

Quantitative Research Methods

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RASHED ALMANSOORI – 1708881

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Standardised Project Management and Project Success in Dubai Government Organisations

1. Introduction

Standardisation of best practices in various fields of business is an important consideration in research given the benefits of minimisation of risks of project failure as well as of minimisations of costs and inefficiency associated. Standardisation allows for processes to be optimised for the benefit of the company and for smoother operation. In the field of project management, considerable practitioner literature is devoted to standards and best practices, with little to no research on the effect of standardisation of various elements of project management on the likelihood of project success. The research into project management standardisation is significant as it would allow organisations to determine which elements of their processes, tools etc. should be standardised across projects to maximise the probability of success as defined by cost, schedule, quality and customer satisfaction goals. Given the myriad of variables available to the company at its disposal, project investment should prioritised to the efforts that are most likely to bring maximal returns. Standardisation is often discussed in practitioner literature as being able to accomplish that. For instance, in the case of Europe and the US industries, the PMBoK as well as the IPMA are often quoted standards specifying optimal processes and offering certifications towards project management. The International Project Management Association is the go to organisation for standards. On the other hand the German association for project managers (GPM) is locally the organisation in Germany responsible for standards and is considered equivalent in stature to the IPMA standard. Thus, considerable attention is devoted to project management standardisation. However, its utility is required to be tested empirically so as establish the validity of this assumed relationship between standardisation and project success.

There are a number of cultural factors which affect the operation of a business. In particular, management culture varies radically in different parts of the world. Thus, the effectiveness of standardisation or other variables on the efficacy of project management requires to be explicitly tested in these differing cultures. Dubai has, in recent times become the middle eastern hub of business and sees the mixture of various global cultures influencing its organisational practices. Moreover, insofar as standardisation of project management is concerned, there are vast divergences between standards in western countries such as the US or UK and those in this region of the world. Avison and Myers (1995) confirm the need for such research, by stating that the ethnocentricity has been an important influencer in there being an insufficient understanding of

challenges associated with IT projects. Avison and Myers (1995) also assert that empirical research is required to establish explanatory models in the relationship between cultural factors and project management, given that organisational-level culture as well as national culture operate with and influence a myriad of factors in organisational operation. This research gap is also substantiated in project management literature (Zwickael, 2009).

This paper presents a study carried out to examine the presence of a relationship between standardisation across various aspects of project management and project success. Specifically, it seeks to examine if standardisation is a 'critical success factor' for an organisation. Moreover, it is carried out in government organisations in Dubai and is based on the experience of project managers in these organisations as captured in an empirical study. Section 2 presents the literature review carried out on the subject of project management and standardisation. Section 3 presents the methodology of the study where the methodological basis of the research carried out is discussed. Section 4 presents the results of the study wherein key findings are presented. Section 5 provides a detailed discussion of the results in relation to the hypothesis of the study. Lastly, conclusions are presented in Section 6 of the study.

2. Literature Review

Critical Success Factors

The literature on the determinants of project success are discussed under the term "critical success factors" (CSFs). One form of defining success factors in the literature is on the basis of major variables which enhance the success of projects (Alias et al., 2014). They can also be defined as levers which are operable by various project managers in order to boost the possibility of achieving the desired results (Westerveld, 2003). Different factors affect the outcome (either a failure or success) of a specific project and varying these specific factors at an appropriate time increase the chance of success (Savolainen, 2012). According to Osei-Kyei and Chan (2015), CSFs can be categorized into five major groups. These groups include project procedures, human-related factors, external environment, project-related factors and project management actions (Osei-Kyei and Chan, 2015). The variables present within each of the groups can affect their presence in the other groups and vice versa. For Alias et al., (2014), one specific variable which affects the success of a project is how capable the project manager is in achieving the initially set quality, cost, functionality and schedule goals. The above discussed CSFs are foundational and largely accepted as playing a critical role in project success. However, they are not sufficiently specific and do not offer any insight above and beyond what is intuitively accepted in organisational practice.

