

MAJOR CAUSE AND PREVENTION METHOD OF MATERIAL WASTAGE AT CONSTRUCTION INDUSTRY



Authors : MUHAMAD SHAMIL IRSHAD BIN ROSLI ID NUMBER: PC13027
DR. SHRIKANT PANIGRAHI
BACHELOR OF INDUSTRIAL TECHNOLOGY MANAGEMENT WITH HONOR
UNIVERSITI MALAYSIA PAHANG



ABSTRACT

This research is about the major cause and prevention method of material wastage at construction industry. Today in globalisation era, the construction industry is become rise rapidly in many country include Malaysia country. Malaysia have achieved many successful build the building such as KLCC, Petronas Twin Tower, house construction and others. Not only Malaysia country, another developed country such as China, America, Japan, United Kingdom and others also has same way as Malaysia. The problem of material wastage among construction industry always being issues to handle it. In this study, major cause of material wastage in construction industry is focus on. There are five element major cause that can be measured, lack of experience, site management and supervision, mistakes and errors in design, mistakes during construction, an inadequate planning and scheduling The creation of this waste can be prevented by 3 R method by lean manufacturing concept to minimize the waste that is reuse, reduction, and recycling. Totally, seventeen (17) cause of material wastage were identified. Besides that, there is twenty six (26) prevention method to minimize material wastage. All variable were analysed using Average Index (AI), ranking and simple percentages. Ranking of cause and minimization of material wastage was demonstrated according to their importance level.

INTRODUCTION

Material wastage in a construction industry are always has been issues among country today since rise of development of building construction becoming rapidly growth in 21 century. Malaysia have develop many success building in construction such as KLCC, Petronas Twin Tower, house construction, industry building, that comparable other advanced country such as United State, China, Japan, and others. However, the problem of a huge amounts of waste that always produce in construction industry among this country are still have a problem (Polat and Ballard, 2004).

Since a construction has a major and direct influenced on many other industries by means of both purchasing of inputs and providing the products to all other industries, reducing or eliminating waste in the construction industry could yield great cost savings to the society.

PROBLEM STATEMENT

- ❑ The increasing a demand of infrastructure projects, large amounts of construction waste, residential development projects are being produced in Malaysia.
- ❑ These conditions also may give a huge impact on project costs and time because of physical and non-physical waste in Malaysia of construction industry.

OBJECTIVES

- 1.To identify major cause of material wastage that effect in construction industry.
2. To identify prevention method to minimize material wastage industry.

