

IJESTY

eISSN : 2775-2674

International Journal of Engineering, Science and Information Technology

Volume 5, Issue 3, July 2025



Published by:
Master Program of Information Technology
Universitas Malikussaleh, Aceh Utara, Indonesia
<http://ijesty.org>

Editorial Team

Editor-in-Chief

- **Prof Dr. Ir. Dahlan Abdullah, M.Kom, IPU, ASEAN Eng,**
Scopus ID: 57205132023 (**h-index: 20**)
Sinta ID: 6719997
GS ID: Dcwb_X8AAAAJ
Department of Information Technology, Universitas Malikussaleh, Indonesia

Managing Editor

- **Dr. Ir. Cut Ita Erliana, ST, MT, IPM,**
Scopus ID: 57201495484 (**h-index: 6**)
Sinta ID: 77872
GS ID: Kds0FtkAAAAJ
Department of Industrial Engineering, Universitas Malikussaleh, Indonesia
- **Mursalin, S.Pd., M.Pd**
Scopus ID: 57204472312 (**h-index: 5**)
Sinta ID: 259759
GS ID: UHdwyF0AAAAJ
Department of Mathematics, Universitas Malikussaleh, Indonesia

Regional (Handling) Editor for Europe

- **Prof. Anastasios Doulamis** (Scopus ID: 35565008000, National Technical University of Athens, Athens) **Greece**
- **Dr. Gökhan BÜYÜKKAHRAMAN** (Scopus ID: 57191536489, Balıkesir Üniversitesi) **Turkey**
- **Dr. Ahmet Murat Kadioglu** (GS ID: MOWFjMgAAAAJ, OSTİM Technical University) **Turkey**
- **Dr. Alpaslan Durmus** (Scopus ID: 58017879300, OSTİM Technical University) **Turkey**
- **Pirnazarov Nurnazar Rashid Uli** (Scopus ID: 57216542134, Karakalpak State University) **Uzbekistan**

Regional (Handling) Editor for Middle East and Africa

- **Prof. Madjid Eshaghi Gordji** (Scopus ID: 21733262000, Semnan University) **Iran**
- **Ass. Prof. Golnaz Jozanikohan** (Scopus ID: 56427890800, University of Tehran) **Iran**
- **Ass. Prof. Dr. Manal Abdullah** (Scopus ID: 25222478500, King Abdulaziz University, Jeddah) **Saudi Arabia**

Regional (Handling) Editor for Asia-Pacific

- **Prof. Dr. Mazlina Binti Abdul Majid** (Scopus ID: 57222473453, Universiti Malaysia Pahang) **Malaysia**
- **Prof. Amirul Mukmini, Ph.D** (Scopus ID: 55850809900, Universitas Jambi) **Indonesia**
- **Prof. Dr. Kakarla Hari Kishore** (Scopus ID: 56278735700, Koneru Lakshmaiah University) **India**
- **Ass. Prof. Dr. A.S. Ahmar** (Scopus ID: 57203957779, Universitas Negeri Makassar) **Indonesia**
- **Ass. Prof. Dr. A. Surendar** (SCOPUS ID: 57191878392, Saveetha University, Chennai) **India**
- **Ass. Prof. Dr. Md. Nadir Bin Ali** (Scopus ID: 56045355900, Daffodil International University) **Bangladesh**
- **Dr. Jamaluddin Salim** (Scopus ID: 24725389600, Universiti Malaysia Pahang) **Malaysia**

- **Dr. Yuhao Su** (Scopus ID: 58569660300, Universiti Malaysia Pahang), **China**
- **Ts Dr Zairi Ismael Rizman** (Scopus ID: 36959761800, Universiti Teknologi MARA) **Malaysia**

Regional (Handling) Editor for America

- **Prof. Hari Mohan Srivastava** (Scopus ID: 23152241800, University of Victoria) **Canada**
- **Madhav Narayan Bhat** (Scopus ID: 59140823700, University of Columbia) **New York**

Advisory International Editorial Boards

- **Prof. Dr. Emmanuel Addai**, (SCOPUS ID: 57214724521), Taiyuan University of Technology, **China**
- **Prof. Dr. Boyd Hunter**, (SCOPUS ID: 7102304423), Australian National University, **Australia**
- **Prof. Dr. Habil Gheorghe Savoie, Ph. D.**, (SCOPUS ID: 36722291200), University of Pitesti, Pitesti, **Romania**
- **Prof. Dr. Isabel Menezes**, (SCOPUS ID: 8889137500), University of Porto, **Portugal**
- **Prof. Dr. Andrea Szukala**, (SCOPUS ID: 56976441100), University of Augsburg, **Germany**
- **Prof. Dr. Gufran Darma Dirawan, M.EMD**, (SCOPUS ID: 56145309400), Universitas Negeri Makassar, **Indonesia**
- **Prof. Dr. Carl Liu**, (SCOPUS ID: 55729560800), Leshan Vocational and Technical College, **China**
- **Prof. Dr. Nor Aziah Alias**, (SCOPUS ID: 50260946700), Universiti Teknologi MARA, **Malaysia**
- **Prof. Dr. Kathleen Flanagan**, (SCOPUS ID: 56694170300), University of Tasmania, **Australia**

International Journal of Engineering, Science, and Information Technology (IJESTY) eISSN 2775-2674

Published by Malikussaleh University, Indonesia

Editor E-mail: journalijesty@gmail.com



The works in **the IJESTY Journal** are licensed under a [Creative Commons Attribution 4.0 International Public License](https://creativecommons.org/licenses/by/4.0/) (CC

Vol 5, No 3 (2025)

DOI: <https://doi.org/10.52088/ijesty.v5i3>

Table of Contents

Articles

Article Open Access

Classification Of Outpatient Visit Status Walking at Dr. Zubir Mahmud Hospital Using Algoritma C4.5

1

 DOI : [10.52088/ijesty.v5i3.865](https://doi.org/10.52088/ijesty.v5i3.865)

Putri Fikria, Rozzi Kesuma Dinata, Yesy afrillia

Article Open Access

Implementation of The Seasonal Autoregressive Integrated Moving Average Predictive Model on Raw Material Usage Data at PT. Plastik Karawang Flexindo

12

 DOI : [10.52088/ijesty.v5i3.867](https://doi.org/10.52088/ijesty.v5i3.867)

Muhammad Rindra Alfiansyah, Tukino Tukino, Agustia Hananto, Elfina Novalia

Article Open Access

Hiace Transportation Departure Scheduling Information System in Lhokseumawe With Genetic Algorithm

21

 DOI : [10.52088/ijesty.v5i3.878](https://doi.org/10.52088/ijesty.v5i3.878)

Narita Taskia, Rozzi Kesuma Dinata, Sujacka Retno

Article Open Access

Public Facility Recommendation System in Subulussalam City Using Fuzzy C-Means Algorithm

29

 DOI : [10.52088/ijesty.v5i3.873](https://doi.org/10.52088/ijesty.v5i3.873)

Indah Fachlira Berutu, Rozzi Kesuma Dinata, Yesy Afrillia

Article Open Access

Clustering of Futsal Interest Level Among Students K-Means Method

41

 DOI : [10.52088/ijesty.v5i3.879](https://doi.org/10.52088/ijesty.v5i3.879)

Faris Bagaswara, Muchlis Abd Muthalib, Rini Meiyanti

Article Open Access

A Hybrid GDHS and GBDT Approach for Handling Multi-Class Imbalanced Data Classification

51

 DOI : [10.52088/ijesty.v5i3.894](https://doi.org/10.52088/ijesty.v5i3.894)

Hartono Hartono, Muhammad Khahfi Zuhanda, Rahmad Syah, Sayuti Rahman, Erianto Ongko

Article Open Access

Implementation of Support Vector Machine Method with TF-IDF for Sentiment Analysis of the Al-Zaytun Islamic Boarding School Controversy

58

 DOI : 10.52088/ijesty.v5i3.883

T. Fardiansyah, Zara Yunizar, Maryana Maryana

Article Open Access

Expert System For Detecting Soil Fertility Levels for Oil Palm Cultivation Using the Fuzzy Tsukamoto

66

 DOI : 10.52088/ijesty.v5i3.884

Winda Yanti, Zara Yunizar, Yesy Afrillia

Article Open Access

Implementation of the Simple Additive Weighting Algorithm for Café Recommendations in Lhokseumawe City

73

 DOI : 10.52088/ijesty.v5i3.885

Raihan Arkan, Safwandi Safwandi, Ar Razi Ar Razi

Article Open Access

Application of Data Mining with the Least Square Method to Predict Web-Based Drug Inventory

80

 DOI : 10.52088/ijesty.v5i3.897

Abdul Halim, Safwandi Safwandi, Fajriana Fajriana

Article Open Access

The Mediating Role of Job Satisfaction in the Relationship between Work-Life Balance, Continuance Commitment, Task Complexity, and Competence on Perceived Productivity

86

 DOI : 10.52088/ijesty.v5i3.895

Zumrodah Zumrodah, Dhimas Angga Negoro

Article Open Access

What Brings Gen-Z to the Library? An Investigation of Interior Design Elements in Denpasar City's Libraries

