

Project Managers' Competencies in International Development Projects: A Delphi Study

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Abstract

Project Managers' (PMs) competencies are critical issues for international development projects (IDPs), and the success of IDPs is largely dependent on how prudently and effectively a PM manages the IDPs operations. So far, the topic of PMs Competencies is mainly explored in the private sector context using a survey-based research approach, and very few attempts have been made to examine the competencies of PMs in the IDPs sector. Accordingly, this study examines the PMs' competencies at each phase of the project life cycle (Initiation, Planning, Execution, Monitoring and Controlling, and Closing) by drawing on the sample of 15 PMs from the IDPs' sector by employing a Delphi method, which enables aggregation of experts' opinions in a more structured and systematic manner. Findings of this study proposed five of the most critical competencies within each phase of the project life cycle and ranked based on their relative importance, for example, leadership, communication, planning, innovation, motivation, etc. The findings contribute to emerging literature and bring new insights on project managers' competencies in the IDPs sector.

Keywords

competencies, project management, process group, project manager, developing countries, international development projects

Introduction

Donor agencies commonly use International Development Projects (IDPs) to aid in funding and collaborative services to developing countries (Crawford & Bryce, 2003; Hermano et al., 2013; Zetland, 2010). Such projects are financed by multilateral development agencies, such as the World Bank, the European Union, the United Nations Development Program, the Inter-American Development Bank, the African Development Bank, the Asian Development Bank; bilateral agencies including, the United States Agency for International Development (USAID), the French Cooperation, the Canadian International Development Agency (CIDA); and many organizations and departments of international cooperation established by former developed and industrialized countries (Ika, 2012).

The Organization for Economic Co-operation and Development (OECD) reported that development assistance reached a record high in 2013, where donors have spent USD134.8 billion in net official development assistance (Yamin & Sim, 2016). In addition, international aid programs are instrumental in facilitating developing and emerging countries to make real progress in health, agriculture, and education systems. For instance, during the

financial crisis of 2007 to 08, the Mongolian government was unable to provide quality education services to poor people. To address this issue, the Asian Development Bank supported Mongolia's Ministry of Education, Science, and Culture with a \$17 million grant to maintain the operational costs of their public schools, including support for the textbook purchase and teachers' salaries (Asian Development Bank, 2016).

To address economic growth and social development issues in developing countries, the demand for IDPs' delivery is continually increasing (Zhang et al., 2013). In Afghanistan, for example, since 2001, hundreds of billions of dollars have been spent on development activities, and many ID projects have been organized across the country (Shafiei & Puttanna, 2018). Approximately 82% of development assistance is

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estimated to be spent from the budget (Bizhan, 2018), mostly through IDPs (Shafiei & Puttanna, 2018). As a result of these interventions, some improvements have been made, especially in GDP growth, poverty reduction, education, life expectancy, child and maternal health, and infrastructure; however, these improvements are very small compared to the number of dollars spent in the country (Samim, 2016). Overall, the ID project failure rate is very high (Shafiei & Puttanna, 2018).

According to Zhang et al. (2013), the concerns and expectations of stakeholders have increased, particularly in terms of establishing clear and achievable project objectives, balancing the competing demands for quality, scope, time and cost, and managing projects in response to uncertainty. Consequently, many ID projects perform poorly. As argued by Ahsan et al. (2013), Alaloul et al. (2016), and Moradi et al. (2020a), only a competent project manager (PM) can successfully meet varied stakeholders' concerns and expectations. However, the lack of qualified project managers and low administrative capacity is a human factor related to IDP failure (Shafiei & Puttanna, 2018).

On the other hand, recruiting the right PM is a key challenge for IDPs (Project Management Institute, 2018). According to the Project Management Body of Knowledge's (PMBOK) guide, the PM is responsible for accomplishing project objectives (Project Management Institute, 2018). The PM's role is one of the most challenging jobs in any IDP because it requires a complex set of interpersonal and technical competencies to manage and coordinate various aspects of IDPs. Accordingly, it is widely acknowledged that the project's outcome depends on the PM (Alvarenga et al., 2019; Ballesteros-Sánchez et al., 2019; Blaskovics, 2016; Müller & Turner, 2007; Rodney Turner et al., 2009). Therefore, selecting a competent PM is one of the most important decisions for the project success (Meredith & Mantel, 2009).

While prior studies explored a range of PMs competencies in the private sector context (Brière et al., 2015), a dearth of research has looked at PMs competencies in the IDPs context. In 2020, Moradi and fellows researched collaborative construction projects and stated that project managers (possessing appropriate competencies) are among the most important players in this current work environment. In another research based on project critical success factors, Moradi et al. (2020b) also discussed the role of project manager competence and its importance in project success.

Some notable research contributions were made by Diallo and Thuillier (2004), Khang and Moe (2008), Bayiley and Teklu (2016), Boakye and Liu (2016), Orchard and Stringer (2016), and Fahri (2019) that focused on IDP success factors such as the beneficiary's satisfaction level toward generated services and goods, project document confirmation, project goals and objectives achievement, project completion within time and estimated cost, receiving a high national profile,

and developing a good reputation with donors, that are very much inter-connected with PMs' competencies. However, more precise research aspects such as searching for specific competencies of a PM during five project management phases or process groups (i.e., initiating, planning, executing, monitoring and controlling, and closing) are mostly overlooked in the extant literature.