There are also "via negativa" factors that affects projects negatively. According to Kerzner (2001), constantly making changes to the scope of a project is a move that must be highly discouraged, as it could greatly damage the sense of direction of the team members who work on the project and could ultimately cause project failure (Kerzner, 2001). The paper equally remarked that the ability of the program manager to effectively lead the members of the team remains a crucial factor

affecting a program's outcome. The study undertaken by a huge consulting firm, Keane, responsible for having created the Project Manager Competency Model (PMCM), was cited by Sadeghi et al. (2014). PMCM is applied in the identification of project management skill and attitude clusters which are considered important. The discoveries of this model highlights two attributes of great importance; negotiation and conflict handling skills (Sadeghi et al., 2014). For Cole and Barker (2009), the assets managed by the project managers shouldn't pay sole attention to financial items, instead, all resources associated with the project success, most especially, the human resource pool, should be properly managed. This set of CSFs on the other hand, while specific are largely based on exploratory or qualitative literature, and the specific implications of these findings to project managers is not always evident.

According to Heagney (2016), the four major stakeholders for a project are the top management, the collective of team members, the project manager and most crucially the customer/client. Heagney (2016) equally believed that the stakeholder benefits and the final product are two other determinants in the success of a project. How competent the project manager is, as well as his team is, is an important determinant of project success (Ha and Tran, 2018). The project team and its manager have to be selected conscientiously so as to make sure that they possess the important skills and dedication needed to put in stellar performances. The involvement of and consultation with the clientele during project delivery is crucial to the project's success (Zou et al., 2014). For the project to be successful, the user has to be highly committed to the achievement of the project's targets and to participate in its management process (Kharbanda and Pinto, 1996). Projects which turn out successful often have efficient reporting and management systems which ensure proper project monitoring and adequate feedback. This allows comparison of project goals and team efficiency (Constantino et al., 2015). Techniques and methodologies have been built and encapsulated within various literature by professional project management associations and institutes (PMI, 2013). Notwithstanding, data-based studies exhibit the various challenges involved in applying project management processes (Ala-Risku and Kärkkäinen, 2006; Chou and Yang, 2012; Hong et al., 2011). This takes place because both external and internal contexts have the power to affect project management (Papke-Shields et al., 2010). In some cases, certain studies attempt to highlight the connection between project success and project management maturity. The basic thesis within these studies is; firms which spend resources and effort in order to improve PM as well as broaden their PM capacity often enjoy better success on their projects. Yet, the material on this thesis isn't conclusive or sufficient. (Grant and Pennypacker, 2006a, Thomas and Mullaly, 2007). All the above discussed factors are accepted explicitly as critical success factors to project success. However, there is considerable scope for empirical quantitative investigation into explicitly defined CSFs in their correlation to project success.

The literature also discusses CSFs for project investment, closely associated with project success. Success in project investment is substantially more difficult to attain in comparison to success in project management. This is because success in project investment requires a system oriented mentality in order to grasp and properly manage both the internal as well as external environments (Fortune and White, 2006). For example, it has been discovered by Cserhâti and Szabó (2014) that relational-based success factors like leadership, communication and cooperation are often much

more significant than the task-based success factors. Backing this discoveries, Müller and Turner (2007) discovered that the very experienced project managers often pay more attention to the development of teamwork and are more focused on investment success. In the same vein, when working on urban regeneration projects that require a modification of conduct and behavior on the part of the citizens, the efficiency of stakeholder management remains a crucial factor for determining project success (Yu and Kwon, 2011). As a result of this, Golini et al (2015) discovered that the project management tools, such as the Gantt chart and the critical path technique, which were used in realizing project management success are not the same as those required for realizing project investment success. This is because these project management tools have a much closer connection to stakeholder management tools like the responsibility assignment matrix and the stakeholder matrix.

Standardised project management

Insignificant research has been carried out within the PM and development literature on the dissemination of basic standards and techniques within firms (Ahlemann et al., 2009), even the privately owned ones. This serves as a knowledge gap which several specialists and researchers are trying to bridge and this, with time, has brought about extensions and reapplications of the project management standards specifically engineered to singular contexts (Besner and Hobbs, 2008). Notwithstanding the comprehensive nature of the project management techniques, different contexts show different strategies to project management (Hanisch and Wald, 2012). The above mentioned assertion is particularly evident in ID projects, as these kinds of projects give very specific characteristics. Some of these characteristics are high stakeholder participation and not-for-profit operations. (e.g., Golini et al., 2012). A number of specific techniques for use in projects, such as the Logical Framework and Baum's "project cycle", (Baum, 1970) have been postulated, however, the evaluation conducted on the efficacy of these tools as well as their consolidation with the other project management techniques is still preliminary (Ika, 2012; Lovegrove et al., 2011).

