



Significance of project management performance assessment (PMPA) model

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Abstract

Bryde (Bryde JD. Modelling project management performance. *Int J Quality Reliab Manage* 2003;20(2):229–25) has presented project management performance assessment (PMPA) model. The model proposes six criteria for assessing PM performance; based upon the EFQM business excellence model. This paper examines what is the level of impact of these criteria over the project management performance (PMP) in Pakistani listed organizations. This paper also examine the scope of the association within different criteria of project management performance assessment (PMPA) model and with project management performance (PMP) in the Pakistani listed organizations and whether this association is significant, furthermore it investigate that to which extent different characteristics of PM performance, correlate with each other and with project management performance (PMP). It is concluded that the PMPA model have a potential use as framework to assess the project management performance, by conducting empirical study and checking the impact, correlation and association of the criteria of PMPA model and PMP.

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1. Introduction

Project management is today's spicy topic. Copious research work has been done but this field is so dynamic that every angle shows a different prospective of the subject. Since its commencement in the literature and its applicability, the world has shown tremendous progress. As erudition involves day by day in project so as stringency involves in managing these complex and gigantic project. To avoid the waste of scarce recourses has increased the errands upon the shoulders of management. So it is necessary to boost up the performance. But as performance is an intangible thing, especially in case of management perfor-

mance, so choosing tools for assessing the performance is also a hard job.

This is as much as true for the Identification performance generating factors in project management and more than that it difficult to choose a framework to access these factors so performance can be evaluated. Many organizations from the corporate world are claiming that 'we manage project very effectively and our performance is outstanding. Despite this, numerous organizations still ignore to invest in evaluating the project management performance, they are just living in present day and ignoring the future, they just emphasize upon the meeting time, cost and specification of the project, but obviously now as we all now that there is competition every where and "Survival of the fittest" best describe the today's business environment. So good project management performance assessment tools are needed in order to make an organization "best of the best". In Bryde [5] proposed a model for assessment of project management performance. And he suggested

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that by following his model with some variation according to one's own need an organization can achieve best project performance. This assumption needs to be carefully tested. This Research Study addresses this assumption directly and therefore the focus of the research remained around whether project management performance assessment PMPA model practices make a difference in the company performance or not. If so, which factors of PMPA has stronger impact for enhancement of the performance of project management in Pakistan and it is also needed to evaluate that model have enough potential for the assessment of the project management performance.

2. Literature review

Pakistan, a developing country, needs the use of new synchronized “approaches” of the developed world for improving efficiency, reliability as well as success, which are mandatory for the business world. The “success” measures of project are evolving new dimension in this changing world, as survival of the fittest is the best describing principle of today's competitive business environment.

The project can be defined as “a transitory venture undertaken to generate an exclusive outcome or service Barad et al. [2]. Transitory means that the project has an end date. Exclusive means that the project's end results are different than the results of other functions of the organization”. Bowen et al. [3] use case studies to suggest that the only way organizations achieve anything intricate or noteworthy is through projects.

Project management can be defined as “The manner of implementation, of expertise, paraphernalia, knowledge and modus operandi to an extensive range of activities for the fulfillment of prerequisite of the specific project. Project management knowledge and practices can be defined upon individual processes. These individual processes can be: Initiating, Planning, Executing, Controlling and Closing”. The origin of the project management is in managing US department of defense contracts with this process being first documented during the 1950s and 1960, Loo [24]. Cammarano [8] evoke that project management is fundamental for lucrative and incessant enhancement of programs and obviously it is a “stipulation not a lavishness”.

As project management is a vital task so it is also imperative to gauge the performance of the project management. Here it indispensable to distinguish between project performance (PP) and project management performance (PMP). They both are coupled with each other but they are absolutely diverse from each other so one should not perplex in these terms (Bryde [6]). Regardless of poor project management (PM), project could be considered “prosperous” and it is also probable that a project is futile despite of superior project management (PM) (DeWitt [13]). For example, cultivating a culture that enhances the performance of the project is prerequisite for the project management performance but while assessing the project

performance it is not obligatory to consider this, and project may be viewed a successful project.

During the last two decade of previous century, research has been pointed out that success criteria of project evolve new dimensions. Evaluation of project success, by the dissimilar key project participants (stakeholders), in different times, has been done in diverse ways (for example, Gobelli [23], Pinto and Pinto [33] and Neumann et al. [29]), while traditional view of project success was meeting, time (schedule), cost (budget) and specification (quality). modern definitions of success integrate criteria beyond the conventional “iron triangle” (Atkinson [1]) substitution between cost (budget), time (schedule) and quality (specification), with theorists accent the paramount need to enchant the optimism of key project participants (e.g. Nicholas [30]; Gobelli and Larson [23]; Deutsch [12]; Neumann et al. [29]; Maylor [27]; Tukul and Rom [37]). As the clout, authenticity and exigency of project stakeholders is comprehended to be continually rising, there is a new focus in PM literature on developing models that apply theories of stakeholder classification and conspicuousness to the project environment (see, for example, Mallak et al. [25]; Tuman [38]).

