

# **Exclusive Project Critical Success Processes: a Cultural Diversity Perspective**

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## **ABSTRACT**

Critical success factors are those that are most important to ensure project success. As previous studies have shown that these factors vary across project phases and contexts, this study analyses the impact of culture on critical success processes included in the planning phase of a project. Based on data collected from 715 project managers, planning processes were found to have unequal importance to project success across countries. For example, human resource management is a critical success process only in countries with high human orientation score and risk management only in countries with high uncertainty avoidance score, as identified in the cultural diversity literature.

## **1. Introduction**

A project manager is expected to perform in multiple areas to ensure that the project is planned and executed properly (Zwikael and Smyrk, 2010). However, since a project manager is limited in his time and knowledge he/she cannot perform all project processes in a satisfactory manner. Hence, a project manager should better focus on those factors which have the greatest impact on project success. This approach, which is well recognized in the project management literature, is usually called Critical Success Factors (CSF). Lately, a detailed approach, entitled Critical Success Processes (CSP) was developed by Zwikael and Globerson (2006) and implemented (Zwikael, 2008; Zwikael, 2009) in various industrial sectors. This approach assists project managers in identifying specific project planning processes, which have the greatest impact on project success. However, the impact of culture on CSPs has not yet been analyzed. This paper analyzes CSPs across cultures and its alignment with the cultural diversity theory.

The objective of this paper is to investigate the impact of the culture in which a project is executed, on the criticality of project management processes. More specifically, this study aims at identifying CSP in projects executed in three very different cultures, in Japan, Israel, and New Zealand. The findings, based on a vast field study, will follow a literary review and research hypotheses.

## **2. Cultural diversity theory**

Culture is defined as a collective phenomenon, because it is at least partly shared with people who live or lived within the same social environment where it was learned (Hofstede, 1980). The term culture refers to the entire way of life for a group of people. It encompasses every aspect of living and has four elements that are

common to all cultures: technology, institutions, language and arts (Meredith and Mantel, 2006). Newman and Stanley (1996) claim that culture differences influence more than the geographical or the organizations differences. There are also indications that environmental factors may impact the critical processes. For example, Crawford et al. (2006) found variation in project management knowledge and practices between industries, countries and application areas.

Langford (2003) classifies differences in cultures into three categories: (1) traditional organization structure, (2) managerial differences and (3) differences in fundamental concept and philosophy which contracts and laws are based on. This paper focuses on the managerial differences among cultures. Mismanaging cultural differences can cause frustration and hurt organizational performance when working across cultures. However, if successfully managed, cultural differences can lead to innovative business practices, faster and better learning within the organization, and sustainable sources of competitive advantage (Hoecklin, 1996).

Comparing organizational performances in different cultures attracts a lot of attention, as can be traced in the management literature. Yazici (2009) defines perceived organizational performance as project effectiveness and efficiency followed by resulting business performance. Jessen (2006) compared project management capabilities among three countries and found that French projects are executed most professionally, Norwegian projects have a moderate maturity rate and Russian projects are least professionally executed. Toren et al. (1997) compared managerial task preferences and evaluation of work characteristics in the USA, Japan, Israel, Italy and Australia. Nijkamp, et al. (2001) compared environmental quality in 12 European countries. Jackson and Artola (1997) initiated a cross-cultural empirical study, examining ethical beliefs and behaviors among French and German managers, and

compared results with previous studies of American and Israeli managers. Igarria and Zviran (1996) examined the effect of national environments on end-user computing characteristics in American, Israeli and Taiwanese companies. Koschatzky, et al. (1996) compared sensor technology processes in the USA, Europe and Japan. Maya et al. (2005) found cultural differences in NASA centers, while investigating NASA's process for culture change.

Cultural differences were found in most of the studies stated in the last paragraph. These results indicate different behavior and decision making patterns in different countries. Uday-Rilay (2006) claims that understanding cultural differences is also critical while managing cross-cultural teams.

The most recent and recognized cultural diversity study is GLOBE (House et al., 2004), which includes nine dimensions. The characteristics of the three cultures analyzed in this paper are described below. Japanese have the highest future orientation score among the three countries. New Zealanders are a collective (rather than individualist) society. Israelis have the lowest power distance score among the three countries.