A significant literature related to the subject concerns the standardisation of project management best practices, standardised across projects. PMBP can be defined as the collective of best-known methods of carrying out work duties in order to realise high performance on a project (Kertzner, 2000). The project information such as its specifications, bill of quantities, design drawings, work schedules and other paperwork are not believed to fall under PMBP. In completely project-oriented firms, the projects encompass, most, or even all, of every business operation typically executed in the firm (Hobday ,2000). The knowledge, resources and the capacities of the organisation are developed through projects.

Standardised project management (SPM) can be defined as a technique for managing projects which are made up of standardised processes (Martinelli. and Milosevic 2016). In this paper, standardisation refers to the total absence of disparity when implementing these processes. Thus, standardisation rises as disparity falls. Many previous studies came to a conclusion that firms which execute their projects using committed, versatile and accountable project teams backed with

solid management support often perform better than those which don't (Takey. and de Carvalho, 2015). This study doesn't adopt this project-level approach, instead, it peruses a more complex organisational level, known as the "enterprise" level (Dinsmore, 1999). The basis of the enterprise level is; relating all the organisation's projects with each other and then integrating and harmonizing them with the organisation's critical business strategy, using designs like project excellence centers or offices, will support the achievement of project goals (Block and Frame, 2001). Generally, synchronisation of all projects being run within an organisation as well as the support of the various project management teams is stated to boost project management capability (Kerzner, 2000). In Shenhar (2001), it is postulated that particular methods help drive project successes. Milosevic and Patanakul, (2005) equally discovered that standardised project techniques are important to the provision of a hitch-free project management process which will cause the attainment of project targets. Presently, most organisations emphasise the need for leadership style based on specific leadership capabilities identified in the literature (Todorović et al., 2015). In line with this, Larson et al. (2014) stated that all persons involved in a specific project must be armed with the exact same collection of important skills in order to carry out their tasks judiciously and to achieve the project's objectives, hence boosting project management capability.

Standardisation in Elements of Project Management as Critical Success Factors

Process standardisation

Literature on project management often differentiates between customized and standardised PMMs (Curlee, 2008; Milosevic and Patanakul, 2005) and it remains undecided as regards if customized PMMS, standardised PMMS or a mixture of both boosts project effectiveness, thus causing an improved possibility of project success (Shenhar and Dvir, 1999). PMBOK, a growing paradigm in project management, has associated standardisation of project management with project success (Zwikael and Globerson, 2006; Lin Moe and Pathranarakul, 2006). The widespread belief on PMBOK and it's associated plan to build a project management set of standardised processes, is that project management know-how can be applied to various project forms within all kinds of environments and industries (Engwall, 1992)

Business strategy consistency and formalisation

Miller (1987) states that companies benefit from standardised business strategy owing to the use of constitutional uncertainty reduction tools like standardised operating processes and formal policies to distance themselves from unnecessary occurrences which might reduce efficiency. Though these devices lower maneuverability, they boost efficiency by reducing the diversity of tasks and making the performance increasingly routine. Venturelli et al. (2018) support proactivity

in business strategy as it relates to stakeholder collaboration requiring the formalisation of techniques which integrates certain sustainability subsets.

Centralised information processing

The need for centralised information processing is closely tied to the widely researched paradigm of knowledge management. The role of the former is directly related to the need for the latter. The term 'Lessons learned' is a highly significant one in the world of project management and it can be described as the major project experiences which have comprehensive business significance for upcoming projects (Project Management Institute, 1987). Due to the continued acquisition of knowledge by organisations, firms often adopt management advancements. In most cases, these advancements are sufficient in generating long-term competitive edges if properly applied (Carrillo et al., 2013). Irrespective of this, most R&D projects are often carried out based on specialized knowledge. When this knowledge cannot be directly applied to other running projects, then organisational amnesia (project-to-project) tends to set in. Even though the advancement made in the understanding and improvement of inter-project learning appears to be quite modest (Hartmann and Dorée, 2015), the basic factors causing project amnesia in organisations were identified and brought together by Schindler and Martin (2003). These factors are categorized into four groups – motivation, skills, time and discipline – so as to highlight the major success factors affecting project learning. Nevertheless, several of these factors are dependent on silent knowledge or inside processes employed by the workers and most times, it is not easy to ensure their availability for the whole firm. This is because they can be transferred during the varied personal and systemic interactions of the workers (Goffin and Koners, 2011). Regarding product innovation, Koners and Goffin (2007) highlight the importance of further research determining how employees can produce silent and explicit, i.e. codified, easily accessible and perfectly identified, knowledge and back project-to-project learning. The literature on information management is largely from the IT field of academic study and practitioner literature with little to no emphasis in PM literature. Nevertheless, the function which the standardisation of information management performs is generally accepted to be related to project successes in IT, thus, there is no reason to think that this law doesn't generally hold. Monteiro et al. (2016) relates process standardisation within a "Project Management Office" (information management system) to the lowering of identifiable risks. Marchewka, (2014) also identified the standardisation of management, planning and reporting of final products as a major advantage Project Management Office holds.

