Chapter 43
A Fuzzy System for Evaluating Human Resources in Project Management

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ABSTRACT

The key lubricants for the necessary functioning of any organization are money, machines, time, and humans. Human resources is the most important ingredient among them. Most projects fail because of ineptitude of those who administer the project, notably in government projects. Alternatively, advertisement for expert positions suffers as a result of poor coverage, late responses, non-transparency, and subjective selection during recruitment process. This work proposes a fuzzy system for the evaluation of human resources for the management of projects in core areas where professional services are expedient for supervision. It exposes the level of experience on the job, core competencies, exposure, and knowledge scope. A prototype fuzzy system for evaluation of human resource for project management, consisting of a user friendly menu-driven interface, was developed for evaluating the suitability of professionals for different roles within a project team. At the end of the work, it is expected that governments, companies, and various donor agencies would find the system useful when embarking on projects for an optimal result.

INTRODUCTION

The major problem confronting every successive administration in Nigeria is lack of basic infrastructure meant for the populace. Millions of hard-earned taxpayer money is expended on failed projects. A project is considered failed when it has not delivered in term of cost, quality, and time based on the projected target and it basic expectations have not been met. Poor management of key public infrastructure projects

has caused the failure of most government projects. This is not unconnected with human factors. United Nations Industrial Development Organization (UNIDO) noted that some projects were not successful in Nigeria as a result of breakdown in communication among the project managers, programme managers and people who designed the projects (Cynthia, 2018). Apart from project failure, most projects awarded by the Federal, State and Local government are not executed at all. These projects are given to non-professionals and professionals with little expertise in the project domain. This has led to many abandoned projects in the country.

Literatures dwell on success factors in project management and little emphasis is placed on why project actually failed. Even when discussing the success factors, the effects of project management team characteristics that produced the success are largely ignored. Walid and Oya (1996) believes that project managers' competence is a critical factor that affects project planning, scheduling and communication. It is a general consensus among researchers that the qualities of project team members are crucial to success or failure of any project (Bernard et al., 2011; Sadi et al., 2014, Nathaniel et al., 2017).

To avert project failure, some of the metrics used for evaluation of project team are given in Shashi Consulting (2018). These criteria bother on the versatility of certain qualifications for the individuals that would serve in the project team and the criteria for selecting the team manager, members and roles to assign to each team member. Selecting wrong individuals into a project management team ensures that the project is "dead" on arrival. Also, where the team manager is wrongly chosen, even with the right management team, the project is certain to fail. That is, the right selection of each member of the group is essentially important for good result.

Indeed, many factors could result in project failure. Such factors according to Walid and Oya (1996) include factors related to the project, factors related to the project manager and the team members, factors related to the organization, factors related to the external environment project managers' performance and environmental factors. Rosanne (2019) lists ten main causes of project failure as:

- Poor preparation
- Inadequate documentation and tracking
- Bad leadership
- Failure to define parameters and enforce them
- Inexperienced project managers
- Inaccurate cost estimations
- Little communication at every level of management
- Culture or ethical misalignment
- Competing priorities
- Disregarding project warning signs

In most cases these factors are interrelated.

The catastrophic overall effect of project failure cannot be adequately quantified. Project failure has led to loss of life and properties in Nigeria and beyond. For example, Omenihu et al. (2016) identifies Nigeria cities with most cases of building collapse as a result of structural failure. Within the period of their research, it was observed that 83, 18, 13, and 14 incidences of collapse building were recorded in Lagos, Abuja FCT, Rivers, and Oyo state respectively with resultant casualty rates of 702 in Lagos, 110 in Abuja FCT, 178 in Rivers and 127 in Oyo state.

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