Thus, the current study aims to bridge this knowledge gap by examining key PMs' competencies within each phase of the process group that influences IDP implementation. In this context, this study makes several theoretical and practical implications by advancing extant literature and value-adding to the ID projects. It explores what skills are required to turn a project manager into a competent project manager for ID projects in emerging and developing countries and the critical competencies required by a project manager at every phase of the process group to be successful. Also, it identifies key competencies within existing literature to build a theoretical point for discussion, which resulted in providing a general overview of the project manager's competencies.

A later study used the Delphi method because Delphi is an extensively used and accepted method for attaining convergence of views and beliefs of experts and professionals (within certain topic areas) concerning real-world knowledge. The results revealed a concise list of PMs Competencies at different phases of project management. The study will provide insights for managers and organizations on the training of international project management practitioners by developing essential competencies which do not only help to enhance individual PMs Performance but also improve the chances of successful IDPs' implementation.

Literature Review

Project Manager Competencies

Project management competence has been defined as a Meta ability to integrate a combination of technical skills, cognitive aptitude, and interpersonal ability (Pant & Baroudi, 2008), which directs activities during projects from initiation through closing to achieve expected outcomes (Bredillet et al., 2015). Prior research has examined a range of PM competencies in varied contexts (see Appendix). In project-based organizations, the competencies of PMs have been categorized into integrative and functional dimensions (Danneels, 2002; Verona, 1999). Each type is further divided into three stages of critical competencies, individual, collective, and organizational. Anvari et al. (2016) identified staff skills, working style and results, attitude, and knowledge as important competencies at the individual level.

The general competency standards are broadly adopted based on performance instead of knowledge (Crawford, 2005; Hanna et al., 2016; Moradi et al., 2020a). The standards are; the International Project Management Association's (IPMA)

standards, the Project Manager Competency Development (PMCD) Framework by Project Management Institute (PMI) based on PMBOK Guide (Project Management Institute, 2008), and National Competency Standards for Project Management by the Australian Institute of Project Management (AIPM). PMI model, for instance, presents a development path from a novice project manager to a competent and experienced project manager based on acquiring competencies from informal or formal development activities (Project Management Institute, 2017). These competency standards have been broadly used to evaluate a project manager's role with the assumptions that: (i) managerial practices are universal and context-independent, and (ii) project manager's performance can be led by certified PMs based on Competency Standards (Chen et al., 2008; Crawford, 2005; Hanna et al., 2016).

Nonetheless, learning and developing PMs' competencies is a more complex and multi-dimensional process (Egginton, 2012; Rolstadås et al., 2011; Winter et al., 2006); since it requires dealing with three at least domains in precise. These important domains include the development of critical thinking to deal with complexity (adaptableness, collaborative skills, multi-disciplinary, and critical thinking), create flexible parameters to manage projects (particularly interpersonal skills compared to technical skills, estimating/scheduling skills, planning, direction, problem-solving skills, communication, working with teams), and project managers preparation for engaging within the background of real-life projects (Ramazani & Jergeas, 2015). These areas indicate that PMs have a broader role than merely executing tasks such as a change agent (Analoui, 1989), a leader or a decision-maker (Ika & Hodgson, 2014).

Thus, to bridge the mentioned knowledge gap, it is first important to know what skills are generally required to turn a project manager into a competent one. Prior research has examined a range of PM competencies in varied contexts. Table 1 summarizes the project managers' competencies considered most by the researchers. However, its extended version is presented in Appendix, detailed with the overview of the project manager's competencies (125 in number) from 2009 to 2019, how every researcher contributed to research, and time to time additions.

ID Project Managers' Competencies

The competence of project managers is a vital success factor for international projects (Khang & Moe, 2008; Li et al., 2020). According to Ika and Donnelly (2017), project managers should use their abilities to produce a successful international capacity building project. According to Lei et al. (2017), understanding foreign technical standards can help with international project performance. It may be stated that project managers must possess sufficient skills to ensure project success in a highly complex and uncertain environment (Li et al., 2020).

Table 1 identifies key competencies to build a theoretical point for discussion. As mentioned earlier, a dearth of research has looked at PMs Competencies in the IDP context. Perhaps, this is due to the complicated nature of IDP processes. As observed by Ahsan and Gunawan (2010), IDPs' processes are complicated and often involve a range of internal and external stakeholders groups (e.g., a host country, financial institutions, donor or lending agencies, clients, project coordination unit, government agencies, as well as a large number of contractual workers who complete the physical execution of most of the project activities) (Ahsan & Gunawan, 2010). IDPs' performance depends on each of the contributing parties with multiple objectives and diverse cultures. The client is usually the host country's institution or sectoral ministry who will officially represent all recipients participating in the evaluation phase of the project and perform close monitoring of the project execution process (Ahsan & Gunawan, 2010; Golini et al., 2015). Most donors have sole involvement in the project development and identification process, resulting in stakeholders feeling left out (Golini et al., 2015; Youker, 1999).

