

Cultural Resistance to Implementing Earned Value Management System in Construction Organization

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ABSTRACT

One of the reasons why employees in a construction organization accept or reject a new system is their cultural profile. Even if the system promises to deliver better results it still may receive resistance from the employees. This is against logic and conventional thinking. One such new system in India is Earned Value Management (EVM). This study tries to identify the cultural dimensions in the Indian construction organizations that inhibit the acceptance of EVM in their organization. After conducting contextual enquiries and questionnaire surveys in a number of Indian construction organizations, the most important ten cultural dimensions that contribute to the resistance to adopt EVM were identified. Based on the respondents personal feedback these ten cultural dimensions are explained in detail and the motives for resistance is brought to light. It is found that Uncertainty Avoidance, Masculinity and Feminist and Power Distance are the top three ranked Cultural Dimensions.

Keywords

Earned Value Management, cultural dimensions, Uncertainty Avoidance, Masculinity and Feminist, Power Distance

1. INTRODUCTION

To fully understand what is "resistance to change" one must first understand what is resistance. Resistance is defined as the refusal to accept or comply with something. Regardless of how the change is going to benefit the organization there will always be some form of resistance to implementing it. This difficulty faced by the organization is referred as the resistance to change [8].

Geert Hofstede, studied hundreds of IBM employees from around the world and describe five fundamental cultural dimensions that contribute to the way employees react to change. Hampden-Turner and Trompenaars [6] found seven variables that are culturally relevant to any organization. These cultural dimensions and values that are mentioned here result in a tendency to handle change or to resist it in different ways specific to each culture [7].

2. LITERATURE REVIEW

Earned Value Management (EVM) is a comprehensive methodology used to manage construction projects for measuring its performance and progress. The methodology addresses several project management areas, like project organization, planning, scheduling and budgeting, accounting, analysis, reporting, and change control [1]. EVM originated in the 1960's in the United States Defense Department and over the years has found its way into all forms of project

managements from manufacturing, information technology and even construction project management [2].

Whenever a new system like EVM is introduced in a construction organization it experiences resistance from the employees [8]. Cultural dimensions and values is one of the main factors that prompt employees to handle change or to resist it in different ways specific to each culture [7].

Culture is defined as "the collective programming of the mind that distinguishes the members of one group or category of people from another" [11, p. 25]. Each culture has its own characteristics which comprises of its unique psychological traits, attributes [9]. These cultural characteristics are better understood using what researchers like to call cultural dimensions; it also sheds light on the cross cultural differences [10].

Two cultural dimensions: context (high or low) along with time perception (polychronic or monochronic) were introduced by Hall [14] from years of observation and interviewing. Trompenaars [11] identified seven dimensions of culture from his study. They are universalism vs. particularism, individualism vs. collectivism, affective vs. affect-neutral communication style, specific vs. diffuse relationships, ascription vs. achievement, time orientation, and nature orientation. Trompenaars seven cultural dimensions were derived from Shils's [12] five-dimension scheme as its base and include certain components of Hofstede's [3] model. In addition to these cultural dimensions, Kluckhohn and Strodtbeck [13] suggested four basic cultural traits that relation to nature, relation to others (lineal, collateral, and individualistic), time orientation, and personal activity.

Lastly, Schwartz [15] distinguished seven cultural value traits from a work related context: conservatism, intellectual autonomy, affective autonomy, hierarchy, mastery, egalitarian commitment, and harmony.

From all these literature, 30 cultural dimensions that contribute to resistance to change in a construction organization is as follows:

Activity Orientation, Affective (Emotional) versus Neutral Cultures, Authority Conception, Context, Controllability, Degree of Power, Economic Progress, Environment and Technology, Face - Saving, Harmony, Human Nature Orientation, Individualism versus Collectivism, Instrumental versus Expressive Orientation, International Trade and Communication, Long Term versus Short Term Orientation, Masculinity versus Feminist, Meaning of Life, Non - Verbal Communication, Political Decentralization, Power Distance, Property, Relationship to Nature, Resources, Space, Specific versus Diffuse Cultures, Time Orientation, Achievement and Ascription, Time Perception, Uncertainty Avoidance, and Universalism versus Particularism.

3. OBJECTIVE

1. To find the top 10 cultural dimensions that contributes to the resistance in the implementation of EVM in a construction organization.
2. Explain these 10 cultural dimensions based on the personal responses of the respondents of the questionnaire.

3. METHODOLOGY AND FINDINGS

a. Questionnaire survey

- Closed ended questionnaire considering the objective of the study.
- Consist of 2 parts: Part A and Part B.
- Part A consists of 30 predetermined cultural dimensions where respondent have to mark each cause as per their significance.
- Part B consists of respondent personal opinion.

b. Rating criteria for resistance to change:

- To identify how much respondents agree or disagree on the severity of these causes based on their expertise, a 5 point Likert scale is made.
- The rating of scale from 1 to 5 are:

Not Significant- 0% Resistance to change;

Slightly Significant- < 35 % Resistance to change;

Moderately Significant- 35 – 60% Resistance to change;

Very Significant- 60 – 75 % Resistance to change s;

Extremely Significant - > 75 % Resistance to change.