92-

 DOI : 10.52088/ijesty.v5i3.889

Sharon Febrina Anjaeni, Freddy Hendrawan, Ni Made Emmi Nutrisia Dewi

Article Open Access

Hybrid Deep Fixed K-Means (HDF-KMeans)

102-

 DOI : 10.52088/ijesty.v5i3.913

Muhammad Khahfi Zuhanda, Kelvin Leonardi Kohsasih, Pieter Octaviandy, Hartono Hartono, Dian Kurnia, Nurliana Tarigan, Manan Ginting, Manahan Hutagalung

Article Open Access

Structural Study on the Impact of Aerodynamic Loads on Winglet Support Structures

112-

 DOI : 10.52088/ijesty.v5i3.888

Eduardo Morales, Mario Chávez, Griselda Abarca, Yunuén López, Jesús Mares, Juan Cruz

Article Open Access

Analysis of Boarding House Feasibility and Satisfaction Using Data Mining with the C4.5 Algorithm Based on Service Quality and Facilities

122-

 DOI : 10.52088/ijesty.v5i3.896

Aktina Manik, Dahlan Abdullah, Ar Razi Ar Razi

Article Open Access

Optimizing Annual Cropping Patterns Using A multi-objective Approach to Maximize Income and Minimize Soil Erosion  DOI : 10.52088/ijesty.v5i3.923 <i>Nasyiin Faqih, Suripin Suripin, Dyah Ari Wulandari, Mochammad Qomaruddin</i> Article Open Access	132-
Advancing the Measurement of MOOCs Software Quality: Validation of Assessment Tools Using the I-CVI Expert Framework  DOI : 10.52088/ijesty.v5i3.911 <i>Mugi Praseptiawan, Ahmad Naim Che Pee, Mohd Hafiz Zakaria, Agustinus Noertjahyana</i> Article Open Access	138-
Composite Material Engineering Analysis Based on Circular Economy for the Conservation of Interior Ornaments and Traditional Balinese Architecture  DOI : 10.52088/ijesty.v5i3.919 <i>I Kadek Prana Jaya, Ni Made Emmi Nutrisia Dewi</i> Article Open Access	146-
Enhancing Teks Summarization of Humorous Texts with Attention-Augmented LSTM and Discourse-Aware Decoding  DOI : 10.52088/ijesty.v5i3.932 <i>Supriyono Supriyono, Aji Prasetya Wibawa, Suyono Suyono, Fachrul Kurniawan</i> Article Open Access	156-
The Radio Frequency Identification Implementation Design for INLISLite Library Management System  DOI : 10.52088/ijesty.v5i3.902 <i>Majidah Majidah, Widiyanto Widiyanto, Aji Purwinarko, Kasinyo Harto, Fridiyanto Fridiyanto, Amirul Mukminin</i> Article Open Access	169-
The Impacts of Collaborative Online International Learning, Web-Based Language Learning, and Onsite Learning on Japanese Language Ability  DOI : 10.52088/ijesty.v5i3.903 <i>Unsriana Linda, Asmarani Dhanier, Prawati Maria Tamarina, Novella Utari</i> Article Open Access	176-
Documentary Video Introduction of Modern Tebe System Based on Video in Cemenggaon Village, Sukawati, Gianyar  DOI : 10.52088/ijesty.v5i3.890 <i>I Wayan Agus Palguna Brahmanta, Ramanda Dimas Surya Dinata, Anak Agung Sagung Intan Pradnyanita</i> Article Open Access	182-
Creation of a 3D animated film titled "Made and the Lost Spirit"  DOI : 10.52088/ijesty.v5i3.893 <i>Ida Bagus Ista Krishna, Ramanda Dimas Surya Dinata, Kadek Prana Jaya, Ari Rimbawan</i> Article Open Access	192-
Potential of Medicinal Plants in Indonesian Forest Biodiversity Conservation in Synergy with Pharmaceutical Technology for Modern Medicine  DOI : 10.52088/ijesty.v5i3.899 <i>Dadang Muhammad Hasyim, Dito Anurogo, Yessikah Feiby Bansaleng, Siti Fatmah Hiola, Nuralfin Anripa</i> Article Open Access	200-

Design of Semujur Bridge with Diagonal Steel Box Arch Bridge

 DOI : 10.52088/ijesty.v5i3.900

Rizqi Alghiffary, Griselda Junianda Velantika, Karina Melawati Eka Putri, Elok Dewi Widowati, Muhamad Fauzan Akbari

208-

Article Open Access

Implementation of Intrusion Detection System Using Snort and Log Visualization Using ELK Stack

 DOI : 10.52088/ijesty.v5i3.901

Fatih Dien Robbani, Emy Haryatmi, Tri Agus Riyadi, Riza Adrianti Supono, Ary Bima Kurniawan, Rosdiana Rosdiana

220-

Article Open Access

Tensile and Flexural Properties of Epoxy Nanocomposites Reinforced with Cellulose Nanocrystals

 DOI : 10.52088/ijesty.v5i3.892

Taufik Azhary, Afril Efan Pajri

229-

Article Open Access

Evaluating User Satisfaction and Public Engagement in Local Government Social Media

 DOI : 10.52088/ijesty.v5i3.905

Azwar Aman, Khairul Imtihan, Muhamad Rodi

235-

Article Open Access

Impact of Information Technology: Developments the Related Research in the Last 2 Decades

 DOI : 10.52088/ijesty.v5i3.916

Irman Amri, Ika Safitri Windiarti

249-

Article Open Access

Comparative Study on the Implementation of Knowledge Management Systems for Aglaonema Farmers: A Structured Method and UML Object Approach

 DOI : 10.52088/ijesty.v5i3.953

Yuni Sugiarti, Arif Imam Suroso, Irman Hermadi, Euis Sunarti

258-

Article Open Access

Retrieval Augmented Generation-Based Chatbot for Prospective and Current University Students

 DOI : 10.52088/ijesty.v5i3.951

Luluk Setiawati Hartono, Esther Irawati Setiawan, Vrijraj Singh

268-

Article Open Access

Development of Integrated Audiovisual Digital Handout Through Flipbook Application Based on Realistic Mathematics Education

 DOI : 10.52088/ijesty.v5i3.990

Fajriana Fajriana, Rifaatul Mahmuzah, Fitri Ayu Ningtiyas, Nurul Afni Sinaga, Zurra Yusally Aufa, Novilia Junianti Saragih

278-

Article Open Access

Optimizing YOLO-Based Algorithms for Real-Time BISINDO Alphabet Detection Under Varied Lighting and Background Conditions in Computer Vision Systems

 DOI : 10.52088/ijesty.v5i3.948

Lilis Nur Hayati, Anik Nur Handayani, Wahyu Sakti Gunawan Irianto, Rosa Andrie Asmara, Dolly Indra, Nor Salwa Damanhuri

285-

Article Open Access

Evaluating User Experience in a Microservices-Based E-Learning Platform for Technopreneurship with the UEQ  DOI : 10.52088/ijesty.v5i3.946 <i>Poetri Lestari Lokapitasari, Syaad Patmanthara, Muhammad Ashar, Fachrul Kurniawan</i>	295-
Article Open Access	
Comprehensive Risk Analysis in Cargo Transportation by Land: Implications for Safety and Operational Efficiency  DOI : 10.52088/ijesty.v5i3.949 <i>Ahmad Soimun, Anggun Prima Gilang Rupaka, Nengah Widiangga Gautama, Putu Diva Ariesthada Sadri, Ni Luh Darma Yanti, Dynes Rizky Navianti, Hendra Yuda Novianto</i>	302-
Article Open Access	
Study on Magnetic Properties Characterization of Aceh Iron Sand as Raw Biomedical Application Materials  DOI : 10.52088/ijesty.v5i3.975 <i>Muhammad Sayuti, Muhammad Yusuf, Reza Putra, Riza Wirawan</i>	312-
Article Open Access	
Kuntilanak as a Runtime Entity: Technical Integration of Javanese Folklore Using Manga Matrix in a 2D Horror Game  DOI : 10.52088/ijesty.v5i3.961 <i>Herman Thuan To Saurik, Harits Ar Rosyid, Aji Prasetya Wibawa, Esther Irawati Setiawan</i>	316-
Article Open Access	
Optimization of LPG Distribution for a Multiplatform-Based LPG Marketplace  DOI : 10.52088/ijesty.v5i3.994 <i>Herman Budianto, Farhan Faisal Zainul Mustaqin, Esther Irawati Setiawan, Joan Santoso</i>	327-
Article Open Access	
Fake News Detection in Model Integral: A Hybrid CNN-BiLSTM Model  DOI : 10.52088/ijesty.v5i3.1058 <i>Renuka Nyayadhis, Chaya Jadhav, Ch Bhupati, R.A. Mabel Rose, M Prabhu</i>	337-
Article Open Access	
The Impact of Government Cooking Oil Subsidies on Social Welfare: Elasticity-Based Multimarket Approach  DOI : 10.52088/ijesty.v5i3.967 <i>Fatimah Fatimah, Subhan A. Gani, Syamsul Bahri, Sri Meutia, Syukriah Syukriah</i>	344-
Article Open Access	
Building a Narrative Event Dataset from Andersen's Fairy Tales for Literary and Computational Analysis  DOI : 10.52088/ijesty.v5i3.910 <i>Erna Daniati, Aji Prasetya Wibawa, Wahyu Sakti Gunawan Irianto</i>	354-
Article Open Access	
Benchmarking Techniques for Real-Time Evaluation of LLMs In Production Systems  DOI : 10.52088/ijesty.v5i3.955 <i>Reena Chandra, Rishab Bansal, Karan Lulla</i>	363-
Article Open Access	
Assessing the Tax Amnesty Program in Indonesia Through System Success and Trust Models  DOI : 10.52088/ijesty.v5i3.958	373-