More precise, the research aspects such as specific competencies of a PM during process groups (i.e., initiating, planning, executing, monitoring and controlling, and closing) are overlooked in the existing literature. As a result, an advanced research emphasis is required to explore the competent project manager's skills for the IDPs, specifically at every phase of the process group. As suggested by Brière et al. (2015), the competencies of PMs are most significant during the transitions between project stages. It also acts as an enhancement, not a replacement for organizational competencies (Loufrani-Fedida & Missonier, 2015).

Varajão et al. (2017) described the process as a set of activities interactive or interrelated through which inputs are transformed into outputs. The PMBOK Guide describes the "process" as a set of interconnected activities and actions executed to accomplish a specific objective (Newton, 2015). The set includes initiating, planning, executing, monitoring and controlling, and closing. Initiating is the approval of a project and defining the preliminary scope of any new project, whereas planning describes the project and mature scope of the project, development of the project management plan, and identification and scheduling of project activities. Execution is implementing the defined project management plan to achieve the project's objectives within the project's scope. The extent of adequate project manager competencies can successfully determine their ability to implement projects (Krchová, 2019). Monitoring and controlling focused on comparing the actual progress with a performance planned in the planning phase, examine variances, evaluate factors affecting the process, assess possible options, and implementation of appropriate remedial action as required. Closing is a critical but sometimes overlooked project phase, during which project managers serve as project team leaders (Wen & Qiang, 2019) although this phase focuses on the formal

termination of the project and transfers the finished product to customers or to close an abandoned project (Ozguler, 2016; Project Management Institute, 2008, 2013; Sanghera, 2014; Varajão et al., 2017). In the last few years, several guides for good practices have been developed containing techniques and processes covering every aspect of managing the project from the initiation phase until closing (Varajão et al., 2017). Although these processes are not separate, they interact and overlap one another. Change in any factor will affect other factors. Therefore, for the successful delivery of the project, a good project manager keeps the balance among all processes (Project Management Institute, 2008).

We conducted a Delphi study to answer the research question: What are the critical competencies a project manager requires at every phase of the process group to succeed? The Delphi method relies on expert's experience and knowledge, which helps to obtain the research goal by reaching a consensus on a specific question via a structured process of iterative questionnaires with controlled feedback. (Keil et al., 2013; Okoli & Pawlowski, 2004; Paré et al., 2013; Schmidt, 1997). Turoff and Linstone (2002) defined the Delphi method as: "a method for structuring a group communication process so that the process is effective in allowing a group of individuals as a whole to deal with a complex problem."

To accomplish this "structured communication," the following section has provided; some feedback of individual contribution of information and knowledge; some assessment of the group judgment or view; some opportunity for individuals to revise views; and some degree of anonymity for the individual responses'.

Research Methodology

Delphi method involves decision-making within-group through iterative feedback, opinions of an expert panel, and a consensus. This method is used in various disciplines, which include public administration (Preble, 1983), social work (Raskin, 1994), operations management (Malhotra et al., 1994), and information systems (Addison, 2003; Doke & Swanson, 1995; Nevo & Chan, 2007). We decided to use Delphi, making this research technique more vigorous and desirable compared to a survey method that only allows information to be collected from respondents only once (Seuring & Müller, 2008).

Delphi method begins with the expert panel selection, where every panelist is asked to give their input regarding the problem area. These inputs are gathered and then assembled into a list of unique items. Once items are gathered, they are presented back to the panelists to rank them accordingly. Next, each item's mean rank is calculated and presented back to the panelists to compare their original and mean rankings. This process continues until the required results are acquired, and group consensus is reached.

The Delphi technique is a method of research using survey techniques applied to very compound areas to obtain a

consensus among experts via a series of intensive questionnaires. To develop the questionnaire, one hundred and twenty-five (125) competencies were identified from existing literature (Appendix) and discussed with professional project managers face-to-face. The final list of competencies was presented to respondents during interviews. Experts were selected with a minimum of 5 years' experience in IDPs. Each individual was interviewed at their respective office, and the time duration was between 0.5 and 1 hour. Furthermore, every respondent agreed on the comprehensiveness and effectiveness of the proposed competencies. Respondents were also asked to review and distinguish competencies within process groups.

The survey was divided into two main sections. In Section 1: there are 12 queries related to the respondent's profile: name, age, gender, contacts, experience, and workplace. In Section 2: the first six questions included the respondent's perception of the project and its process; the next five questions about assigned competencies within five process groups; last three for respondents' insight of project success.