METHODS

- ❑ Quantitative Research Method
- ❑ SPSS software

RESULTS

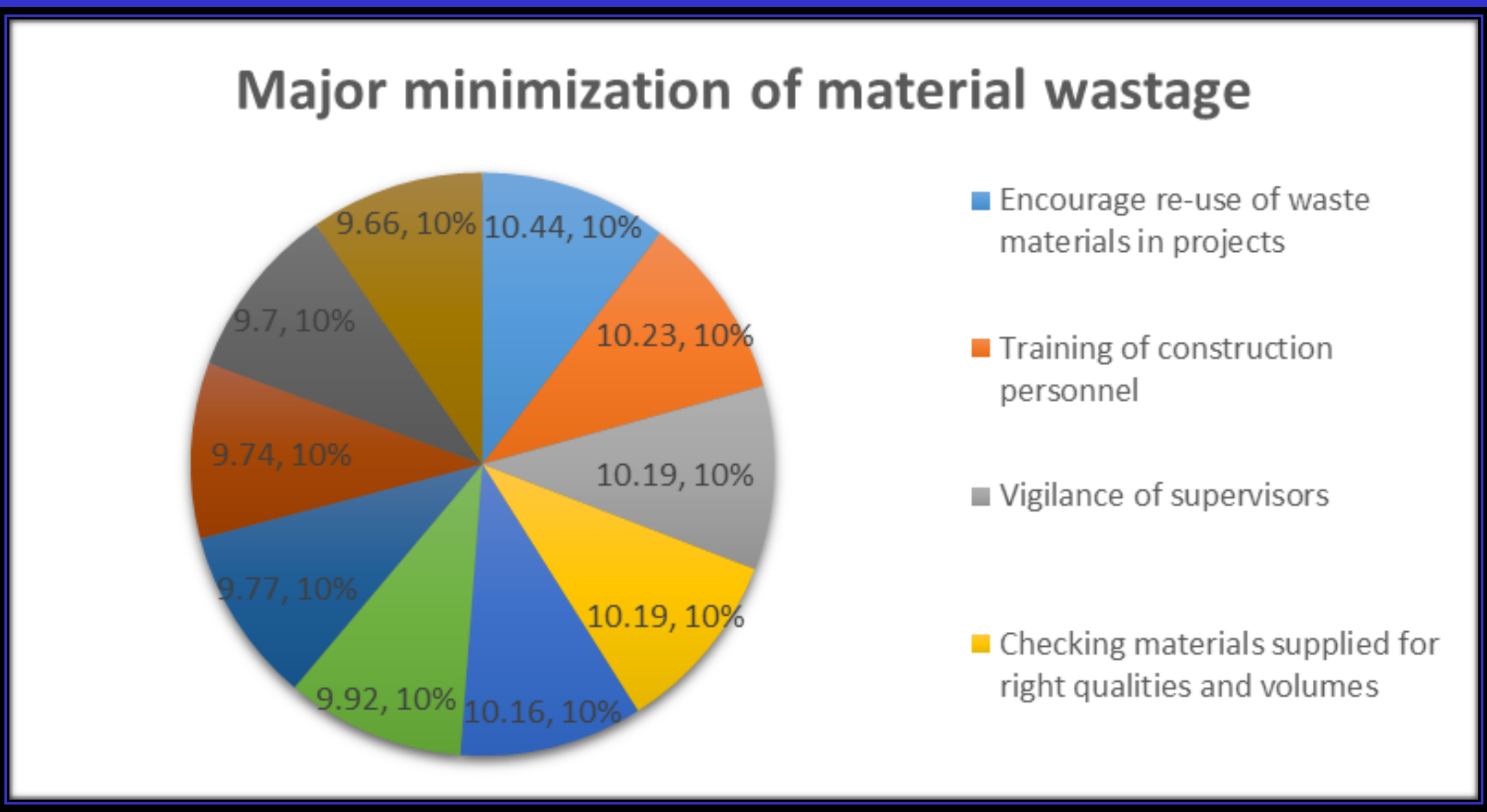
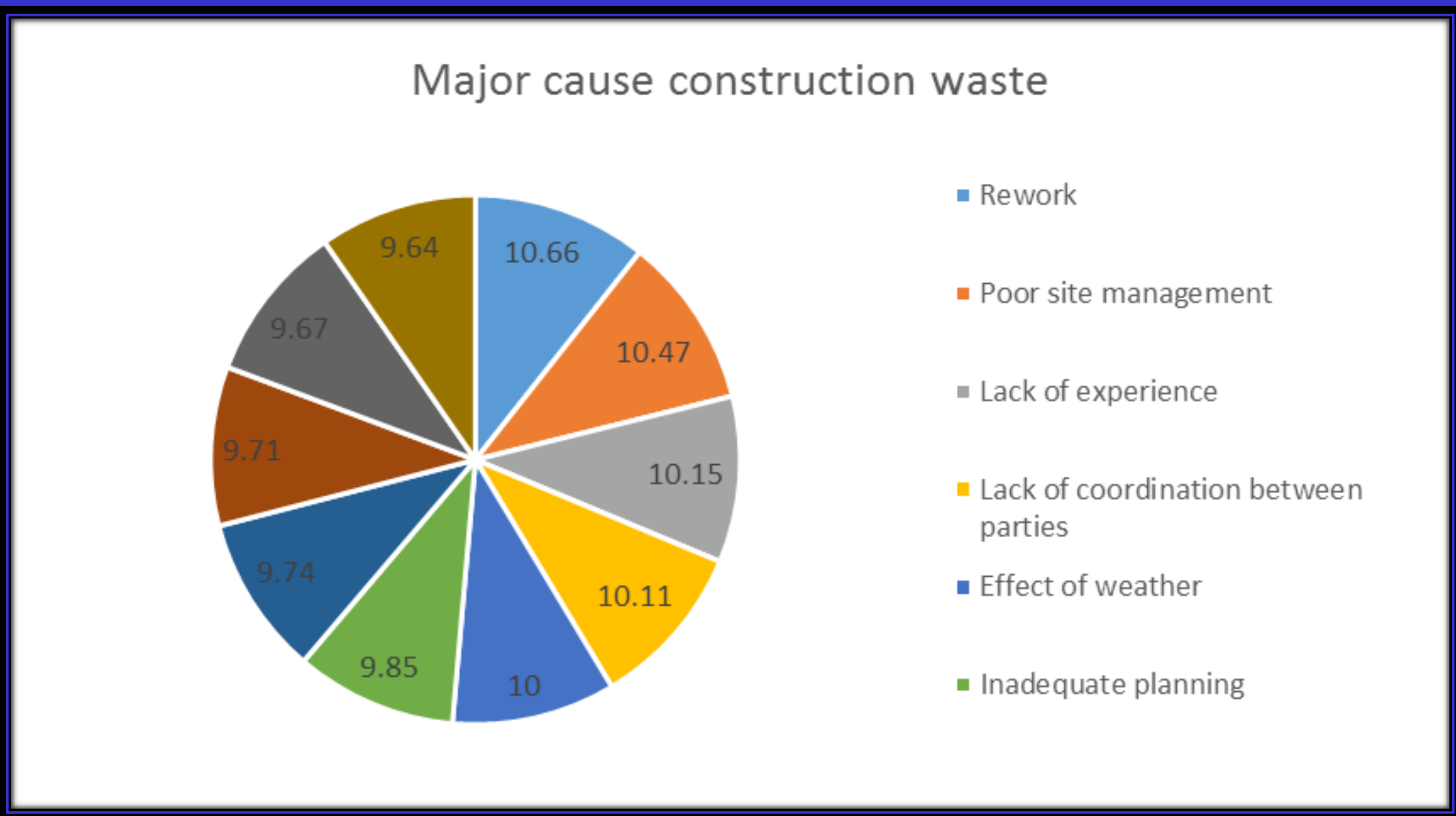
MODEL ANALYSIS IN SPSS SOFTWARE

