## LOW COST MULTI-FUNCTIONAL SIDE TABLE

## MUHAMMAD FAKHRUR RADZI BIN YAHANI

Final Year Project Submitted in Partial Fulfilment of the Requirement for the Degree of Bachelor of Science (Hons.) Furniture Technology In the Faculty of Applied Sciences Universiti Teknologi MARA

AUGUST 2020

## ABSTRACT

#### LOW COST MULTI-FUNCTIONAL SIDE TABLE

Space constraint causes issues for consumers who want to use furniture in small spaces, such as people living in apartments and other small houses. Thus, low cost multifunctional side tables are produced in a variety of functions to ensure completeness for users living in small spaces. The objective of this project was to provide flexible design of space-saving furniture to meet customer specifications and to introduce innovative design using low-cost materials. In addition, wooden pallets are ideal for interior furniture and are suitable for the design of furniture that can serve more than one purpose. After completion of the design and manufacturing process, a survey of 76 respondents was conducted to determine characteristics based on gender, profession, income and age. Questionnaires are performed to assess whether the product meets the consumer requirements based on the customer needs data collected. It applies to the price, quality and function of the product. Following the kano model, most respondents agreed and were pleased with the furniture based on the survey obtained. In final point, low cost multi-functional side tables are successfully designed and manufactured and have the potential to be marketed.

## ACKNOWLEDGEMENTS

#### Assalamualaikum w.b.t,

Praise be to Allah, Most Gracious and Most Merciful, for His glorious grace and encouragement in the completion of this final year project. First, I would like the highest level of gratitude to both my parents and my siblings, who have given me unconditional support for any kind of aid that may be offered to me.

As the author of this final year project, I am eternally grateful and would like to express my sincere gratitude to my supervisor, Dr Siti Noorbaini Sarmin, for her guidance, her relentless encouragement and the wisdom she has passed on. I would also like to express my gratitude and my very special thanks to Dr Siti Zalifah binti Mahmud, project coordinator for handling and overseeing all my activities before, during and after the research paper. Finally, special thanks to all my friends, lecturers and staff at the Wood Industry Study Centre, UiTM Pahang, who were directly or indirectly involved in this project. The support that is offered will not be forgotten.

(Muhammad Fakhrur Radzi bin Yahani)

# **TABLE OF CONTENTS**

ABS ACK TAB LIST LIST LIST	TRACT TRAK KNOWLEDGEMENTS BLE OF CONTENTS I OF TABLES I OF FIGURES I OF PLATES I OF ABBREVIATIONS	ii iiii iv v vii viii ix x
СНА	APTER 1 Introduction	1
1.1	General	1
1.2	Problem statement	2
1.3	Objective of the study	3
CHA	APTER 2 LITERATURE REVIEW	4
2.1	Multi-functional furniture	4
2.2	Stylish and modern furniture design	5
2.3	Furniture materials and characteristic	6
2.4	Wooden pallet from Pinus Radiata	9
СНА	APTER 3 MATERIALS AND METHODS	12
3.1	Concept and material selection method	12
	3.1.1 Concept selection	12
	3.1.2 Material selection	13
	3.1.3 Material research	14
3.2	Product development process	14
	3.2.1 Planning	15
	3.2.2 Determination of product specification	16
	3.2.3 Design – concept generation and selection	17
	3.2.4 Physical prototyping	21
3.3	Manufacturing process	21
	3.3.1 Raw material collection	22
	3.3.2 Planning process	23
	3.3.3 Cutting process	23
	3.3.4 Assembling	24
	3.3.5 Finishing	25
3.4	Analyzing customer needs and product specification	26

CHA	PTER 4 RESULTS AND DISCUSSION	29
4.1	Respondent demographic	29
4.2	Determination of customer needs	31
4.3	Determination of product specification	33
СНА	PTER 5	37
5.1	Conclusion	37
5.2	Recommendations	38
CITED REFERENCES		39
APP	ENDICES	42
CUR	RICULUM VITAE	52