Figure 1 presents an overview of the Delphi study. The Delphi method is intended to get the most reliable and valid consensus from a panel of specialists by a chain of questionnaires combined with controlled views or feedback, and outcomes of each round led to the series of rounds (Alaloul et al., 2016; Skulmoski et al., 2007). A pilot study was conducted to test the comprehensibility and suitability of the questionnaire. Various researchers recommend pilot study for ambiguities, working out any procedural problems or comprehensions and improving overall survey (Gordon, 1994; Hung et al., 2008; Mitchell, 1991; Skulmoski et al., 2007). Piloting also allows participants to gather their thoughts on the topic and bring anything else forward that they may wish to discuss as part of the Delphi process (Belton et al., 2019; Hasson et al., 2000; Toma & Picioreanu, 2016). PM competencies identified from the existing literature were discussed with project management experts to form interview questions. The first draft of the questionnaire consisted of six questions, was reviewed by two experts (i.e., an academician teaching project manager and a professional project manager with working experience in ID projects). After the final review, the questionnaire consisted of 14 open-ended questions. Furthermore, everyone on the expert panel has their own subjective opinions, making it more reliable than the statements of individuals, and accordingly validates the results. To test the reliability scale and examine the scale, internal consistency and mean score was used. To measure the reliability of the test, results were compared with a 3.0 mean score (Alaloul et al., 2016). Various studies confirmed that a mean score above 3.0 is sufficient to achieve an acceptable and reasonable consensus (Alaloul et al., 2016; Badghan et al., 2020; de Villiers et al., 2005; Keil et al., 2002; Ludwig, 1994; Wang et al., 2021).

The Delphi method was intended to minimize bias in responses (Alaloul et al., 2016), and the number of rounds

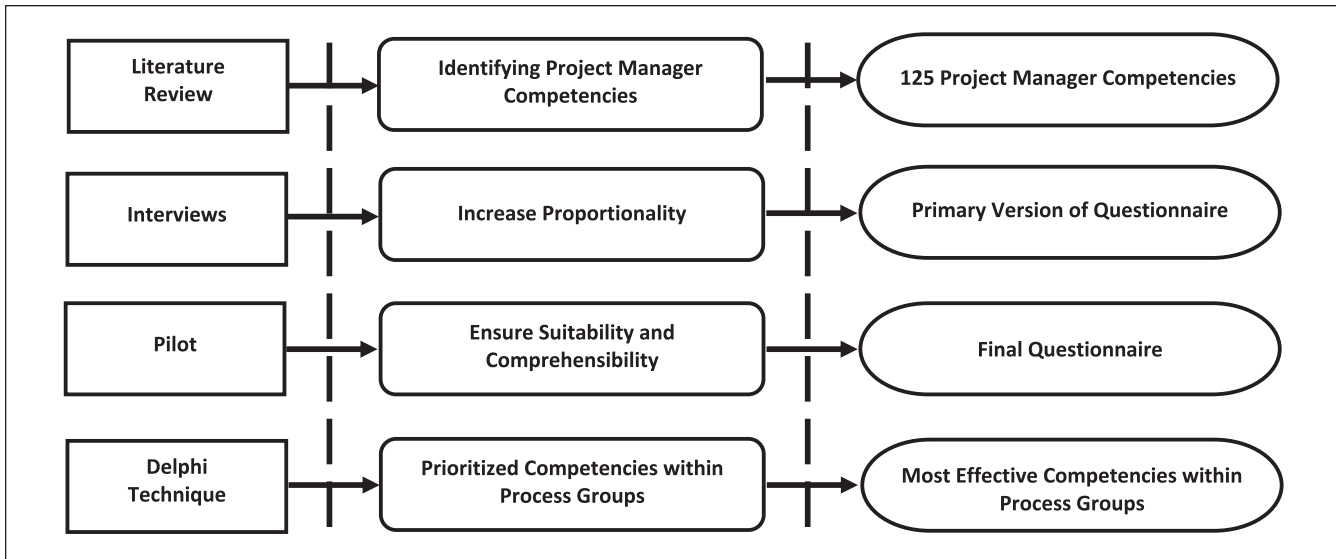


Figure 1. Delphi process of the study.

could vary between two and seven (Alaloul et al., 2016; Hasson & Keeney, 2011; Skulmoski et al., 2007). However, Cyphert and Gant (1971), Brooks (1979), Ludwig (1994), Custer et al. (1999), Hasson et al. (2000), Hsu and Sandford (2007), Trevelyan and Robinson (2015), Alaloul et al. (2016), and Drumm et al. (2021) point out that three-round are often sufficient to collect the needed information and to reach a consensus in most cases with involving the number of respondents between 10 and 30. For this reason, the author applied the process of the three rounds of Delphi, which are detailed in the following sections:

Selection of Expert Panel

Carefully selecting the panel of experts is the key to success in the Delphi technique. Expert panels are usually based on their quality, knowledge, and experience regarding the subject matter rather than quantity, while, as documented by Ludwig (1994, p. 63), “in most of the Delphi studies researchers have used respondents between 15 and 20.” Consequently, the decision about panel size is pragmatic and empirical, taking factors such as expense and time into consideration. While the guidance on the number of members is not definitive, Hasson and Keeney (2011) suggested the panel can consist of 10 to 15 professionals if their professional background is similar in terms of the research subject. However, if various professional groups’ involvement in a study, more respondents are expected to be required. Thus, 15 expert respondents were chosen as the sample size, professionals representing several IDP disciplines, including private and public sectors (see Table 2). The panelists selected for the Delphi technique in this study met the criteria of having adequate work, knowledge, and experience in IDPs or is

currently working in organizations within the sector. Additionally, all the panelists selected for this study were PMs by profession with more than 5 years’ experience working with advanced academic qualifications.

