

UNIVERSITI TEKNOLOGI MARA

**USABILITY AND ENHANCEMENT
ON *KITARECYCLE* MOBILE APPS**

NURSHAVAREENA BINTI KHALID

Thesis submitted in fulfillment
of the requirements for the degree of
Master of Art
(Art and Design)

Faculty of Art and Design

June 2023

ABSTRACT

The population of Malaysia is increasing rapidly, generating a worrying amount of solid waste management. Therefore, there's an urgency to respond to the mounting issue of solid waste management in Malaysia. *KITARecycle* is an incentive-based program introduced by SWM Environment Sdn Bhd. This research aims to see the design features installed in the *KITARecycle* mobile app, identify if the *KITARecycle* mobile app is suitable for the user to utilize in the recycling process, and determine the residents' level of awareness towards the *KITARecycle* program and mobile apps. From the findings, the improvements and recommendations can be applied according to ISO 9241-11. A survey of 100 Melaka residents is conducted with experts, and SWM representative interviews are evaluated using Nielsen's usability heuristic principles. This study found that the mobile application campaign is not being utilised optimally due to the lack of awareness of recycling activities. From the data collected, it is asserted that the public awareness of the existence of this program is low; hence, in conclusion, the campaign has failed to create a meaningful impact on the community.

ACKNOWLEDGEMENT

Firstly, I wish to thank Allah for allowing me to embark on my Master's and complete this long and challenging journey. My gratitude and thanks go to my supervisor Assoc Prof Dr Azahar Harun, and this thesis is dedicated to my husband and daughters for being together along this journey. This piece of victory is dedicated to all of you. Alhamdulillah.

TABLE OF CONTENTS

	Page
CONFIRMATION BY PANEL OF EXAMINERS	ii
AUTHOR'S DECLARATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF ABBREVIATIONS	xiii
CHAPTER ONE: INTRODUCTION	1
1.1 Research Background	1
1.2 Problem Statement	4
1.3 Research Objectives	6
1.4 Research question	6
1.5 Scope of Study	6
1.6 Significance of Study	6
1.7 Limitation and Delimitation	7
CHAPTER TWO: LITERATURE REVIEW	8
2.1 Introduction	8
2.2 Mobile Application in Waste Management	8
2.3 Usability	9
2.4 Jacob Nielson's Method	13
2.5 Gestalt Theory	13
2.6 Recycling Behaviour	14

CHAPTER THREE: RESEARCH METHODOLOGY	17
3.1 Introduction	17
3.2 Research Design	18
3.3 Interview with SWM Environment Sdn. Bhd Representative	19
3.4 Survey on Melaka Resident	21
3.4.1 Criterion Sampling	22
3.4.2 Pilot test	23
3.4.3 Survey Procedure	23
3.4.4 Survey Structure	23
3.5 Expert View Rating: UI/UX Designer	25
3.5.1 Heuristic Principle	26
3.5.2 Expertise Selection	26
3.5.3 Pilot Test	27
3.5.4 Expert UI/UX Interview Procedure	27
CHAPTER FOUR: ANALYSIS	28
4.1 Introduction	28
4.2 Interface <i>KITAREcycle</i> Mobile Apps	28
4.3 Result and Discussion SWM Representative	41
4.3.1 Conclusion	49
4.4 Result and Discussion Data Collection of Melaka Resident	50
4.4.1 Demography	51
4.4.2 General Understanding of Recycling	54
4.4.3 Usability	60
4.4.4 Awareness	71
4.4.5 Respondents' Recommendation on <i>KITAREcycle</i> Apps Enhancement	75
4.4.6 Respondents' Expectations on the <i>KITAREcycle</i> Program in the Future	78
4.5 Result and Discussion with UI/UX Experts	79
4.5.1 Logo	79
4.5.2 Interface	80
4.5.3 Brand Image	81