Standardised tools and project management success

Westerveld et al. (2003) carried out a review of critical success factors and identified use of tools as often identified in early literature as a success factor. Remus and Wiener (2010) found *via negativa* that unsuccessful projects often lack the use of standard tools. Steger et al. (2004) carried out a case study of Bosch Gasoline and associate their use of standard tools along with homogenous processes as crucial factor in the success of its projects.

Standardised metrics in project success

Lohman et al. (2004) carried out a case study approach in project design with regard to international logistics. Their discoveries allude to the critical function of a general collection of standard performance metrics used as a mechanism for attaining such height of coordination. Milosevic and Patanakul (2005) carried out an empirical study to determine the significance of standardisation and find the role of standard metrics to be statistically significant in their sample. However, Zhou (2006) cite standardisation of metrics as not being crucial when contrasted against standardisation of “process, tools, culture and leadership”

Role of National Culture on Project Management

Some studies tackle the national cultural facets of project management success (Rees, 2007). A number of these studies particularly highlight how difficult it is to manage heterogeneity within project teams. Also, these studies discuss the disagreements between various project management models (Chevrier, 2003), the problems which arise due to cultural and political factors (Shore and Cross, 2003), disparate cooperative working relationships (Kendra and Tapin, 2004), the impact of country of origin (Noorderhaven and Harzing, 2003) as well as the various methods of conflict and dispute resolution (Chan and Tse, 2003). Other issues discussed are diverse decision making procedures (d'Iribarne, 1998), barriers to information dissemination (Rosswurm and Bayerlein, 2005) and challenges of knowledge integration (Subramaniam, 2006).

According to Hofstede (2001), cultural dimensions refer to groups of interrelated values connected by certain similarities or cultural aspects which can be appraised within various cultures as methods of tackling general societal problems. This perspective was birthed in 1980 by Hofstede on the basis of a comprehensive experimental study conducted on IBM workers across 50 nations using a questionnaire. Hofstede gave an idea of the results of a factor analysis by initially describing four specific cultural dimensions: Uncertainty avoidance (related to working with uncertainty), Individualism/Collectivism (connected to interpersonal relationships), Femininity/Masculinity (emotional gender duties) and power distance (related to inequality). In subsequent versions, Hofstede included pragmatism or short/long term orientation (related to delayed gratification) and then, in line with Minkov's research, he recently added Restraint/Indulgence (related to the satisfaction of human aims). After Hofstede's work, other researchers have either discovered and integrated new cultural dimensions, or defined the exact same reality in different perspectives (Micheal Minkov, 2007). Several of these dimensions are, however, closely related to that of Hofstede (Michael Minkov, 2007; Stumpf, 2011). The legitimacy of these new dimensions has been established by several researches (Oudenhoven, Timmerman, & Zee, 2007). Meng (2013), using the Hofstede's theory, shows that each one of the five dimensions affect the risk management of contractors. Furthermore, Hofstede et al. (2010a) confirmed that their hypothesis can equally be used for analyzing organisational cultures. A positive connection between the PDI of a country and project risks was discovered by Rees-

Caldwell and Pinnington (2013). According to Das and Teng (2001), an excellent management team having a long term orientation often manages low relational risk within an alliance relationship.