The Delphi method’s procedure is shown in Figures 1 and 2 in the form of flow charts. In Round 1, respondents were asked to form a list of the competencies required by PMs at every stage of the project process group based on their perception. In Round 2, consolidated results of Round 1 were provided to the respondents, who were asked to rate all competencies within the project process group with the help of a five-point Likert scale. All factors with less than 3.0 mean scores were excluded. Obtained data were analyzed with the help of the SPSS software (Alaloul et al., 2016; Ludwig, 1994; Skulmoski et al., 2007).

Round 1: Listing of Competencies Within Process Groups

The Delphi technique in the primary round is significant and was performed for the process of exploration. Each expert required a list of the competencies at every project process stage group based on their knowledge and experience. Each expert was provided with a list of general PM competencies gathered from existing literature to keep them on track. Once the first round was completed, responses were carefully analyzed, and a list was formed consisting of competencies at every stage of the project process group. The list of competencies at every stage of the project process group was compiled, including Initiation=27, Planning=24, Executing=27, Monitoring and Controlling=22, Closing=12 based on the experts’ perception and practical knowledge.

Table 2. Respondents' Profile.

ID	Experience (years)	Experts' role	Current organization	Number of projects involved (from start to end)
Respondent 1	23	Portfolio Manager	UKAID	9
Respondent 2	05	Project Director	Planning and Development Department of Pakistan	3
Respondent 3	10	Manager Planning and Services	NADRA	10
Respondent 4	10+	Sourcing Specialist	Telenor	20
Respondent 5	35+	CEO	Syscomp International (Pvt.) Ltd.	10
Respondent 6	10	Economist	The World Bank	5
Respondent 7	40	Project Consultant	The World Bank	5
Respondent 8	10	Project Manager	NADRA	9
Respondent 9	05	Project Manager	USAID	3
Respondent 10	10	Planning Engineer	Descon	3
Respondent 11	14	Project Control Manager	Descon	5
Respondent 12	08	Project Consultant	UKAID	6
Respondent 13	06	Project Director	Islamic Development Bank	5
Respondent 14	11	Program Manager	Planning and Development Department of Pakistan	5
Respondent 15	13	Project Manager	China-Pakistan Economic Corridor	7

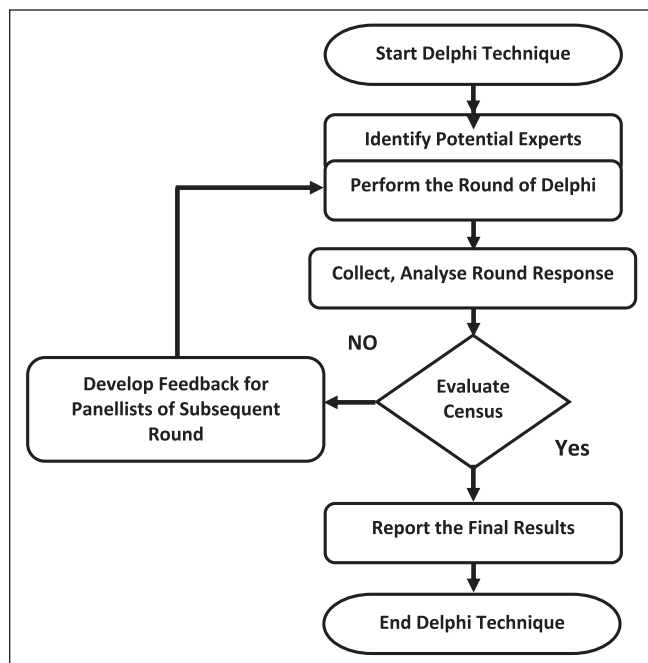


Figure 2. Delphi technique flow chart.

Round 2: Obtained Ratings by the Experts

In Round 2, consolidated Round 1 was provided to the respondents, who were asked to rate the narrowed competencies within the project process group. For this purpose, a Likert scale of five points was used, which ranged from 1 “not important,” 2 “less important,” 3 “moderate,” 4 “important,” and 5 “very important.” 3.0 mean score was

adopted as a cut-off criterion. Data collected in this phase were analyzed and calculated with the mean score. Experts were asked to rank the previously driven competencies within the process groups. According to the mean score, factors with less than 3.0 mean scores were rejected. Considerable agreement between the respondents was achieved. Only the measure that was observed as moderate remained for the re-evaluation in the third round, so the number of factors removed from Initiation = 17, Planning = 14, Executing = 15, Monitoring and Controlling = 13, Closing = 4.

Round 3: Re-Assessment and Final Ratings

In Round 3, based on consolidated outcomes, panelists were asked to re-assess their previous ratings from Round 2, which consisted of a new list of competencies at every stage of the project process group (Initiation=10, Planning=10, Executing=12, Monitoring and Controlling=9, Closing=8). Ratings were re-evaluated and re-adjusted by the majority of the panelists. Data collected in this phase were also analyzed and calculated with the mean score. As in Round 2, mean score factors with less than 3.0 were rejected.