Article Open Access

Cyber Security of Robots: Integrating Safety and Security in Cognitive Social Computers

 DOI : 10.52088/ijesty.v5i3.1059

382-

K Parthiban, R Kanchana, P S V S Sridhar, N. V. Krishnamoorthy, P.S.G. Aruna Sri

Article Open Access

Learning Sanskrit to Strengthen Multiculturalism and Religious Moderacy

 DOI : 10.52088/ijesty.v5i3.968

388-

I Made Surada, I Nyoman Subagia, Putu Eka Sura Adnyana

Article Open Access

Blockchain Technology Model on Virtual Museum as an Effort to Enhance Balinese Cultural Metaverse

 DOI : 10.52088/ijesty.v5i3.972

394-

I Gede Iwan Sudipa, Putu Wirayudi Aditama, Christina Purnama Yanti

Article Open Access

Data-Driven Decision-Making Use Case: Applying Big Data Analytics to Forecast Important Decisions

 DOI : 10.52088/ijesty.v5i3.1122

402-

A Rama Prasath, S Leelavathy, P S G Aruna Sri, G Saranya, S V Manikanthan

Article Open Access

Sentiment Analysis of Vidio Application Based on Reviews on Google Play Store Using Bidirectional Encoder Representations from the Transformers Method

 DOI : 10.52088/ijesty.v5i3.1124

409-

Rina Refianti, Andrian Senjaya

Article Open Access

Tracking the Footprints of the Veda Teachings Implementation Study on Hindus in Bali

 DOI : 10.52088/ijesty.v5i3.973

415-

Mangku Pastika, I Gusti Ngurah Sudiana, Sri Putri Purnamawati, Relin D.E

Article Open Access

Swarm Intelligence-Based Performance Optimization for Wireless Sensor Networks for Hole Detection

 DOI : 10.52088/ijesty.v5i3.1127

419-

T Padmapriya, Chaya Jadhav, Renuka Nyayadhish, Neeraj Kumar, P Kaliappan

Article Open Access

Optimization Study Of Time And Mass Of Ketapang Fruit Shell Biosorbent in the Methylene Blue Batch Adsorption Process

 DOI : 10.52088/ijesty.v5i3.1000

428-

Meriatna Meriatna, Zulmiardi Zulmiardi, Rizka Nurlaila, Suryati Suryati, Fikri Hasfita, Faisal Faisal

Article Open Access

Analysis of Forehand and Backhand Stroke Accuracy and Lateral Epicondylitis Pain among Recreational Tennis Players

 DOI : 10.52088/ijesty.v5i3.1134

435-

Ashish Mathew A, S F Mariyam Farzana, Suresh T N, Arvind M, Prithiha V

Article Open Access

Compositional Engineering of Chitosan, Potato Starch, Kaolin Biocomposites: Tuning

Compositional Engineering of Chitosan-Potato Starch-Kaolin Biocomposites: Tuning Physicochemical Properties for Wound Dressing Applications  DOI : 10.52088/ijesty.v5i3.1001 <i>Suryati Suryati, Rizka Mulyawan, Meriatna Meriatna, Cut Khairunnisa, Leni Maulinda, Fikri Hasfita</i> Article Open Access	441-
Transformer-Based Tabular Foundation Models: Outperforming Traditional Methods with TabPFN  DOI : 10.52088/ijesty.v5i3.1146 <i>R Anand Babu, Vishwa Priya V, Manoj Kumar Mishra, Inakoti Ramesh Raja, Surya Kiran Chebrolu, B Swarna</i> Article Open Access	448-
The Mechanical Properties of Bismuth-based Ceramic Nanocomposite  DOI : 10.52088/ijesty.v5i3.1086 <i>Nurmalita Nurmalita, Ahmad Fikri, Masrullita Masrullita, Novi Sylvia, Zetta Fazira, Jalaluddin Jalaluddin, Zainuddin Ginting</i> Article Open Access	456-
Performance of Soil Subgrade Improvement using Waste Material Coconut Shell Charcoal  DOI : 10.52088/ijesty.v5i3.1006 <i>Lusi Dwi Putri, Cut Rahmawati, Jawad Ahmad</i> Article Open Access	464-
Sustainable Interior Design for Urban Cafés: Integrating Urban Culture and Smart Technology to Enhance Work-Oriented Comfort  DOI : 10.52088/ijesty.v5i3.1009 <i>Ruth Puji Setyaningrum, I Kadek Pranajaya, Ni Made Emmi Nutrisia Dewi</i> Article Open Access	470-
Exploring the Synergy: User Stories in Agile Software Development  DOI : 10.52088/ijesty.v5i3.1161 <i>Siti Nur Fathin Najwa Binti Mustaffa, Jamaludin Bin Sallim, Rozlina Binti Mohamed</i> Article Open Access	480-
Smart Cropping Pattern: A Systematic Study of Sustainable Agriculture Optimization Model  DOI : 10.52088/ijesty.v5i3.1132 <i>Mushthofa Mushthofa, Suripin Suripin, Dyah Ari Wulandari, Mochammad Qomaruddin</i> Article Open Access	491-
Emerging Carbon Capture Technologies in the Palm Oil Industry: A Review of Bioenergy and Carbon Capture Storage Approaches  DOI : 10.52088/ijesty.v5i3.1170 <i>Loso Judijanto</i> Article Open Access	500-
Analysis of the Influence of Infinite Mindset Through Innovation and Learning Ability on Business Sustainability  DOI : 10.52088/ijesty.v5i3.1181 <i>Muhammad Reza Aulia, Cut Salsabila, Anisah Nasution, Fanthasir Awwal Fuqara, Utary Azrani, Henny Pratiwi, Hendy Tannady</i> Article Open Access	510-
A Novel Hybrid Method for DAP: Differential Evolution with Variable Neighborhood Search  DOI : 10.52088/ijesty.v5i3.1296	515-

Article Open Access

A Comprehensive Review-Remote Monitoring System Based on Iomt for Neurological Disabilities

523-

 DOI : 10.52088/ijesty.v5i3.1036

Pradeep Raj M S, Manimegalai P

Article Open Access

Factory-Grade Diagnostic Automation for GeForce and Data Centre GPUs

537-

 DOI : 10.52088/ijesty.v5i3.1089

Karan Lulla, Reena Chandra, Kishore Ranjan

Article Open Access

Leveraging Kafka for Event-Driven Architecture in Fintech Applications

545-

 DOI : 10.52088/ijesty.v5i3.1074

Jaya Krishna Modadugu, Ravi Teja Prabhala Venkata, Karthik Prabhala Venkata

Article Open Access

Edge Computing Frameworks for Real-Time Optimisation in Autonomous Electric Vehicle Networks

554-

 DOI : 10.52088/ijesty.v5i3.1397

Laith S. Ismail, Abeer Salim Jamil, Taghreed Alaa Mohammed Ali, Ibraheem Hatem Mohammed Al-Dosari, Khedier Salman, Siti Sarah Maidin

Article Open Access

Design and Deployment of a Secure Cyber-Physical System for Energy Monitoring in Smart Agriculture

564-

 DOI : 10.52088/ijesty.v5i3.1398

Dina Fallah, Elaf Sabah Abbas, Mohsen Ali Ahmed, Wafaa Adnan Sajid, Thamer Kadum Yousif Al Hilfi, Siti Sarah Maidin

Article Open Access

Mobile Learning Applications and Their Impact on Students' Academic Performance in Rural Schools

573-

 DOI : 10.52088/ijesty.v5i3.1412

Farog'at Muhammedova, Mirkomil Ergashev, Nilufar Imamova, Anorgul Ashirova, Adham Urishev, Mokhira Kuvvatova, Shalola Sattorova

Article Open Access

Federated Learning Architectures for Privacy-Preserving Smart Grid Data Processing

576-

 DOI : 10.52088/ijesty.v5i3.1423

Sarah Ali Abdulkareem, Sabah M. Kallow, Imad Matti Bako, Salima Baji Abdullah, Saad T.Y. Alfalahi, M. Batumalay

Article Open Access

Cotton Disease Prediction Using Deep Transfer Learning: Comparative Analysis of Resnet50, VGG16 and Inceptionv3 Models

588-

 DOI : 10.52088/ijesty.v5i3.1116

Sandeep Gupta, Abu Bakar Abdul Hamid, Tadiwa Elisha Nyamasvisva, Vishal Jain, Nitin Tyagi, NG Khai Mun, Danish Ather

Article Open Access

Safety Function Model for Requirement Specification in Critical Systems: A Case Study of Generic Patient Controlled Analgesia Pump Model (CGPA)

595-



DOI : [10.52088/ijesty.v5i3.1370](https://doi.org/10.52088/ijesty.v5i3.1370)

