

Development of Prediction Model for the Scoring of Global

Innovation Index: Case of the Sultanate of Oman

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Abstract

The research investigated the Global Innovation Index scoring system in depth for the purpose of providing a prediction model for the Global Innovation Index score. The research addressed the key links and motivation of research that described the importance of the Global Innovation Index score to the Sultanate of Oman that put targets for Sultanate of Oman to achieve Global Innovation Index score of 41.19 by 2030, and score of 51.98 by 2040. The research identified gaps in the Global Innovation Index such as lack of clarity on conversion equations from values to scores of indicators, lack of clarity on weights, priorities, or scaling system used for combining the indicators to their respective sub-pillar, and lack of clarity on the interrelationship between the indicators. Furthermore, the research used an estimation method for filling the missing data points by means of forward feeding, backward feeding, and accepting zeros. The research analyzed the correlations of the indicators, developed the converting methodology from countries economy value to indicator score, and further processes the score into a multi-level weighted average system to estimate the Global Innovation Index score. The prediction model provided in this research is based on a concept of comparing the cost, time, and resources to the impact gained in the Global Innovation Index score.

The prediction model was tested with current policy and data report of 2020, and accuracy level of 99.96% was achieved. However, the model is found sensitive to different factors including prediction years, applicability of indicators, the definition of cost, time, and resources, and countries growth.

Keywords: Global Innovation Index, Innovation Management, Global Competitiveness, Oman Vision 2040.