

**FACTORS AFFECTING THE EFFICIENCY OF
WAREHOUSE PICKING OPERATION IN RETAIL
INDUSTRY**

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Department of Transport and Logistics Management

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STATEMENT OF THE SUPERVISOR

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ABSTRACT

Covid-19 pandemic has changed people's buying behavior and most of retail supermarkets are in a great challenge of fulfilling customer requirements due to "Panic buying" behavior. Since the current trend has become an e-commerce market, the necessity of well-working warehouse operation has increased. Therefore, to move with the customer changes and to increase customer satisfaction, improvements should be added for warehouse activities. Order-picking has the highest priority in warehouse operation in terms of improving the warehouse efficiency.

This research was conducted to determine the factors that affect efficiency of warehouse picking operation in retail industry with a comprehensive literature study. Following factors were identified as the influential factors for the efficiency of warehouse picking operation such as training on warehouse workers, technology, incentive payments for labor, picking methodology, safety of the operation etc. Further analysis was conducted for factors identified from literature review using a self-administered questionnaire which was developed and distributed among warehouse people to get their opinions. 207 responses were collected, and consistency analysis test confirmed that the collected data set is consistent and in an acceptable level. Using Analytical Hierarchy Process (AHP) it was concluded that "Training on warehouse workers", "Technology" and "Machine maintenance plan" were the top 3 factors that affect the efficiency of warehouse picking operation. Therefore, rather than focusing on one area, management should give a priority for all three areas simultaneously. Such as, there should be a mechanism to train the workers which should not be only a one-time training, management should invest on technology based on the volume and complexity of the operation they have and finally rather than waiting for a machine breakdown, people should have a proper machine maintenance plan.

Because of the pandemic situation, it was difficult to have many participants for the survey and total number of respondents was limited. Future studies can be conducted with another level of AHP by considering sub factors under each prominent factor and it can also be suggested to analyze the challenges going to face when implementing these factors within a warehouse. Same study can be done for other operations within the warehouse such as put-away, repacking, loading etc.

Key words: Warehousing, Warehouse Management, Picking, Efficiency

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LIST OF ACRONYMS

AHP – Analytical Hierarchy Process

AI - Artificial Intelligence

KPI – Key Performance Indicator

MIS – Management Information System

RFID – Radio-Frequency Identification

WMS – Warehouse Management System

TABLE OF CONTENTS

DECLARATION OF ORIGINALITY	i
COPY RIGHT STATEMENT	ii
STATEMENT OF THE SUPERVISOR	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
LIST OF ACRONYMS	v
LIST OF FIGURES	viii
LIST OF TABLES	ix
LIST OF EQUATIONS	ix
1 CHAPTER – INTRODUCTION	1
1.1 Background of the Research	1
1.2 Problem Statement / Need for the Study	1
1.3 Research Question	3
1.4 Research Objectives	3
1.4.1 General Objective.....	3
1.4.2 Specific Objectives.....	3
1.5 Research Scope.....	3
1.6 Significance of the Study.....	3
1.7 Time Plan.....	4
1.8 Key Terminology.....	5
1.9 Chapter Breakdown	6
1.10 Chapter Summary	6
2 CHAPTER – LITERATURE REVIEW	7
2.1 Importance of Warehouse Picking Operation	7
2.2 Challenges in Warehouse Picking Operation	7
2.3 Techniques use to Improve the Efficiency of Warehouse Picking Operation.	10
2.4 Literature Summary	16
3 CHAPTER - RESEARCH METHODOLOGY	21
3.1 Introduction	21

3.2	Research Design	21
3.3	Conceptual Framework.....	22
3.4	Identification of Variables	22
3.4.1	Dependent Variable.....	22
3.4.2	Independent Variable	22
3.5	Questionnaire Design	23
3.6	Selection of Population and Sample	24
3.6.1	Target Population	24
3.6.2	Sample.....	24
3.6.3	Sample Size	24
3.6.4	Sampling Method	24
3.6.5	Duration of the Study	25
3.6.6	Justification of the Sampling Approach	25
3.7	Data Collection	25
3.7.1	Primary Data Sources.....	25
3.7.2	Secondary data sources	25
3.8	Data Analysis.....	25
3.8.1	Validity and Reliability	26
3.8.2	Descriptive Analysis	26
3.8.3	Pareto Analysis.....	28
3.8.4	Analytical Hierarchy Process (AHP)	28
4	CHAPTER – RESEARCH FINDINGS	30
4.1	Introduction	30
4.2	Reliability Statistics.....	30
4.3	Descriptive Analysis.....	31
4.3.1	Demographic Profile and Preferences Analysis.....	31
4.3.2	The Central Tendency and Dispersion	34
4.4	Pareto Analysis	36
4.5	AHP Analysis	37
5	CHAPTER – DISCUSSION CONCLUSION AND FUTURE RESEARCH DIRECTIONS.....	40
5.1	Introduction	40
5.2	Results & Discussion.....	40

5.3	Conclusion	41
5.4	Research Limitations	42
5.5	Future Research Directions	42
5.6	Chapter Summary	43
6	CHAPTER – REFERENCES	44
7	CHAPTER – APPENDIX	50
7.1	Questionnaire Template 1 (Primary Data Collection).....	50
7.2	Questionnaire Template 2 (Data Collection for AHP)	58

LIST OF FIGURES

Figure 3.1	Conceptual Framework.....	23
Figure 4.1	Case Processing Summary	30
Figure 4.2	Reliability Statistics	31
Figure 4.3	Gender.....	31
Figure 4.4	Age.....	32
Figure 4.5	Education Level	32
Figure 4.6	No. of Experience	33
Figure 4.7	Experience in WMS.....	33
Figure 4.8	Type of Technologies Used	34
Figure 4.9	Pareto Analysis Chart	36

LIST OF TABLES

Table 1.1 Time Plan	4
Table 2.2 Literature Summary.....	20
Table 3.1 Response Values	26
Table 3.2 Random Consistency Indices	26
Table 4.1 Descriptive Analysis Summary	34
Table 4.2 Calculation of Pareto Analysis.....	36
Table 4.3 Code Description.....	37
Table 4.4 Weight Calculation.....	38
Table 4.5 Critical Ratio Calculation.....	38
Table 4.6 AHP Result.....	38
Table 5.1 Conclusion.....	42

LIST OF EQUATIONS

Equation 3.1 Cronbach's alpha	26
Equation 3.2 Mean	27
Equation 3.3 Median when n is even	27
Equation 3.4 Median when n is odd.....	27
Equation 3.5 Standard Deviation	28
Equation 3.6 Consistency Index (CI)	29
Equation 3.7 Consistency Ratio (CR)	29