

UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

**A COMPARISON OF THE CRITIC-WASPAS AND THE
ENTROPY-WASPAS METHODS TO SOLVE THE
BEST SECONDARY SCHOOL TEACHER
SELECTION PROBLEM**

NURUL IZZATIE BINTI NOR HESHAM – 2021340561

NUR AMY SYUHADA BINTI AB NASIR – 2021100035

SITI FARHANA BINTI FAIRUZ – 2021110761

P22M23

**Report submitted in partial fulfilment of the requirement
for the degree of
Bachelor of Science (Hons.) (Management Mathematics)
College of Computing, Informatics and Mathematics**

AUGUST 2023

ACKNOWLEDGEMENTS

IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

First and foremost, we are grateful to the Almighty God for enabling us to complete this final year project. In order for our endeavour to be successful, we needed guidance and support. We are grateful to Allah for providing us with a healthy mind and body so that we are able to finish the project.

We would like to express our deepest thanks to, Ms Nor Faradilah Binti Mahad, lecturer of College Computing, Informatics and Media and also assign as our supervisor, who had guided a lot of tasks during two semesters session 2022/2023. We also want to thank everyone, especially our final year project lecturers, Dr Nurul Liyana Binti Abdul Aziz, Ms Nur Lina Binti Abdullah and Mrs Noraimi Azlin Binti Mohd, who made it possible for us to complete this assignment whose contribution in encouragement also helped us coordinate our assignment, deserves special recognition.

Sincere appreciation to everyone in our study group for their generosity and moral support. We appreciate your friendship and memories. Our deepest appreciation goes to our cherished family for their unending love, devotion, and encouragement. Your generosity to those who indirectly contributed to this research means a great deal to us. Thank you a lot for everything.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	ii
TABLE OF CONTENTS	iii
LIST OF TABLES	v
LIST OF FIGURES	vii
ABSTRACT	viii
CHAPTER 1: INTRODUCTION.....	1
1.1 Background of Study	1
1.2 Problem Statement.....	3
1.3 Objective of Study	4
1.4 Significance of Study.....	4
1.5 Scope of Study	4
1.6 Limitation of Study.....	5
1.7 Definition of Terms and Abbreviations	5
CHAPTER 2: BACKGROUND THEORY AND LITERATURE REVIEW	8
2.1 Multiple Criteria Decision Making (MCDM)	8
2.2 Weighted Aggregated Sum Product Assessment (WASPAS) Method	10
2.3 Criteria Importance Through Intercriteria Correlation (CRITIC) Method	12
2.4 Entropy Method	16
2.5 Selection of criteria.....	19
2.6 Conclusion	21
CHAPTER 3: METHODOLOGY AND IMPLEMENTATION.....	22
3.1 Conceptual Diagram for CRITIC-WASPAS Method and Entropy-WASPAS Method	22
3.1.1 Framework of CRITIC Method	23
3.1.2 Framework of Entropy Method	25
3.1.3 Framework of WASPAS Method	26

3.2	Implementation of CRITIC-WASPAS and Entropy-WASPAS methods	28
3.2.1	The implementation of CRITIC-WASPAS method	29
3.2.2	The implementation of Entropy-WASPAS method	36
CHAPTER 4: RESULT AND DISCUSSION.....		43
4.1	Comparison between the final rank of criteria using CRITIC method, Entropy method and decision maker preference	43
4.2	Comparison between the final rank of alternatives using CRITIC-WASPAS method, Entropy-WASPAS method and decision maker preference.	46
CHAPTER 5: CONCLUSION AND RECOMMENDATION		48
5.1	Conclusion	48
5.2	Recommendation	48
REFERENCES.....		50
APPENDIX A: ETHICS APPROVAL BY UITM RESEARCH ETHICS COMMITTEE.....		61
APPENDIX B: QUESTIONNAIRE		63

ABSTRACT

In Malaysia, there are hundreds of thousands of secondary school teachers and a few of them have been awarded the title of the best secondary school teacher through a selection. Criteria Importance Through Intercriteria Correlation (CRITIC) - Weighted Aggregated Sum Product Assessment (WASPAS) method and Entropy-WASPAS method are proposed to solve the best secondary school teacher selection problem. The objective of this study is to integrate WASPAS method with CRITIC and Entropy methods in solving the best secondary school teacher problem. Moreover, this study aims to select the best secondary teacher and compare the selection using CRITIC-WASPAS and Entropy-WASPAS methods. The criteria weights are evaluated by the objective weighting methods, which are CRITIC and Entropy methods, while the alternatives will be determined by WASPAS method. The data is collected from a curriculum senior assistant in the secondary school in Terengganu, who represents the decision maker (DM) of this study, and the data is for the selection of the best secondary school teacher for the year of 2022. Student achievement in the curriculum (C1), observation in the classroom through 'Standard Kualiti Pendidikan Malaysia gelombang 2' (SKPMg2) (C2), classroom management (C3), student welfare management (C4), and student achievement in co-curriculum (C5) are among the criteria used in the selection process. The alternatives are A1, A2 and A3, which represent three secondary school teachers. The ranking order for CRITIC method is $C2 > C5 > C4 > C1 > C3$ and the ranking order for Entropy method is $C1 > C4 > C3 > C5 > C2$. The results show that C1 and C3 have the same criteria ranking with the DM preference and the ranking that obtained by using Entropy method. Meanwhile, both CRITIC-WASPAS and Entropy-WASPAS methods have the same ranking order for alternative which is $A3 > A2 > A1$. In conclusion, all the objectives of this study were successfully achieved and the method proposed are suitable to solve the best teacher selection problem in a secondary school.