For the valuable performance of the project, much work has been made in the area of “quality” to view it in a broader sense. For example Wateridge [41] states the meaning of quality is defined by the clientele and other stakeholders according to their own perception and desires. Mitchell et al. [28] research shows that there is a demanded need to empathize and meet the expectations of a verity of project participants places the concept of “stakeholder” in project management (PM) sphere. Many researcher among which Nicholas [30]; Wateridge [41]; Atkinson [1]; Tukul and Rom [37] reaches at the same conclusions that measures of the project success is the contentment of key project stakeholders, and stakeholder could only be satisfy if their quality criteria will be achieved.

A bond between project management and quality management emanates from similar rationale, i.e. The primary aim of PM is the contentment of clientele and other key project stake holder's requisites (BSI [7]; PMI [34]) and the aim of the academic perspectives of “quality” is to meet the requirements of clientele (Oakland [31]).

For the Success of a project the satisfaction of different stakeholders can only be achieved by Quality management. With the introduction of total quality management (TQM) in a project start new horizon of research. “A hypothesis of managing the total organization to relinquish quality to client” defines TQM by Daft [10], the author identifies four noteworthy elements that make up the concept –“benchmarking; and incessant improvement with employee involvement and focus on the client.” Evans and Lindsay [14] who state that TQM “The quality should be dispatched from the perspective of strategic management because it is not exclusively a restrain or methodological concern.” similarly Garvin [16] states that Senior management will take TQM austere if and only if organizations find a durable bond between quality processes and the

bottom line. This review of research on TQM clearly indicated that how necessary it is to focus upon TQM. [3] the authors identified TQM as an “attitude of organization-wide pledge to unremitting perfection, with the focus on solidarity with team, escalating benefactor contentment and slashing costs. Mechanism of TQM is parallel alliance across functions and departments which stretch to rope in clientele and suppliers”.

The link between TQM and project management in many circumstance has been seen and analyzed from two main standpoint (Bryde [4]), one is the use of the principles of project management as a agency for the unbeaten implementation of a TQM Programme. The other is when individual quality improvement has been seen as smaller projects within the milieu of the total quality improvement Programme. Stamatis [36] stress the analogous and amalgamate focuses of TQM and project management. TQM provides the visualization of “best in class”. A document entitled BS ISO 10006, present guidance in project management about quality management. The elementary resemblance of project and quality management are also evident in the BSI document boosting the satisfaction of customer and other stakeholder needs is paramount All work within projects is carried out as a set of planned and interlinked processes Management is responsible for creating within the business an environment of unremitting improvement (BSI [7]).

TQM emphasize human’s constant diligence for the accomplishment of unsurpassed in class, whereas project management delegate itself mostly on techniques, such as scrutinizing planning and managing, warranting that within the predefined time limit, the particularized goals of the TQM programme are accomplished in a cost effective approach (Stamatis [36]).The TQM type approach gives the track to construct the PM standards that contemplate on the quality of PM process and the quality of outcome (BSI [7]) so (Froonhof [15]) concluded that theme of quality management system (QMS) has been zealously acknowledged for synthesizing of PM models. Many models have been developed but all the models have some kind of deficiencies, so most appropriately it is necessary to develop a model which is flawless. (Maylor [26]) states that

it is necessary now to develop and adopt new models. Empirical studies shows that the TQM has been abundantly inaugurate in successful PM (Pelligrinelli and Bowman [32]; Hides et al. [17]) this shows the mixing the PM and QM fields gives success to the outcome. With day by day introduction of TQM help us to make batter approaches to enhance the PM performance. The concepts of TQM not only help to synchronize the requirement of key project participants but at the same time it is marked it also contribute in other areas which can contribute to deployment of successful project management.

