The Strategy of Improving Project Management Using Indicator Measurement Factor Analysis (IMF) Method

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Abstract. POAC is the de facto international standard that has been universally accepted as the theory behind successful execution of project management and implementation. Many however do not possess the know-how of correctly implementing POAC in project management. Often confused with the variety of available applications, time consuming to explore and often requiring to prepare big budgets to purchase the required tools. In this study, a new method called IMF (Indicator Measurement Factor Analysis) is proposed. IMF is a simple, low cost implementation tools that facilitate effective POAC control monitoring and implementation in project management. Not only that, the IMF is simple to use and produce effective results in harbouring communication, collaboration, critical thinking, competition, and creativity of teamwork. A collection of information from various feature of IMF is discussed, and the satisfaction level of users are collected and analysed. These data can be used to accurately predict the importance of IMF in POAC implementation, and hence encourage wide acceptance among prospective users in various different fields.

1. Introduction

The basic functions of Planning, Organizing, Actuating and Controlling (POAC) management have been widely applied in various sectors. POAC is the de facto international standard that has been universally accepted as the theory behind the successful implementation of management and project implementation. As for the implementation of POAC, there have been many examples examined in this study starting from the industrial sector, these four aspects play a role to reflect managerial ability in making decisions, handling disruptions, managing resources and negotiators, so that they are considered universal and very important for every manager to do[1-2]. Each component of the company's internal environment consisting of human resources, marketing activities, finance, and production / operational activities always performs this management function [3]. In the education sector the optimization of POAC learning resources has a role in the concept of understanding and helps students be more active with structured learning styles, functionally optimizing the quality of teaching material resources carried out by mobilizing and utilizing existing resources [4-5].

A strong and durable organization, careful planning is needed [6]. Other sources of application of POAC also contribute to the government sector, used to analyze and see the management constraints of e-Gov management based on the G2C web model in the Culture and Tourism Office of Central Java Province [7] viewed from the individual sector POAC sectors considered to be able to develop one's personal abilities. In the era of the industrial revolution 4.0 today, the application of POAC is increasingly widespread which is packaged with various digitalization programs.

Figure 1. POAC

But many do not have the knowledge to apply POAC correctly in project management. Often confused with the various applications available, it takes time to explore and often needs to prepare a large budget to buy the tools needed. Judging from the implications, the leader needs information on the progress of the project, this cannot always be described properly because the information obtained is only descriptive. Many obstacles are caused by expensive POAC, and also difficult to implement, including the disclosure of making their own systems or purchasing systems. This paper is to provide a simple solution, using spreadsheets and a combination of vasTmind methods to successfully and effectively implement POAC [8] [9] [10] [11].

Based on the background of existing problems, in this study a new method called the IMF (Indicator Measurement Factor Analysis) is proposed as a strategy in solving project management problems in the field of education. The IMF is a simple and low-cost implementation tool that facilitates effective monitoring and implementation of POAC controls in project management.

2. Literature Review

Teaching and learning, basically implements several managerial functions which include: (1) planning; (2) organizing; (3) actuating; (4) controlling [12] [13] 14]. The model is the main function in project management where most of it is developed by the project management association, one of the strategies that can be taken is to make the project portrait a starting point for identification and analysis of project characteristics and challenges formed from the indicator table [15] [16] 17] In other studies explaining the basic knowledge of organizational management consists of knowledge about: POAC principles, HR management, financial management, risk management, SOP. Infrastructure & Facility Asset Management or I & FAM is the knowledge, knowledge or action in managing infrastructure and facilities, so that infrastructure and facilities can function sustainably [18] [19] [20]. In higher education institutions as an efficient management organization, [21].
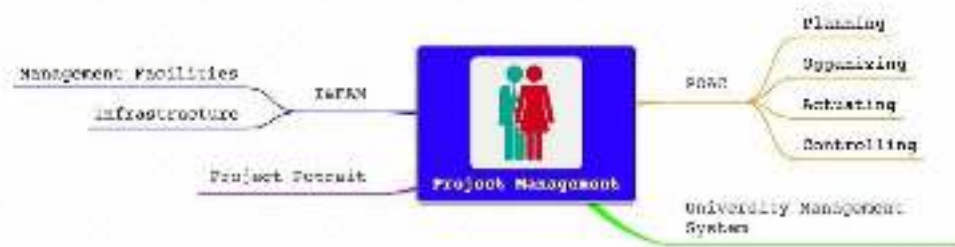
Figure 2. vasTmind POAC

In addition to strengthening the basis of background research, a literature review was conducted on previous research in the application of project management in a variety of ways described through vasTmind.

