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DAFTAR PUSTAKA

Alzidan, I. D., & Swasono, M. A. H. (2023). Interaksi lama fermentasi dan waktu *Roasting* terhadap sifat kimiawi kopi bubuk. INSOLOGI: Jurnal Sains dan Teknologi, 2(5), 861-871.

Ayu, P. C., Machrizailani, M. R., Rohanah, A., Sinamo, K. N., & Sebayang, N. U. W. (2024). Design of coffee *roaster* with controlled temperature system to maintain the sustainability of coffee *Roasting* process. IOP Conference Series: Earth and Environmental Science, 1302(1), 012116. https://doi.org/10.1088/1755-1315/1302/1/012116

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. Dalam J. Kuhl & J. Beckmann (Eds.), Action control: From cognition to behavior (hlm. 11–39). Springer. https://doi.org/10.1007/978-3-642-69746-3_2

Bottazzi, D., Farina, S., Milani, M., & Montorsi, L. (2012). A numerical approach for the analysis of the coffee *Roasting* process. Journal of Food Engineering, 112(3), 243–252. https://doi.org/10.1016/j.jfoodeng.2012.04.009

Baselia, D., Zulaikhah, S., Rejeki, A. P. S., Govi, B. G., & Rizki, R. (2024). Pengaruh Suhu Penyangraian Terhadap Sifat Fisikokimia dan Tingkat Kesukaan Kopi Robusta. Journal of Food and Agricultural Technology, 2(1), 1-11.

Bastian, F., Sinaga, H. L. R., Syarifuddin, A., & Hambali, A. (2024). Peningkatan cita rasa kopi robusta terdekafeinasi melalui fermentasi ulang menggunakan mucilage tiruan. Agrointek: Jurnal Teknologi Industri Pertanian, 18(3), 593-604.

Biu, E. O., Nwakuya, M. T., & Wonu, N. (2019). Detection of non-normality in data sets and comparison between different normality tests. Asian Journal of Probability and Statistics, 5(4), 1–20.

Bakı, R., Bırgoren, B., & Aktepe, A. (2018). A meta analysis of factors affecting *Perceived Usefulness* and perceived ease of use in the adoption of e-learning systems. Turkish Online Journal of Distance Education, 19(4), 4-42.

Castiblanco Jimenez, I. A., Cepeda García, L. C., Marcolin, F., Violante, M. G., & Vezzetti, E. (2021). Validation of a TAM extension in agriculture: Exploring the determinants of acceptance of an e-learning platform. Applied Sciences, 11(10), 4672. https://doi.org/10.3390/app11104672

Cepriadi, C., & Kausar, K. (2021). PERAN PENYULUH DALAM KEBERDAYAAN PETANI PADI SAWAH DI DESA BELADING KECAMATAN SABAK AUH KABUPATEN SIAK. Jurnal Ilmiah Sosio-Ekonomika Bisnis, 24(02), 27-33.

Creswell, J. W., & Plano Clark, V. L. (2018). Designing and conducting mixed methods research (3rd ed.). SAGE Publications.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16(3), 297–334.

Validasi Desain Teknologi Smart Portable Roaster Berdasarkan Persepsi Pengguna dengan Pendekatan
Technology Acceptance Model
Moch Lilo triwichaksono, Dr. Radi, S.T.P., M.Eng., IPU. ASEAN Eng.; Anggoro Cahyo Sukartiko, S.T.P., M.P., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Darmajana, D. A., Hidayat, D. D., Sagita, D., & Hapsari, N. L. (2024, February). Effects of the developing time-based *Roasting* profile on characteristics of the robusta coffee of Subang. In AIP Conference Proceedings (Vol. 2957, No. 1, p. 050013). AIP Publishing LLC.

Davis, F. D. (1989). *Perceived Usefulness*, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–340. https://doi.org/10.2307/249008

Dougherty, D. (2012). The maker movement. Innovations: Technology, Governance, Globalization, 7(3), 11-14.

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention and behavior: An introduction to theory and research. Addison-Wesley.

