilaku petani dalam pengelolaan usaha tani dengan penerapan teknologi smart farming 4.0. *Seminar Nasional Lahan Suboptimal*, 1, 634–643. <https://conference.unsri.ac.id/index.php/lahansuboptimal/article/view/1804>
- Aubry, P. (2021). On the non-recursive implementation of multistage sampling without replacement. *MethodsX*, 8, 101553. <https://doi.org/https://doi.org/10.1016/j.mex.2021.101553>
- Azizah, N., Setyabudi, I. F., Auliya, I. D., Zakaria, M. A., Ramadhana, I. H.,

- Natalia, G., & Kurniawati, D. (2025). Peran Penyuluh Pertanian dan Bantuan Alsintan-Subsidi Saprodi dalam Meningkatkan Produksi Padi di Kelompok Tani Jambuan Jaya Kabupaten Jember. *Jurnal Ilmiah Inovasi*, 25(2), 113–124.
- Badan Perakitan dan Modernisasi Pertanian. (2024). *Dukung Program Strategis, Kementerian Pertanian Luncurkan SIAP TANAM Versi 1.0*. <https://doi.org/https://brmp.pertanian.go.id/berita/dukung-program-strategis-kementerian-pertanian-luncurkan-siap-tanam-versi-10>
- Badan Pusat Statistik Indonesia. (2026). *Berita Resmi Statistik No. 16/02/Th. XXIX, 2 Februari 2026*. Diakses pada 14 Mei 2026, dari https://web-api.bps.go.id/download.php?f=csLaiuX8lWi9zL2HwfLPW2FpdWx0dUNLZk5VenUwL2QwcTzaazJvVzJMMXJ1VIBKQnhGZm8rM3VrMjNJMi9abzB3YzZ4MTZ0Y11ZRFBESU1aV3VwRFYvL1JBRHQzUi84QTZPY0F6K3NFTkFHTEdoREp6OWVqN0gyZVN0aU1kVE1UUKQrc0RqSnJFWkJkMzVvWE5Fd2laeGpDT0NrcVRWeTICZE5sQT09&_gl=1*1u0uxoo*_ga*MTQyOTE2OTMyNC4xNzQ1ODE0NjAz*_ga_XXTTVXWHDB*cze3Nzk2MjgyMDEkbzE5JGcxJHQxNzc5NjI4Mzc1JGo2MCRsMCRoMA..
- Balasundram, S. K., Shamshiri, R. R., Sridhara, S., & Rizan, N. (2023). The role of digital agriculture in mitigating climate change and ensuring food security: an overview. *Sustainability*, 15(6), 5325.
- Batkai, M., Hugé, J., Huitema, D., Semeijn, J., Lambrechts, W., & Stoorvogel, J. (2023). Social learning as a catalyst for building resilience among smallholder farmers: Exploring its role in promoting transformations. *NJAS: Impact in Agricultural and Life Sciences*, 95(1), 2278906. <https://doi.org/10.1080/27685241.2023.2278906>
- Beck, K. (2024). Chapter 46 - Surveys and questionnaires. In A. E. M. Eltorai, J. A. Bakal, J. M. Haglin, J. A. Abboud, & J. J. B. T.-T. O. Crisco (Ed.), *Handbook for Designing and Conducting Clinical and Translational Research* (hal. 225–227). Academic Press. <https://doi.org/https://doi.org/10.1016/B978-0-323-85663-8.00015-5>
- Bhardwaj, P. (2019). Types of Sampling in Research. *Journal of the Practice of Cardiovascular Sciences*, 5(3). https://journals.lww.com/jpcs/fulltext/2019/05030/types_of_sampling_in_research.6.aspx
- Bicchieri, C., Dimant, E., Gelfand, M., & Sonderegger, S. (2023). Social norms and behavior change: The interdisciplinary research frontier. *Journal of Economic Behavior & Organization*, 205, A4–A7. <https://doi.org/https://doi.org/10.1016/j.jebo.2022.11.007>
- Bollen, K. A. (1987). Total, Direct, and Indirect Effects in Structural Equation Models. *Sociological Methodology*, 17, 37–69. <https://doi.org/10.2307/271028>
- Bontsa, N. V., Mushunje, A., & Ngarava, S. (2023). Factors Influencing the

Perceptions of Smallholder Farmers towards Adoption of Digital Technologies in Eastern Cape Province, South Africa. *Agriculture*, 13(8). <https://doi.org/10.3390/agriculture13081471>

- Botella, F., Moreno, J. P., & Benavent, A. P. (2014). How efficient can be a user with a tablet versus a smartphone? *Interacción '14: Proceedings of the XV International Conference on Human Computer Interaction*, 1–9. <https://doi.org/10.1145/2662253.2662317>
- Caffaro, F., & Cavallo, E. (2019). The Effects of Individual Variables, Farming System Characteristics and Perceived Barriers on Actual Use of Smart Farming Technologies: Evidence from the Piedmont Region, Northwestern Italy. In *Agriculture* (Vol. 9, Nomor 5, hal. 111). <https://doi.org/10.3390/agriculture9050111>
- Cai, B., Shi, F., Meseretchanie, A., Betelhemabraham, G., & Zeng, R. (2024). Agricultural socialized services empowering smallholder rice producers to achieve high technical efficiency: empirical evidence from southern China. *Frontiers in Sustainable Food Systems*, 8, 1329872. <https://doi.org/https://doi.org/10.3389/fsufs.2024.1329872>
- Cao, H., Nguyen, D., Toi, H., Nguyen, N., & Duong, V. (2025). Application of digital technology in rice production of households in the Mekong Delta. *VNUHCM Journal of Economics - Law and Management*, 9(1 SE-Research article). <https://doi.org/https://doi.org/10.32508/stdjelm.v9i1.1490>
- Cardona, A., Carusi, C., & Bell, M. M. (2021). Engaged Intermediaries to Bridge the Gap between Scientists, Educational Practitioners and Farmers to Develop Sustainable Agri-Food Innovation Systems: A US Case Study. In *Sustainability* (Vol. 13, Nomor 21). <https://doi.org/10.3390/su132111886>
- Cassia, F., & Magno, F. (2024). The value of self-determination theory in marketing studies: Insights from the application of PLS-SEM and NCA to anti-food waste apps. *Journal of Business Research*, 172, 114454. <https://doi.org/10.1016/j.jbusres.2023.114454>
- Chin, W., & Marcoulides, G. (1998). The Partial Least Squares Approach to Structural Equation Modeling. In *Modern Methods for Business Research*. Laurence Elbaum Associates Publisher. https://www.researchgate.net/publication/311766005_The_Partial_Least_Squares_Approach_to_Structural_Equation_Modeling
- Cho, G., Hwang, H., Sarstedt, M., & Ringle, C. M. (2020). Cutoff criteria for overall model fit indexes in generalized structured component analysis. *Journal of Marketing Analytics*, 8(4), 189–202. <https://doi.org/10.1057/s41270-020-00089-1>
- Chourad, R., Beeraladinni, D., Naik, V., Jamdar, R., Joshi, A., & Deshmanya, J. B. (2024). Economic impacts of digital transformation in agricultural extension services. *International Journal of Agriculture Extension and Social*