Results

Delphi Survey Ranking

The results are based on the responses gathered in three rounds from 15 respondents representing professionals from several disciplines related to IDPs, including private and public sectors. These experts represented an extensive range of IDP professionals in Pakistan and provided an unbiased

Table 3. Final Ranking of Factors.

	Process groups				
	Initiation	Planning	Execution	Monitoring and controlling	Closing
Representing competences (in order of significance)	Strategic vision	Defining scope	Directing	Variance analysis	Reconciliation
	Initiative	Planning	Leadership	Controlling	Documentation
	Leadership	Leadership	Coordination	Monitoring	Delivery
	Realistic	Cost planning	Resource management	Analytical skills	Acceptance
	Communication	Strategic planning	Negotiating	Performance management	Closure

view. The majority held high positions in their respective organizations and were academically qualified. The analysis in Table 3 showed the results of the data from the Delphi survey with the mean of each factor above 3.0. All factors with a mean greater than 3.0 were considered for the ranking.

Responses from the third round represented the means of factors that signified a consensus among all panelists on competencies required by PMs within process groups for the performance of IDPs in Pakistan.

Analysis and Discussion

This study revealed PMs' five most required competencies within process groups (initiation, planning, execution, monitoring and controlling, and closure) (Table 3).

In the initiation phase, strategic vision is the highest-ranked competency by the PMs, followed by initiation, leadership, realistic, and communication, respectively. This result concurs with the work of Brière et al. (2015), who suggested that strategic vision provides an overview of goals and objectives in a specific time for the future with the support of strategies and to achieve milestones. Strategic vision enables the prediction of future results (Skulmoski & Hartman, 2010). To achieve the goals of any project, a PM should be initiative (Swan et al., 2000), leadership-oriented (Brière et al., 2015), realistic (Shastri et al., 2017), and practical in their approach. Skulmoski and Hartman (2010) noted that the most significant communication skills are questioning effectively or feedback generation and listening skills during the initiation phase. Moreover, effective communication skills are important for every PM to transmit the required information crucial to achieving organizational goals and maintaining competitiveness (McHenry, 2008).

The planning phase defines the scope as the most important competency, followed by planning, leadership, cost estimation, and strategy. McHenry (2008) described defining the scope as the foundation of most aspects leading toward failure or success. Correspondingly, Keil et al. (2013) stated that PMs require planning skills because when project plans are drawn up, details must be adjusted

as required. After approval, to continue with planning, the PM requires leadership competencies to be influential and make decisions to move the project from the planning phase to the execution phase (Skulmoski & Hartman, 2010). In the same vein, Doloi (2011) viewed that PM cost estimation has great significance as it provides considerable information for making decisions, scheduling, cost and managing resources. While from the initiation phase to the planning phase, projects attached to the strategic plan and carrying specific goals considerably elevates the project management value to an imperative investment for any organization (Golob, 2002; Medina & Medina, 2014; Torfi & Rashidi, 2011).

Directing is considered the most important competency at the execution phase, followed by leadership, coordination, resource management, and negotiation. Sanghera (2014) stated that managing and directing a project at the execution phase is the process to implement the project plan developed earlier in the planning phase. Directing the project at execution includes supervising various project interfaces technically and organizationally for the project to be smoothly executed. While moving from the planning phase to the execution phase, leadership (Skulmoski & Hartman, 2010), coordination (Alaloul et al., 2016), resource management (Androniceanu et al., 2015), and negotiation (Skulmoski & Hartman, 2010) are also significant because at this stage PM has to deal with various internal and external stakeholders.

For the monitoring and controlling phase, variance analysis is considered the essential competency by respondents, followed by controlling, monitoring, analytical skill-building, and performance. The technique to determine the cause and degree of difference among actual or baseline performance is variance analysis. According to Project Management Institute (2008), during the monitoring and controlling phase, performance measurements are used to evaluate the degree of difference from the original scope baseline and take the decision whether preventive or corrective actions are needed or not. A PM ensures the project progresses according to the plan by controlling the scope, timeline, resources, expenditure, and quality (Jabar et al., 2013). Hwang and Ng (2013) suggested that by functioning directly with various other

professionals, a PM must plan, schedule, systematize, and control the project because it is their responsibility to complete the project within the recognized time and cost constraints. A study by Kamau and Mohamed (2015) pointed out that monitoring is also the leading factor of project success. Likewise, analytical skills building (Richards, 2007) and performance management (Helden et al., 2012; Hwang & Ng, 2013; Poister, 2008) can enhance the likelihood of success in any project.

In the closing phase, reconciliation is the highest-ranked competency, followed by documentation, competency, acceptance, and closure. At the end of the project, documentation must be delivered with all other reports (Project Management Institute, 2008). While project practitioners routinely ignore the closing process group (Aziz, 2015; Wen & Qiang, 2019), it is considered important by sampled respondents in this study.

