

UNIVERSITI TEKNOLOGI MARA
FAKULTI SAINS PENTADBIRAN DAN PENGAJIAN POLISI



ARE YOU INTENDED TOWARDS E-WASTE
RECYCLING? : A CASE OF USM STUDENTS

MUHAMAD AZFAR BIN MOHAMAD ZUHDI
2017753853
HAZIQ ISKANDAR BIN HAMDAN
2017187867

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**CLEARANCE FOR SUBMISSION OF THE RESEARCH PROPOSAL BY THE
SUPERVISOR**

Name of Supervisor : Mr. Mohd Nazir Bin Rabun

Title of Research Report : Are you intended towards E-Waste Recycling?: A
Case of USM Students

Name of Student I : Muhamad Azfar Bin Mohamad Zuhdi (2017753853)

Name of Student II : Haziq Iskandar Bin Hamdan (2017187867)

I have reviewed the final and complete research proposal and approve the submission of
this report for evaluation.

(Signature)

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Nowadays, the proliferation of technological advancement in the electrical and electronic industry had led to the development of sophisticated devices which results in the increment of the obsolete rate of the lower device which tends to be waste electrical and electronic equipment (WEEE) (Sabbaghi, Esmailian, Raihanian, Behdad and Cade, 2015). Directing to the e-waste problem, this issue is a global concern as e-waste is a source for a load of toxic materials such as lead, cadmium, mercury, chromium and poly-brominated biphenyls. In addition, e-waste is a source of precious metals such as iron (Fe), copper (Cu), aluminium (Al), gold (Au), silver (Ag) and others (Madrigal-Arias et al, 2015). Furthermore, electronic waste contributed to the concentration of lead (Pb) to the landfills in the US (EPA, 2000).

Virtually, all e-waste consist of specific substance especially copper. Platinum-based metals which generated high chemical stability and conductance of electricity are also included in electrical contact materials (Betts, 2008). Some impurities, such as heavy metals, are applied in the manufacture of electronic equipment, while others, such as polycyclic aromatic hydrocarbons (PAHs), were produced by the low-temperature ignition of e-waste (Robinson, 2009).

Driven by technology, fads, and consumer electronics universal achievement, the worldwide e-waste volume has grown by about 4 percent per year (UNEP, 2009). For instance, e-waste in the United States is now the fastest increasing municipal waste portion (USEPA, 2011). This is because most of the electronic devices have short lifespan and frequently replaced when they malfunction or in severe state to be used. Supposedly, this kind of gadget will be discarded or exported to other countries where most of this event occurred in a developing country (Suja et al., 2014). Meanwhile, Thailand has produced approximately 8,000 tons annually of e-waste that consist of about 20,000 tons per year of electrical and electronic goods. Thailand also face issues caused by low knowledge of consciousness on e-waste, incomplete databases, and inventories