- Development*, 7(12), 197–201.
<https://doi.org/10.33545/26180723.2024.v7.i12c.1403>
- Coelli, T., D.S.P. Rao, and G. E. B. (1998). *An introduction to efficiency and productivity analysis*. Kluwer Academic Publishers Boston.
- Damanik, I. P. N., & Tahitu, M. E. (2025). Adoption of Transplanting Machine among Rice Farmers in Maluku, Indonesia. *Journal of Agricultural Extension*, 29(3 SE-), 143–153.
<https://journal.aesonnigeria.org/index.php/jae/article/view/5473>
- Davis, F. D., & Granić, A. (2024). *The technology acceptance model: 30 years of TAM*. *SpringerBriefs in Human-Computer Interaction (eBook)*. Springer Nature Switzerland AG. <https://doi.org/https://doi.org/10.1007/978-3-030-45274-2>
- de Roo, N., Amede, T., Elias, E., Almekinders, C., & Leeuwis, C. (2023). Diffusion of agricultural knowledge in Southern Ethiopia: finding the real opinion leaders through network analysis. *The Journal of Agricultural Education and Extension*, 29(1), 99–115. <https://doi.org/10.1080/1389224X.2021.1987282>
- Deb, P., & Sharma, M. L. (1968). Informal Leaders and Technological Change in Agriculture 1. *Sociological Bulletin*, 17(2), 133–140.
<https://doi.org/https://doi.org/10.1177/0038022919680203>
- Dinas Pertanian Dan Pangan Kabupaten Trenggalek. (2025). *Trenggalek Agricultural Spatial Network Database Utilization And Reporting (TANDUR)*. <https://etandur.trenggalekkab.go.id/>
- Dolinska, A., & d'Aquino, P. (2016). Farmers as agents in innovation systems. Empowering farmers for innovation through communities of practice. *Agricultural Systems*, 142, 122–130.
<https://doi.org/https://doi.org/10.1016/j.agsy.2015.11.009>
- Elmobayed, M. G., Al-Hattami, H. M., Al-Hakimi, M. A., Mraish, W. S., & Al-Adwan, A. S. (2024). Effect of marketing literacy on the success of entrepreneurial projects. *Arab Gulf Journal of Scientific Research*, 42(4), 1590–1608. <https://doi.org/10.1108/AGJSR-06-2023-0266>
- Faqih, A., Aisyah, S., & Elizabeth, R. (2020). *Group Farmers Association and the Success of Rural Agribusiness Development Program BT - Proceedings of the International Conference on Agriculture, Social Sciences, Education, Technology and Health (ICASSETH 2019)*. 188–192.
<https://doi.org/10.2991/assehr.k.200402.042>
- Patricia, A., Yurisinthae, E., & Dolorosa, E. (2025). Pengaruh Karakteristik Petani pada Produktivitas Usahatani Jagung Manis di Kecamatan Rasau Jaya Kabupaten Kubu Raya. *Mimbar Agribisnis: Jurnal Pemikiran Masyarakat Ilmiah Berwawasan Agribisnis*, 11(1), 745–756.
<http://dx.doi.org/10.25157/ma.v11i1.16322>

- Fayaz, A., & Kaundal, M. (2025). Leveraging Mobile Technology to Enhance Agricultural Extension Services: A Review. *Archives of Current Research International*, 25(7), 804–817. <https://doi.org/10.9734/acri/2025/v25i71380>
- Filippini, R., Marescotti, M. E., Demartini, E., & Gaviglio, A. (2020). Social Networks as Drivers for Technology Adoption: A Study from a Rural Mountain Area in Italy. In *Sustainability* (Vol. 12, Nomor 22, hal. 9392). <https://doi.org/10.3390/su12229392>
- Finger, R. (2023). Digital innovations for sustainable and resilient agricultural systems. *European Review of Agricultural Economics*, 50(4), 1277–1309. <https://doi.org/10.1093/erae/jbad021>
- Firmanto, A., Ngarawula, B., & Wahyudi, C. (2024). Social Interaction for Empowering and Encouraging Farmer Productivity in Kecamatan Rubaru, Sumenep. *KnE Social Sciences*, 9(26 SE-Articles), 80–89. <https://doi.org/10.18502/kss.v9i26.17071>
- Francisco, J. C. S., Mamangon, L. G. F., Pagaduan, E. E., Pajarillo, R. L. C., & Domingo, A. V. (2024). Farmers' Digital Transformation Preferences: Acceptability, Affordability, Accessibility, Awareness, and Availability. *International Journal of Advanced Engineering, Management and Science*, 10(7), 9–12. <https://doi.org/10.22161/ijaems.107.3>
- Gang, F., & Ping, Z. (2012). The Characteristics of Farmers and Paying Willingness for Information. *The Journal of Agricultural Science*, 4, 163–170. <https://doi.org/10.5539/jas.v4n4p163>
- Gao, Y., Zhao, D., Yu, L., & Yang, H. (2020). Influence of a new agricultural technology extension mode on farmers' technology adoption behavior in China. *Journal of Rural Studies*, 76, 173–183. <https://doi.org/10.1016/j.jrurstud.2020.04.016>
- Gorobets, N. (2022). Using of digital technologies in agricultural management. *Publishing House "Baltija Publishing."* <https://doi.org/10.30525/978-9934-26-220-3-27>
- Guampe, F. A., Kolompo, S. A., Marhawati, M., Purnamasari, F., Rosadi, S. H., Lano, M. L., Makaborang, M., Amir, M. A., Yusran, Y., & Rahmaningtyas, A. (2025). Agribisnis: Strategi, Inovasi dan Keberlanjutan. *Penerbit Tahta Media*.
- Hadi, S., Aprisco, H., Abdillah, M. F., & Suroso, B. (2025). The exemplary role of farmer institutional administrators as a strengthener for the holistic and integrative reform of the agricultural development paradigm. *Holistic: Journal of Tropical Agriculture Sciences*, 3(1), 21–43. <https://doi.org/https://doi.org/10.61511/hjtas.v3i1.2025.1973>
- Hager, P. (2012). *Theories of Practice and Their Connections with Learning: A Continuum of More and Less Inclusive Accounts BT - Practice, Learning and*