IDPs, delivered in emerging markets, such as Pakistan, may have institutional, infrastructural and economic challenges that increase the level of environmental uncertainty. This indicates that project owners or sponsors would seek PMs with competencies to manage and deal with emerging uncertain situations. From previous research, characteristics such as adaptation to uncertainty (Omran et al., 2012), creativity (Trivellas & Drimoussis, 2013), ability to deal with ambiguity (Loufrani-Fedida & Missonier, 2015), and knowledge of the unpredictability of complex environments (Silvius, 2016) would be considered valuable by these managers. Lastly, host countries may have different reporting and accountability standards, and legal systems may be slow to act, so trust is important in managing relationships. It would, therefore, be assumed that trust-building competency such as influence (Zhang et al., 2013) and transparency (Mesly, 2015) would also be important. Additionally, PMs should be ethical and have strong interpersonal skills to succeed while working with diverse stakeholder groups (Brière et al., 2015; Omar & Fayek, 2016; Trivellas & Drimoussis, 2013). It is somewhat surprising that these competencies were not identified as important by respondents.

Further, since host countries may have different reporting and accountability standards and legal systems may be slow to act, trust is an important factor in managing relationships. It would, therefore, be assumed that trust-building competencies such as influence (Zhang et al., 2013) and transparency (Mesly, 2015) would be important. Project Managers should be ethical (Brière et al., 2015; Omar & Fayek, 2016; Trivellas & Drimoussis, 2013) and have strong interpersonal skills to work with diverse stakeholder groups. Therefore, it is somewhat surprising that respondents did not identify these competencies as important. These outcomes suggest that project management in this setting may be viewed as a

deterministic, task-driven process required to respond to sponsor and community requirements.

Conclusion

This study has investigated the PMs' competencies required at every process group of the project life cycle using the Delphi technique, a systemic method to rank order these competencies in terms of their significance. The obtained results provide the basis for the following conclusions concerning the collaborative construction projects: First, this study expands the project management body of knowledge by identifying key competencies required by PMs to deliver IDPs successfully. Second, from a methodological perspective, this study revealed a concise list of PMs Competencies by employing a Delphi method that uses a structured approach to aggregate PMs' competencies at different phases of project management. Third, from a managerial perspective, our study findings could help international development organizations and PMs to develop the essential competencies which do not only help to enhance individual PMs Performance but also improve the chances of successful IDPs' implementation.

Since these findings are originated from the self-evaluation of PMs, which provide new insights for project managers of ID projects in terms of possessing the competencies necessary for their superior performance and their managers to be aware of project managers' core and supportive competencies in ID projects. This study can be used as a guideline/measure/tool to highlight their soft competencies not only by practitioners but also by future PMs. It will provide PMs with a better understanding of requirements and competencies at every phase of ID projects. Additionally, study findings enable project managers to develop such competencies that are essential for them and can help them enhance their performance.

This study also offers assistance for human resource personnel in the recruitment process of PM by providing a list of competencies as a systematic way to assess project management capabilities. Furthermore, it also provides managerial insights for individuals and organizations about the career and competence development of project managers in the context of ID projects.

There are some limitations to this study. The study sample is limited; it only consists of 15 experts drawn from a single country. In addition, the study only portrays the findings from the general perspective of practitioners of IDPs, not within any specified sector. Thus, in future research, the outcomes of the study could be applied to other developing countries with different data analyses to obtain cross-cultural differences between Pakistan and other developing countries.

Table IA. A Detail Summary of Literature Review on Project Managers' Competencies.

Sr	Competencies	Hashim et al. (2011)	Fisher (2011)	Gebril and Wah (2012)	Madter et al. (2012)	Trivellas and Drimoussis (2013)	Hwang and Ng (2013)	Zhang et al. (2013)	Omoredde et al. (2013)	Keil et al. (2013)	Jaocha et al. (2014)	Ramazani and Jergas (2015)	Brière et al. (2015)	Lijkamaa (2015)	Loufrani-Fedida and Missonier (2015)	Bredillet et al. (2015)	Mesy (2015)	Mansor et al. (2016)	Anvari et al. (2016)	Silvius (2016)	Arroyo-Cañada et al. (2016)	Omar and Fayek (2016)	Dziekoński (2017)	Moradi et al. (2020a)
1	Team management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	Control and monitoring	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	Transparent																							
4	Leveraging diversity												✓											
5	Analyzing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6	Planning	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7	Management of inter-project processes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8	Work processes																							
9	Safety management																							
10	Documentation										✓													
11	Interdependency management	✓									✓												✓	
12	Scope management									✓	✓												✓	
13	Organizational savvy									✓	✓												✓	
14	Decision making	✓								✓													✓	
15	Credibility																						✓	
16	HR management																						✓	
17	Self-control																						✓	
18	Commitment									✓													✓	
19	Seeking consensus									✓													✓	
20	Assessment	✓								✓													✓	
21	Problem solving	✓								✓													✓	
22	Fair	✓								✓													✓	
23	Communication	✓								✓													✓	
24	Innovation									✓													✓	
25	Flexibility									✓													✓	
26	Understanding others									✓													✓	
27	Strategic thinking	✓								✓													✓	
28	Motivation	✓								✓													✓	
29	Doing quickly									✓													✓	
30	Centralization									✓													✓	
31	Reporting									✓													✓	
32	Self-assessment									✓													✓	
33	Project knowledge									✓													✓	
34	Training and development									✓													✓	
35	Coaching and succession planning									✓													✓	
36	Productive									✓													✓	
37	Product knowledge									✓													✓	
38	Sustainability									✓													✓	
39	Administrative and management process	✓								✓													✓	