A study recommend the effectiveness of rapport between QM practices and PM performance (Barad and Raz [2]) the linkage of these two area have remarkable potential and exploitation of that potential is necessary. TQM proved a catalyst in paving a way in which PM concepts were deployed (Kerzner [20]). TQM methodology can provides a guide line where an organization can improve there performance of the future projects by reviewing the performance of past project (Stamatis [36]). TQM creates a no-blame culture amongst project leadership (Kotnour [21]). QM models have modified to assess project and PM performance. Furthermore many models have customized to PM context. Among them some models which map organizational unfolding with respect to the maturity of QM are customized (Humphery [18]; Dale et al. [11]; and Crosby [9]) and other models which use self-assessing technique are customized, e.g., Malcolm Baldrige National Quality Award (MBNQA). The Humphery’s [19] work prove the base of PM maturity model (Jain [19]; Ward [40]). As discussed earlier that MBNQA was a customized model to PM performance context that use self assessing technique to view the organization’s status prove the base of constructing project quality index (PQI) (Kumar and Wolf [22]). PQI revolve around the project performance and model of Jain [19] and Ward [40] revolve around the project management (PM) performance, both have been not test through empirical studies yet!

In order to synthesis a framework in which project management performance can be enhanced and evaluate the remaining within the methodology of TQM, It is a superior

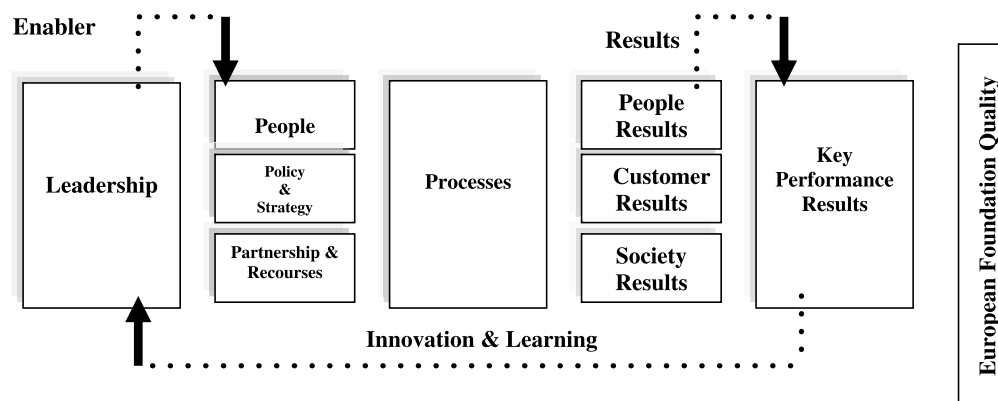


Fig. 1. EFQM business excellence award.

approach to work and customize existing TQM framework for the project management. In this way one will not broke the boundaries which are essential for the TQM. Different framework and awards in different parts of world have been followed in order to achieve TQM and those organizations who fulfill the prescribed criteria also took the competitive advantage. Among these framework and awards are ISO, Canada Award for excellence, European Foundation of Quality Management (EFQM) business excellence model etc.

Truly outstanding organizations are those that struggle to satisfy their stakeholders by what they achieve, how they achieve it and what they are likely to achieve. This is hard enough at the best of times; sustaining it in a world of increasing global competition, rapid technological innovation, changing processes and frequent movement in the economic, social and customer environments, is even harder. Recognizing this challenge, the European Foundation for Quality Management (EFQM) was created to promote world-class approaches to the management of European organizations that would lead to sustainable excellence. The EFQM excellence Model, a non-prescriptive framework based on nine criteria, can be used to assess an organization's progress towards excellence.

Fig. 1 shows the EFQM business excellence model.

2.1. The project management performance assessing (PMPA) model

An EFQM model seems a good framework for constructing model to measure the performance of project management. EFQM model is beneficial in defining TQM in articulate way (Van Der Wiete [39]) also Maylor [26] states that innovative models of PM practice and performance are needed instead of conventional models.

Fig. 2 shows PMPA model which is customize shape of EFQM and Bryde [5] discussed following integral parts of PMPA model.

2.1.1. PM Leadership

- (1) PM Leadership should focus on the development of a broad role for pm in the organization.
- (2) Leadership focus to produce awareness to view project as a vehicle for managing all types of change.
- (3) Leadership should ensure the pm system support the development of project culture.

2.1.2. PM Staff

- (1) Planning in project management for the staff of project.
- (2) Managing human resource.
- (3) Providing reward and recognition. Especially how organizations plans and manages its PM Staff, give training, ensure its staff's career development and also for the future projects (PMPA).

2.1.3. PM Policy and Strategy

- (1) How the development of PM across an organization is introduced in a planned and systemic fashion with a link existing between the strategic organization level and the tactical, project level.
- (2) PM Strategy is sold?
- (3) Organization wide PM system which kind of control has been setup. Is it centralized or devolved control.
- (4) Organization wide PM system with devolved (hand down) control is setup.

2.1.4. PM Partnership and Recourses

- (1) The importance of win-win partnership (stakeholder, supplies etc).