Table 1: Major cause construction waste and Minimization of material wastage

Major cause construction waste	Average	Std.	Rank
	Index	Deviation	
Rework	3.8933	0.92376	1
Poor site management	3.8267	0.93539	2
Lack of experience	3.7067	0.9554	3
Lack of coordination between parties	3.6933	0.99964	4
Effect of weather	3.6533	0.96553	5
Inadequate planning	3.6	1.03975	6
Frequent design changes	3.56	1.04287	7
Slow information between parties	3.5467	1.03053	8
Lack of attention paid to standard sizes available market	3.5333	1.00449	9
Mistakes during construction	3.52	0.92063	10

Major of minimization of material wastage	Average	Std.	Rank
	Index	Deviation	
Encourage re-use of waste materials in projects	3.9467	1.03836	1
Training of construction personnel	3.8667	0.94916	2
Vigilance of supervisors	3.8533	0.96833	3
Checking materials supplied for right qualities and volumes	3.8533	0.98218	4
Positive attitude of workers towards the handling of materials	3.84	0.98694	5
Recycling of some waste material on site	3.7467	0.80695	6
Just in time operations	3.6933	0.98603	7
Proper storage of materials on site	3.68	0.96086	8
Use of more efficient construction equipment	3.6667	0.99095	9
Adherence to standardized dimensions	3.6533	0.89281	10

Figure 2: Pie Chart of ten major cause of material wastage and minimization of material wastage (Percentages)



➤ Major cause of material wastage

- The first ranking percentage causes of material wastage is rework which are 10.66%, poor site management about 10.47%, lack of experience about 10.15, lack of coordination between parties about 10.11%, effect of weather about 10%, inadequate planning about 9.85%, frequent design changes about 9.74%, slow information between parties about 9.71%, lack of attention paid to standard sizes available market about 9.67%, and lastly is mistakes during construction about 9.64%.

➤ Minimization of material wastage

- The first ranking percentage causes of material wastage is encourage re-use of waste materials in projects about 10.44%, training of construction personnel about 10.23 %, Both vigilance of supervisors about and checking materials supplied for right qualities and volumes have same percentages about 10.19% , positive attitude of workers towards the handling of materials about 10.16, recycling of some waste material on site about 9.92%, just in time operations, about 9.77%, proper storage of materials on site about 9.74%, use of more efficient construction equipment about 9.7%, and last ranking of percentages is adherence to standardized dimensions about 9.66%.

CONCLUSIONS AND RECOMMENDATION

- ❑ The findings established from the analysis of the data have been related to the objectives of the study in this section.
- ❑ The future study could be performed by using a larger sample size to get the accurate and consistent results.
- ❑ The results will enable building organizations to improve construction quality and efficiency.
- ❑ Minimizing materials waste would improve project performance and have a positive impact on the national economy.