Azma Abdullah, Rohani Abu Bakar, Fairus Abdul Farid, Mansoor Abdulhak

Article Open Access

Gamification Design in Assisting Master's Students in Learning Readiness of XYZ University



DOI : [10.52088/ijesty.v5i3.974](https://doi.org/10.52088/ijesty.v5i3.974)

Sebastian Stanley Salim, Gunawan Wang

603-

Article Open Access

Operationalizing No-Code AI: Cross-Functional Implementation and Organizational Impact



DOI : [10.52088/ijesty.v5i3.1190](https://doi.org/10.52088/ijesty.v5i3.1190)

Binita Mukesh Shah, Rishab Bansal

611-

Article Open Access

Towards Self-Healing Cloud Infrastructures: Predictive Maintenance with Reinforcement Learning and Generative Models



DOI : [10.52088/ijesty.v5i3.1185](https://doi.org/10.52088/ijesty.v5i3.1185)

Jyoti Kunal Shah, Prashanthi Matam

619-

Article Open Access

Failure of Preventive Security Controls in Cloud-Native Systems: Revisiting Governance Enforcement



DOI : [10.52088/ijesty.v5i3.1294](https://doi.org/10.52088/ijesty.v5i3.1294)

Muhammad Daffa Ramadhan, Ahmad Nurul Fajar

628-

Article Open Access

A Lightweight Deep Learning Model for Crop Disease Detection on Mobile Devices



DOI : [10.52088/ijesty.v5i3.1535](https://doi.org/10.52088/ijesty.v5i3.1535)

Qi Jing

636-

Article Open Access

Toward Ultra-Reliable Low-Latency V2X: A Hybrid Deep Learning Approach for Intelligent Vehicular Networks



DOI : [10.52088/ijesty.v5i3.1536](https://doi.org/10.52088/ijesty.v5i3.1536)

Yi Jiang, Shamsul Arrieya Bin Ariffin

644-

Article Open Access

Optimizing Supply Chain Logistics with Predictive Analytics: Using Data Science to Improve Cost Efficiency and Operational Performance



DOI : [10.52088/ijesty.v5i3.1078](https://doi.org/10.52088/ijesty.v5i3.1078)

Rushabh Mehta

654-

Article Open Access

Harnessing Backflow: AI-Optimized Hybrid Fan Systems for Micro-Scale Energy Regeneration and Smart Efficiency Control



DOI : [10.52088/ijesty.v5i3.1411](https://doi.org/10.52088/ijesty.v5i3.1411)

Bhuvana Kumar V, N. Yedukondalu, Narayana Rao Appini, Siddabathuni Suresh Babu, Karnam Sreenu

660-

Article Open Access

Screen Reader AI: A Conversational Web-Accessibility Assistant for Blind and Low-Vision Users



DOI : [10.52088/ijesty.v5i3.1562](https://doi.org/10.52088/ijesty.v5i3.1562)

Rushilkumar Patel

671-

Blockchain Technology for Renewable Energy Transactions and Grid Management

 DOI : [10.52088/ijesty.v5i3.1731](https://doi.org/10.52088/ijesty.v5i3.1731)

677-

*Sura Hamed Mousa, Refat Taleb Hussain, Zahraa Mohammed Hassan, Nameer Hashim Qasim,
Akram Fadhel Mahdi, M. Batumalay*

International Journal of Engineering, Science, and Information Technology (IJESTY) eISSN 2775-2674

Published by Malikussaleh University, Indonesia

Editor E-mail: journalijesty@gmail.com



The works in **the IJESTY Journal** are licensed under a [Creative Commons Attribution 4.0 International Public License](https://creativecommons.org/licenses/by/4.0/) (CC BY 4.



Assessing the Tax Amnesty Program in Indonesia Through System Success and Trust Models

Muji Muji*, Haris Maupa, Cokki Cokki

Doctoral Program of Management Science, Universitas Tarumanagara, Indonesia

*Corresponding author Email: muji.118242011@stu.untar.ac.id

The manuscript was received on 11 February 2025, revised on 18 March 2025, and accepted on 20 June 2025, date of publication 28 June 2025

Abstract

The success of a Tax Amnesty Program (TAP) in developing countries such as Indonesia depends not only on fiscal policy execution but also on how taxpayers perceive and trust the program. This study integrates the Information System Success Model with the trust construct to empirically examine the factors affecting TAP performance from a citizen-centric perspective. Using a quantitative approach, the research involved 414 Indonesian taxpayers selected through stratified random sampling, with data analysed using SmartPLS 3.0. One hundred eighty-seven valid responses were retained after a filtering process based on TAP knowledge awareness. The proposed model includes six constructs: Information Quality (INQ), Program Quality (PGQ), Service Quality (SVQ), Taxpayer Trust (TPT), Taxpayer Satisfaction (TSF), and Net Benefits (NBF). The structural model revealed that INQ significantly affects both TPT and TSF, and that TSF has the most decisive influence on NBF. However, PGQ and SVQ did not considerably impact TPT, suggesting that trust in TAP may be influenced more by institutional and cultural factors than perceived technical features. The findings highlight the necessity to enhance tax information accuracy and transparency while strengthening public trust and satisfaction. This study provides an integrative model to evaluate TAP success and offers practical insights for policymakers aiming to improve taxpayer participation through trust-based interventions. The novelty lies in quantitatively integrating information systems and behavioural trust constructs within the tax amnesty framework.

Keywords: Tax Amnesty Program, Information System Success Model, Taxpayer Trust, Taxpayer Satisfaction, Structural Equation Modeling.

1. Introduction

The Indonesian government continues to intensify the development of infrastructure and public services, which requires a robust and sustainable source of state revenue. Taxes represent the most significant revenue component; therefore, improving taxpayer compliance is vital. Indonesia's tax system adopts a self-assessment approach, whereby taxpayers independently calculate, pay, and report their obligations [1]. However, compliance rates remain suboptimal. For instance, in 2015, only 59.98% of registered taxpayers filed their annual tax returns, and although this improved to 10.59 million submissions in 2018 (a 14% increase), it remains far below the potential [2].

To increase compliance and tax revenue, the government introduced the Tax Amnesty Program (TAP), allowing taxpayers to declare previously undisclosed assets without facing penalties [3]. While the TAP yielded positive initial results, the program fell short of expectations. Challenges such as a lack of understanding among taxpayers, complex bureaucracy, and inadequate service quality persist as significant barriers [4].

Globally, Indonesia's TAP performance reflects a moderate uptake compared to similar initiatives. For example, South Africa's 2003 TAP achieved over 55% participation among eligible individuals, while Italy's 2009 amnesty recorded significant voluntary disclosures [5]. In contrast, participation in Indonesia remained low, with this study revealing that only 28% of respondents took part in any program phase, despite high awareness (91%). This gap between awareness and action indicates deeper systemic and perceptual issues.

Several prior studies have demonstrated that improving the quality of information, services, and program design can increase voluntary and enforced compliance [6][7]. Trust in public institutions has also been identified as a critical determinant in the success of public fiscal policies [8][9]. Given the complexity of policy adoption in developing countries, it becomes crucial to examine TAP success from a financial and citizens' perspectives, considering factors such as information quality, trust, and satisfaction.



This study addresses these challenges by empirically investigating the determinants of TAP performance in Indonesia using a composite model that integrates the Information System Success Model (ISSM) with a trust construct. This integration offers a novel framework for examining taxpayer perceptions in a structured and quantifiable manner.

Accordingly, this research is guided by the following two questions:

RQ1: What is the current performance status of TAP implementation in Indonesia from the taxpayer's perspective?

RQ2: What factors influence the performance of TAP implementation as perceived by taxpayers?

This article is structured into six main sections. Following the introduction, Section 2 presents the relevant literature and conceptual framework. Section 3 outlines the research methodology, including the sampling design and analytical approach. Section 4 discusses the findings, while Section 5 interprets the results in light of previous studies. Finally, Section 6 concludes with theoretical contributions, policy implications, and directions for future research.

2. Literature Review

Tax amnesty has become a significant topic in public finance research, especially in improving taxpayer compliance and increasing state revenue. Numerous studies have highlighted the diverse factors affecting the effectiveness of tax amnesty programs (TAP). Trifan et al. [10] employed a quantitative method and found that taxpayer compliance and tax sanctions positively influence participation in TAP. In a qualitative study, Yakin [11] emphasised that poor information, system, and service quality are the primary barriers to successful implementation. Similarly, using a descriptive approach, Hajawiyah et al. [12] concluded that TAP in Indonesia has not yet achieved its objectives due to implementation inefficiencies.

Hayat et al. [13] applied a partial least squares (PLS) approach and discovered that perceived benefits significantly affect taxpayer compliance; however, service quality did not moderate the relationship. Indah and Setiawan [14] found that taxpayer awareness, tax sanctions, and e-filing systems significantly impact reporting compliance. On a broader level, Richards [15] compared the tax amnesty experiences of Nigeria, Indonesia, South Africa, India, and Italy, highlighting Indonesia's ongoing challenges, particularly regarding public engagement and institutional trust. Complementary to these findings, Remitasari and Fenton [16] revealed that taxpayers' prior experience and perceptions are critical to their willingness to participate in TAP. Walettina and Anton [17] observed that despite the implementation of TAP, its impact on national tax revenue remained statistically insignificant, suggesting that fiscal outcomes alone may not fully capture program performance.