- Change: Practice-Theory Perspectives on Professional Learning* (P. Hager, A. Lee, & A. Reich (ed.); hal. 17–32). Springer Netherlands. https://doi.org/10.1007/978-94-007-4774-6_2
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. 3rd Edition. Sage Publications.
- Hair, J. F., Tomas, G., Hult, M., & Christian, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Library of Congress Cataloging-in-Publication Data.
- Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, 1(3), 100027. <https://doi.org/https://doi.org/10.1016/j.rmal.2022.100027>
- 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://link.springer.com/content/pdf/10.1007/978-3-030-80519-7.pdf>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hair Jr, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), 107–123. <https://doi.org/https://doi.org/10.1504/IJMDA.2017.087624>
- Haji-Othman, Y., Yusuff, M. S. S., & Hussain, M. N. M. (2024). Data analysis using partial least squares structural equation modeling (PLS-SEM) in conducting quantitative research. *International Journal of Academic Research in Business and Social Sciences*, 14(10), 2380–2388. <http://dx.doi.org/10.6007/IJARBS/v14-i10/23364>
- Han, M., Liu, R., Ma, H., Zhong, K., Wang, J., & Xu, Y. (2022). The Impact of Social Capital on Farmers' Willingness to Adopt New Agricultural Technologies: Empirical Evidence from China. In *Agriculture* (Vol. 12, Nomor 9, hal. 1368). <https://doi.org/10.3390/agriculture12091368>
- Hanafiah, M. H. (2020). Formative vs. reflective measurement model: Guidelines for structural equation modeling research. *International Journal of Analysis and Applications*, 18(5), 876–889. <https://etamaths.com/index.php/ijaa/article/view/2166>
- Hayami, Y., & Ruttan, V. W. (1985). Agricultural development. *Baltimore, London*.
- Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new

- technology research: updated guidelines. *Industrial management & data systems*, 116(1), 2–20. <https://doi.org/10.1108/IMDS-09-2015-0382%0A>
- Hermawati, L., Pusvita, E., Marwa, T., & Yulianita, A. (2025). Analysis of technology adoption and government policy in improving the financial performance of SMEs in the Indonesia agricultural sector. *Heritage and Sustainable Development*, 7(1 SE-Articles), 117–132. <https://doi.org/10.37868/hsd.v7i1.966>
- Herningsih, H., Muhsin, M., & Linggarweni, B. I. (2025). Komparasi Pendapatan Usahatani Padi (*Oryza Sativa*) Varietas Padjajaran Dan Cakrabuana Di Kecamatan Pringgarata Kabupaten Lombok Tengah. *JIMP: Jurnal Ilmiah Manajemen Profetik*, 3(2), 60–69. <https://doi.org/https://doi.org/10.55182/jimp.v3i2.591>
- Hollon, S. D. (2019). Moderation, mediation, and moderated mediation. *World Psychiatry*, 18(3), 288. <https://doi.org/https://doi.org/10.1002/wps.20665>
- Idris, N. A. M., & Zulkifli, Z. (2024). Knowledge, attitude and practices of smart farming technology for small scale farmers in paddy production: A case study in Melaka. *IOP Conference Series: Earth and Environmental Science*, 1397(1), 12032. <https://doi.org/10.1088/1755-1315/1397/1/012032>
- Imelda, I., Hidayat, R., & Aritonang, M. (2022). The Effect of Individual Characteristics and Entrepreneurship on Rice Farming Performance. *AGRARIS: Journal of Agribusiness and Rural Development Research*, 8(1 SE-Research Article), 58–72. <https://doi.org/10.18196/agraris.v8i1.11466>
- Indonesia. (2019). *Undang-Undang Nomor 22 Tahun 2019 tentang Sistem Budi Daya Pertanian Berkelanjutan*. Lembaran Negara Republik Indonesia Tahun 2019 Nomor 201. Jakarta: Sekretariat Negara. Diakses pada 14 Januari 2026 pada: <https://peraturan.bpk.go.id/Details/123688/uu-no-22-tahun-2019>
- Ishak, A., Margono, T., Alfayanti, Y. H., Fauzi, E., Putra, W. E., Miswarti, Yahumri, Rosmanah, S., & Rahman, T. (2024). Farmers' responses to the use of rice agro-advisory service application in South Bengkulu Regency. *IOP Conference Series: Earth and Environmental Science*, 1297(1), 12004. <https://doi.org/10.1088/1755-1315/1297/1/012004>
- Jiang, Y., Zhao, X., Zhu, L., Liu, J. S., & Deng, K. (2021). Total-effect test is superfluous for establishing complementary mediation. *Statistica Sinica*, 31(4), 1961–1983. <https://www3.stat.sinica.edu.tw/statistica/J31N4/J31N414/J31N414.html>
- Jin, Y. (2022). Development and Application of Social Learning Theory. *Learning & Education*, 10(7 SE-Article), 183–184. <https://doi.org/10.18282/l-e.v10i7.3002>
- Jones, T. L., Baxter, M. A. J., & Khanduja, V. (2013). A quick guide to survey research. *The Annals of The Royal College of Surgeons of England*, 95(1), 5–

