

**APPLICATION OF ERGONOMICS IN THE REDESIGNING
OF TRICYCLE SIDECAR IN CAVITE STATE
UNIVERSITY (CvSU) MAIN CAMPUS**

THESIS

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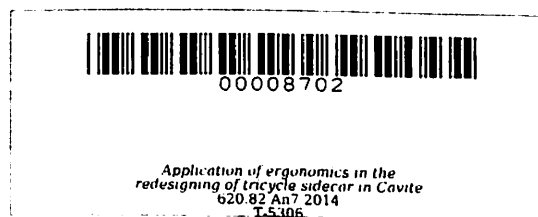
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**APPLICATION OF ERGONOMICS IN THE REDESIGNING OF TRICYCLE
SIDECAR IN CAVITE STATE UNIVERSITY
(CvSU) MAIN CAMPUS**

Undergraduate Thesis
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ABSTRACT

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The study was primarily conducted to redesign the tricycle sidecar commonly used in Cavite State University Main Campus through the application of ergonomics and anthropometry. It also aimed to determine the individual attributes of the participants, identify the anthropometric discomforts that were experienced by the passengers in riding the tricycle sidecar and compare the dimensions of the present with the proposed tricycle sidecar designs to show the deficiency of the required dimensions of the present design that might be the cause of the discomforts associated in using the tricycle sidecar. The mismatch between the dimensions of the tricycle sidecar and its passengers causes discomforts.

The study required data such as the anthropometric dimensions of the passengers, the common discomforts they experienced in riding a tricycle sidecar and the dimensions of the tricycle sidecar. The data gathering for the anthropometric dimensions of the passengers and identification of discomforts was conducted in the form of survey from the passengers of tricycle sidecar from Cavite State University Main Campus, while the dimensions of the tricycle sidecar were obtained through measuring sidecars from the mentioned university.

Industrial Engineering tools such as principles of ergonomics, anthropometry as well as statistics were applied in gathering and analyzing the data. The use of percentiles was helpful in determining the appropriate dimensions of the proposed sidecar design.

The results of the study clearly showed the mismatch in dimensions between the tricycle sidecar and its passengers. The measured dimensions of the sidecars were insufficient or smaller than the corresponding dimensions of the passengers making it unfit for use. The results also showed that most passengers experience discomforts on the different parts of their bodies while riding in it.

With the required measurements from the participants, the researchers were able to propose an ergonomically designed tricycle sidecar that would possibly help in reducing and eliminating the discomforts that are being experienced by the passengers in using the common tricycle sidecar in Cavite State University Main Campus.

TABLE OF CONTENTS

	Page
BIOGRAPHICAL DATA	iii
ACKNOWLEDGMENT	v
ABSTRACT	vii
LIST OF TABLES	xi
LIST OF FIGURES	xiii
LIST OF APPENDICES	xiv
LIST OF APPENDIX TABLES	xv
LIST OF APPENDIX FIGURES	xvi
INTRODUCTION	1
Statement of the Problem	2
Objectives of the Study	3
Importance of the Study	3
Definition of Terms	4
Scope and Limitations of the Study	7
Conceptual Framework	8
REVIEW OF RELATED LITERATURE	9
METHODOLOGY	18
Research Design	18
Sampling Frame	18
Sample Size Determination	18
Definition of Variables	20

Sources of Data	21
Data Gathering Procedure	22
Data Analysis	22
Statistical Treatment.	23
RESULTS AND DISCUSSIONS.	25
SUMMARY, CONCLUSION AND RECOMMENDATIONS	43
Summary	43
Conclusion.	44
Recommendations	45
REFERENCES.	46
APPENDICES.	47

LIST OF TABLES

Table		Page
1	Required number of respondents per college based from stratified random sampling technique	20
2	Sex of the the tricycle sidecar passengers	25
3	Body mass index of the tricycle sidecar passenger	26
4	Frequency distribution of participants per college	27
5	Frequency of occurrence of head discomfort in riding a tricycle sidecar	28
6	Frequency of occurrence of visual discomfort in riding a tricycle sidecar	28
7	Frequency of occurrence of neck discomfort in riding a tricycle sidecar	29
8	Frequency of occurrence of shoulder discomfort in riding a tricycle sidecar	30
9	Frequency of occurrence of body discomfort in riding a tricycle sidecar	31
10	Frequency of occurrence of back discomfort in riding a tricycle sidecar	31
11	Frequency of occurrence of discomfort associated with the tricycle's low seat	32
12	Frequency of occurrence of leg and thigh discomfort in riding a tricycle sidecar	33
13	Frequency of occurrence of feet discomfort in riding a tricycle sidecar	34
14	Frequency of occurrence of discomfort associated in entering and exiting a tricycle sidecar	35
15	Frequency of occurrence of discomfort associated in	