García Rivas, R. E., Bertarini, P. L. L., & Fernandes, H. (2025). Automated coffee roast level classification using machine learning and deep learning models. Journal of Food Science, 90(9), e70532. https://doi.org/10.1111/1750-3841.70532

Guetterman, T. C., Fetters, M. D., & Creswell, J. W. (2015). Integrating quantitative and qualitative results in health science mixed methods research through joint displays. Annals of Family Medicine, 13(6), 554–561. https://doi.org/10.1370/afm.1865

Harnadi, B., Widiantoro, A. D., Prasetya, F. H., Sanjaya, R., & Sihombing, R. P. (2024). Role of age, gender and cultural factors as moderator on technology acceptance of online entertainment. Information Discovery and Delivery. https://doi.org/10.1108/IDD-02-2023-0017

Harsawardana, Samodro, B., Mahesworo, B., Suparyanto, T., Atmaja, D. B. S., & Pardamean, B. (2020). Maintaining the quality and aroma of coffee with fuzzy logic coffee *Roasting* machine. IOP Conference Series: Earth and Environmental Science, 426(1), 012148. https://doi.org/10.1088/1755-1315/426/1/012148

Herawati, D., Giriwono, P. E., Dewi, F. N. A., Kashiwagi, T., & Andarwulan, N. (2019). Critical *Roasting* level determines bioactive content and antioxidant activity of Robusta coffee beans: D. Herawati *et al*. Food science and biotechnology, 28(1), 7-14.

Hidayat, D. D., Sudaryanto, A., Kurniawan, Y. R., Indriati, A., & Sagita, D. (2020). Development and evaluation of drum coffee *Roasting* machine for small-scale enterprises. *INMATEH Agricultural Engineering*, *60*(1), 79–88. https://doi.org/10.35633/INMATEH-60-09

Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. Qualitative Health Research, 15(9), 1277–1288. https://doi.org/10.1177/1049732305276687

International Organization for Standardization. (2015). ISO 9001:2015 Quality management systems Requirements. ISO.

Validasi Desain Teknologi Smart Portable Roaster Berdasarkan Persepsi Pengguna dengan Pendekatan
Technology Acceptance Model
Moch Lilo triwichaksono, Dr. Radi, S.T.P., M.Eng., IPU. ASEAN Eng.; Anggoro Cahyo Sukartiko, S.T.P., M.P., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Jabnabillah, F., & Margina, N. (2022). Analisis korelasi pearson dalam menentukan hubungan antara motivasi belajar dengan kemandirian belajar pada pembelajaran daring. Jurnal Sintak, 1(1), 14-18.

Khoerunnisa, S. F. Z., Taftazani, T. M. T., Chotimah, K. A., Shafira, N., Dzikrullah, M. F., & Nurussama, A. (2025). Pengaruh Motivasi Belajar Terhadap Prestasi Belajar Siswa. Menulis: Jurnal Penelitian Nusantara, 1(6), 334-341.

Kurnia, R. A., & Tandijaya, T. N. B. (2023). Pengaruh *Perceived Ease of Use*, *Perceived Usefulness*, security dan trust terhadap intention to use aplikasi jago. Jurnal Manajemen Pemasaran, 17(1), 64-72.

Kath, J., Byrareddy, V. M., Mushtaq, S., Craparo, A., & Porcel, M. (2021). Temperature and rainfall impacts on robusta coffee bean characteristics. Climate Risk Management, 32, 100281.

Kinasih, A., Winarsih, S., & Saati, E. A. (2021). Karakteristik sensori kopi arabica dan robusta menggunakan teknik brewing berbeda. Jurnal Teknologi Pangan dan Hasil Pertanian, 16(2), 12-22.

Lestari, N. P., Purbasari, D., Taruna, I., & Hasan, M. (2022). Peningkatan Produktivitas dan Kualitas dengan Modernisasi Mesin *Roasting* di UKM "Bromo Coffee"-Probolinggo. KIAT Journal of Community Development, 1(2), 76-81.

Lubis, A., Almaghfirah, S., Almanda, M., & Ratna. (2024). Performance test, noise, and economic analysis of coffee *Roasting* machines rotating cylinder. IOP Conference Series: Earth and Environmental Science, 1290(1), 012024. https://doi.org/10.1088/1755-1315/1290/1/012024

Malrianti, Y., Zulnadi, Z., Yudistira, Y., Djinis, M. E., Batubara, F. Y., Defrian, A., Akbar, F., & Sinurat, F. B. (2025). Mesin penyangrai biji kopi portabel dengan tuas pengaduk vertikal. Agroteknika, 8(1), 16–27. https://doi.org/10.55043/agroteknika.v8i1.444

Mardiana, L., & Satya, R. R. (2025). ANALISIS PENERAPAN APLIKASI JKN MOBILE PADA PESERTA BPJS CABANG SOREANG DI FKTP PUSKESMAS PADAMUKTI DENGAN MENGGUNAKAN METODE TECHNOLOGY ACCEPTANCE MODEL. JURNAL MANAJEMEN MODAL INSANI DAN BISNIS (JMMIB), 6(1), 234-247.