There has been increased knowledge of the important function of embeddedness when analyzing projects (Blomquist and Packendorff, 1998). The issue at stake here is the management of the integration project within the local professional reasoning. In line with this, a research conducted by Campagnac and Winch (1998) which focused on construction projects enables the discrimination and characterisation of two separate national project management models in France and England. Milosevic (2002) discovered that different project personnel have varying project management scripts that are modeled based on national culture. For example, leadership schemas for a bad or good leader as well as conduct scripts (greetings) differ by culture (Shaw, 1990). In Ramaprasad and Prakash (2003), the way a dearth of domestic knowledge prevents effective PM is demonstrated. Debates have been held on the topic of project managers being mandatorily versed in the culture and history of every international stakeholder involved in the project, most especially the suppliers, partners and buyers (Zwikaël, 2009). Methods of problem solving varies among cultures because some of these cultures prefer a comprehensive assessment of the entire problem before making a decision, while the others adopt a trial and error approach (Eriksson et al., 2002)

In Liu and Fellows (2008), it is confirmed that the parent companies' organisational cultures are in line with the cultural characteristics of their host nations. However, the organisational culture of a joint venture is heavily affected by the most pronounced national culture of the project management team members. These assertions back up the theories of Kogut and Singh (1988) which state that organisational cultures lie within national cultures and thus disparities in national culture have been proved to cause differences in employee expectations as well as administrative and organisational processes. Many researchers and managers often say that culture remains a crucial factor in the development and application of management methods (Zhang and Wu, 2013, Kull and Wacker, 2010). Empirical findings have been gathered to show that cultural disparities could impact the speed and technique of change in an organisation (Abrahamsson and Isaksson, 2012). The form of management skills has to be conformed to cultural specifications, i.e. a management method or viewpoint which is suitable for a national culture isn't always suitable for another (Hofstede and Minkov, 2010).

3. Methodology

Research Approach

This study utilises an empirical approach. Empirical studies require the observation and measurement of reality, thus they confirm knowledge via real experience. Theoretical (non-empirical) studies, however, require the creation and study of theories which account for the

provided data. Experimental proof (the collection of a person's real experiences or discoveries) can be examined both qualitatively and quantitatively. By evidence quantification or reference derivation from its qualitative form, researchers can give answers to experimental questions, which basically has to be properly defined and accountable based on the collected evidence (commonly referred to as data). Research design must be adapted depending on field and the hypotheses being investigated. Thus, here, a quantitative empirical methodology is chosen so as to draw robust and statistically generalizable conclusions as to the relationship between project success and standardised project management. In considering research design, it was thought apt to use a multi-method research study so as to triangulate findings and provide further trustworthiness to results. However, given the limited time available for the research study a quantitative correlational study was carried out. An initial literature review was carried out to determine an appropriate model for project management standardisation that could be developed to test the hypotheses of the study.

The study investigates PM standardisation through the individual consideration of 7 identified components of project management where standardisation may be applied.

H1: Standardized PM process is positively associated with project success

H2: Organizational factors supporting PM standardisation are positively associated with project success

H3: Standardized PM information management systems is positively associated with project success

H4: Standardized PM tools is positively associated with project success

H5: Standardized PM metrics is positively associated with project success

H6: Standardized project culture is positively associated with project success

H7: Standardized PM leadership is positively associated with project success

Development of PM Standardisation Model

A project management standardisation model was developed with such standardisation being carried out across various elements of project management. These components were necessary to be identified so as to accurately establish the level of standardisation in the later study. The applicable literature was found and collected despite its volume and the associated challenges. This is because this literature is crucial to putting together a systematic assessment. The collected information provided data from which inferences, evidence and ideas were derived. The search which was to be carried out for applicable literature to be used in this research was comprehensive, particularly considering the size of literature to be analyzed.

A number of considerations governed the literature review methodology. Developing a methodological search mechanism, prior to commencing the literary search is important for an efficient and successful collection of information. The aforementioned preparation assisted in meeting the targets of the methodological assessment as well as in providing solutions to the stated research problem. When generating a search mechanism, the scope of the search, how much

attention it pays to detail and the time readily available for it to operate must all be considered. The main aim was to ensure that the executed methodological analysis of reviews was complete, fair and in-depth. A workable duration for conducting the methodological analysis of reviews was fixed. It was agreed that literature review similar to that presented in this document requires an estimated time of 2 – 3 weeks even though this duration is highly based on the research question and the availability of resources. The deductions from this literature review are presented in Section 2.

