NUR AMIRAH MOHD YUSOFF BACHELOR OF SURVEYING SCIENCEI AND GEOMATICS (HONOURS) AUGUST 2023

QUALITY ASSESSMENT OF 3D MODEL GENERATED USING VARIOUS GCP DISTRIBUTION IN SMARTPHONE ACQUIRED IMAGE

NUR AMIRAH BINTI MOHD YUSOFF

2019230634

COLLEGE OF BUILT ENVIRONMENT

UNIVERSITI TEKNOLOGI MARA

PERLIS

AUGUST 202

QUALITY ASSESSMENT OF 3D MODEL GENERATED USING VARIOUS GCP DISTRIBUTION IN SMARTPHONE ACQUIRED IMAGE

NUR AMIRAH BINTI MOHD YUSOFF
2019230634

Thesis submitted to the Universiti Teknologi MARA Malaysia
In partial fulfillment for the award of the degree of the
Bachelor of Surveying Science and Geomatics (Honours)

AUGUST 2023

AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

Name of Student	:	Nur Amirah Binti Mohd Yusoff
Student I.D. No.	:	2019230634
Programme	:	Bachelor of Surveying Science and Geomatics (Honours) – AP220
Faculty	:	College of Built Environment
Choose an item.	:	Quality Assessment of 3D Model Generated Using Various GCP Distribution on Smartphone Acquired Image
Signature of Student	:	……..
Date	:	August 2023

ABSTRACT

Smartphone have been widely used in various fields. The use of smartphone has also been used in the field of photogrammetry in producing 3D modelling of structure building and objects. However, archaeologist have been introduced in using this method for record the artifacts as reference for architectural purposes, dimensions and heights. in archaeological. However, in this research the method used are smartphone photogrammetry applied in documentation of grave. Therefore, a study should be conducted to find out the potential of using smartphone in documentation the artifacts. The aim of this study is to assess the potential of smartphone photogrammetry using Ground Control Point (GCP) in archaeological documentation. So, to achieve the aim is distribute the pattern of GCP and Check Points. The second objective is to compare the accuracy measurements of distribute pattern GCP. The GCPS were tested in two scenarios of pattern distribution GCPS. It tested in middle distribution and homogeneous distribution. Each scenario was initiated with 30 GCPS and Verification points (VP) is 30 VPS. In the study, 3D model of grave is generating to be compare the accuracy of pattern distribution GCPS. So, from this research GCP can be identified the effect from the GCPS distribution. Therefore, it is a recommendation to do further research on using smartphone as a new platform in photogrammetry in different of distance from the object for accurate measurement.

Keywords: Ground Control Point (GCP), Smartphone, Close-Range Photogrammetry and 3D Model

TABLE OF CONTENTS