Martilla, J. A., & James, J. C. (1977). Importance-performance analysis. Journal of Marketing, 41(1), 77–79. https://doi.org/10.1177/002224297704100112

Matzler, K., Bailom, F., Hinterhuber, H. H., Renzl, B., & Pichler, J. (2004). The asymmetric relationship between attribute-level performance and overall customer satisfaction: A reconsideration of the importance–performance analysis. Industrial Marketing Management, 33(4), 271–277. https://doi.org/10.1016/S0019-8501(03)00055-5

Musari, K., Hakiki, M. H., Abadi, M. R., & Hendrianto, D. (2025). Produktivitas Mesin *Roasting* Kopi Di Perumda Perkebunan Kahyangan Jember: Analisis Etika Bisnis Islam. Menulis: Jurnal Penelitian Nusantara, 1(3), 619-622.

UNIVERSITAS GADJAH MADA
Validasi Desain Teknologi Smart Portable Roaster Berdasarkan Persepsi Pengguna dengan Pendekatan Technology Acceptance Model
Moch Lilo triwichaksono, Dr. Radi, S.T.P., M.Eng., IPU. ASEAN Eng.; Anggoro Cahyo Sukartiko, S.T.P., M.P., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Maspul, K. A., & Sidiq, A. R. (2024). Factors Influencing Consumer Preferences for Espresso and Omni Roasted Coffee: A Comprehensive Analysis. Journal of Economics and Economic Education, 1(1), 1–11. DOI https://doi.org/10.59066/JEEE.V1I1.678.

Muhari, E. H., Sihombing, R. P., Sarungu, Y. T., Marlina, A., Leoanggraini, U., & Hariyadi, T. (2023). Effect of fruit ripening level and *Roasting* temperature on robusta coffee bean quality. International Journal Applied Technology Research, 4(1), 41-52.

Muljo, H. H., Pardamean, B., Perbangsa, A. S., Purwandari, K., & Hidayat, A. A. (2020). TAM as a Model to Understand the Intention of Using a Mobile-Based Cancer Early Detection Learning Application. International Journal of Online & Biomedical Engineering, 16(2).

Nuruddin, M., Ismiyah, E., Dahda, S. S., Mahbubah, N. A., Yusron, R. M., & Ridlo, M. Z. (2025). Comprehensive Hazard Identification and Risk Assessment (HIRARC) in the Coffee Production Process: A Case Study of Kopi Lanange Jagad. International Journal of Science, Engineering and Information Technology, 10(1), 593-597.

Nopriandy, F., Suhendra, S., & Anjiu, L. D. (2023). Kajian Eksperimental Mesin Sangrai Kopi Semi Otomatis Tipe Drum Rotari. Turbo: Jurnal Program Studi Teknik Mesin, 12(2).

Nirmala, B. M. S. (2020). Analisis Kebergunaan: Aplikasi Pemesanan Fastboat Berbasis Mobile di Bali. Jurnal Teknologi Informasi dan Multimedia, 1(4), 344-350.

Norman, D. A. (1988). The design of everyday things. Basic Books.

Nielsen, J. (1993). Usability engineering. Academic Press.

Oematan, A. J., Kelen, Y. P., Baso, B., & Sucipto, W. (2024). Rancang Bangun Mesin Roasted Biji Kopi Timor Portabel Berbasis Internet Of Things (IoT) dengan Mikrokontroler ESP32. Krisnadana Journal, 3(3), 155-165.

Ogunjirin, O. A., Odeniyi, O. M., Olubo, A. S., Farounbi, A. J., Ola, O. A., & Adeleke, S. A. (2020). Design and construction of an electrically powered coffee *Roasting* machine. IOP Conference Series: Earth and Environmental Science, 445(1), 012009. https://doi.org/10.1088/1755-1315/445/1/012009

Plohl, N., & Cus Babic, N. (2024). Using the UTAUT2 components and trust to predict consumer acceptance of smart home technology: A systematic review. Human Technology, 20(1), 93-113.