While these studies offer valuable insights, most focus on administrative efficiency and general public perception, leaving a theoretical gap concerning the roles of information quality, trust, and satisfaction in shaping perceived program outcomes. To address this, the present study adopts a framework that integrates the Information System Success Model (ISSM) with trust as an added construct to better capture taxpayer engagement's behavioural and perceptual dimensions.

The ISSM, developed by DeLone and McLean [18–21], is widely recognised for evaluating the performance of information systems and public service platforms. Core variables in this model—information quality (INQ), program quality (PGQ), and service quality (SVQ)—are known to influence user satisfaction (TSF) and perceived net benefits (NBF). Several studies affirm that information quality significantly influences satisfaction and user trust, which is critical in the public sector [18, 22–26]. For example, Diputra and Yasa [27] and Putra et al. [28] found that program quality positively affects both trust and satisfaction, while Ali et al. [29] emphasised the central role of trust as an indicator of successful system implementation. Juwaini et al. [30] further demonstrated that service quality enhances satisfaction and confidence, especially in user-facing public systems.

Trust, in particular, has been repeatedly identified as a pivotal factor in tax compliance. Haning et al. [8] and Batrancea et al. [9] highlighted the strong correlation between institutional trust and voluntary taxpayer behaviour. On the other hand, satisfaction serves as a cognitive evaluation of service quality and program efficiency, and its impact on perceived benefits has been substantiated by studies such as those by Putra et al. [28] and Ginting et al. [23].

Drawing from these foundations, this study proposes a research model that positions INQ, PGQ, and SVQ as predictors of taxpayer trust and satisfaction, which are expected to influence perceived net benefits. This conceptual approach is considered a theoretical contribution, as it extends the ISSM by incorporating trust and applying it specifically to the TAP context in Indonesia. The operational definitions of each construct used in the model are further detailed in Table 1.

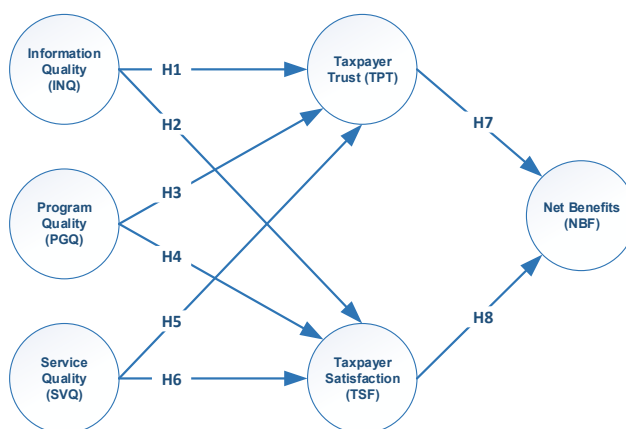


Fig 1. The Proposed Research Model

Table 1. Variable Definitions

Variable	Definition
INQ	Information competency to meet taxpayers' needs and expectations in TAP. This includes accuracy, completeness, relevance, timeliness, and ease of understanding of the information provided.
PGQ	Competency related to ease, suitability, and timeliness of the TAP implementation.
SVQ	Competency related to the excellence of services provided in TAP, including sufficient data, taxpayer-oriented services, responsive delivery, and security.
TPT	Competency related to taxpayers' trust in TAP. This includes legality, clear rules, transparency, honesty in management, and systematic procedures.
TSF	Competency related to taxpayers' satisfaction with TAP, focusing on the program's ability to meet needs, effectiveness, efficiency, and comfort provided to taxpayers.
NBF	Competency regarding how much TAP benefits taxpayers, including improved management, productivity, competitive advantages, cost savings, and resource optimisation.

Table 2 lists the measurement items used in this survey study. The instruments were formulated based on the definitions of each indicator in terms of the TAP implementation context, referring to the previous studies used in the model development.

Table 2. List of Measurement Items

Code	Measurement Items
INQ1	Accuracy TAP provides accurate information
INQ2	Timeliness TAP provides timely information when I need it
INQ3	Completeness TAP provides complete information
INQ4	Relevance TAP provides information that suits my needs
INQ5	Understandable TAP provides easy-to-understand information
PGQ1	Ease of Follow TAP is easy to implement
PGQ2	Flexibility TAP is flexible in its implementation
PGQ3	Functionality TAP has many functionalities for taxpayers
PGQ4	Reliability TAP is reliable in its implementation
PGQ5	Timeliness TAP is implemented at the right time
SVQ1	Data Sufficiency TAP provides services with sufficient data availability
SVQ2	Empathy TAP provides services according to the taxpayer's needs
SVQ3	Responsiveness TAP provides responsive services to taxpayers
SVQ4	Security TAP provides secure services to taxpayers
TPT1	Legality The government officially runs TAP
TPT2	Clarity TAP is run with clear rules and procedures
TPT3	Openness TAP is implemented transparently
TPT4	Integrity TAP is managed honestly
TPT5	Systematization TAP is implemented systematically
TSF1	Adequacy TAP meets the needs of tax management
TSF2	Effectiveness TAP is implemented effectively
TSF3	Efficiency TAP is implemented efficiently
TSF4	Comfort TAP provides convenience in its implementation
TSF5	Overall Satisfaction Overall, TAP is satisfied with its implementation
NBF1	Managerial Effectiveness TAP implementation increases the effectiveness of tax management for taxpayers
NBF2	Productivity Improvement TAP implementation increases productivity for taxpayers
NBF3	Competitive Advantage TAP implementation brings competitive benefits to taxpayers
NBF4	Cost Savings TAP implementation saves costs that taxpayers must incur
NBF5	Resources Savings In general, TAP implementation saves resources that taxpayers must spend.

Referring to the references investigated in the model development phase, the researchers proposed eight hypotheses to examine the relationships among six variables in the developed model, i.e.:

- H1: INQ significantly affects TPT
- H2: INQ significantly affects TSF
- H3: PGF significantly affects TPT
- H4: PGF significantly affects TSF
- H5: SVQ significantly affects TPT
- H6: SVQ significantly affects TSF
- H7: TPT significantly affects BNF
- H8: TSF significantly affects BNF

3. Methods

This study followed a structured, eight-phase empirical research process designed to explore the Tax Amnesty Program (TAP) performance from the taxpayer's perspective in Indonesia. The phases included: (1) literature review, (2) model and hypothesis development, (3) instrument design, (4) pilot testing, (5) data collection, (6) data cleaning, (7) statistical analysis, and (8) interpretation

and conclusion. These steps are summarised in the research flowchart (Figure 2), which illustrates the sequential and systematic approach applied throughout the study.

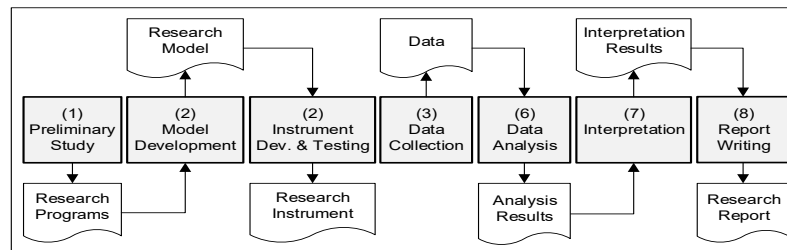


Fig 2. Research Procedure

The study employed a quantitative survey method. The population targeted included Indonesian citizens with valid taxpayer identification numbers (NPWP) and minimum awareness of the TAP. A purposive sampling strategy was applied, emphasising respondents with a basic understanding of tax regulations and amnesty schemes to ensure the reliability of perceptual assessments. Online ($n = 125$) and offline ($n = 289$) data collection channels yielded 414 initial responses.

Following a rigorous data screening process, 227 responses were discarded. These excluded participants failed to meet the inclusion criteria regarding TAP awareness or provided inconsistent responses (e.g., incomplete Likert-scale entries or contradictory answers in demographic verification). The final sample size retained for analysis was 187, which exceeds the minimum required threshold for partial least squares structural equation modelling (PLS-SEM) as recommended by Hair et al. [31].

To assess potential sample bias resulting from the data exclusion, a non-response bias test was conducted by comparing early and late respondents on key demographic attributes (age, tax status, education level). The test revealed no significant differences, suggesting the discarded data did not introduce substantial bias into the results.

The research instrument consisted of a structured questionnaire divided into two parts: (1) an introduction and informed consent section, and (2) a series of validated measurement items for each construct (INQ, PGQ, SVQ, TPT, TSF, NBF), using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). The items were adapted from previous validated studies in tax administration, public service quality, and information system success models.

Descriptive statistical analysis was performed using Microsoft Excel 2013 and IBM SPSS 25. For model validation and hypothesis testing, SmartPLS 3.0 was used to assess both the measurement model (outer model) and the structural model (inner model). Four criteria were used to evaluate the measurement model: indicator reliability (outer loadings ≥ 0.70), internal consistency reliability (Cronbach's Alpha and Composite Reliability ≥ 0.70), convergent validity (Average Variance Extracted ≥ 0.50), and discriminant validity (Fornell-Larcker criterion and HTMT ratio).