	using the small seat of a tricycle sidecar	36
16	Frequency of occurrence of arm discomfort in riding a tricycle sidecar	37
17	Comparison of passengers' and tricycle sidecars' dimension (Main Seat)	38
18	Comparison of passengers' and tricycle sidecars' dimension (Small Seat)	39
19	Formulation of the proposed tricycle sidecar's dimensions	40
20	Comparison between the present and proposed tricycle sidecar dimensions	41

LIST OF FIGURES

Figure		Page
1	Conceptual framework of the application of ergonomics in redesigning the tricycle sidecar in Cavite State University (CvSU) Main Campus	8
2	Proposed tricycle sidecar design	42

LIST OF APPENDICES

Appendix		Page
1	Appendix Tables	48
2	Appendix Figures	54
3	Anthropometric Assessment Questionnaire.	65
4	Anthropometric Dimensions	68
5	Table of Percentile	74
6	Passengers' Body Parts that Suffer Discomforts in Riding a Tricycle Sidecar	76

LIST OF APPENDIX TABLES

Appendix Table		Page
1	Anthropometric dimensions of participants.....	49
2	Tally of the passengers' discomfort per sex and college.....	50
3	Frequency of participants' discomfort.....	53
4	Average tricycle sidecars' dimensions.....	53

LIST OF APPENDIX FIGURES

Appendix Figure		Page
1	Frequency graph of the required number of participants per college	55
2	Frequency graph of the sex of the the tricycle sidecar passengers	55
3	Frequency graph of the body mass index of the tricycle sidecar passenger	56
4	Frequency graph of the number of participants per college	56
5	Frequency graph of the occurrence of head discomfort in riding a tricycle sidecar	57
6	Frequency graph of the occurrence of visual discomfort in riding a tricycle sidecar	57
7	Frequency graph of the occurrence of neck discomfort in riding a tricycle sidecar	58
8	Frequency graph of the occurrence of shoulder discomfort in riding a tricycle sidecar	58
9	Frequency graph of the occurrence of body discomfort in riding a tricycle sidecar	59
10	Frequency graph of the occurrence of back discomfort in riding a tricycle sidecar	59
11	Frequency graph of the occurrence of discomfort associated with the tricycle's low seat	60
12	Frequency graph of the occurrence of leg and thigh discomfort in riding a tricycle sidecar	60
13	Frequency graph of the occurrence of feet discomfort in riding a tricycle sidecar	61

14	Frequency graph of the occurrence of discomfort associated in entering and exiting a tricycle sidecar	61
15	Frequency graph of the occurrence of discomfort associated in using the small seat of a tricycle sidecar	62
16	Frequency graph of the occurrence of arm discomfort in riding a tricycle sidecar	62
17	Comparison graph of passengers' and tricycle sidecars' dimension (Main Seat)	63
18	Comparison graph of passengers' and tricycle sidecars' dimension (Small Seat)	63
19	Comparison graph between the present and proposed tricycle sidecar dimensions	64

**APPLICATION OF ERGONOMICS IN THE REDESIGNING OF TRICYCLE
SIDECAR IN CAVITE STATE UNIVERSITY (CVSU)
MAIN CAMPUS (AY 2013-2014)**

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INTRODUCTION

Tricycles are used primarily for commercial transportation, either of passengers in pedicabs and freights and deliveries. It is considered as one of the major means of transportation in various countries in south-east Asia especially in the Philippines due to its flexibility in transportation. Still, a very small number of individuals can afford such a vehicle just for their private use. Most motorcycles in the Philippines are being used for serving as a kind of taxi by attaching a sidecar alongside it that commonly carries a maximum number of three persons. The fact that this country's most inhabited areas can not be reached by larger vehicles made the use of tricycles more convenient and practical for most of the people thus, making it a daily necessity for many. The tricycle's small and compact size are its most advantageous attributes which makes it fit for travelling narrow streets and roads but it also poses problems that are often encountered but not recognized by its passengers.