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Citation: Elgadi, Osama, Birkett, Martin and Cheung, Wai Ming (2015) A mixed method approach to data collection for the development of a six sigma framework for Libyan Manufacturing Companies (LMCs). In: MMIRA Asia Regional Conference, 19 - 20 September 2015, Osaka.

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A mixed method approach to data collection for the development of a six sigma framework for Libyan Manufacturing Companies (LMCs)

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Background

Six sigma adoption has increased phenomenally world-wide in recent years. Data showed that corporate-wide six sigma deployments save an average of 2% of total revenue per year. The use of six sigma also saved fortune 500 companies an estimated \$427 billion (Noria Corporation, 2007). However, to date, there is no evidence of the use of six sigma in LMCs. Therefore this research describes a mixed method data approach to identify the reasons and barriers behind the lack of six sigma use in LMCs.

Methods

A survey has been chosen as the main strategy, and will start by conducting interviews to collect qualitative data followed by the development of a questionnaire to obtain the quantitative data; this mixed data collection method is known as 'the exploratory sequential design' (Saunders et al., 2012). The main targeting interviewees will be those who are responsible for quality management systems in their firms, and also managers who are responsible in decision making such as executives and chairmen. The interview questions are mainly generated from the literature review and are focused on the potential reasons and barriers behind the lack of six sigma utilization. Once interviews have been conducted and analysed, the data will be used together with the outcomes of the literature review to develop the questionnaire for distribution to LMCs to obtain the quantitative data. Once data collection has been completed, the research will move to the next stage to analyse and interpret the collected data by using SPSS software.

Expected results and importance

A lack of knowledge of six sigma is expected to be one of the main reasons for not using six sigma in LMCs. However, the research will hopefully reveal the other reasons and barriers behind that. These findings will then be used in the development of a novel six sigma framework to be implemented in LMCs to improve their quality and competitiveness.

Questions for the audience

All questions are welcomed.

References

Noria Corporation. (2007). Report finds Six Sigma has saved Fortune 500 \$427B. *iSixSigma Magazine*
Saunders, M. N., et al. (2012). *Research methods for business students, sixth edition*: Pearson Education India.