The structural model was evaluated using path coefficients ($\beta \geq 0.1$), significance levels from bootstrapping ($t > 1.96$ at $\alpha = 0.05$), coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and relative impact (q^2). These tests provided insight into the explanatory power and robustness of the proposed model, ensuring that both statistical and theoretical validity were maintained.

This methodological approach aligns with best practices in empirical studies involving user perceptions, public sector evaluation, and behavioural compliance research, making the findings statistically sound and theoretically grounded.

4. Results and Discussion

This section presents the main results of the study in three parts: (1) respondent profiles, (2) perceptions of TAP implementation, and (3) the structural model findings derived from SmartPLS analysis.

First, the final sample consisted of 187 respondents. Most were private-sector employees (38%) with a bachelor's degree (59%). Most were classified as individual taxpayers (70%) and considered knowledgeable in tax-related matters (44%). While TAP awareness was high (91%), actual participation was low, with 72% stating they had not joined the program. Most participation occurred during the first period (13%), suggesting that early-stage promotion may have had a more substantial impact.

Table 3. Profiles of the Respondents Involved in This Study

Respondent Profile	Description	Σ	%
Occupation	Private Employees	71	38%
	Others	50	27%
	Finance and Banking	34	18%
	Educators	16	8%
	Government Employees and SOEs	11	6%
	Entrepreneurs	5	3%
Education	Bachelor's Degree	110	59%
	High School	36	19%
	Diploma	22	12%
	Master's Degree	19	10%
	Doctoral Degree	0	0%
Taxpayer Classification	Individual Taxpayers	131	70%
	Individual and Business Taxpayers	29	16%
	Business Taxpayers	27	14%
Tax Skills Level	Skilled	82	44%
	Less Skilled	72	38%

Tax Amnesty Knowledge Level	Unskilled	16	9%
	Highly Skilled	12	6%
	Very Unskilled	5	3%
	Aware	170	91%
	Very Aware	17	9%
Tax Amnesty Participation	Did Not Participate	134	72%
	Period 1	25	13%
	Period 3	20	11%
	Period 2	8	4%

Second, Table 4 presents the respondents' strong acceptance of the program, with 67% stating they accepted TAP and 18% strongly accepting it. However, their readiness varied: only 18% claimed to be fully prepared to participate. Technical and managerial factors were identified as significant concerns. Data availability (30%) and financial readiness (25%) were the top technical challenges, while program evaluation (23%) and planning (20%) dominated managerial concerns. Institutionally, taxpayer support and commitment were cited by 36% as essential for successful implementation.

Table 4. Profiles of the TAP Implementation Expressed by Respondents

Aspect	Description	Σ	(%)
Readiness and Willingness to Accept	Accepts	125	67%
	Strongly Accepts	33	18%
	Less Accepts	21	11%
	Does Not Accept	4	2%
	Strongly Does Not Accept	4	2%
Percentage of Readiness and Willingness	61%-80%	56	30%
	<20%	38	20%
	81%-100%	34	18%
	41%-60%	34	18%
	21%-40%	25	14%
Technical Factors	Data Availability	56	30%
	Financial Availability	46	25%
	Human Resource Availability	36	19%
	Technology Availability	28	15%
	Method Availability	21	11%
Managerial Factors	Program Acceptance Evaluation	42	23%
	Program Acceptance Planning	38	20%
	Program Acceptance Direction	38	20%
	Program Acceptance Regulation	35	19%
	Program Acceptance Control	34	18%
Institutional Factors	Taxpayer Support and Commitment	67	36%
	Current Economic Conditions	50	27%
	Government Support and Commitment	38	20%
	Support and Coordination Across Units	19	10%
Benefits of Tax Amnesty	Work Culture and Systems	13	7%
	Increases State Revenue	85	46%
	Ease Tax Payments	40	21%
	Boosts Economic Development	34	18%
	Increases Tax Payment Volume	28	15%
Impact of Truth Factors	Influential	104	56%
	Very Influential	43	23%
	Less Influential	21	11%
	Strongly Not Influential	12	6%
	Not Influential	7	4%

Third, the PLS-SEM assessment results comprise the measurement model and structural model assessments. The measurement model assessment results confirmed the indicators' reliability and validity through four key examinations [32][33]. The indicator reliability examination was conducted with a threshold value of 0.7 for the outer loading of each indicator to represent its respective construct. The internal consistency reliability examination was assessed using a threshold value 0.7 for the composite reliability (CR) and Cronbach's alpha (CA) values to ensure that the indicators within each construct consistently measure the same concept. The convergent validity examination was done with a threshold value 0.5 for the average variance extracted (AVE) value to confirm that each construct explains more than 50% of its indicator variance. Lastly, the discriminant validity examination used Fornell-Larcker's criterion, cross-loadings, and the HTMT ratio, showing that each construct is distinct from the others in the model. Figure 3 and Table 5 indicate that the outer model was robust and suitable for further structural model evaluation.

Figure 3, Table 6, Table 7, and Figure 4 demonstrate the results of the structural model assessments [32, 33]. (1) All eight paths of the model represented significant relationships with overall β values above the threshold value of ≥ 0.1 . (2) Together, the INQ, PGQ, and SVQ variables firmly explained the variance of the TPT and TSF variables by approximately 61.8% and 81.8%, respectively. Meanwhile, both TPT and TSF variables have also strongly presented the variance of the NBF ($\pm 69.6.8\%$). (3) Two of the eight

hypotheses (H3 and H5) were rejected because the t-test values of both paths failed to meet the threshold value of >1.96 . (4) Among the paths of the model, TSF→NBF was the only path with a strong effect size. (5) The predictive relevance links were the most critical paths. (6) Both INQ→TPT and TSF→NBF paths were the links with medium relative impact, and the rest had a small relative impact.

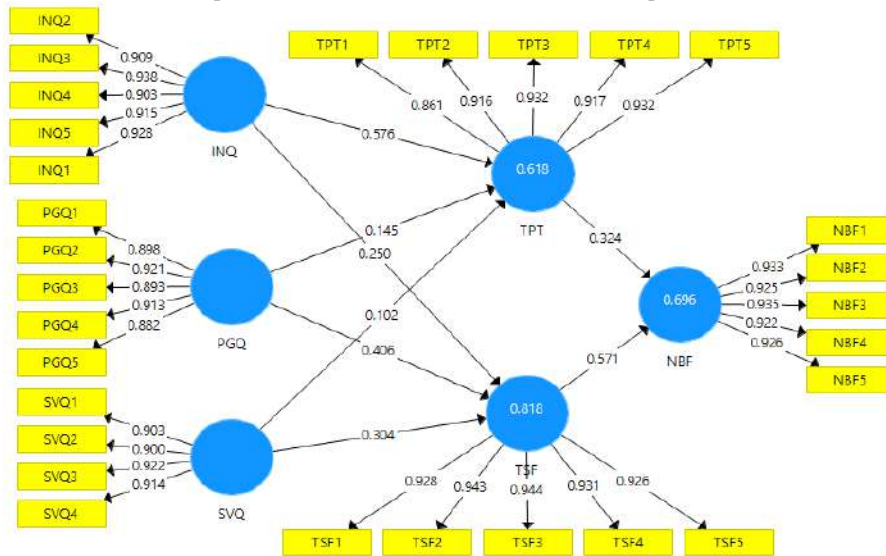


Fig 3. Results of the SmartPLS Calculation

Table 5. Results of the Measurement Model Assessments

Indicators	Cross Loading (CL)						CR	AVE
	INQ	NBF	PGQ	SVQ	TPT	TSF		
INQ1	0.928	0.733	0.714	0.743	0.723	0.721	0.964	0.844
INQ2	0.909	0.716	0.736	0.792	0.690	0.759		
INQ3	0.938	0.688	0.719	0.731	0.730	0.747		
INQ4	0.903	0.740	0.728	0.759	0.730	0.775		
INQ5	0.915	0.684	0.742	0.731	0.682	0.761		
NBF1	0.704	0.933	0.698	0.719	0.692	0.738	0.969	0.862
NBF2	0.721	0.925	0.707	0.723	0.656	0.748		
NBF3	0.740	0.935	0.731	0.710	0.684	0.783		
NBF4	0.698	0.922	0.699	0.683	0.674	0.726		
NBF5	0.737	0.926	0.756	0.727	0.690	0.728		
PGQ1	0.689	0.709	0.898	0.816	0.613	0.783	0.956	0.812
PGQ2	0.733	0.713	0.921	0.818	0.658	0.803		
PGQ3	0.742	0.680	0.893	0.780	0.627	0.790		
PGQ4	0.700	0.707	0.913	0.740	0.624	0.788		
PGQ5	0.707	0.679	0.882	0.759	0.586	0.745		
SVQ1	0.724	0.690	0.745	0.903	0.614	0.748	0.951	0.828
SVQ2	0.754	0.681	0.799	0.900	0.632	0.801		
SVQ3	0.738	0.706	0.813	0.922	0.641	0.778		
SVQ4	0.760	0.716	0.802	0.914	0.656	0.804		
TPT1	0.656	0.650	0.582	0.604	0.861	0.581	0.961	0.832
TPT2	0.733	0.678	0.642	0.644	0.916	0.660		
TPT3	0.715	0.667	0.626	0.654	0.932	0.666		
TPT4	0.692	0.650	0.624	0.624	0.917	0.647		
TPT5	0.731	0.690	0.669	0.660	0.932	0.691		
TSF1	0.791	0.779	0.834	0.844	0.694	0.928	0.972	0.873
TSF2	0.775	0.737	0.786	0.795	0.659	0.943		
TSF3	0.772	0.732	0.818	0.800	0.656	0.944		
TSF4	0.762	0.760	0.799	0.801	0.690	0.931		
TSF5	0.727	0.738	0.816	0.778	0.628	0.926		