7. <https://doi.org/10.1308/003588413X13511609956372>

- Kabirigi, M., Adewopo, J. B., Sun, Z., & Hermans, F. (2024). Opinion leaders' influence on knowledge transmission about crop diseases management: Exploring the attributes that matter to followers. *Outlook on Agriculture*, 53(3), 264–276. <https://doi.org/https://doi.org/10.1177/00307270241267764>
- Kamaruddin, S. W., Zulkifli, Z., & Akbar, A. (2025). Strengthening Farmer Institutions in Rice Farming: An Interpretive Structural Modeling Approach. *Jurnal Ilmu Pertanian Indonesia*, 30(4 SE-Articles), 703–711. <https://doi.org/10.18343/jipi.30.4.703>
- Khan, N., & Ray, R. L. (2023). Key Role Of Extension Agents In The Transfer and Adoption Of Agricultural Technologies: A Review. *Data Plus*, 1(1). <https://doi.org/https://doi.org/10.62887/dataplus.001.01.0007>
- Klerkx, L., Jakku, E., & Labarthe, P. (2019). A review of social science on digital agriculture, smart farming and agriculture 4.0: New contributions and a future research agenda. *NJAS: Wageningen Journal of Life Sciences*, 90–91(1), 1–16. <https://doi.org/10.1016/j.njas.2019.100315>
- Klerkx, L., van Mierlo, B., & Leeuwis, C. (2012). *Evolution of systems approaches to agricultural innovation: concepts, analysis and interventions BT - Farming Systems Research into the 21st Century: The New Dynamic* (I. Darnhofer, D. Gibbon, & B. Dedieu (ed.); hal. 457–483). Springer Netherlands. https://doi.org/10.1007/978-94-007-4503-2_20
- Kock, N. (2017). Common method bias: a full collinearity assessment method for PLS-SEM. In *Partial least squares path modeling: Basic concepts, methodological issues and applications* (hal. 245–257). Springer.
- Kokt, D., & Mphirime, B. G. (2022). Invigorating the hospitality industry: What is the impact of psychological contract and psychological capital on employee commitment? *Acta Commercii*, 22(1), 1–11. <https://doi.org/10.4102/ac.v22i1.981>
- Kurniawan, E. W., Mentari, F. S. D., Rochman, P., Ayu, I. W., Setyabudi, I. F., Triwahyuningsih, N., Admantin, C. Y., & Suhartini, S. (2025). *Pertanian Modern: Teknologi, Inovasi, dan Keberlanjutan*. PT. Star Digital Publishing.
- Kustiari, T., & Ananta Budiman, Y. (2023). Peningkatan Kinerja Digital Penyuluh Pertanian Dinas Pertanian dan Pangan Kabupaten Banyuwangi Jawa Timur: Performance Improvement for Agricultural Extension Service, Agriculture and Food Service, in Banyuwangi Regency, East Java. *Jurnal Penyuluhan*, 19(02 SE-Articles), 257–274. <https://doi.org/10.25015/19202346275>
- Kustiari, T., Wahyono, N. D., & Setyabudi, I. F. (2026). Pemberdayaan Petani dalam Menyusun Perencanaan Tanam Padi Cerdas Iklim Berbasis Aplikasi Sistem Informasi di Kecamatan Tamanan, Bondowoso. *Jurnal Pengabdian Masyarakat Bangsa*, 3(12 SE-Articles), 7452–7461.

<https://doi.org/10.59837/jpmba.v3i12.4152>

- Lee, Y.-G., Han, K., Chung, C., & Ji, I. (2024). Effects of Smart Farming on the Productivity of Korean Dairy Farms: A Case Study of Robotic Milking Systems. *Sustainability*, *16*(22). <https://doi.org/10.3390/su16229991>
- Lidyana, N., & Sulistiyowati, R. (2022). Analisis Faktor-faktor Produksi Yang Mempengaruhi Pendapatan Petani pada Usahatani Kentang Varietas Granola di Probolinggo. *Manajemen Agribisnis: Jurnal Agribisnis*, *22*(2), 171–175. <https://doi.org/10.32503/agribisnis.v22i2.2514>
- Lienggaard, B. D., Sharma, P. N., Hult, G. T. M., Jensen, M. B., Sarstedt, M., Hair, J. F., & Ringle, C. M. (2021). Prediction: coveted, yet forsaken? Introducing a cross-validated predictive ability test in partial least squares path modeling. *Decision sciences*, *52*(2), 362–392. <https://doi.org/https://doi.org/10.1111/deci.12445>
- Lin, T., Ko, A. P., Than, M. M., Catacutan, D. C., Finlayson, R. F., & Isaac, M. E. (2021). Farmer social networks: The role of advice ties and organizational leadership in agroforestry adoption. *PloS One*, *16*(8), e0255987. <https://doi.org/10.1371/journal.pone.0255987>
- Long, N. L. H., & Nam, T. H. (2025). *Demographic Insights into the Adoption of Digital Innovations in Agriculture: Segmenting Adopters and Non-Adopters among Vietnamese Farmers*. *83*, 52–62. <https://doi.org/https://doi.org/10.61602/jdi.2025.83.07>
- Luo, F., Tian, M., Xia, Q., Xu, D., & Sun, C. (2017). Estimating the Optimal Land Management Scale of Big Grain Production Households and Comprehensive Family Farms Based on the Decision Graph. *International Journal of Economics, Finance and Management Sciences*, *5*(6). <https://doi.org/10.11648/j.ijefm.20170506.16>
- Machali, I. (2021). *Metode penelitian kuantitatif (panduan praktis merencanakan, melaksanakan, dan analisis dalam penelitian kuantitatif)* (hal. 254). Fakultas Ilmu Tarbiyah dan Keguruan Universitas Islam Negeri (UIN) Sunan Kalijaga. <https://digilib.uin-suka.ac.id/id/eprint/50344/>
- Magesa, M., Jonathan, J., & Urassa, J. (2023). Digital Literacy of Smallholder Farmers in Tanzania. *Sustainability*, *15*(17). <https://doi.org/10.3390/su151713149>
- Mahfud, T., & Winnarko, H. (2023). Analisis Penerimaan Teknologi Zoom dalam Pembelajaran Online Mahasiswa Selama Covid-19: Pendekatan Technology Acceptance Model (TAM). *JSHP: Jurnal Sosial Humaniora dan Pendidikan*, *7*(1), 1–17. <https://doi.org/https://doi.org/10.32487/jshp.v7i1.1620>
- Mangesti, G. H., Djamali, R. A., & Rizal, R. (2022). The Effect of Consumer Preference, Perception, and Awareness on Yogurt Purchase Decisions in Banyuwangi Regency. *Budapest International Research and Critics Institute-*

Journal (BIRCI-Journal), 5(3).