2.1.5. PM Life Cycle Process

- (1) PLC to incorporate process in the pre initiation and post delivery stages.
- (2) Emphasis of upstream activities and down stream activities.
- (3) Focus on the customer and stakeholder.
- (4) Clear, concise and comprehensive description of the process.

2.1.6. PM key performance indicators

- (1) Performance indicators.
- (2) Methods used.

In nutshell

2.2. Research methodology

2.2.1. Purpose of the research study

In Bryde [5] proposed a model for assessment of project management performance. And he suggested that by following his model with some variation according to one's own need an organization can achieve best project performance.

The objective of this study is “to find out relationship and impact of PM Leadership, PM Staff, PM Policy and Strategy, PM Partnership and Resources, PM Life Cycle process on project management performance”.

2.3. Research design

2.3.1. Sampling technique

This research have a stab “Convenience Sampling” (a form of Non-probability Sampling) modus operandi has been used. This modus operandi is used to make research process faster by obtaining a large number of completed questionnaires quickly and economically. Only listed companies having hundred employees were selected for the

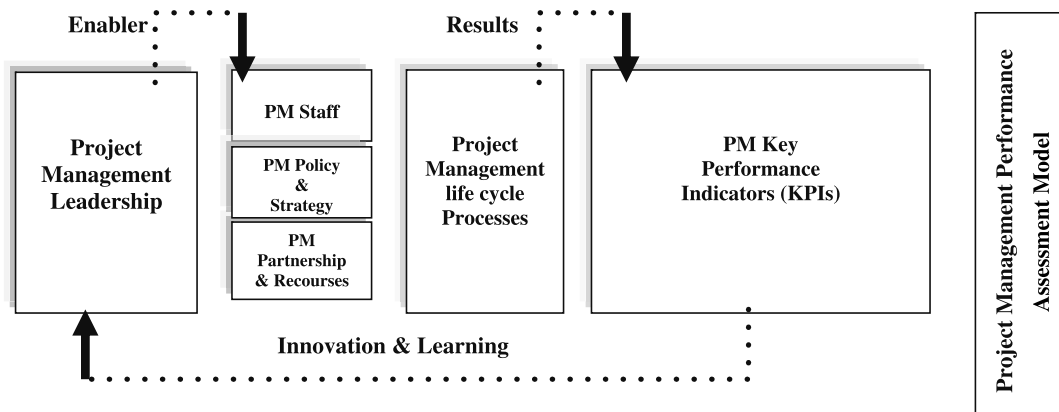


Fig. 2. PMPA model (the customized shape of EFQM).

study. The podium which facilitates us to select the sectors and the organizations is the website of Islamabad Stock Exchange. This website contains all vital information of the listed companies. The postal addresses of the registered offices of these listed organizations were amassed and later on questionnaires were posted to them.

2.3.2. Survey methods (mail, interviews, and telephone)

Management science research studies have used surveys as methods of data collection many times in history. We followed the same approach because secondary data in this field is not available in Pakistan. Due to the scarcity of time and budget, we initially used mail survey for data anthology. Through this method we collected few responses from the listed organizations, but few problems reduced the response rate efficacy, e.g. Project managers from different organizations were not quick in answering, therefore the data compilation was slow. To cope up with this challenge, personal one to one interviewing method was started. Organization operating in the twin cities. For example (Rawalpindi and Islamabad) were personally visited and the interview has been conducted mostly from the Project Managers, service operations and also from the marketing and engineering department's managers. As a result, the response rate was getting quicker with high quality, Response was collected from 16 organizations, but there were other problems like time consumption and traveling. For making responses quicker and eliminating excessive traveling, telephonic interviewing method was used. This method was comparatively more productive and through this method, we collected more responses.

Descriptive surveys are sketched for providing a picture of the ongoing matters and relational surveys are developed for empirical analysis. This research attempt is relational for exploring association between project management performance and PMPA model practices. For the survey, questionnaires developed consisted of 5 likert scale point, 5 for strongly agree and 1 for strongly disagree. Four times, it happened that the managers were not clear about the terminologies used in the questionnaire but this matter was solved through detailed explanation and by one to one discussion.

2.3.3. Response rate

Out of (43) companies, 28 responded back. Industry response rate is (60%) which is a good representative of the sample. After data collection, we coded it in Excel 2006 and SASS 10.0. For calculating results, Regression analysis and Correlation are used.

Table 1 shows business sector, no. of organizations and no of subjects.

Table 2 shows experiences and jobs of the subjects.