Specifically, two of the nine cultural diversity dimensions are of a special relevance to the project management environment: human orientation (because of its implications to human resources management) and uncertainty avoidance (because of its implications to risk management). According to the human orientation index, Japan and New Zealand have high scores, which indicate high degree to which a collective encourages and rewards individuals for being fair, altruistic, caring and kind to others. Israel, on the other hand, has low scores in this index. In the uncertainty avoidance dimension, New Zealand scores high. This means that organizations and groups rely on social norms, rules and procedures to alleviate

unpredictability of future events. Israel and Japan score low in this index. This suggests that culture affects the way risk is perceived and operationalized in projects. All differences were found to be significant in the GLOBE study (House et al., 2004).

### **3. Project planning**

A *project* is a temporary endeavor undertaken to create a unique product, service, or result (Project Management Institute, 2008). The main three most important project characteristics include uniqueness, temporary and predefined goals (Kerzner, 2009; Meredith and Mantel, 2006). The Project Management Body of Knowledge (PMBOK® Guide) identifies 42 processes that should be performed by a project manager during the project's life cycle (PMI, 2008). These processes are grouped in the following five processes groups:

(1) **Initiation** is the phase of formally authorizing a new project. This phase links the project to the ongoing work of the performing organization. Projects are typically authorized as a result of one or more of the following: a market demand, a business need, a customer request, a technology advance or a social need.

(2) **Planning processes** define and refine objectives and select the best of the alternative courses of action to attain the objectives that the project was undertaken to address.

(3) **Executing processes** coordinate people and other resources, such as equipment and material, to carry out the plan in order to perform the project.

(4) **Monitoring and controlling processes** ensure the high quality achievements of the project plan and updating it when necessary.

(5) **Closing processes** formalize acceptance of the project by its customers and other stakeholders and bring it to an orderly end.

Research identifies the quality of project planning as a phase with a most significant impact on project efficiency (Pinto and Slevin, 1988; Johnson et al., 2001; Turner, 1999; Globerson and Zwikael, 2002). Project planning is defined as the establishment of a set of directions in sufficient detail to tell the project team exactly what must be done, when it must be done and what resources to use in order to produce the deliverables of the project successfully (Meredith and Mantel, 2006). Responsibility for planning lies entirely with the project manager, who must ensure that the project is carried out properly to the complete satisfaction of all relevant stakeholders. Major advantages of proper project planning are (1) to eliminate or reduce uncertainty (2) to improve efficiency of the operation (3) to obtain a better understanding of project objectives and (4) to provide a basis for monitoring and controlling work (Kerzner, 2009).

The major outcome of the planning phase is the project plan. This document is developed by the project team during the planning phase of the project. The project plan contains the following elements: overview, project objectives, general approach, contractual aspects, schedules, resources, personnel, risk management plan and evaluation methods (Meredith and Mantel, 2006). In order to achieve this project plan, several managerial processes should be executed. Possible lists of planning processes may be found in different sources. For example, Russell and Taylor (2003) identify seven planning processes, which include defining project objectives, identifying activities, establishing precedence relationships, making time estimates, determining project completion time, comparing project schedule objectives and determining resource requirements to meet objectives. Kerzner (2009) identifies nine major components of the planning phase: objective, program, schedule, budget, forecast, organization, policy, procedure and standard. The PMBOK, which lists a

total of 42 processes, identifies 21 as planning processes (PMI, 2008). Because of its importance, this study focuses on the planning phase of projects.

#### **4. Critical success processes**

The literature identifies planning as one of the Critical Success Factors (CSF) for project success (e.g., Pinto and Slevin, 1988; Johnson et al., 2001; Turner, 1999). Within planning, the project management literature defines specific planning processes, such as scheduling and risk planning (PMI, 2008). However, research has not clearly identified yet which of these planning processes is more crucial than others for enhanced project success. As a result, project managers, who are short of time and, therefore, unable to properly perform all planning processes, may choose to perform the easiest ones or those mandatory to the start of a project, rather than the ones that contribute the most to the success of the project.

Zwikael and Globerson (2006) coined the term Critical Success Process (CSP), which is based on the known CSF approach. Due to some drawbacks of the CSF approach (e.g. Belassi and Tukel, 1996; Zwikael and Globerson, 2006), the CSP approach was found to be more specific and practical for project managers. Their study identified six critical planning processes, namely, “definition of activities to be performed in the project”, “schedule development”, “organizational planning”, “staff acquisition”, “communications planning” and “developing a project plan” (Zwikael and Globerson, 2006). However, since the study was administered just in Israel, its findings may not necessarily be applied to other cultures. Hence, this paper identifies cultural differences and different CSP across countries. It is expected that the cultural diversity theory impacts the CSPs in each culture. Under this assumption, project managers across cultures should focus on different planning processes to improve

project success rates. A study was designed and undertaken to investigate this assumption. The following section describes the research model, hypotheses, data collection and analysis.