- Manzoor, F., Wei, L., & Siraj, M. (2025). Digital Agriculture Technology Adoption in Low and Middle-Income Countries-A Review of Contemporary Literature. *Frontiers in Sustainable Food Systems*, 9, 1621851. <https://doi.org/https://doi.org/10.3389/fsufs.2025.1621851>
- Matous, P. (2023). Male and stale? Questioning the role of “opinion leaders” in agricultural programs. *Agriculture and Human Values*, 40(3), 1205–1220. <https://doi.org/10.1007/s10460-023-10415-9>
- Maula, I. M. (2025). Evaluation of the Effectiveness of Digital Training Program for Farmers in Increasing the Adoption of Modern Agricultural. *Journal of Agricultural Economy and Technology Development*, 2(1), 12–21.
- Mellon-Bedi, S., Descheemaeker, K., Hundie-Kotu, B., Frimpong, S., & Groot, J. C. J. (2020). Motivational factors influencing farming practices in northern Ghana. *NJAS - Wageningen Journal of Life Sciences*, 92, 100326. <https://doi.org/https://doi.org/10.1016/j.njas.2020.100326>
- Morata-Ramírez, M. de los Á., & Holgado-Tello, F. P. (2013). Construct validity of Likert scales through confirmatory factor analysis: A simulation study comparing different methods of estimation based on Pearson and polychoric correlations. *Int'l J. Soc. Sci. Stud.*, 1, 54.
- Mtega, W. P. (2018). The usage of radio and television as agricultural knowledge sources: the case of farmers in morogoro region of tanzania. *International Journal of Education and Development using Information and Communication Technology*, 14(3), 252–266. <https://eric.ed.gov/?id=EJ1201501>
- Muher Sukmayanto, Tubagus Hasanuddin, & Listiana, I. (2022). The Capacity of Farmers in Rice Farming in Kabupaten Lampung Tengah. *Agriecobis : Journal of Agricultural Socioeconomics and Business*, 5(1 SE-Articles), 1–11. <https://doi.org/10.22219/agriecobis.v5i1.16280>
- Mulugeta, T., Ilomo, M., Mueke, A., Onyango, C., Matsaunyane, L., Kritzinger, Q., & Alexandersson, E. (2024). Smallholder farmers’ knowledge, attitudes, and practices (KAP) regarding agricultural inputs with a focus on agricultural biologicals. *Heliyon*, 10(4), e26719. <https://doi.org/10.1016/j.heliyon.2024.e26719>
- Mungai, L. M., Messina, J. P., Zulu, L. C., Chikowo, R., & Snapp, S. S. (2024). The role of agricultural extension services in promoting agricultural sustainability: a Central Malawi case study. *Cogent Food & Agriculture*, 10(1), 2423249. <https://doi.org/10.1080/23311932.2024.2423249>
- Narayan, K. G., Sinha, D. K., & Singh, D. K. (2023). *Sampling Techniques BT - Veterinary Public Health & Epidemiology: Veterinary Public Health-Epidemiology-Zoonosis-One Health* (K. G. Narayan, D. K. Sinha, & D. K.

- Singh (ed.); hal. 111–123). Springer Nature Singapore. https://doi.org/10.1007/978-981-19-7800-5_12
- Ningrum, W. (2013). *Pengaruh pendidikan dan pelatihan terhadap kinerja karyawan (studi pada karyawan joint operating body pertamina-pertochina east java)*. Brawijaya University.
- Nugraha, A. T., Prayitno, G., Azizi, F. A., Sari, N., Hidayana, I. I., Auliah, A., & Siankwilimba, E. (2023). Structural Equation Model (SEM) of Social Capital with Landowner Intention. In *Economies* (Vol. 11, Nomor 4). <https://doi.org/10.3390/economies11040127>
- Nurjanah, D. (2021). Faktor-faktor yang mempengaruhi minat petani muda di Kabupaten Temanggung. *AgriTech: Jurnal Fakultas Pertanian Universitas Muhammadiyah Purwokerto*, 23(1), 61–65. <https://jurnalnasional.ump.ac.id/index.php/AGRITECH/article/view/6779>
- Obenu, F. J. (2020). Memperkirakan rata-rata dan total pemakaian pulsa dengan metode stratified random sampling. *Jurnal Diferensial*, 2(1), 38–56. <https://doi.org/10.35508/jd.v2i1.3747>
- Onofri, L., Trestini, S., Mamine, F., & Loughrey, J. (2023). Understanding agricultural land leasing in Ireland: a transaction cost approach. *Agricultural and Food Economics*, 11(1), 17. <https://doi.org/10.1186/s40100-023-00254-x>
- Onumah, J. A., Asante, F. A., Osei, R. D., & Asare-Nuamah, P. (2023). Do farmer-actor interactions in the agricultural innovation system drive technological innovation adoption in Ghana? *African Journal of Science, Technology, Innovation and Development*, 15(4), 458–472. <https://doi.org/10.1080/20421338.2022.2124938>
- Oyeyemi, M. A. (2015). The Effect of Perception of Extension Service on Small Farm Holders Agricultural Production. *Journal of economics and sustainable development*, 6, 103–112. <https://api.semanticscholar.org/CorpusID:55899877>
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533–544. <https://doi.org/10.1007/s10488-013-0528-y>
- Pemerintah Kabupaten Banyuwangi. (2020). *Tangani problem pertanian, petani Banyuwangi bisa lapor lewat aplikasi*. <https://banyuwangikab.go.id/berita/tangani-problem-pertanian-petani-banyuwangi-bisa-lapor-lewat-aplikasi>
- Perneger, T. V., Courvoisier, D. S., Hudelson, P. M., & Gayet-Ageron, A. (2015). Sample size for pre-tests of questionnaires. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and*