(continued)

Table IA. (continued)

Sr	Competencies	Hashim et al. (2011)	Fisher (2011)	Gebriil and Wah (2012)	Madter et al. (2012)	Trivellas and Drimoussis (2013)	Hwang and Ng (2013)	Zhang et al. (2013)	Omorede et al. (2013)	Keil et al. (2013)	Jabocha et al. (2014)	Ramazani and Jerges (2015)	Brière et al. (2015)	Liikamaa (2015)	Loufrani-Fedida and Missonier (2015)	Bredillet et al. (2015)	Mesly (2015)	Mansor et al. (2016)	Anvari et al. (2016)	Silvius (2016)	Arroyo-Cañada et al. (2016)	Omar Fayeek (2016)	Dziekoński (2017)	Moradi et al. (2020a)
40	Emotional intelligence	✓												✓										
41	Building trust	✓	✓														✓							
42	Cultural awareness	✓	✓																					
43	Leadership	✓		✓		✓		✓		✓		✓		✓										✓
44	Business environment			✓		✓		✓						✓										
45	Change management			✓				✓																
46	Critical thinking			✓																				
47	Organized			✓																				
48	Achievements oriented			✓																				
49	Responsible		✓																					
50	Pragmatic		✓																					
51	Sustained energy and enthusiasm			✓				✓																
52	Organizational experience	✓						✓		✓														
53	Ambiguity			✓																				
54	Self-awareness and regulation			✓																				
55	Charismatic and inspirational			✓																				
56	Investigating			✓																				
57	Intuitive and sensitive			✓																				
58	Closing			✓																				
59	Integrity			✓																				
60	Presentation/public speaking			✓																				✓
61	Conflict management			✓																				✓
62	Aspiration			✓																				✓
63	Analytical thinking			✓																				✓
64	Negotiation			✓																				✓
65	Language proficiency			✓																				✓
66	Ability to manage legal issues			✓																				✓
67	Multitasking			✓																				✓
68	Good listener			✓																				✓
69	Insightful			✓																				✓
70	Coordination			✓																				✓
71	Strategic management			✓																				✓
72	Goal attainment			✓																				✓
73	Quality management			✓																				✓
74	Estimation			✓																				✓
75	Initiative			✓																				✓
76	Organizational commitment			✓																				✓
77	Intellectual			✓																				✓
78	Relationship management			✓																				✓
79	Time management			✓																				✓

(continued)

Table IA. (continued)

Sr	Competencies	Hashim et al. (2011)	Fisher (2011)	Gebriil and Wah (2012)	Madter et al. (2012)	Trivellas and Drimoussis (2013)	Hwang and Ng (2013)	Zhang et al. (2013)	Omoredde et al. (2013)	Keil et al. (2013)	Jacho et al. (2014)	Ramazani and Jergas (2015)	Brière (2015)	Liikamaa (2015)	Loufrani-Fedida and Missonier (2015)	Bredillet et al. (2015)	Mesly (2015)	Mansor et al. (2016)	Anvari et al. (2016)	Silvius (2016)	Arroyo-Cañada et al. (2016)	Omar Fayek (2016)	Dzrękoński (2017)	Moradi et al. (2020a)
80	Crisis management																							
81	Cost management		✓						✓	✓	✓											✓		✓
82	Risk management		✓						✓	✓	✓											✓		✓
83	Attitude			✓																	✓			
84	Maturity			✓																	✓			
85	Interpersonal/intrapersonal management	✓		✓					✓													✓		✓
86	Stakeholder management																							
87	Assertiveness				✓																	✓		✓
88	Authority				✓																	✓		✓
89	Conceptual thinking				✓																			
90	Value management					✓																		
91	Relaxation					✓																		
92	Creativity					✓																		
93	Results orientation					✓																		
94	Efficiency					✓																		
95	Optimism					✓																		
96	Reliability					✓																		
97	Ethics					✓																		
98	Consultation					✓																		
99	Technical competencies	✓		✓																				
100	Human behaviour							✓																
101	Stress management							✓																
102	IT skills							✓																
103	Collaboration							✓																
104	Project priority							✓																
105	Empathy	✓		✓				✓																
106	Influential							✓																
107	Directing							✓																
108	Customer service orientation							✓																
109	Seeks opportunities to improve																							
110	Empowerment								✓															
111	Sense of humour								✓															
112	Patience								✓															
113	Self-management																							
114	Self confidence		✓																					
115	Persistence																							
116	Cooperative																							
117	Knowledge thinking																							
118	Capacity building																							
119	Attention to detail																							
120	Procurement																							
121	Adaptability																							
122	Multi-disciplinary management																							
123	Resource management		✓																					
124	Courteous																							
125	Networking			✓																				

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