## **5. Research Design**

In the previous section we reviewed project management differences among project phases and cultures. This paper focuses on the planning phase of a project to investigate the impact of culture on the criticality of planning processes. More specifically, this study identifies critical project planning processes in three different cultures.

### **5.1 Research hypotheses**

Research hypotheses assume different CSPs to be found across cultures in areas of human resource and risk management, as derived from the cultural diversity theory.

***H<sub>1</sub>: Project human resources planning is a critical success process only in countries with high human orientation score.***

***H<sub>2</sub>: Risk management planning is a critical success process only in countries with high uncertainty avoidance score.***

As the cultural diversity literature suggests New Zealand and Japan have high human orientation scores, it is expected these characteristics will also be applied in the project management environment. As a result, we expect human resource management to be a critical success process in those countries, but not in Israel, which has a low score in this index.



Similarly, as the cultural diversity literature suggests New Zealand has high uncertainty avoidance scores, it is expected these characteristics will also have implications in the project management environment. As a result, we expect risk management to be a critical success process in New Zealand, but not in Israel and Japan, which have a low uncertainty avoidance score.

The objective of this study is to validate (or invalidate) the above hypotheses, and by that to identify exclusive critical success planning processes for each culture.

## **5.2 The research variables**

The research variables include project planning processes relevant to the cultural diversity theory (as the independent variables) and project efficiency (as the dependent variables). The planning processes, used in this study, were adopted from the PMBOK (PMI, 2008) and were chosen to fit the relevant cultural diversity measures included in the GLOBE study (House et al., 2004). Staff acquisition is the relevant human resources management process during its planning phase, as human resources needed to complete the project are obtained. Risk management planning is the process in which critical risks are identified and a mitigation plan is being developed, and is the equivalent to the cultural diversity's uncertainty avoidance index in the project environment.

Project efficiency was measured using schedule overrun, and cost overrun (e.g. Kerzner, 2009; Zwikael and Globerson, 2006). Project efficiency is a common measure for project management success (Dvir and Lechler, 2004) and part of the iron triangle (Zwikael and Smyrk, 2010). Culture was used as a moderating variable for the relationship between planning processes and project efficiency. The variable

“culture” has three options, Japan, New Zealand and Israel. The research variables are presented in Figure 1.

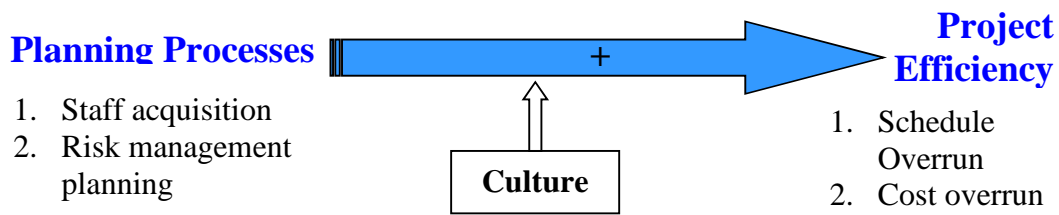


Figure 1 – The research variables

### 5.3 Data Collection

Based on the research model, a questionnaire was developed, described in Zwikael and Globerson (2006). The questionnaire was administered to project managers in Japan, New Zealand and Israel during the years 2002-2007. In Israel, 275 project managers completed the questionnaires, in 26 different workshops, of which 16 were administered as part of internal organizational project management-training program. Each of these workshops included an average of 13 individuals. The other 10 workshops were open to project managers from different organizations. In Japan, 125 questionnaires were completed in 11 organizations. The New Zealand sample included 315 participants across industries and cities. Only native-born participated in this study, in order to well reflect these cultures. A questionnaire was included in the final data analysis, only if at least 80% of its data had been completed. The number of projects included in the research according to the country and industry type is presented in Table 1.

Table 1 – Sample distribution of the countries and industry types

<b>Industry Type</b>	<b>Israel</b>	<b>Japan</b>	<b>New Zealand</b>	<b>Total</b>
Information Technology	132	79	103	<b>314</b>
Construction and Engineering	49	1	60	<b>110</b>
Production and Maintenance	15	33	15	<b>63</b>
Services	10	10	31	<b>51</b>
Government	69	2	106	<b>177</b>
<b>Total</b>	<b>275</b>	<b>125</b>	<b>315</b>	<b>715</b>

In all countries the majority of questionnaires came from the information technology sector. Production and maintenance organizations are more common in Japan, while government organizations are well represented in the New Zealand sample. The relative number of questionnaires from each industry in this study well represents the actual share of these industries in each of these three markets. In the questionnaires, project managers were asked to estimate the frequency of use of the two planning processes in the last completed project they managed.