The basis for these hypotheses was the study by Milosevic and Patankul (2005). In their initial case study research, the researchers identified 7 avenues for project management standardisation namely; 1) PM Process 2) PM Tools 3) Metrics used to measure project progress 4) project culture 5) project leadership 6) Information Management Systems 7) Organisational factors. These aspects also similarly formed the hypotheses of the second leg of this original study wherein a quantitative correlative analysis was carried out, much as is repeated here. However, the model was required to be inferred from the questionnaire used in the said study and based on the literature review it was further developed. Based on the literature review, each of these identified factors is measured based on specific questions that directly address components of these factors. This minimises ambiguity and allows for a more robust analysis. In the original study only 1 question is used to measure each factor. For instance, in the case of independent variable “organisation”, the questionnaire asks: “To what degree does your organisation use managerial mechanisms (e.g., a project management office or project approval committee) to ensure consistent practices in synchronizing and aligning all projects with the business strategy?”. This is supplemented by two other questions defined based on literature: “To what degree are project management processes discussed during high-level strategy meetings?” and “How frequently are PM processes reviewed in an effort to standardise processes and minimise deviation?” so as to obtain a more comprehensive picture of the organisational level standardisation of project management. Similarly additional questions are added for other factors. Moreover, this study also makes the research contribution of testing the utility of standardised project management in the setting of Dubai where cultural differences are vast. A cross-culturally valid relationship between these factors and project success would evidence there being an underlying mechanism directly connecting standardised project management to project success. Moreover, it also provides a research questionnaire in expanding the original questionnaire used to measure the various factors of standardised project management.

Based on the literature review, the researcher made elaborations to the models regarding the level of standardisation as it applies to the PM tools in use, the project process and guidelines, the PM metrics and the required leadership skills. Other similar enquiries were made so as to ascertain the level of standardisation as it applies to information management processes and the project management. For instance, a relevant question in this regard is, "To what degree does your organisation use managerial mechanisms (e.g., a project management office or project

approval committee) to ensure consistent practices in synchronizing and aligning all projects with the business strategy?".

Sample

The respondents of this study were sampled from a number of government organisations in Dubai. While every attempt was made to also include private organisations in the study, an agreement to participate in the study within the deadline at short notice was not achieved. The project managers that agreed to participate were from various "future teams" in these organisations. These are teams concerned with projects towards the planned future performance of their respective departments as part of an initiative by the order of the prime minister. The organisations include: Knowledge and human development authority, Dubai Municipality, Dubai electricity and water authority (DEWA), Dubai Health Authority, Roads and Transport Authority (RTA), Etisalat, DP World (dubai ports), Dubai Department of economic Development (dubaided) and Dubai Police GH. Each organisation has a team of 3-4 project managers who work on projects with local and international firms on a daily basis. They are in charge of all aspects from developing ideas to providing the budget and execution of the projects at all stages. Although a total of 85 potential respondents were approached, a number of them did not agree to participate in the study. Moreover, among those that participated, a number of them were unable to provide the completed questionnaires by the stated deadline. The completed responses constituted of total of 26.

Measures

The initial questionnaire was sent to 5 project managers (DBA/PhD students) for review as to address construct validity. After minor changes requested were made to the wording of the questions based on their review, the questionnaire was administered to project managers who agreed to participate in the study. The data thus collected was utilised towards the testing of the various hypotheses. The subsequent section discusses the quantitative aspects of the data collected. The responses to the questionnaire were required on a 5-point likert scale. While the corresponding meaning of each of the 5 points varied across the questionnaire depending on the phrasing of the question, in each case 5 indicated a highest level of standardisation or highest project success while 1 denoted the lowest level of standardisation or project success.

The measurement tool administered constituted of questions to measure project success, which formed the dependent variable of the study. Based on the initial study project success was measured as the aggregate of the measures of success specifically in relation to cost, customer satisfaction, schedule and quality. Additionally, in this study these individual factors were measured for 3 projects for each participant, unlike in the original study. This allowed for the standardisation effect to be observed across projects as one single data sample per project manager can be misleading, and success averaged over multiple projects is a better measure. The remaining variables which are the independent variables of the study i.e. Standardized PM process, Organizational factors, Standardized PM information management systems, Standardized PM

tools, Standardized PM metrics, Standardized project culture, Standardized PM leadership; are measured based on questions designed after the conducted literature review. The full questionnaire utilised for this study is presented in Appendix 1. From a properly conducted reliability test of the initially distributed questionnaire, Cronbach's alphas proved to be greater than the required value (0.7) at 0.74. This shows that the questionnaire used in the original study is very reliable. In this section, we paid a lot of attention on the type of company, how large the project is as well as its type and lastly, the PM skills of the selected respondents, measured in the no. of years in that field.