2.3.4. Description of the instruments

This study was conducted on a basic level as there was no data available prior to this research. Therefore a likert

Table 1
Business sector, no of organizations and no of subjects

Business sector	No. of organizations	No. of subjects
Defense	1	4
Automotive	3	6
Chemicals/energy	5	8
Sundry manufacturing	4	5
Information systems	3	7
Banking	5	9
Education/consultancy	2	4
Public administration	3	5
Private administration	2	2
Total	28	50

Table 2
Experiences and jobs of the subjects

Time in organization (years)	No. of subjects
>5	38
3-4	7
<3	5
Job	
Project managers	22
Service operations	16
Production	2
IT	4
Marketing	1
Engineering	2
Logistics	2
Others	1

scale questionnaire was developed to find out the impact of PMPA model on the performance of project management. Questionnaire included designation of the subject, his/her experience. We take the criteria of PMPA model “PM Leadership”, “PM Staff”, “PM Policy and Strategy”, “PM Partnership and Recourses”, “PM Life Cycle Management” as the independent variable. Project management performance (PMP) is selected as dependent variables. Statistical tools used were multiple regression and correlation the reason to use these tools of regression and Pearson correlation is that it is easy to understand. Finally they both produce remarkable and meaningful results.

2.3.5. Variables

Variables are given in Fig. 3 and the research model is given in Fig. 4. In this research, 7 variables are considered for analysis. Out of these, 6 are independent variables, 1 is dependent variables. These independent variables are affecting project management performance (PMP).

Fig. 3 shows dependent and independent variables.

2.3.6. Questionnaire

The data collection was through questionnaires consisting of dependent variables (project management performance) independent variables (“PM Leadership”, “PM Staff”, “PM Policy and Strategy”, “PM Partnership and Recourses”, “PM Life Cycle Management”). The questionnaire was developed depending upon the extensive literature review. In the mentioned research studies likert scale questionnaire was used.

2.3.7. Research model

The research model is developed on the basis of previous research studies, we have included following variables (“PM Leadership”, “PM Staff”, “PM Policy and Strategy”, “PM Partnerships and Resources”, and “Project Life Cycle Management Processes”, “PM KPIs” and Project Management Performance PMP).

Equations tested are following:

$$y = \alpha + \beta_1(x_1) + \epsilon$$

$$PMP = \alpha + \beta_1(L) + \epsilon \tag{1}$$

$$y = \alpha + \beta_1(x_2) + \epsilon$$

$$PMP = \alpha + \beta_1(S) + \epsilon \tag{2}$$

$$y = \alpha + \beta_1(x_3) + \epsilon$$

$$PMP = \alpha + \beta_1(PS) + \epsilon \tag{3}$$

$$y = \alpha + \beta_1(x_4) + \epsilon$$

$$PMP = \alpha + \beta_1(PR) + \epsilon \tag{4}$$

$$y = \alpha + \beta_1(x_5) + \epsilon$$

$$PMP = \alpha + \beta_1(PLC) + \epsilon \tag{5}$$

$$y = \alpha + \beta_1(x_6) + \epsilon$$

$$PMP = \alpha + \beta_1(KPI) + \epsilon \tag{6}$$

‘With addition of All Independent variables/

$$y = \alpha + \beta_1(x_1) + \beta_2(x_2) + \beta_3(x_3) + \beta_4(x_4) + \beta_5(x_5) + \beta_6(x_6) + \epsilon$$

$$PMP = \alpha + \beta_1(L) + \beta_2(S) + \beta_3(PS) + \beta_4(PR) + \beta_5(PLC) + \beta_6(KPI) + \epsilon \tag{7}$$

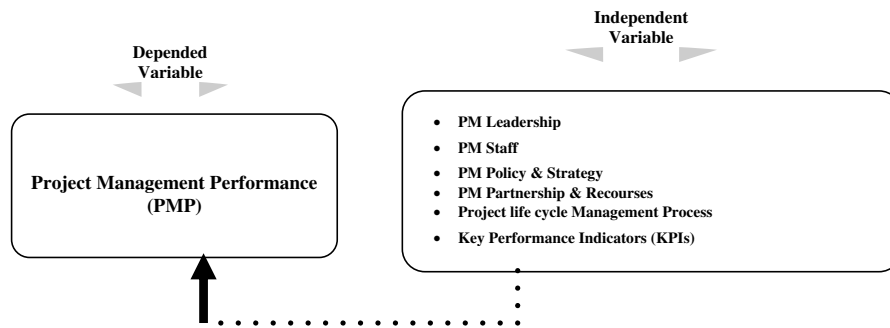


Fig. 3. Dependent and independent variables.