- Rehabilitation*, 24(1), 147–151. <https://doi.org/10.1007/s11136-014-0752-2>
- Pond, G. R., & Caetano, S.-J. (2018). Types of Variables and Distributions. In R. L. C. Araújo & R. P. Riechelmann (Ed.), *Methods and Biostatistics in Oncology: Understanding Clinical Research as an Applied Tool* (hal. 23–35). Springer International Publishing. https://doi.org/10.1007/978-3-319-71324-3_3
- Powell, W. W., & DiMaggio, P. J. (2012). *The new institutionalism in organizational analysis*. University of Chicago press.
- Prangya, S., Jena, A., Behera, D., & Sahoo, S. (2024). Digital Extension System: Scaling Up Digital Technologies For Extension And Advisory Services. In *Futuristic Trends in Social Sciences Volume 3 Book 19* (hal. 28–40). IIP Series. <https://doi.org/10.58532/V3BJSO19P1CH5>
- Pratistya, S. D., Suharno, S., & Bueno, A. (2024). Dampak Teknologi Informasi dan Komunikasi terhadap Produktivitas Pangan di Indonesia. *Agrikultura*, 35(3), 483–493. <https://doi.org/https://doi.org/10.24198/agrikultura.v35i3.58339>
- Pratiwi, A., & Suzuki, A. (2017). Effects of farmers' social networks on knowledge acquisition: lessons from agricultural training in rural Indonesia. *Journal of Economic Structures*, 6(1), 8. <https://doi.org/10.1186/s40008-017-0069-8>
- Prestiana, S. M., Padmaningrum, D., & Sugihardjo, S. (2023). Peran Penyuluh sebagai Agent of Change dalam Adopsi Inovasi Padi Rojolele Srinuk. *JIA (Jurnal Ilmiah Agribisnis): Jurnal Agribisnis dan Ilmu Sosial Ekonomi Pertanian*, 8(3), 176–185. <https://doi.org/10.37149/jia.v8i3.621>
- Putra, D. (2025). Metodologi Penelitian Kuantitatif dan Kualitatif Teoretis & Praktis. *Penerbit Amerta Media*, 142–143.
- Qin, Z., Wang, J., Wang, Y., Liu, L., Zhou, J., & Fu, X. (2025). Assessing the Impacts of New Quality Productivity on Sustainable Agriculture: Structural Mechanisms and Optimization Strategies—Empirical Evidence from China. In *Sustainability* (Vol. 17, Nomor 6). <https://doi.org/10.3390/su17062662>
- Qu, X., Kojima, D., Wu, L., & Ando, M. (2025). *Data Collection and Descriptive Statistics BT - Harvest Loss in China: Rice, Mechanization, and the Moral Hazard of Outsourcing* (X. Qu, D. Kojima, L. Wu, & M. Ando (ed.); hal. 35–45). Springer Nature Singapore. https://doi.org/10.1007/978-981-97-9156-9_3
- Quandt, A., Salerno, J., Neff, J. C., Baird, T. D., Herrick, J. E., McCabe, J. T., Xu, E., & Hartter, J. (2020). Mobile phone use is associated with higher smallholder agricultural productivity in Tanzania, East Africa. *PLoS ONE*, 15(8). <https://doi.org/https://doi.org/10.1371/journal.pone.0237337>
- Radović, V., Pe\vsic, B., Filipović, J., & Ćosić, M. (2021). Agricultural advisors' role in the use of ICTs as a tool for a more sustainable Serbian agriculture.

- Ekonomika poljoprivrede*, 68(2), 477–490.
<https://doi.org/10.5937/ekoPolj2102477V>
- Rahman, S., Anik, A. R., & Sarker, J. R. (2022). Climate, environment and socio-economic drivers of global agricultural productivity growth. *Land*, 11(4), 512.
<https://doi.org/https://doi.org/10.3390/land11040512>
- Ramadayanti, W., Oktaviany, A., Hikmatunnisa, A. N., Maryan, A. D., & Heryadi, D. Y. (2025). Menakar Kesiapan Petani Muda di Kota Tasikmalaya dalam Mengadopsi Teknologi Pertanian. *Tumbuhan: Publikasi Ilmu Sosiologi Pertanian Dan Ilmu Kehutanan*, 2(2), 55–65.
- Rogers, E. M. (2003). *NDiffusion of Innovation*. 5th edition. Free press.
- Rondhi, M., & Adi, A. H. (2018). The Effects of Land Ownership on Production, Labor Allocation, and Rice Farming Efficiency. *AGRARIS: Journal of Agribusiness and Rural Development Research*, 4(2 SE-Research Article), 101–110. <https://doi.org/10.18196/agr.4265>
- Rosário, J., Madureira, L., Marques, C., & Silva, R. (2022). Understanding Farmers' Adoption of Sustainable Agriculture Innovations: A Systematic Literature Review. *Agronomy*, 12(11).
<https://doi.org/10.3390/agronomy12112879>
- Rosdiana, Susilo Wirawan, Yuniarsy Hartika, A., Prabu Aji, S., Febriantika, Rony Nayoan, C., Br Tarigan, F. L., Arisanti, D., Trisilawati, R., & Simanjuntak, R. R. (2023). *Penerapan Strategi Perubahan Perilaku*. GET PRESS INDONESIA.
- Rose, D. C., & Chilvers, J. (2018). Agriculture 4.0: Broadening responsible innovation in an era of smart farming. *Frontiers in Sustainable Food Systems*, 2, 387545.
- Safiteri, P., Koritelu, P., Litaay, S. C. H., & Leiwakabessy, J. E. M. (2025). Social Capital of Rice Farmers in Waihatu Village, Kairatu Barat Subdistrict, West Seram Regency. *Jurnal Ilmiah Global Education*, 6(3 SE-Articles), 1600–1617. <https://doi.org/10.55681/jige.v6i3.4071>
- Sajko, R. L. (2024). On Survey Questionnaire Testing. *Central European Journal of Paediatrics*, 20(2). <https://doi.org/https://doi.org/10.5457/p2005-114.377>
- Salsabella, I. H., Bakhtiar, A., & IBRAHIM, J. A. T. (2024). The role of agricultural extension workers in digital transformation at the Agricultural Extension Center in Lowokwaru Malang. *AGROMIX*, 15(2), 255–261.
<https://doi.org/10.35891/agx.v15i2.4098>
- Santoso, A. B., Girsang, S. S., Raharjo, B., Pustika, A. B., Hutapea, Y., Kobarsih, M., Suprihatin, A., Manurung, E. D., Siagian, D. R., Hanapi, S., Purba, T., Parhusip, D., Budiarti, S. W., Wanita, Y. P., Hatmi, R. U., Girsang, M. A., Haloho, L., Waluyo, Suparwoto, ... Sudarmaji. (2023). Assessing the Challenges and Opportunities of Agricultural Information Systems to Enhance