Data analysis

In order to test the hypotheses of this study, a two pronged approach was used, i.e. a bivariate data analysis technique combined with a single multivariate technique. The bivariate analysis was the Pearson product-moment correlation value between dependent variable and each and every independent variable. The Pearson product-moment correlation coefficient, also known as the Pearson correlation coefficient, is a way of measuring the degree of linear connection existing between two defined variables. This coefficient is represented by r . The values of the coefficient range from -1 to +1. A coefficient of 0 shows that no association exists between both variables. In the same vein, a value above 0 defines a positive correlation i.e. as one variable increases in value, the value of the other one similarly increases concurrently. A value lower than 0 shows a negative correlation i.e. as one variable increases in value, the value of the other one decreases.

In Bivariate analysis, we consider two paired sets of data and determined if any form of relationship is present between them. On the other hand, In the case of multivariate analysis, at least two variables are considered and analysed to determine if any of them are related with a particular outcome. While the pearson product moment correlational analysis was carried out to establish any bivariate relationships, it was necessary to analyse all project standardisation variables as independent variables and project success as dependent variable within a single model. The linear regression model assumed linearity of the model and with no interaction effects between dependent variables.

4. Results

The following Tables 1 and 2 give a breakdown of the results gotten from the conducted bivariate analysis and subsequent stepwise regression during the tests of hypotheses 1 to 7. These results are believed to be provisional as a result of the preliminary and basic nature of this research. Having carried out the planned analysis, of all the seven factors which were tested for their effect on a project success or failure, none of the independent variables are found to be significantly related to the dependent variable of the study. Leadership, standardised PM mechanisms and process are brought into focus. In the original study, these variables were found to be significantly related to project success, however this was not found to be so in this study. The other independent

variables of the study were also found unrelated to project success, as was the case in the original study. Just as illustrated in the below tables, the p-values point to a statistically insignificant connection between the process, leadership and the standardised project management tools respectively individually with project success. Similarly, the combined effect of these selected SPM factors (taken together) on the success of a project isn't significant either. To prove the validity of the initial bivariate analyses, as illustrated in Table 3, the stepwise multiple regression technique was employed. Here, just a single factor, which is, standardised PM mechanism, was used in the equation. During that analysis, a predicted variable might represent the described variance possessed by the dependent variable with the use of correlated factors. All in all, neither the bivariate analysis nor the multivariate analysis showed any evidence supporting the hypotheses of this study. These results are discussed in the subsequent section.

Table 1: Bivariate Analysis

Pearson's Correlations

Project Management	
PM Process	0.3227
Project Organisation	0.0301
Information Management	-0.0678
PM Tools	0.1429
Metrics	-0.0481
Project Culture	0.1054
PM Leadership	-0.1288

*. Correlation is significant at the 0.05 level (2-tailed)

Table 2: Multivariate Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.526a	.277	-.004	.45422

a. Predictors: (Constant), PM_Leadership, Project_Culture, PM_Process, Metrics, Project_Organisation, Information_Management, PM_Tools

b. Dependent Variable: Project_Management

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.422	7	.203	.985	.472a
	Residual	3.714	18	.206		

Total	5.136	25
a. Predictors: (Constant), PM_Leadership, Project_Culture, PM_Process, Metrics, Project_Organisation, Information_Management, PM_Tools		
b. Dependent Variable: Project_Management		

Coefficients					
Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
1					
	(Constant)	2.843	1.071	2.655	.016
	PM_Process	.356	.174	.573	.056
	Project_Organisation	-.141	.214	-.182	.517
	Information_Management	-.258	.150	-.493	.103
	PM_Tools	.180	.236	.222	.455
	Metrics	.038	.230	.039	.871
	Project_Culture	.153	.283	.136	.595
	PM_Leadership	-.130	.185	-.155	.491
a. Dependent Variable: Project_Management					

5. Discussion

The study finds no evidence confirming the proposition that project management standardisation is necessarily associated with project success. Specifically, there was no empirical evidence supporting any of the hypotheses of the study, each of which concerned an element of project management standardisation. On the other hand, the original study that formed the foundation for this study on the other hand, did find a correlation between a number of aspects of project management standardization.

