

UNIVERSITI TEKNOLOGI MARA

**URBAN TREE VANDALISM IN
MALAYSIA : DEVELOPING TREE
CARE MONITORING CRITERIA**

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Disertation submitted in partial fulfillment
of the requirements for the degree of
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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 dissertation 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 Postgraduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

An urban tree care monitoring is a management strategy that contributes to the sustainability of the urban trees by presenting the performance status for improvements and rectifications. This aligns with the third and eleventh Sustainable Development Goals (SDGs), focusing on uplifting the quality of urban tree performances by effective urban tree management practices for enhancing good health and well-being, and providing sustainable cities and communities. The ability to successfully perform tree care monitoring is highly dependent on precise attributes that could eventually save time, energy, and money. Accordingly, there is a need for improved monitoring techniques so that tree vandalism incidents would remain stagnant throughout this programme. Hence, there is a need for improving the tree vandalism assessment methods since there is uncertainty in decision making dealing with irrelevant tree vandalism assessment data. Besides, the focuses on preventing vandalism are stated in the fifth Strategic Focus Areas (SFA) by the Landscape Architecture Agenda 2050 (LAA2050). This, thereby, calls for a study that aims to develop a tree vandalism model for urban tree care monitoring. The immediate objectives of this research are (1) to formulate the typologies of urban tree vandalism incidents, (2) to determine the tree vandalism criteria that can be used to assess the status of tree vandalism incidences in the urban areas, and (3) to develop a tree vandalism model based on the criteria determined for urban tree care monitoring. The development of this model adopted a mixed-method research strategy and exploratory sequential research design to achieve the study's aims and objectives. Data were collected from two main sources, which were gathered from the preliminary survey and the two-rounds of the Modified Delphi surveys. The preliminary survey was conducted through the photo-elicitation technique and interpreted by the tree care experts in formulating the typologies of tree vandalism incidence, which later became the initial criteria for conducting the Delphi survey. The modified Delphi method was adopted to obtain the most reliable consensus by the tree care experts to determine the tree vandalism criteria for tree vandalism assessment. The tree vandalism model was developed by structuring the typologies of tree vandalism and the tree vandalism criteria determined by the Delphi surveys. The model was equipped with the tree vandalism composite index constructed from the criteria weightings and categories aggregation determined in round-two of the Delphi survey. The results from the preliminary survey indicated that the tree vandalism typologies were formed by three categories, which are, (1) the specific motive and action, (2) the ideology and practices, and (3) the victim of circumstances. The findings from the Delphi surveys revealed 32 criteria for tree vandalism assessment. The tree vandalism model was structured composing these 32 criteria in 3 categories, which were organized according to their priority. The tree vandalism composite index constructed generates the status of tree vandalism incidences based on five index dimensions; 'very high' (achieve tree vandalism index radius 81% - 100%), 'high' (reach tree vandalism index radius 61% - 80%), 'moderate' (reach tree vandalism index radius 41% - 60%), 'low' (reach tree vandalism index radius 21% - 40%) and 'very low' (reach tree vandalism index under < 20%). In the future, urban tree monitoring programmes performing the tree assessment tasks are expected to consider this tree vandalism model. Hence, the tree vandalism status can be used to guide decision-makers and tree managers in improvement and rectification of decisions.

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