- The respondent should rate a particular dimension based upon the above scale.

c. Data gathering

- As much as possible, the responses have been taken from respondents who are experienced in the relative field and should answer the survey in the most appropriate way.
- The questionnaires were given to the respective respondents by visiting them personally.
- A total of 30 responses were gathered which forms the part of this questionnaire survey.

d. Data analysis

- Relative Importance Index (RII) is adopted for ranking the cultural dimensions as per their significance.
- The formulae used for calculating Relative Importance Index is:

$$RII = \frac{\sum W}{(A \times N)}$$

- W = Weight given to each dimension by respondent, ranges from 1 to 5;
- A = Highest weight i.e. =5 (in this case); and
- N = Total number of respondent i.e. = 30 (in this case).

- RII value varies from 0 to 1 i.e. $0 \leq RII \leq 1$

The results of the relative importance index questionnaire for the cultural resistance to change in a construction organization are shown below in Table 1.

Table 1. Various Cultural Dimensions

RANK	CULTURAL DIMENSIONS	RII VALUE
1	Uncertainty Avoidance	0.926
2	Masculinity and Feminist	0.900
3	Power Distance	0.893
4	Controllability	0.880
5	Context	0.853
6	Individualism	0.813
7	Face Saving	0.793
8	Time Orientation	0.793
9	Economic Progress	0.773
10	Degree of Power	0.760

4. RESULTS

Based on the results of the questionnaire and the respondents personal opinion the top 10 cultural dimensions that effect the implementation of EVM in a construction organization is explained as follows:

a. Uncertainty Avoidance

People in the construction industry give paramount importance to experience. The addition of a new system may give rise to a situation which is foreign to even the most experienced Managers. Because of this reason Managers in the construction organization prefer to stay in their comfort zone without experimenting on new systems like EVM which promises better results. They fear that the new system may put them in a situation where they would not know “what to do” and “how to do it.”

b. Masculinity and Feminist

According to our study men are more resistant to change than women. The construction industry is a male dominated industry, thus there is a lot of resistance. It also suggests that women are better in adapting to the change than men.

Power Distance

Most Managers in the study believe that using their experience and expertise in their respective fields to do their work would make them unique and successful. They feel that the introduction of a new system like EVM would reduce the importance the organization gives to their experience and intuition.

c. Controllability

Most of the respondents in this study have high control levels. And hence they exercise high levels on control in their domain. They felt that the introduction of EVM would limit their control over their domain as they don't have any prior experience with it. They even felt that the loss of control will result in a reduction in productivity.

d. Context

Most respondents in this study prefer a simple approach to their work. They feel that new advanced systems will not only complicate their work but also confuse them. They feel that their current system has fewer variables is, simpler and can also achieve the same results as that of EVM. Moreover a new system like EVM is bound to generate more paper work due to

its high level of context thereby causing more resistance from the employees.

e. Individualism

Similar to Power Distance a respondent's unique skills in managing a project acquired through years of experience can now be better understood and easily accessible to the organization using new management systems and tools. One such system that allegedly diminishes this respondent's uniqueness or individuality is EVM, thus the resistance.

f. Face Saving

With the introduction of a new project management system like EVM, it is likely to cause confusion initially which may lead to bad decisions. Most respondents feel that by avoiding a new system they are more likely to make fewer mistakes and therefore avoid embarrassment.

g. Time Orientation

The introduction of a system like EVM will give a wholesome and complete understanding of the project's cost, schedule, and its overall performance. It enables the respondent to make calculated decisions in the short run. In the long run with more advancement to this system the jobs of these respondents could be replaced by an algorithm or a younger employee. Thus changes such as these pose a threat not in the present but in the future, thus employees resist them as much as they can.

h. Economic Progress

According to the respondents the addition of a system such as EVM does not contribute to a significant economic progress. Considering the effort they have to put in, they feel that the financial benefits derived from the new system is not worth the effort.

i. Degree of Power

Difficult decisions concerning project costs and duration are made by after taking the advice of experienced personals in organizations. Most respondents feel that introduction of a new system like EVM would provide adequate information to make these decisions more easily and in a logical manner. Thus a feeling of loss of power will be experienced by these experienced employees because they feel that their professional expertise is being replaced by a system.

5. CONCLUSION

This study identifies 30 cultural dimensions that were closely related to the resistance of a new system (EVM) experienced in a construction organization from literature.

From these 30 cultural dimensions the top 10 most impactful cultural dimensions were shortlisted using relative importance index questionnaire. These 10 dimensions are ranked in the order of their importance. It is found that Uncertainty Avoidance, Masculinity and Feminist and Power Distance are the top three ranked Cultural Dimensions.

Taking into consideration the impact of these cultural dimensions, construction organizations could use it to make suitable changes on how a new system is introduced. This message is to be communicated to the employees so as to minimize the resistance and hence have a smooth transition from the old system to the new one.

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