Project efficiency results were also estimated and collected for the same set of projects. The two project efficiency dimensions were collected in a different set of questions for each project. Cost overrun and schedule overrun were measured in percentages from the original plan. All questionnaires were anonymous, while data identifying the country involved was added by the research team.

The model's reliability was calculated using a number of statistical tests, such as Cronbach's alpha. Results (0.91) were considerably higher than the minimum value required by the statistical literature (Cronbach, 1951; Nunnally, 1978). More reliability and validity tests for the model can be found in Zwikael and Globerson (2006).

## 6. Results and discussion

This section investigates whether cultural differences impact the identification of CSPs across countries and tests the two research hypotheses. A linear regression was administered, using the two planning processes under investigation as independent variables, and a project efficiency measure as the dependent variable. The impact of each planning process on project efficiency and the significant level were calculated from the analysis. Finally, a planning process was identified as a CSP only if it had a significant impact ( $p < 0.05$ ) on project efficiency.

Since we expect for each independent variable (and each hypothesis), the two variables were treated separately. Table 2 analyzes the staff acquisition planning process, while Table 3 does the same for the risk management planning process. Each table includes information on R squared, F value and the standardized coefficients for each country. Values below 0.05 indicate a significant impact of the planning process on project efficiency.

<b>Planning process</b>	<b>R Squared</b>	<b>F</b>	<b>Standardized Coefficients</b>
Israel	0.01	0.99ns	-0.06ns
Japan	0.06	7.18***	-0.24***
NZ	0.06	16.25***	-0.25***

Table 2 – Staff acquisition as a potential critical success process across cultures

\* $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\* $p < 0.001$ ; ns=non significant

According to Table 2, staff acquisition was found to significantly impact project efficiency (and hence considered as critical planning processes) in Japan and New Zealand. This result supports the first hypothesis, which claims that project human resources planning is a critical success process only in countries with high human orientation score.

<b>Planning process</b>	<b>R Squared</b>	<b>F</b>	<b>Standardized Coefficients</b>
Israel	0.01	3.83ns	-0.12ns
Japan	0.04	5.58*	-0.21*
NZ	0.08	22.84***	-0.29***

Table 3 – Risk management planning as a potential critical success process across cultures

*\* $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\* $p < 0.001$ ; ns=non significant*

According to Table 3, risk management planning was found to significantly impact project efficiency in New Zealand, and to some degree in Japan. This result support the first hypothesis, which claims that risk management planning is a critical success process only in countries with high uncertainty avoidance score.

## **7. Conclusion**

Culture plays a significant role in business in general, and in project management in particular. As one size does not fit all (Shenhar, 2001), planning processes have an unequal importance on project success across countries. This study found that some project management processes that impact project management success positively and significantly in one culture, have no such effect in other cultures.

The findings in this study, undertaken in the project management environment, are highly linked to the cultural diversity theory. For example, it was found that project human resources planning is a critical success process only in countries with high human orientation score. This can be explained by the emphasis given in these cultures to human related activities, and the project environment is of no difference in this case. Similarly, it was found that risk management planning is a critical success process only in countries with high uncertainty avoidance score. This can be explained by the high level of attention to avoid uncertainty by reliance on social norms, rituals, and bureaucratic practices to alleviate the unpredictability of future events given in these cultures in general and in the project environment in particular.

Implications to project management practitioners suggest that not all project management processes have an equal impact on project success. Some have a greater impact than others and hence project managers should pay more attention to these critical success processes. The project management literature claims that there are differences in regard to the ways that project management is being exercised in different cultures. This means that project managers in different cultures should manage their projects in different ways, and hence focus on those critical planning processes relevant to their culture. In an era of global, international and remote projects, it becomes critical for project managers to understand the relevant culture and its impact on the effectiveness of relevant project management processes on project management success.

Finally, limitation of this study should be recognized. The R-squared levels were found to be relatively low. However, comparing these values to other studies within the same area (e.g. Sadeh et al., 2000) these results are acceptable. Another limitation is that the research was conducted in only three countries. Although the

study brought some light to the role of cultural differences in managing projects, more cross cultural research in other countries should be initiated in order to generalize the findings. Also, the research focuses only on the planning phase of the project. Further research focusing on other phases of a project should be conducted as well.

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