Perangin Angin, M. I. B., & Winarno, R. A. (2024). Kopi sangrai: Pengolahan dan kualitas kopi. Deepublish.

Priantari, I., & Dharmawan, A. (2022). Characterization *Roasting* Level of Arabica Coffee (Coffea arabica) Komasti and Andungsari. Jurnal Biologi UNAND, 10(1), 33-41.

Rani, B. M. (2024). Peran Kebijakan Publik dalam Mendorong Inovasi Teknologi: Perspektif Pelaku Industri dan Pemerintah. JISP (Jurnal Inovasi Sektor Publik), 4(2), 80-84.

Validasi Desain Teknologi Smart Portable Roaster Berdasarkan Persepsi Pengguna dengan Pendekatan
Technology Acceptance Model
Moch Lilo triwichaksono, Dr. Radi, S.T.P., M.Eng., IPU. ASEAN Eng.; Anggoro Cahyo Sukartiko, S.T.P., M.P., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Raj, N., & Thomas, A. (2022). A Scale to Measure Risk Behaviour of Vegetable Farmers. Journal of Tropical Agriculture, 60(1).

Rosiana, E., & Risaldi, Y. (2021). Rancang Bangun Mesin Sangrai Kopi Dengan Mikrokontroler Arduino Uno. EPIC (Journal of Electrical Power, Instrumentation and Control).

Rahayuningtyas, A., Ardiasnyah, C. E., Setiyoningrum, F., Sagita, D., Sudaryanto,A., Furqon, M., Nurwidha, F., Arief, D. Z., & Hidayat, D. (2023). Evaluation of Fluidized-Bed and Drum *Roaster* Performance in *Roasting* of Robusta Green Bean. *BIO Web of Conferences*, *69*, 1–13. https://doi.org/10.1051/bioconf/20236903006\

Rahayuningtyas, A., Hidayat, D. D., Furqon, M., & Santoso, T. (2023). Sistem monitoring dan kontrol suhu alat sangrai biji kopi otomatis berbasis mikrokontroler. Agrointek: Jurnal Teknologi Industri Pertanian, 17(2), 374–383. https://doi.org/10.21107/agrointek.v17i2.14506

Radi, Purwantana, B., Alamsyah, R. P., & Prawira, H. D. (2019). Design of portable coffee *roaster* for home industry. IOP Conference Series: Earth and Environmental Science, 327(1), 012019. https://doi.org/10.1088/1755-1315/327/1/012019

Radi, Saragih, E. P., Pratama, B., & Fitri, W. K. (2020). Performance analysis of fuzzy logic controller applied on portable *roaster*. In IOP Conference Series: Earth and Environmental Science (Vol. 757, No. 1, p. 012022). IOP Publishing.

Rahayu, F. S., Budiyanto, D., & Palyama, D. (2017). Analisis Penerimaan E-Learning Menggunakan *Technology Acceptance Model* (Tam)(Studi Kasus: Universitas Atma Jaya Yogyakarta). Jurnal Terapan Teknologi Informasi, 1(2), 87-98.

Robey, D. (1979). User attitudes and management information system use. Academy of Management Journal, 22(3), 527–538.

Roscoe, J. T. (1975). Fundamental research statistics for the behavioral sciences (2nd ed.). Holt, Rinehart and Winston.

Sagita, D., Mardjan, S. S., Purwandoko, P. B., & Widodo, S. (2024). Low-cost IoT-based multichannel spectral acquisition systems for roasted coffee beans evaluation: Case study of *Roasting* degree classification using machine learning. Journal of Food Composition and Analysis, 133, 106478.

Setianto, W. B., Yohanes, H., Atmaji, G., Susanto, M., Astin, E. P., & Lanjar. (2023, September). The effect of fluidized bed *roaster* temperature on the roasted coffee beans antioxidant activity and its sensory evaluation. In IOP Conference Series: Earth and Environmental Science (Vol. 1246, No. 1, p. 012005). IOP Publishing.

