

THE ROLE OF NATURAL HUMAN BEHAVIOUR IN TRAIN EVACUATION SIMULATIONS – A CLASSROOM-BASED SIMULATION

THESIS

The thesis is submitted in partial fulfillment of the requirements for degree of the Master of Science (M.Sc.) at Master Programme in Transport System and Engineering



NINTASHA PRAHASTUTI RINDU R.H.W.
23/524874/PTK/15280

**MASTER PROGRAMME
PROGRAMME IN TRANSPORT SYSTEM AND ENGINEERING
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
FACULTY OF ENGINEERING
UNIVERSITAS GADJAH MADA
YOGYAKARTA
2025**

THE ROLE OF NATURAL HUMAN BEHAVIOUR IN TRAIN EVACUATION SIMULATIONS – A CLASSROOM-BASED SIMULATION

THESIS

The thesis is submitted in partial fulfilment of the requirements for degree of the Master of Science (M.Sc.) at Master Programme in Transport System and Engineering



NINTASHA PRAHASTUTI RINDU R.H.W.
23/524874/PTK/15280

**MASTER PROGRAMME
PROGRAMME IN TRANSPORT SYSTEM AND ENGINEERING
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
FACULTY OF ENGINEERING
UNIVERSITAS GADJAH MADA
YOGYAKARTA
2025**

THE ROLE OF NATURAL HUMAN BEHAVIOUR IN TRAIN EVACUATION SIMULATIONS – A CLASSROOM-BASED SIMULATION

THESIS

The thesis is submitted in partial fulfillment of the requirements for degree of the Master of Science (M.Sc.) at Master Programme in Transport System and Engineering



NINTASHA PRAHASTUTI RINDU R.H.W.
23/524874/PTK/15280

**MASTER PROGRAMME
PROGRAMME IN TRANSPORT SYSTEM AND ENGINEERING
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
FACULTY OF ENGINEERING
UNIVERSITAS GADJAH MADA
YOGYAKARTA
2025**

APPROVAL SHEET

The Supervisor Team approves the thesis

THE ROLE OF NATURAL HUMAN BEHAVIOUR IN TRAIN EVACUATION SIMULATIONS – A CLASSROOM-BASED SIMULATION

by:

Nintasha Prahastuti Rindu R.H.W.

23/524874/PTK/15280

Supervisor: <u>Prof. Dr. Techn. Ir. Danang Parikesit, M.Sc. (Eng)., IPU., APEC.Eng</u> NIP. 196506031990031002	 Date: 11.12.2025
Co-Supervisor: <u>Dr. Ir. Dewanti, MS.</u> NIP. 196304261990032001	 Date: 11-12-2025

ACKNOWLEDGEMENT SHEET

TESIS

THE ROLE OF NATURAL HUMAN BEHAVIOUR IN TRAIN EVACUATION SIMULATIONS – A CLASSROOM-BASED SIMULATION

By:

Nintasha Prahastuti Rindu R.H.W.

23/524874/PTK/15280

The thesis has been examined and defended in front of the Board of Examiners
on December 19th, 2025.

Supervisor:

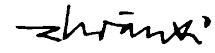
Prof. Dr. Techn. Ir. Danang Parikesit, M.Sc. (Eng)., IPU., APEC.Eng
NIP. 196506031990031002



Date: 14.01.2026

Co-Supervisor:

Dr. Ir. Dewanti, MS.
NIP. 196304261990032001



Date: 15 January 2026

Examiner:

Arumdyah Widiati, S.T., M.Sc., Ph.D.
NIP. 111198207201111201



Date: 14 January 2026

This thesis has been accepted as one of the requirements
for the degree of Master of Science
Date 15 January 2026

Acknowledged by,
Head of the Department of Civil and Environmental Engineering



Prof. Dr. Eng. Ir. Muhammad Zudhy Irawan, S.T., M.T., IPM.
NIP. 198302042012121005



The Role of Natural Human Behaviour in Train Evacuation Simulations – A Classroom-based Simulation

Nintasha Prahastuti R.R.H.W., Prof. Dr. Techn. Ir. Danang Parikesit, M.Sc. (Eng)., IPU., APEC.Eng;Dr. Ir. Dewanti, M. Sc. (Eng)., IPU., APEC.Eng
Universitas Gadjah Mada, 2025 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Lampiran: Histori alur persetujuan

No	Jabatan	Nama	Jenis	Tanggal Disetujui
1	Ketua Departemen Teknik Sipil dan Lingkungan	Prof. Dr.Eng. Ir. Muhammad Zudhy Irawan, S.T., M.T.	Tanda Tangan	Senin, 19 Januari 2026 16:52

Diajukan oleh Emi Rusmiati, S.E. pada Senin, 19 Januari 2026 11:16



*Dokumen ini telah melalui proses approval secara daring sebelum QR Code dibubuhkan.
Scan QR Code yang ada di setiap halaman dokumen ini untuk verifikasi.*