

Identifying KPIs used to evaluate the Performance of industrial estates using the balanced scorecard in the Sultanate of Oman

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Abstract

Achieving industrial estate objectives didn't become a necessity for its management only, but to achieve Oman's vision. Since the appearance of Oman's vision 2040, encouraged many industries to build and develop their foundations to catch up to the Oil industry and become part of the country's source of income. Industrial estates have a great background in Oman as we have more than eleven industrial estates within the Sultanate. As a result, the performance assessment of these cities has become a must as a tool that helps to achieve these industries' objectives. The institutional performance evaluation has been covered in the literature in many industries and a few discussed the industrial estate area. That allowed this paper to focus on identifying the strategic KPIs that affect industrial estates' performance through the identification of other industries KPIs then making the experts engagement in the field to be higher to end up with a result can be dependent on. The selection and filtration of KPIs are done using Balance scorecard as the traditional way of evaluating performance which proves to be unadequate. It also makes sure that financial and non-financial KPIs are used to evaluate the performance as it contains four perspectives which are Financial, internal processes, customer, learning and growth perspective. The identified KPIs from literature were 56 KPI which decreased to 22 after setting the objectives then a later discussion merged two KPIs together to end up with 21. After identifying the KPIs, weighting them was crucial to identify the importance of each one of them which is done through AHP method and using the Satty scale from 1 to 5 degree of importance. Then linking them using DEMATEL and AHP integrated method to overcome the limitations of both methods as the AHP method weights the KPIs only and the DEMATEL is forming the cause- effect relation without weight them. Then a strategic map was used as a graphical representation to these weights and links.

The AHP result was obtained by taking 5 experts' opinions through a questionnaire and adopting their average decision matrix to be the outcome that the "percentage of Developed area" as the most KPI affecting the performance of industrial estate. Then it showed that the "Growth Rate in Investment Amount" and "Percentage of Leased lands" KPIs have the most importance than others based on experts' opinion. After that DEMATEL method applied to establish the cause-effect relationship between KPIs through the factors $(Di+Ri)$ and $(Di-Ri)$ and use the results from both modules to establish the final relation.

AHP-DEMATEL integrated method. This method was made by multiplying the weight calculated in AHP in the factors $(Di+Ri)$ and $(Di-Ri)$ acquired from DEMATEL. That helps to get the cause-and-effect relation of KPIs to each other and get the input to build the strategic map. The integrated method considered "Growth Rate in Investment Amount" has the most causal relationship with other KPIs followed by "percentage Of Developed area" as a second and "percentage Of Leased Land" as a third. This result will help top management in decision making by evaluating the performance of their industrial estate and VI

analyzing the main cause of not achieving their strategic objectives. The KPIs weight included in this study provide a direction in which industrial estate management must focus on as they are the most important indicators to achieve its objectives. Also, in case of any increase or reduction in performance, the possibility of catching up will be feasible and a reason to find the causes of KPI reduction.