

Universiti Teknologi MARA

**Analysis of the Ranking of Mobile
Telephone Brands Chosen by Female
Community in Tanah Merah, Kelantan
Using Fuzzy Electre Method**

Fatin Najwa Binti Mat Sedi

**Report submitted in fulfillment of the requirements
for Bachelor of Sciences (Hons.) Management
Mathematics, Faculty of Computer and Mathematical
Sciences**

February 2021

STUDENT'S DECLARATION

I certify that this report and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

.....

FATIN NAJWA BINTI MAT SEDI
2017575751

JANUARY 28,2021

ABSTRACT

Mobile telephones (better referred as mobile phones) are known as standard device among Malaysian citizens, irrespective of gender. By using mobile phones, any information around the world can be accessed easily and communication through social media has become easy. The usage of a mobile phone has a significant influence on the user daily life, making it an important device. With the many brands available in the market, a consumer needs to make a wise choice based on certain criteria. The objective of this study is to rank the brands of mobile phones most preferred by the female community in Tanah Merah, Kelantan by identifying the criteria of the mobile phones. The criteria are price, resolution, screen size, design and durability. The Fuzzy Electre method (Elimination Et Choix Traduisant la Realite) has been used in this study. This fuzzy method was first introduced in 1965 before it was renamed as Electre I. In order to analyze the data regarding the decision matrix, the Electre method has been used as an outranking technique to rank the set of alternatives through the linguistic variables and the fuzzy numbers. The result of the study indicates that Samsung is the most preferred mobile phone brand among the female respondents, followed by Oppo and Huawei, respectively. It also shows that Vivo and Xiaomi are equally the least chosen brands.

Keywords: Mobile phone, Fuzzy Electre, alternatives, ranking, criteria.

TABLE OF CONTENTS

CONTENTS

SUPERVISOR’S APPROVAL.....	i
STUDENT’S DECLARATION.....	ii
ACKNOWLEDGEMENT.....	iii
ABSTRACT.....	iv
TABLE OF CONTENTS.....	v
LIST OF FIGURES.....	vii
LIST OF TABLES.....	viii
CHAPTER 1 INTRODUCTION.....	1
1.1 Background of the Study.....	1
1.2 Problem Statement.....	2
1.3 Objective of the Study.....	3
1.4 Scope of the Study.....	4
1.5 Significance of the Study.....	4
CHAPTER 2 LITERATURE REVIEW.....	5
2.1 Research on Mobile Telephones.....	5
2.2 Fuzzy Electre (Elimination Et Choix Traduisant la Realite).....	7
2.3 Summary.....	9

CHAPTER 3 RESEARCH METHODOLOGY.....	10
3.1 Method of Data Collection.....	10
3.2 Fuzzy Electre (Elimination Et Choix Trasuisant la Realite).....	10
CHAPTER 4 RESULTS AND DISCUSSIONS.....	18
4.1 The Hierarchical Model for Mobile Phone Ranking.....	18
4.2 The Linguistic Term for Determining the Weights of the Criteria and Performances for Mobile Phone Brands.....	19
4.3 The Selection of Sample Using Slovin Formula.....	20
4.4 Fuzzy Electre Method for Mobile Phone Brands Ranking.....	21
CHAPTER 5 CONCLUSION AND RECOMMENDATION.....	31
5.1 Conclusion.....	31
5.2 Recommendation.....	32
REFERENCES.....	33
APPENDICES.....	35
Appendix A: Structed Questionnaires.....	35
Appendix B: The list of Acronyms.....	38
Appendix C: The Respondents responses based on the 5 Criteria.....	40