Sukainah, A., & Wijaya, M. (2023). Pengaruh suhu dan waktu penyangraian terhadap kadar kafein dan mutu sensori kopi liberika (Coffea liberica) Bantaeng. Jurnal Patani: Pengembangan Teknologi Pertanian dan Informatika, 6(1), 1-10.

UNIVERSITAS GADJAH MADA
Validasi Desain Teknologi Smart Portable Roaster Berdasarkan Persepsi Pengguna dengan Pendekatan Technology Acceptance Model
Moch Lilo triwichaksono, Dr. Radi, S.T.P., M.Eng., IPU. ASEAN Eng.; Anggoro Cahyo Sukartiko, S.T.P., M.P., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Sulistyo, A., & Suhono, S. (2023). Implementasi teknologi mesin sangrai biji kopi semi otomatis. Jurnal Teknologi Elektro, 14(1), 8–13.

Suud, H. M., Savitri, D. A., & Ismaya, S. R. (2021). Perubahan sifat fisik dan cita rasa kopi arabika asal Bondowoso pada berbagai tingkat penyangraian. Jurnal Agrotek Ummat, 8(2), 70–75. https://doi.org/10.31764/jau.v8i2.5238

Starowicz, M., & Zieliński, H. (2019). How Maillard reaction influences sensorial properties (color, flavor and texture) of food products?. Food Reviews International, 35(8), 707-725.

Tarigan, E. B., Wardiana, E., Hilmi, Y. S., & Komarudin, N. A. (2022, January). The changes in chemical properties of coffee during *Roasting*: A review. In IOP conference series: Earth and environmental science (Vol. 974, No. 1, p. 012115). IOP Publishing.

Umaroh, S., & Mahfuzh, R. (2025). Analisis penerimaan pengguna pada sistem pembayaran shopeepay dengan metode TAM (Technology Acceptance Model). Kocenin Serial Konferensi, (1), TI002-1.

USDA Foreign Agricultural Service. (2026). Indonesia: Coffee annual (GAIN Report No. ID2026-0021). U.S. Department of Agriculture. https://www.fas.usda.gov/data/gain/2026/05/indonesia-coffee-annual

Ulrich, K. T., & Eppinger, S. D. (2016). Product design and development (6th ed.). McGraw-Hill Education.

Venkatesh, V., & Bala, H. (2008). *Technology Acceptance Model* 3 and a research agenda on interventions. Decision Sciences, 39(2), 273–315.

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

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the *Technology Acceptance Model*: Four longitudinal field studies. Management Science, 46(2), 186–204.

Venkatesh, V. (2000). Determinants of *Perceived Ease of Use*: Integrating control, intrinsic motivation, and emotion into the *Technology Acceptance Model*. Information Systems Research, 11(4), 342–365.

Wibowo, J. W., Munandar, A., Mahendra, O., Josary, J. V., Ningrum, D. I. S., & Sejati, B. (2022). A review of a smart coffee *roaster*: Electronics, design, and artificial intelligence. IOP Conference Series: Earth and Environmental Science, 1116(1), 012011. https://doi.org/10.1088/1755-1315/1116/1/012011

Wilson, P. S. (2014). Coffee *Roasting* acoustics. The Journal of the Acoustical Society of America, 135(6), EL265–EL269. https://doi.org/10.1121/1.4874355

Yap, Z. Y., & Kamaruddin, N. K. (2023). The intention to use smart home internet of things (IoT) among generation Y: an application of the technology acceptance model (TAM). Research in Management of Technology and Business, 4(1), 637-648.

UNIVERSITAS
GADJAH MADA
**Validasi Desain Teknologi Smart Portable Roaster Berdasarkan Persepsi Pengguna dengan Pendekatan
Technology Acceptance Model**
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Yanti, S. A., Soekardi, C., & Lubis, M. S. Y. (2018). Analysis of parameter *Roasting* on color and peanuts roasted taste. Aceh International Journal of Science and Technology, 7(2), 138-143.

Zhang, S., Zhou, T., Li, C., Zhang, M., & Yang, H. (2024). Research progress and prospect of fluidized bed metallic ore *Roasting* technology: A review. Fuel, 378, 132717.

Zhou, C., Qian, Y., & Kaner, J. (2024). A study on smart home use intention of elderly consumers based on technology acceptance models. PLOS ONE, 19(3), e0300574. https://doi.org/10.1371/journal.pone.0300574