3. Model

The research model is reflected through a new method called Indicator Measurement Factor Analysis (IMF), where this method has the characteristics to answer the needs of managerial functions that are Planning, Organizing, Actuating and Controlling (POAC) to be more informative, actual, effective, efficient and real time. The simple combination of spreadsheets and vasTmind made the IMF an innovation in responding to the needs of users that still could not be fulfilled in terms of high software financing, lack of understanding of the system and the results of the POAC analysis were only descriptive so that they were considered less reflecting the expected results of top level management.
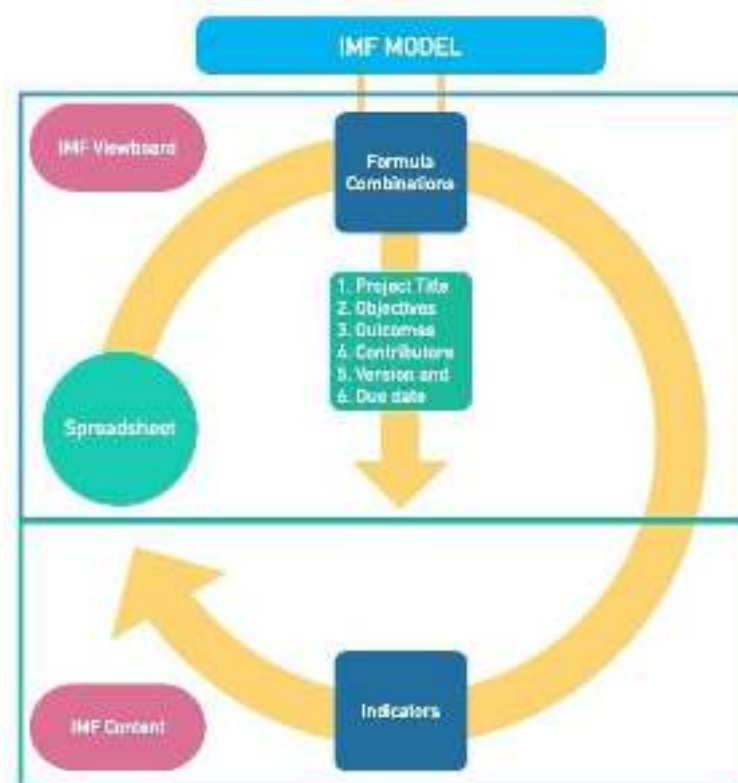

Figure 3. Indicator Measurement Factor Analysis (IMF) Model

From the side of the IMF consists of 2 (two) major parts, namely the IMF Viewboard and IMF Content. The Viewboard section is the main key to achieving IMF, here users can explain all the information they want to display without having to scroll down to the bottom of the page. Universally the header can be combined with various spreadsheet formulas such as HLookup, VLookup, Average, Sum, Max and Min Score and mainly consists of a structured indicator layout which is the project title, objectives, outcomes to be achieved, contributors and versions of each IMF according to the time target which is determined. The content section contains the entire project work process that consists of indicators to be measured.

4. Implementation

Here is one simple algorithm used in implementing IMF

$$x = \frac{X\ \ +X\ \ +X\ \ ....}{\Sigma x}$$

The implementation of the IMF contributes to the managerial function of the project based on POAC, this is reflected in the results of the implementation of 3 (three) IMF in research project management.

Figure 4. IMF Research Master Plan Project

Based on Figure 4 above, it can be explained that project management monitoring, in line with the Indicator Measurement Factor Analysis (IMF) Model consists of 2 (two) parts, namely IMF Viewboard and IMF Content. In the IMF section the Viewboard or header is an important point that can provide overall information without having to scroll down to the bottom so that it can display the information needed by top level management which consists of Project Title, Objectives, Outcomes,

Contributors Version (version changes run every month) and Due date and combination of the following functions:

= AVERAGE(H9:K17)

= max(P6:S6)

= hlookup(U7,P6:T7,2,false)

The second part is the IMF Content, each process is carried out in this second part where each contributor can complete the task with a percentage achievement and a unique code on each project.

5. Conclusion

The project management improvement strategy is reflected from the results of the completion of each contributor's work, which can be used as monitoring. motivation in working on tasks and self-development. Not only that, the IMF is easy to use and produces effective results in hiding communication, collaboration, critical thinking, competition, and teamwork creativity. A collection of information from various IMF features is discussed, and the level of user satisfaction is collected and analyzed. This data can be used to accurately predict the importance of the IMF in the implementation of POAC, and hence encourage broad acceptance among potential users in different field.

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