

**UNIVERSITI TEKNOLOGI MARA**

**A PROCEDURE FOR MONITORING OF HUMAN  
RESOURCES STRATIFICATION IN ARAU USING  
GIS INTEGRATION**

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Thesis submitted in fulfillment  
of the requirements for the degree of  
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## AUTHOR'S DECLARATION

I declare that the work in this thesis/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.

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## ABSTRACT

Perlis government has planned on developing their state to be Negeri Bandaraya in 2030. In order to be develop, the government has focused on several potential areas such as Chuping, Kuala Perlis and Arau. In monitoring the phases of the development in human resources in Arau, the government authorities are facing the problems which they are lack of systematic method to be used continuously until the plan of Perlis Negeri Bandaraya 2030 are achieved. One of the method that can be used to monitor the development of human resources is stratification. Stratification is the organizations of people into variety of social classes on the basis of income, occupational, educational attainment, literacy rate, birth rate, personal care, sensitivity towards environment care. The aim of this study was to design a procedure to monitor the spatial distribution of human resources stratification in Arau. The two types of data collections were obtained through direct interviewing and from government authorities which is Department of Surveying and Mapping Malaysia. The processes of all these data were using ArcGIS 10.3 and Microsoft Excel. The base map, road map and the boundaries of each DUN were digitized. The data of questionnaires survey and the coordinates of the houses that are arranged in Excel then were exported to ArcGIS to be displayed in the map. The layers were created according to the social issues that have been addressed which are academic rate, literacy rate and the sensitivity of residents towards environment care. The distribution of human resources intensity and quality were analyzed by using Moran's I analysis. The result will then show the map of human resources stratification in each of 5 DUN areas which are Pauh, Tambun Tulang, Guar Sanji, Simpang Empat and Sanglang. Hence, the procedure to monitor the spatial distribution of human resources stratification were designed. In conclusion, the procedure can be used continuously by the government authority in monitoring the human resources stratification until the plan of Perlis Negeri Bandaraya 2030 are achieved.

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