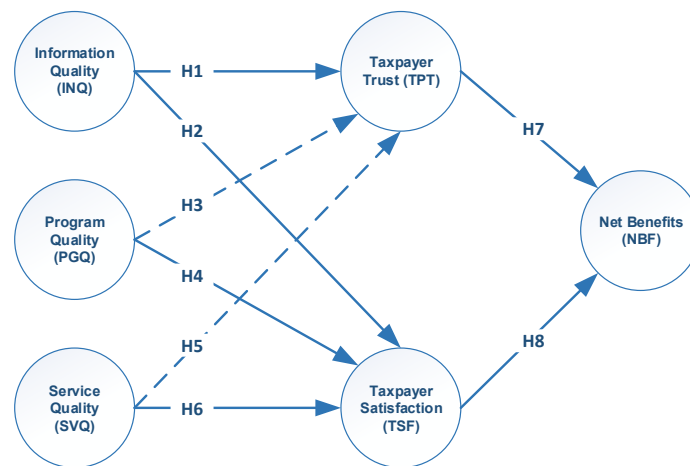
Table 6. Results of the Structural Model Assessments

	Route	β	t-test	R^2	f^2	Q^2	q^2
H1	INQ→TPT	0.576	5.795	0.618	0.264	0.477	0.149
H2	INQ→TSF	0.250	3.431	0.818	0.099	0.664	0.045
H3	PGQ→TPT	0.145	1.397	0.618	0.013	0.477	0.011
H4	PGQ→TSF	0.406	5.660	0.818	0.198	0.664	0.080
H5	SVQ→TPT	0.102	0.798	0.618	0.005	0.477	0.010
H6	SVQ→TSF	0.304	3.157	0.818	0.099	0.664	0.033

H7	TPT→NBF	0.324	3.198	0.696	-0.484	0.551	0.091
H8	TSF→NBF	0.571	5.389	0.696	0.526	0.551	0.278

Table 7. Interpretations of the Structural Model Assessment Results

	β	t-test	R ²	f ²	Q ²	q ²
H1	Significant	Accepted	Strong	Medium	predictive relevance	Medium
H2	Significant	Accepted	Strong	Small	predictive relevance	Small
H3	Significant	Rejected	Strong	Small	predictive relevance	Small
H4	Significant	Accepted	Strong	Medium	predictive relevance	Small
H5	Significant	Rejected	Strong	Small	predictive relevance	Small
H6	Significant	Accepted	Strong	Small	predictive relevance	Small
H7	Significant	Accepted	Strong	Small	predictive relevance	Small
H8	Significant	Accepted	Strong	Large	predictive relevance	Medium

**Fig 4.** Results of the Hypothesis Examinations

The results confirm that information quality (INQ) plays a critical role in shaping both trust and satisfaction, aligning with previous findings by Noori [34] and Ginting et al. [23]. Similarly, program quality (PGQ) significantly influenced taxpayer satisfaction, consistent with the work of Putra et al. [28]. However, rejecting H3 and H5—where PGQ and SVQ failed to influence trust significantly—raises important sociocultural considerations. In the Indonesian context, public confidence in government programs often stems not from technical or procedural excellence but from perceived fairness, transparency, and legal certainty. According to Haning et al. [8] and Batrancea et al. [9], trust is driven more by institutional integrity and public sentiment than by service delivery's perceived efficiency. Moreover, Indonesian citizens have historically exhibited scepticism toward fiscal policies without clear, transparent communication. Even if a program functions well administratively, a lack of perceived fairness or honesty may undermine trust. This cultural orientation may explain why SVQ and PGQ showed no significant direct effect on TPT, despite having an indirect impact via TSF.

Table 8 summarises how the results compare with those of the selected previous studies to situate the findings within the broader literature.

Table 7. Comparison of Current Findings with Prior Research

Hypothesis	Supported	This Study	Prior Research	Possible Explanation
H1 INQ → TPT	✓	Significant	Ginting et al. [23]	Trust grows with accurate and timely information
H2 INQ → TSF	✓	Significant	Noori [49]	Information clarity builds satisfaction
H3 PGQ → TPT	✗	Insignificant	Diputra & Yasa [22] (significant)	Trust in Indonesia is more influenced by legal clarity than system usability.
H4 PGQ → TSF	✓	Significant	Putra et al. [23]	Ease and functionality improve satisfaction
H5 SVQ → TPT	✗	Insignificant	Ali et al. [25] (significant)	Trust is influenced more by perceived fairness than service responsiveness
H6 SVQ → TSF	✓	Significant	Juwaini et al. [24]	Good service quality boosts satisfaction
H7 TPT → NBF	✓	Significant	Haning et al. [26]	Trust influences perceived benefits
H8 TSF → NBF	✓	Strong effect	Putra et al. [23]	Satisfaction leads to greater perceived program value

5. Conclusion

This study investigated the performance of Indonesia's Tax Amnesty Program (TAP) by integrating the Information System Success Model (ISSM) with a trust construct, offering a structured quantitative framework to examine how information quality, program quality, service quality, taxpayer trust, and satisfaction influence perceived program benefits. The findings revealed that although TAP awareness was high among taxpayers (91%), actual participation remained low, with only 28% taking part in any program phases. Most respondents

(67%) accepted the program's existence, while 46% perceived it as beneficial to state revenue. Technically, the availability of accurate data (30%) was considered the most critical factor, while from a managerial standpoint, program evaluation (23%) and planning (20%) were viewed as essential. Institutionally, taxpayer support and commitment (36%) were recognised as pivotal to the program's success. The structural model confirmed that information quality significantly influenced trust and satisfaction, while program and service quality significantly influenced satisfaction but did not directly impact trust. Trust and satisfaction, in turn, significantly affected the perceived net benefits of TAP. These results suggest that trust and satisfaction are critical mediators in shaping the perceived success of tax amnesty programs. Interestingly, the insignificant direct effect of program and service quality on trust may reflect a cultural tendency in Indonesia where trust in public institutions is shaped more by perceived transparency and fairness than by technical or service efficiency. In light of these findings, several recommendations can be made. First, trust-building must be prioritised through transparent communication and institutional credibility to enhance the effectiveness of TAP and similar fiscal programs. Second, taxpayer literacy should be strengthened through targeted interventions such as integrated e-learning platforms, social media campaigns, gamified educational tools, and collaborative programs involving tax consultants and academic institutions. Third, periodic monitoring and evaluation should be embedded into future TAP implementations to assess public sentiment and adapt real-time strategies. Lastly, government agencies must foster long-term taxpayer engagement through simplified reporting mechanisms, clear legal safeguards post-amnesty, and ongoing support from tax administrators. This study, however, is limited by its cross-sectional design and reliance on self-reported survey data, which may not fully capture longitudinal changes or nuanced taxpayer behaviour. Future research is encouraged to apply longitudinal or qualitative approaches—such as interviews or ethnographic methods—to gain deeper insight into taxpayers' decision-making processes and the long-term impacts of policy trust. Additionally, incorporating moderating variables such as demographic or psychological traits may further enrich the understanding of taxpayer responses across different population segments.

