UNIVERSITAS
GADJAH MADA
DEMAND MODELING OF THE JAKARTA-BANDUNG HIGH-SPEED RAIL: AN APPLICATION OF THE MIXED LOGIT MODEL AND
THE THEORY OF PLANNED BEHAVIOR
M DIMAS MAHARDIKA, Dr. Eng. M. Zudhy Irawan, S.T., M.T.
Universitas Gadjah Mada, 2021 | Diunduh dari http://etd.repository.ugm.ac.id/

TABLE OF CONTENTS

TITLE PAGE i
APPROVAL SHEET ii
DECLARATION OF ACADEMIC INTEGRITY iii
PREFACE v
TABLE OF CONTENTS vi
LIST OF TABLES viii
LIST OF FIGURES ix
ABSTRACT x
INTISARI xi
CHAPTER I INTRODUCTION 1
1.1. Background 1
1.2. Problem Formulation 2
1.3. Research Objective 3
CHAPTER II LITERATURE REVIEW 7
2.1. Discrete Choice Model Studies 7
2.2. Structural Equation Modeling Studies 8
2.3. Theory of Planned Behavior Studies 9
2.4. High-Speed Rail Travel Studies 11
2.4.1. HSR studies in the international context 11
2.4.2. HSR studies in the Indonesian context 12
CHAPTER III THEORETICAL BACKGROUND 14
3.1. Discrete Choice Model 14
3.2. Mixed Logit Model 14
3.2.1. Estimation methods 15
3.2.2. Model specification and performance test 16
3.3. Theory of Planned Behavior 17
3.4. Structural Equation Modeling 19
3.4.1. Data requirements for SEM 20
3.4.2. Stages of modeling in SEM 22
3.5. Stated Preference 24
3.5.1. Selection of alternatives, attributes, and attribute levels 26

UNIVERSITAS
GADJAH MADA
DEMAND MODELING OF THE JAKARTA-BANDUNG HIGH-SPEED RAIL: AN APPLICATION OF THE MIXED LOGIT MODEL AND
THE THEORY OF PLANNED BEHAVIOR
M DIMAS MAHARDIKA, Dr. Eng. M. Zudhy Irawan, S.T., M.T.
Universitas Gadjah Mada, 2021 | Diunduh dari http://etd.repository.ugm.ac.id/

3.5.2. Full factorial design 26
3.5.3. Fractional factorial/orthogonal design 27
CHAPTER IV RESEARCH METHOD 28
4.1. Study Area 28
4.2. Research Design 30
4.2.1. Data collection and sampling 31
4.3. Questionnaire Design 32
4.3.1. Traveler characteristics questionnaire 32
4.3.2. Stated preference experiment design 34
4.3.3. Psychological factors question 36
4.4. Data Analysis 38
CHAPTER V ANALYSIS AND DISCUSSION 40
5.1. Survey Data 40
5.2. Discrete Choice Model 45
5.2.1. Mixed logit model utilities 45
5.2.2. Effects of traveler characteristics on mode choice 48
5.3. Structural Equation Model 51
5.3.1. Confirmatory factor analysis for the measurement model 51
5.3.2. Structural model fit 54
5.3.3. Overall model for HSR travel intention 57
5.4. Policy Discussion 61
CHAPTER VI CONCLUSIONS AND RECOMMENDATIONS 65
6.1. Summary of the Findings 65
6.2. Recommendations for Future Study 66
REFERENCES 68
APPENDIX 76