

ABSTRACT

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APPLICATION PROGRAM DESIGN TO DETERMINE TRANSPORTATION MODE

(viii + 66 pages; 19 figures; 4 tables; 12 equations)

Choosing the right transportation mode for moving people is vital for the movement to be effective and to ensure that processes afterwards are not adversely affected.

In determining the transportation mode, basic criteria such as external risk, cost, distance, and comfort need to be measured. Analyzing these criteria can be time consuming, especially when numerous and diverse alternatives are being considered while standards and consistency must be maintained.

This study was conducted to alleviate such problems by designing a computerized tool for compiling necessary information and automating quantitative criteria calculations while qualitative criteria are converted into scale measurements to standardize the calculation.

In view of ease of use, affordability, flexibility as well as continuous improvements, Microsoft Excel has been chosen as the fundamental software for the application program.

This application program was tested using a case study from an oil and gas company where five alternative scenarios, threshold limits and weighted scores were analyzed. Two options could be easily eliminated due to color coding for failing threshold limits while the best Option could be easily identified due the quantitative scoring. Results have proven that faster and more accurate analysis could be achieved in determining the most appropriate transportation mode.

Keywords: Application Program, Microsoft Excel, Multi-Criteria Decision Analysis, Transportation Mode.

References: 16 (1998-2011).