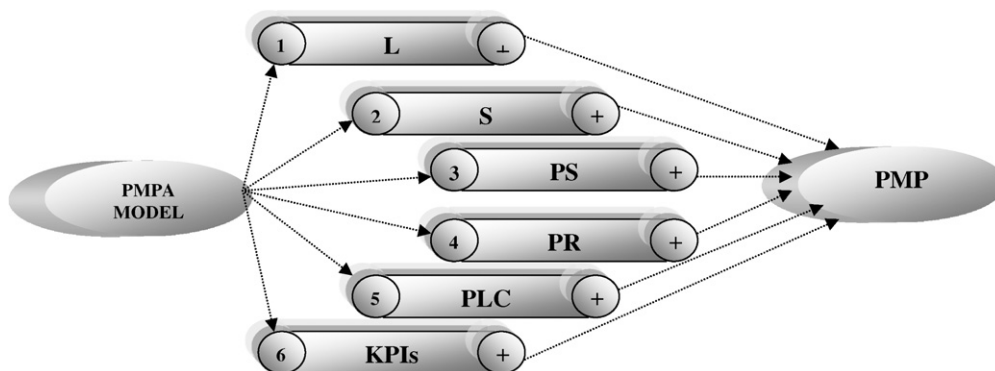


Fig. 4. TMQ-Research model.

Where as:

1. $X_1 = L =$ PM Leadership
2. $X_2 = S =$ PM Staff
3. $X_3 = PS =$ PM Policy and Strategy
4. $X_4 = PR =$ PM Partnership and Recourses
5. $X_5 = PLC =$ PM Project Life Cycle Management
6. $X_6 = KPI =$ PM key performance indicators (KPIs)
7. $X_8 = PMP =$ Project management performance

3. Research model

Fig. 4 shows the research model.

3.1. Hypothesis

On the basis of extensive literature review one main and six supplementary hypotheses are developed for the study.

H1:

The use of project management performance assessment (PMPA) model has positive/significant effect over the project management performance (PMP).

H_{1-a}:

The criteria of PMPA model “Project Management (PM) Leadership” have positive effect over the project management performance (PMP).

H_{1-b}:

The criteria of PMPA model “Project Management (PM) Staff” have positive effect over the project management performance (PMP).

H_{1-c}:

The criteria of PMPA model “Project Management (PM) Policy and Strategy” have positive effect over the project management performance (PMP).

H_{1-d}:

The criteria of PMPA model “Project Management (PM) Partnership and Recourses” have positive effect over the project management performance (PMP).

H_{1-e}:

The criteria of PMPA model “Project Life Cycle Management (PM)” have positive effect over the project management performance (PMP).

H_{1-f}:

The criteria of PMPA model “key performance indicators (KPIs)” have positive effect over the project management performance (PMP).

3.2. Research findings

Table 3 is showing correlations for all the variables and Table 4 is indicating descriptive statistics comprised upon values of standard deviations, means, median, mode, minimum, maximum values and ranges. There is a high correlation amongst the independent and dependent variables. We precede sequence wise from highly correlated variable to lest correlated variables.

In project management performance (PMP) and PM key performance indicators, correlation is (0.69). Mean of the PM key performance indicators is (4.43), whereas standard deviation is (0.53), which show that PMP and KPIs have strongest correlation. While Project management performance (PMP) and PM Life cycle process management (PLC), correlation is (0.65). Mean of the PM Life cycle process management (PLC) is (4.38), whereas standard deviation is (0.57). Between project management performance (PMP) and project management leadership (PML), correlation is (0.63). Mean of the project management leadership (PML) is (4.27), whereas standard deviation is (0.59). Comparing project management performance (PMP) and

Table 3
Correlations of variables

	PMP	L	S	PS	PR	PLC	KPIs
Project management performance (PMP)	1						
Project management leadership (PML)	0.63	1					
Project management staff (S)	0.55	0.53	1				
PM policy and strategy (PS)	0.49	0.39	0.13	1			
PM partnership and resources (PR)	0.34	0.34	0.09	0.31	1		
PM life cycle management process (PLC)	0.65	0.49	0.22	0.42	0.19	1	
PM key performance indicators (KPIs)	0.69	0.55	0.41	0.49	0.29	0.61	1

Table 4
Descriptive statistics mean, standard deviation

Vari/DS	Mean	S D	Variance	CV	Mode	Range	Minimum	Maximum	Count
(PMP)	4.22	0.54	0.29	13.3	4	2	4	5	50
(L)	4.27	0.59	0.35	14	3.8	2.8	2	3.9	50
(S)	4.12	0.47	0.22	11	4	2	3	4.2	50
(PS)	3.76	0.56	0.32	13.58	3.8	3.2	2.2	3.6	50
(PR)	3.56	0.51	0.26	12.21	4	2.8	2.8	4.6	50
(PLC)	4.38	0.57	0.33	15	3.4	3.4	3.1	4.2	50
(KPIs)	4.43	0.53	0.29	13.06	4	2.5	3.3	4.3	50