This may be owing primarily to one or more of two major influencing factors. Firstly, the study was not able to utilise a sufficiently large sample owing to the limited time available for the project and due to difficulties in getting respondents of the study to deliver their responses within a stated allotted time. The second potential factor beside sample size is thought to be cultural. The study is carried out in Dubai where organisational and national cultures are vastly different to those in western countries like USA and UK. The study does not find a correlation, possibly owing to standardisation not being a dominant influencer of project success in organisations in Dubai. Given that achieving project success is a multivariate problem as identified in the literature, it is not unlikely that the relative importance of influencing factors vary from culture to culture, and that

in governmental organisations in Dubai, standardisation is far less weighted than other factors such as project length and incentivisation.

While the results of the correlational study did not show an statistically significant correlations, the pearson product moment correlation coefficients were found to be substantially negative in many cases, a counter-intuitive finding of the study. While conclusions cannot be drawn given the small sample size utilised and the statistical insignificance of coefficients, it can be intuited that provided the sample is representative of the population of project managers in this region, standardisation is certainly not strongly correlated with project success. If a very strong linear relationship existed between project success and standardisation, the coefficients would still yield a high positive value regardless of statistical significance.

Limitations of the study

The study is associated with a number of limitations. Firstly, the sample size utilised here is only constituted of 26 project managers. Future studies will require to be conducted with over 100 participants so as to yield more generalizable findings testing the relationship between standardisation and project success. The study was also limited to governmental organisations. This was primarily owing to availability issues. Private organisations were contacted but refused to participate in the study. Thus, the results may be biased and may only apply to governmental organisations in Dubai. Governmental organisations operate under vastly different conditions and have different definitions of project success as for private organisations. Moreover, they are largely focused on operational projects rather than innovation or client oriented projects. This further influences the nature of the studied relationship in this context. Moreover, the departments in which the project managers worked in, did not allow them to work on a diverse range of projects as in a fast paced private organisation. Future studies may investigate the relationship using a sample comprised of diverse projects including construction, electrical engineering, mergers and acquisition fulfilment etc. so as to obtain a robust conclusion as to the presence or absence of the relationship.

Project management standardisation was studied based on components identified in a limited number of studies. As with the original study that formed the foundation of this research, the model was not tested for autocorrelation, so as to create a complete statistically valid regression based model. This would be beneficial to carry out prior to testing these elements in the questionnaire as in this study, and to limit the test to constructs for which validity has been explicitly established.

While standardisation is the focus of this study, it is evident that both standardisation and its opposite construct, adaptation, influence project success. The results in this study may be ambiguous owing to the isolation of standardisation alone as a determinant of project success. A combined analysis of adaptation and standardisation may provide a more accurate relationship.

Moreover, the questionnaire may be redesigned so as to have responses requiring respondents to simultaneously consider the role of these two factors as working in tandem.

Given that the literature review was carried out for major publications in the subject, the constructs identified were in English. While every attempt was made to ensure clarity of the questionnaire, the possibility of a loss of meaning in translation cannot be conclusively removed. This is particularly owing to the fact that words for technical terms such as “standardisation” when translated are closely associated with other constructs that are unrelated in Arabic. Lastly, the study did not utilise negatively framed versions of the questions to improve reliability. This is since a large number of components of project management standardisation were required to be tested and the questionnaire had to be limited so as to ensure maximum completed responses, given the small available sample.

6. Conclusion

This research study sought to contribute to the empirical knowledge on the subject of standardised project management in its role in creating project success. Specifically, the study sought to investigate the influence of standardisation of specific elements of project management standardisation individually and collectively on project success. While past studies have investigated the relationship, the models of project management standardisation were insufficiently detailed. Thus, a foundational study on the subject and an extensive literature review formed the basis for a new model of project management standardisation that formed the basis for the empirical investigation. The research contribution lies in having conducted the study with a more elaborate model. Moreover, the second research contribution lies in assessing the applicability of the assumed relationship in a setting with a different national culture, said to influence project management and project success.

The study did not find any supporting evidence confirming the presence of a relationship between any of the seven factors and project success. Specifically, no statistically significant correlations were found between project success and elements of project management standardisation. In the study, the variances in success of projects handled by various project managers were not explained by differences in standardisation across those projects. However, this may be owing to the limitations of the quantitative study conducted rather than owing to the absence of the stated relationship. Most significantly, the study was able to utilise only a small sample of project managers affecting the generalisability of findings. Moreover, there was a lack of diversity in the types of projects handled by the PMs in the study. Future studies may repeat the study without these limitations so as to more accurately assess the relationship in the context of Dubai. Nevertheless, the correlations were not very strong within the studied sample.

7. References

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