References

- [1] H. Mallick, "Do governance quality and ICT infrastructure influence the tax revenue mobilisation? An empirical analysis for India," *Economic Change and Restructuring*, vol. 54, no. 2, pp. 371-415, 2021.
- [2] T. Sevendy, S. Suhardjo, N. Renaldo, A. Remy, and K. Meyer, "Internet Understanding Moderates the Influence of Technology Acceptance Model and Digital Taxation on Taxpayer Compliance," *Interconnection: An Economic Perspective Horizon*, vol. 1, no. 3, pp. 163-170, 2023.
- [3] H. P. Wijaya, "Implications of the implementation of the tax administrative sanctions policy on taxpayer compliance," *Global Legal Review*, vol. 3, no. 2, pp. 109-126, 2023.
- [4] A. Hasan, N. Sheikh, and M. B. Farooq, "Exploring stakeholder perceptions of tax reform failures and their proposed solutions: a developing country perspective," *Meditari Accountancy Research*, vol. 32, no. 3, pp. 721-755, 2024.
- [5] N. Richards, "Comparative Overview of Tax Amnesty Policy Implementation in Nigeria," *The Nigerian Juridical Review*, vol. 16, pp. 103-123, 2021.
- [8] M. T. Haning, H. Hamzah, and M. H. Tahili, "Determinants of public trust and its effect on taxpayer compliance behavior in South Sulawesi Province, Indonesia," *Public Policy and Administration*, vol. 19, no. 2, pp. 205-218, 2020.
- [9] L. M. Batrancea et al., "A self-employed taxpayer experimental study on trust, power, and tax compliance in eleven countries," *Financial Innovation*, vol. 8, no. 1, p. 96, 2022.
- [10] V. A. Trifan, S. G. Szentesi, L. D. Cuc, and M. F. Pantea, "Assessing Tax Compliance Behavior Among Romanian Taxpayers: An Empirical Case Study," *SAGE Open*, vol. 13, no. 3, p. 21582440231195676, 2023.
- [11] I. H. Yakin, "Implementation of Human Resources Management in Efforts to Improve the Performance of Tax Instructors," *Atestasi: Jurnal Ilmiah Akuntansi*, vol. 7, no. 1, pp. 287-299, 2024.
- [12] A. Hajawiyah, T. Suryarini, and T. Tarmudji, "Analysis of a tax amnesty's effectiveness in Indonesia," *Journal of International Accounting, Auditing and Taxation*, vol. 44, p. 100415, 2021.
- [13] N. Hayat, A. A. Salameh, A. A. Mamun, M. Helmi Ali, and Z. K. M. Makhbul, "Tax compliance behavior among Malaysian taxpayers: a dual-stage pls-sem and ann analysis," *SAGE Open*, vol. 12, no. 3, p. 21582440221127190, 2022.
- [14] N. Indah and P. E. Setiawan, "The effect of tax awareness, taxation sanctions, and application of e-filing systems in compliance with personal taxpayer obligations," *American Journal of Humanities and Social Sciences Research (AJHSSR)*, vol. 4, no. 3, pp. 440-446, 2020.
- [15] A. Remitasari and A. J. Fenton, "Public perception on the implementation of tax amnesty program," *Journal of Communication and Public Relations*, vol. 1, no. 1, pp. 16-31, 2021.
- [16] S. Walettina and A. Anton, "ANALYSIS THE EFFECT OF TAX POLICY, TAX AMNESTY PROGRAMME, ECONOMIC GROWTH, INFLATION AND INDIVIDUAL TAXPAYER COMPLIANCE ON TAX RECEIPT IN PEKANBARU," in *International Conference on Business Management and Accounting*, 2022, vol. 1, no. 1, pp. 24-39.
- [17] N. Hayat, A. A. Salameh, A. A. Mamun, M. Helmi Ali, and Z. K. M. Makhbul, "Tax compliance behavior among Malaysian taxpayers: a dual-stage pls-sem and ann analysis," *SAGE Open*, vol. 12, no. 3, p. 21582440221127190, 2022.
- [18] A. Subiyakto, "Assessing Information System Integration Using Combination of the Readiness and Success Models," *Bulletin of Electrical Engineering and Informatics*, vol. 7, no. 3, pp. 400-410, 2018, doi: 10.11591/eei.v7i3.1182.
- [19] I. Y. Alyoussef, "Acceptance of e-learning in higher education: The role of task-technology fit with the information systems success model," *Heliyon*, vol. 9, no. 3, p. e13751, 2023/03/01/ 2023, doi: <https://doi.org/10.1016/j.heliyon.2023.e13751>.
- [20] G. Banafu Akrong, S. Yunfei, and E. Owusu, "Development and validation of an improved DeLone-McLean IS success model - application to the evaluation of a tax administration ERP," *International Journal of Accounting Information Systems*, vol. 47, p. 100579, 2022/12/01/ 2022, doi: <https://doi.org/10.1016/j.accinf.2022.100579>.
- [21] M. K. Al-Kofahi, H. Hassan, R. Mohamad, T. Intan, and M. Com, "Information systems success model: A review of literature," *International Journal of Innovation, Creativity and Change*, vol. 12, no. 8, 2020.
- [22] T. E. Mofokeng, "The impact of online shopping attributes on customer satisfaction and loyalty: Moderating effects of e-commerce experience," *Cogent Business & Management*, vol. 8, no. 1, p. 1968206, 2021.

- [23] Y. Ginting, T. Chandra, I. Miran, and Y. Yusriadi, "Repurchase intention of e-commerce customers in Indonesia: An overview of the effect of e-service quality, e-word of mouth, customer trust, and customer satisfaction mediation," *International Journal of Data and Network Science*, vol. 7, no. 1, pp. 329-340, 2023.
- [24] S. J. Putra, A. Subiyakto, A. R. Ahlan, and M. Kartiwi, "A coherent framework for understanding the success of an information system project," *Telkomnika (Telecommunication Computing Electronics and Control)*, Article vol. 14, no. 1, pp. 302-308, 2016, doi: 10.12928/TELKOMNIKA.v14i1.2711.
- [25] P. Keikhosrokiani, N. Mustaffa, N. Zakaria, and R. Abdullah, "Assessment of a medical information system: the mediating role of use and user satisfaction on the success of human interaction with the mobile healthcare system (iHeart)," *Cognition, Technology & Work*, vol. 22, no. 2, pp. 281-305, 2020.
- [26] A. Subiyakto, N. A. Hidayah, G. Gusti, and M. A. Hikami, "Readiness and success of ubiquitous learning in Indonesia: Perspectives from the implementation of a pilot project," *Information (Switzerland)*, Article vol. 10, no. 2, 2019, Art no. 79, doi: 10.3390/info10020079.
- [27] I. Diputra and N. Yasa, "The influence of product quality, brand image, brand trust on customer satisfaction and loyalty," *American International Journal of Business Management (AIJBM)*, vol. 4, no. 1, pp. 25-34, 2021.
- [28] S. J. Putra, A. Subiyakto, I. Yunita, M. Gunawan, and Y. Durachman, "Assessing the user satisfaction perspectives of information system: A library case study in Indonesia," *Indonesian Journal of Electrical Engineering and Computer Science*, vol. 12, no. 1, pp. 95-101, 2018.
- [29] A. Juwaini et al., "The role of customer e-trust, customer e-service quality and customer e-satisfaction on customer e-loyalty," *International journal of data and network science*, vol. 6, no. 2, pp. 477-486, 2022.
- [30] B. J. Ali et al., "Impact of service quality on the customer satisfaction: Case study at online meeting platforms," in Ali, BJ, Saleh, Akoi, S., Abdulrahman, AA, Muhamed, AS, Noori, HN, Anwar, G.(2021). *Impact of Service Quality on the Customer Satisfaction: Case study at Online Meeting Platforms*. *International journal of Engineering, Business and Management*, 2021, vol. 5, no. 2, pp. 65-77.
- [31] J. F. Hair Jr et al., "An introduction to structural equation modeling," *Partial least squares structural equation modeling (PLS-SEM) using R: a workbook*, pp. 1-29, 2021.
- [32] C. M. Ringle, M. Sarstedt, N. Sinkovics, and R. R. Sinkovics, "A perspective on using partial least squares structural equation modelling in data articles," *Data in Brief*, vol. 48, p. 109074, 2023.
- [33] J. F. Hair Jr et al., "An introduction to structural equation modeling," *Partial least squares structural equation modeling (PLS-SEM) using R: a workbook*, pp. 1-29, 2021..

Abstracting & Indexing



International Journal of Engineering, Science, and Information Technology (IJESTY) eISSN [2775-2674](#)

Published by Malikussaleh University, Indonesia

Editor E-mail: journalijesty@gmail.com



The works in the **IJESTY Journal** are licensed under a [Creative Commons Attribution 4.0 International Public License \(CC BY 4.0\)](#).



INTERNATIONAL JOURNAL OF ENGINEERING, SCIENCE AND INFORMATION TECHNOLOGY

UNIVERSITAS MALIKUSSALEH

P-ISSN : 0 < > E-ISSN : 27752674



4.20805

Impact



2417

Google Citations



Sinta 4

Current Accreditation

[Google Scholar](#) [Garuda](#) [Website](#) [Editor URL](#)

History Accreditation

2021

2022

2023

2024

2025

Garuda

Google Scholar

Integrating E-Learning into The Vocational High School Curriculum: Strategies, Challenges, and Future Directions

Malikussaleh University, Aceh, Indonesia

International Journal of Engineering, Science and Information Technology Vol 6, No 1 (2026) 1-10

2026

DOI: 10.52088/ijesty.v6i1.1523

Accred : Unknown

Public Sentiment Analisis on the Phenomenom of Body Shaming on Social Media X Using the Extreme Gradient Boosting Algorithm

Malikussaleh University, Aceh, Indonesia

International Journal of Engineering, Science and Information Technology Vol 6, No 2 (2026) 67-74

2026

DOI: 10.52088/ijesty.v6i2.1818

Accred : Unknown

Application of Singular Value Decomposition for Image Compression of Yogyakarta Cosmological Axis in Digital Learning in Vocational Education

Malikussaleh University, Aceh, Indonesia

International Journal of Engineering, Science and Information Technology Vol 6, No 1 (2026) 9-20

2026

DOI: 10.52088/ijesty.v6i1.1732

Accred : Unknown

Systematic Literature Review on AI-Enhanced Dual-Axis Solar Tracking Systems: Techniques and Performance Analysis

Malikussaleh University, Aceh, Indonesia

International Journal of Engineering, Science and Information Technology Vol 6, No 3 (2026) 15-24

2026

DOI: 10.52088/ijesty.v6i3.1553

Accred : Unknown