- Farmers' Capacity and Target Rice Production in Indonesia. In *Sustainability* (Vol. 15, Nomor 2, hal. 1114). <https://doi.org/10.3390/su15021114>
- Saputra, F. (2025). Instrument Reliability Analysis. *Jurnal Indonesia Sosial Sains*, 6(3 SE-Articles), 791–806. <https://doi.org/10.59141/jiss.v6i3.1669>
- Saraswati, F., Azzahra, F., & Fikri, M. R. A. (2024). The Role of Farmer Group Heads in the Adoption of Rice Paddy Cultivation Innovations in Rangdumulya Village. *International Journal of Agricultural Social Economics and Rural Development (Ijaserd)*, 4(1), 50–59. <https://doi.org/10.37149/ijaserd.v4i1.1300>
- Sarma, P. K., Alam, M. J., & Begum, I. A. (2022). Farmers' knowledge, attitudes, and practices towards the adoption of hybrid rice production in Bangladesh: an PLS-SEM approach. *GM Crops & Food*, 13(1), 327–341. <https://doi.org/10.1080/21645698.2022.2140678>
- Sekretariat Jenderal Pertanian. (2025, April). Pusdatin dan BB Mektan Gelar Diskusi Mekanisasi Pertanian Mendukung Smart Farming. *Portal Satu Data Pertanian*, 22(04), 1–12. https://satudata.pertanian.go.id/assets/docs/publikasi/NL_April_2025_2.pdf
- Selvamuthu, D., & Das, D. (2024). *Introduction to probability, statistical methods, design of experiments and statistical quality control*. Springer. <https://link.springer.com/book/10.1007/978-981-99-9363-5>
- Setiabudhi, H., Suwono, S., Setiawan, Y. A., & Karim, S. (2025). *Analisis data kuantitatif dengan SmartPLS 4*. Borneo Novelty Publishing. <https://ebooks.borneonovelty.com/media/publications/588838-analisis-data-kuantitatif-dengan-smartpl-29069ce4.pdf>
- Setiawan, R. F., & Fitriana, N. H. I. (2025a). The Influence of Farmer Characteristics on the Digitalization of Durian Farming in Wonosalam District, Jombang Regency. *Nusantara Science and Technology Proceedings*, 2024(47), 246–252. <https://doi.org/10.11594/nstp.2025.4738>
- Setiawan, R. F., & Fitriana, N. H. I. (2025b). The Influence of Farmer Characteristics on the Digitalization of Durian Farming in Wonosalam District, Jombang Regency. *Nusantara Science and Technology Proceedings*, 2024(47 SE-Articles), 246–252. <https://doi.org/10.11594/nstp.2025.4738>
- Shaliza, F., Sumardjo, S., Sadono, D., & Uchrowi, Z. (2025). The synergy of agricultural extension and farmer group leadership in promoting farmers' independence in the digital era. *BIO Web of Conferences*, 186, 2007. <https://conference.ipb.ac.id/isotobat/article/view/1654>
- Shehrawat, P. S., B, A., Aditya, & Bhakar, S. (2024). Exploring awareness and utilization of agricultural mobile apps among smallholder farmers. *International Journal of Agriculture Extension and Social Development*, 7(1), 252–257. <https://doi.org/https://doi.org/10.33545/26180723.2024.v7.i1d.217>

- Shukla, U. C., & Huber, K. E. (2023). Chapter 34 - Sample size. In A. E. M. Eltorai, J. A. Bakal, D. W. Kim, & D. E. B. T.-T. R. O. Wazer (Ed.), *Handbook for Designing and Conducting Clinical and Translational Research* (hal. 199–202). Academic Press. <https://doi.org/https://doi.org/10.1016/B978-0-323-88423-5.00028-5>
- Siagian, R. A., & Soetjipto, W. (2020). Cost Efficiency Of Rice Farming In Indonesia: Stochastic Frontier Approach. *Agricultural Socio-Economics Journal*, 20(1), 7–14. <https://doi.org/10.21776/ub.agrise.2020.020.1.2>
- Sidharth, S., Kaur, M., & Manasa, K. (2024). Opinion Leaders' Role in Strengthening Agriculture Extension in India. *Gujarat Journal of Extension Education*, 37(2). <https://doi.org/https://doi.org/10.56572/gjoe.2024.37.2.0030>
- Sofyan, Y. (2022). *Olah Data Statistik SmartPLS 3 SmartPLS4 AMOS STATA. Cetakan Kedua, Penerbit Dewangga Energi Internasional.*
- Sugiyono. (2017). Metode penelitian kuantitatif kualitatif dan R&D. In *Alfabeta, Bandung*. Alfabeta. <https://inlislite.ipdn.ac.id/opac/detail-opac?id=9696>
- Sun, P. P. (2020). *Research Design and Methodology BT - Chinese as a Second Language Multilinguals' Speech Competence and Speech Performance: Cognitive, Affective, and Sociocultural Perspectives* (P. P. Sun (ed.); hal. 99–130). Springer Singapore. https://doi.org/10.1007/978-981-15-6941-8_5
- Susilowati, S. H. (2016). Fenomena penuaan petani dan berkurangnya tenaga kerja muda serta implikasinya bagi kebijakan pembangunan pertanian. *Forum penelitian agro ekonomi*, 34(1), 35–55. <https://epublikasi.pertanian.go.id/berkala/fae/article/view/1150>
- Tano, I. M. (2024). Digitalization in local governance. *Pantao (International Journal of the Humanities and Social Sciences)*, 3(3), 226–238. <https://doi.org/https://doi.org/10.69651/PIJHSS030317>
- Taofan Bagus Prayuda. (2024). Peran Penyuluh Pertanian dalam Mendukung Transformasi Digital Melalui Petani Apps di Sektor Pertanian Pedesaan Air Joman. *Neptunus: Jurnal Ilmu Komputer Dan Teknologi Informasi*, 2(4 SE-Articles), 43–50. <https://doi.org/10.61132/neptunus.v2i4.402>
- Tey, Y. S., & Brindal, M. (2024). A meta-analysis of factors speeding the adoption of agricultural intensification methods in Africa. *The Journal of Agricultural Education and Extension*, 30(4), 521–534. <https://doi.org/https://doi.org/10.1080/1389224X.2023.2240758>
- Van den Ban, A. W., & Hawkins, H. S. (1996). *Agricultural Extension. Blackwell Science Ltd* (hal. 294). Oxford, UK.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425–478.