Project Management Staff (S), correlation is (0.55). Mean of the Project Management Staff (S) is (4.12), whereas standard deviation is (0.47). But in Project management performance (PMP) and PM Policy and Strategy (PS), correlation is (0.49). Mean of the PM Policy and Strategy (PS) is (3.76), whereas standard deviation is (0.56). And last but not the least in project management performance (PMP) and PM Partnership and Resources (PR), correlation is (0.34). Mean of the PM Partnership and Resources (PR) is (3.56), whereas standard deviation is (0.51).

Coefficient of correlation between PM life cycle management (PLC) process and PM key performance indicators is (0.61), the results show that the PLC and KPIs have strong association with each other. Correlation between Leadership (L) and PM key performance indicator (KPIs) is (0.60), which indicates that they have very good impact upon each other. Coefficient of correlation between Leadership (L) and KPIs is (0.53), which also show there strong association. Coefficient of correlation between PM Staff (S) and KPIs is (0.41). The results show that both of them strongly related with each other. Correlation between PM Partnership and Strategy (PS) and KPIs is (0.49), which indicate there association with each other.

We have calculated sample mean, the highest mean of selection (4.43) is indicating that KPIs is the most important factor in project management performance but Partnership and recourses PR is showing the lowest mean (3.56), highlighting that the Partnership and recourses PR is not a major contributory factor of project management performance PMP. Table 4 is showing graphical representation of variables' means.

3.2.1. Regression

Table 5 shows the regression outcomes for Pakistani listed organizations. This table shows that by increasing 1 unit of PM key performance indicators (KPIs) will increase project management performance (PMP) by (0.69) units which means this variable is having strong impact on project management performance (PMP). This result is significant at 5%. If 1 unit of PM Life cycle process management (PLC) is increased (0.64) units will be increased of project management performance (PMP) in Pakistan, which means this variable is having high impact on project management performance (PMP) with significant at 5%. Likewise if 1

unit of PM Leadership (L) is increased (0.60) units of project management performance (PMP) are increased with significance of 5%, showing a positive impact on project management performance (PMP).

By increasing 1 unit of project management staff (S) (0.53) of customer acceptance is increased, which means this variable has an impact on project management performance (PMP). This result is significant at 4%. If 1 unit of PM policy and strategy (PS) and 1 unit of PM Partnership and Resources (PR) is increased (0.42) and (0.39) will be increased respectively of project management performance (PMP) which have slightly less impact on project management performance (PMP) as compared to other KPIs, PLC and L. This result is significant at 3%.

4. Conclusion

The results divulge that the deployment of project management performance assessment (PMPA) model has positive and significant impact over project management performance (PMP). Results produced through analysis shows that all criterias have significant association with project management performance that ultimately prove over main assumption.

Secondly key performance indicators (KPIs) have highest impact over the project management performance. "Project Life Cycle Management" an important criteria of PMPA model have positive impact over project management performance (PMP) after KPIs. "Project Management Leadership" has great deal of impact over the project management performance (PMP). "Project Management Staff", "Project Management Policy and Strategy" and "Project Management Partnership and Recourses" are having significant impact over the project management performance (PMP). Over all results are supporting the hypothesis.

This study pointed out particular areas which needs higher priority for performance enhancement in case of low productive project management. This research contribution is helpful for project managers to identify less strengthen quotient of project which needs to be converted in to super strengthen by professional effective practices or through capitalistic approach with further financing.

Study concluded that all six independent variables of PMPA model have strong positive correlation with project management performance (PMP). Key performance indicator is showing strong correlation with other independent variable, which ultimately have a strong impact over PMP. Study findings are indicating that PMPA model has significant impact over project management performance and can be used as framework to assess the "project management performance (PMP)".

Future direction for this research could be longitudinal study of PMPA model in project management organizations of Pakistan with more number of respondents. Other than longitudinal study impact of PMPA model of financial and market performance of the organization can be tested.