- Vologirov, K. (2024). DIGITAL TOOLS FOR MONITORING AND MANAGEMENT IN AGRICULTURAL PRODUCTION. *The American Journal of Engineering and Technology*, 6(10 SE-Engineering and Technology), 119–125. <https://doi.org/10.37547/tajet/Volume06Issue10-13>
- Vorobyev, S. V., & Kuleshova, M. S. (2023). The Impact Of Digital Transformation Processes On The Economic Efficiency Of Agricultural Enterprises. *Problems of Branch Economics*, 2, 64–71. <https://doi.org/10.24888/2949-2793-2023-2-64-71>
- Wahyudi, W., Avianti, W., Martin, A., Jumali, Andriyani, N., Prihatiningsih, D., Misesani, D., Fahrudin, Yufrinalis, M., Mbari, M., Ningsih, A., Yulianto, A., Rokhman, M., Haqiyah, A., & Sukwika, T. (2023). *Metode Penelitian: Dasar Praktik dan Penerapan Berbasis ICT*. PT. MIFANDI MANDIRI DIGITAL.
- Wang, B., & Dong, H. (2023). Research on the farmers' agricultural digital service use behavior under the rural revitalization strategy—Based on the extended technology acceptance model. *Frontiers in Environmental Science*, 11. <https://doi.org/10.3389/fenvs.2023.1180072>
- Wang, S., Yang, Y., Yin, H., Zhao, J., Wang, T., Yang, X., Ren, J., & Yin, C. (2025). Towards Digital Transformation of Agriculture for Sustainable Development in China: Experience and Lessons Learned. In *Sustainability* (Vol. 17, Nomor 8). <https://doi.org/10.3390/su17083756>
- Wang, Y., Wang, Z., Zhao, M., & Li, B. (2024). The influence of technology perceptions on farmers' water-saving irrigation technology adoption behavior in the North China Plain. *Water policy*, 26(2), 170–188. <https://doi.org/10.2166/wp.2024.170>
- Wetzels, M., Odekerken-Schröder, G., & Van Oppen, C. (2009). Using PLS path modeling for assessing hierarchical construct models: Guidelines and empirical illustration. *MIS quarterly*, 177–195.
- Wibowo, A., & Sundari, S. (2025). Keberdayaan Petani Menerapkan Budidaya Kopi Robusta Cerdas Iklim Tersertifikasi Dan Dampaknya Pada Kesejahteraan. *Jurnal Penyuluhan Pertanian*, 20(2), 109–123.
- Wibowo, F. X. P. (2023). *Pengolahan dan Analisa Data Statistika dengan SPSS*. Penerbit Andi.
- William, & Kumar, S. (2024). The Role of Digital Technologies in Enhancing Agricultural Economic Efficiency. *Stallion Journal for Multidisciplinary Associated Research Studies*, 3, 255–263. <https://doi.org/10.55544/sjmars.3.5.19>
- Wolfert, S., Ge, L., Verdouw, C., & Bogaardt, M.-J. (2017). Big Data in Smart Farming – A review. *Agricultural Systems*, 153, 69–80. <https://doi.org/https://doi.org/10.1016/j.agry.2017.01.023>
- Xie, J., Yang, G., Wang, G., Zhu, Y., & Guo, Z. (2023). Substitutes or

complements? Exploring the impact of environmental regulations and informal institutions on the clean energy utilization behaviors of farmers. *Environment, Development and Sustainability*, 25(5), 3893–3922. <https://doi.org/10.1007/s10668-022-02222-9>

Yamin, S. (2025). *KOMBINASI SEM PLS & Necessary Condition Analysis Penelitian Lebih Powerfull*. Dewangga Energi Internasional Publishing.

Yarsasi, S., Tahyudin, I., & Hariguna, T. (2025). Analisis Validitas dan Reliabilitas Kuesioner dengan Metode Partial Least Squares Structural Equation Modeling pada Aplikasi SMARTPLS. *Jurnal Pendidikan dan Teknologi Indonesia*, 5(7 SE-), 1905–1913. <https://doi.org/10.52436/1.jpti.885>

Yeo, M. L., & Keske, C. M. (2024). From profitability to trust: factors shaping digital agriculture adoption. *Frontiers in Sustainable Food Systems*. <https://doi.org/https://doi.org/10.3389/fsufs.2024.1456991>

Zakirova, A., Klychova, G. S., Yusupova, A., Nikitenko, I. G., & Zakirov, A. M. (2021). Crop Management System Based on Digital Technologies. *International Scientific-Practical Conference “Agriculture and Food Security: Technology, Innovation, Markets, Human Resources” (FIES 2021)*, 37. <https://doi.org/10.1051/bioconf/20213700188>

Zhang, H., & Zhu, H. (2025). The Impact of Agricultural Digitization on Land Productivity: An Empirical Test Based on Micro Panel Data. *Land*, 14(1). <https://doi.org/10.3390/land14010187>