Table 5
Regression

	Coefficients	Adjusted <i>R</i> -square	<i>P</i> -value
Intercept	2.73	0.45	0.04
L	0.6		0.05
S	0.53		0.04
PS	0.42		0.03
PR	0.39		0.03
PLC	0.64		0.05
KPIs	0.69		0.05

Feed back form

Your Name _____
 Your JOB _____
 Your Main Project Role _____
 Number of year in organization _____
 Total experience in project environment _____

A Project management performance (PMP)

1	Leadership play a very critical role in project management	1	2	3	4	5
2	Planning, Managing, reward and recognition play important role in project management	1	2	3	4	5
3	Better the Policy and Strategy, better will be the project management	1	2	3	4	5
4	Stronger partnership with the stakeholder, leads to good project management	1	2	3	4	5
5	Clear and comprehension description of the process is important in project management	1	2	3	4	5
6	Good key performance indicators usually result of better project management	1	2	3	4	5

B PM Leadership (L)

1	A project is a vehicle for tackling all business-led change within an organization	1	2	3	4	5
2	Project focused meetings are held in our organization	1	2	3	4	5
3	Project ideas/information is freely shared by all	1	2	3	4	5
4	A common project language is shared by all	1	2	3	4	5
5	Project teams are usually brought together to work in close physical proximity to each other	1	2	3	4	5
6	Project information is clearly evident in the work environment	1	2	3	4	5
7	Social gatherings and festivities associated with projects are held in the organization	1	2	3	4	5

C Project management staff (S)

1	Organization-wide training in project management	1	2	3	4	5
2	Formal processes/procedures are used, helping us to better manage our projects	1	2	3	4	5
3	Formal processes/procedures are used, but add little value	1	2	3	4	5

4	Formal processes/procedures are not used	1	2	3	4	5
5	Is there a formal process for selecting people to work in project teams?	1	2	3	4	5
6	The training is provided on an ad hoc basis as the need arises	1	2	3	4	5
7	There is formal process linking training to career development	1	2	3	4	5
8	The training is a mixture of both ad hoc and a formal process	1	2	3	4	5
9	My performance evaluation is built into the project management process of individual projects	1	2	3	4	5

D Project management policy and strategy (PS)

1	The benefits of project management are being promoted	1	2	3	4	5
2	A company-wide project management system with centralized control is being set up	1	2	3	4	5
3	Redefining of jobs	1	2	3	4	5
4	Organization-wide project management methods	1	2	3	4	5
5	Quality management system accreditation	1	2	3	4	5
6	Reduction in management layers	1	2	3	4	5
7	Total quality management	1	2	3	4	5
8	Policy of recognition for project-related work	1	2	3	4	5
9	Quality circles	1	2	3	4	5
10	Policy of employee involvement in decision making	1	2	3	4	5
11	Policy of recognition for developing skills in project-related work	1	2	3	4	5
12	Employee empowerment policy	1	2	3	4	5
13	Change in company ownership	1	2	3	4	5
14	Business process reengineering	1	2	3	4	5

E PM partnership recourses

1	Open two-way partnerships with customers exist	1	2	3	4	5
2	Open two-way partnerships with suppliers exist	1	2	3	4	5
3	Internal stakeholder	1	2	3	4	5
4	External stakeholder	1	2	3	4	5
5	Project sponsor	1	2	3	4	5

F PM life cycle process (PLC)

1	Conception/initiation of a project idea	1	2	3	4	5
2	Project selection/prioritization	1	2	3	4	5
3	Project start-up	1	2	3	4	5
4	Defining of benefits, goals, objectives	1	2	3	4	5
5	Planning time, cost, scope of work	1	2	3	4	5
6	Managing risk	1	2	3	4	5

7	Change management	1	2	3	4	5
8	Contract management	1	2	3	4	5
9	Monitoring and controlling a project	1	2	3	4	5
10	Closing down a project	1	2	3	4	5
11	Handover of project deliverables	1	2	3	4	5
12	People selection	1	2	3	4	5
13	Benefit management	1	2	3	4	5
14	Quality improvement	1	2	3	4	5
15	Performance review/monitoring	1	2	3	4	5
16	Configuration management	1	2	3	4	5
17	Do you use a model of the stages of project life cycle when managing projects	1	2	3	4	5

G Project management KPIs (KPI)

1	Client perception	1	2	3	4	5
2	Meeting specified project objectives	1	2	3	4	5
3	Smoothness of handover	1	2	3	4	5
4	Responsiveness to change	1	2	3	4	5
5	Cost effectiveness of work	1	2	3	4	5
6	Improvement in organizational capability	1	2	3	4	5
7	Growth of others	1	2	3	4	5
8	Own personal growth	1	2	3	4	5
9	Level of disruption to organization	1	2	3	4	5
10	Avoidance of non-benefit through early cancellation	1	2	3	4	5
11	Enabling of other project work	1	2	3	4	5
12	Personal non-financial rewards	1	2	3	4	5
13	Contribution to continuous improvement	1	2	3	4	5
14	Adherence to defined procedures	1	2	3	4	5
15	Degree of process innovation	1	2	3	4	5
16	Personal financial rewards	1	2	3	4	5

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