Artigos

The project manager's competencies at the mobile context of project management

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Abstract

Different organizations are adopting work mobility. With regard to projects context, mobility changes interaction processes and emphasizes skills required from project managers. Considering this scenario, we carried out a survey by questionnaire with 114 project managers, to investigate how mobility has been changing project management and the inherent project manager competencies in this environment. Triangulation and pattern combination were the basis for the analysis, and results suggest that mobility is benefited by the context of projects, by highlighting that commitment, maturity, experience, and ability to use technologies are critical skills for project managers working remotely.

Keywords: Work Mobility; Mobile Information Technologies [MIT]; Project Management; Competencies of Project Managers.

1   Introduction

Mobile work seems to be more and more imperative, given the flexibility, ease, and agility required for the interaction between people and professionals (Besseyre des Horts, Isaac, & Leclercq, 2006; Hosseini, Zuo, Chileshe, & Baroudi, 2013; Schumacher, 2014). Likewise, elements such as the concern about cost reduction for office leasing and the attraction and retention of potential human resources, through the provision of a better quality of life to these professionals, foster the flexibility of work models (McMahon & Pospisil, 2005; Timms *et al.*, 2015).

In project management, the structuring of the mobile teams brings new forms of interaction and collaboration and may create new concerns and require new competencies. A project involves and affects many people, including those that do not work close to others; for this reason, it must be carried out in a coordinated, specialized and shared way, ensuring the necessary integration of related parties and compliance with deadline, quality, and budget (PMI, 2017).

This context indicates that in project-based organizations, project management activities themselves can lead to interaction conflicts, need for specific abilities or greater emphasis on particular knowledge, skills and attitudes, both for the project manager and his/her team, and for the organization (Rabechini, 2005; Kerzner & Kerzner, 2017; PMI, 2017; Weimann, Pollock, Scott, & Brown, 2013; Purvanova, 2014). By reflecting on work mobility in the context of project management, we can infer that it can potentially remodel traditional processes of project management, introduce new features or elements to these processes, as well as change (or put more emphasis) on the demanded competencies of project managers who choose work mobility.

Thus, based on the reflection about the characteristics of work mobility, the main elements of project management, and the competencies that may stand out in the mobile context, this study investigated how mobility has been changing project management, and the inherent project manager competencies. To do this, we collected data from 114 project managers through a questionnaire. We analyzed data through triangulation of evidence and standard combination, and results indicate that work mobility is benefited by the project management processes, being intrinsic to this context. They also emphasize commitment, maturity, previous experience and expertise in using technologies as part of the core competencies for loosening the workplace of project managers.

2   Work mobility and mobile information technologies

Work mobility is only possible with appropriate technology (Weimann *et al.,* 2013; Martinic, Fertalj, & Kalpic, 2012). Innovations in communication tools increased the performance of computing devices, and easy access to data and voice networks increasingly incorporate technology into people's daily lives (Lyytinen & Youngjin, 2002) and foster the expansion of work mobility, although there is little perception of it. It is the ubiquitous computing, which is omnipresent and inseparable, as Weiser (1991) described.

According to Fontana and Sørensen (2005), the accelerated development of mobile services occurs both through the perspectives of developers and of users and operators of these technologies, in fast life cycles, with more frequent and repeated interactions. The authors called this effect 'hyper-interactive innovation', which uses the influence of networks on both sides (users and providers) to shape the development of mobile services.

In mobile work, information exchange and communication are strongly supported by electronic devices (Sørensen, 2011; Weiser, 1996; Hosseini *et al.*, 2013; Weimann *et al.*, 2013), and though new dimensions of interaction (Kakihara & Sørensen, 2001); this context transforms work relationships, and changes the way professionals communicate and collaborate (Sørensen, 2011), more and more through virtual work structures (Saccol & Reinhard, 2007).

Saccol, Reinhard, Schlemmer, and Barbosa (2010) observed that the availability of appropriate technologies is an essential condition to facilitate, for example, learning in the mobile organizational context. For the authors, those involved in processes of learning, mobility, and capacity building often replace enthusiasm by frustration, if they face technological or ergonomic limitations of mobile devices. To Vartiainen (2008), in mobile work, it is essential to know how to use appropriately Mobile Information Technologies (MITs), as well as to have social abilities in

order to be effective, even in an environment where more people are served through media interactions.

Mobility brings new organizational and individual challenges. One relates to work management since mobile workers with more independence and autonomy can decide when to start and finish their work, thus needing to strengthen their capacity of organization and self-management (Vartiainen, 2008). Other challenges are also part of this context, such as situational, social and cultural factors that may affect work, mainly done through the use of electronic media (Riesman, Glazer & Denney, 1950; Hall, 1976; Jarvenpaa & Lang, 2005; Sørensen, 2011); the interrelationship and overlapping of roles that invariably cause decision conflicts (Kakihara & Sørensen, 2001; Jarvenpaa & Lang, 2005); and more concern on how to keep privacy and safety of remotely shared information (Jarvenpaa & Lang, 2005).

In short, there is a convergence of views about the ubiquity of MITs, their vital character when it comes to remote interactions, as well as the strong expansion of work mobility, its benefits, and challenges, both organizational and personal.

2.1 On project management

In general, a project is a written and/or graphical representation of stages for the achievement of an enterprise, with predefined time, resources and scope (Dinsmore *et al*., 2009; PMI, 2017). Within organizations, a project refers to a temporary effort to create a single product, process, service or result (PMI, 2017), whose final delivery will often be related to strategic decisions for leveraging the business, an attempt to solve a problem or to comply with a new legal regulation. In the temporary and unique effort of a project, people - project managers and stakeholders - carry out and control the plan and the coordination of activities (Rabechini, 2005).

There are issues that deserve attention in the project-based organizational environment. Markgraf (2015) mentions at least three potential problems: 1) focus on projects can bring isolation, since the project team is quite self-sufficient and oriented to go through the work stages, but usually does not get involved with other teams or the rest of the company; 2) there is a risk of implementing compo-

nents separately, which may not work well when connected together; and 3) work continuity is compromised, since employees are always in movement, reporting to different project managers, and doing different tasks. According to Turner, Keenan, and Crawford (2000, p. 16), the temporary focus on projects and the lack of long-term functions may give professionals the feeling of "there isn't a place to hang your hat", thus causing little involvement or permanence of people to work with. Two other alerts from these authors are: a) having individual autonomy or within the project team can create a silo of knowledge, that is, knowledge that is not shared with others; and b) project-based organizations, by giving less importance to functional hierarchy, also reduce their ability to support individuals' experiential learning and their actions as knowledge repositories.

According to Markgraf (2015), the process of selecting professionals in project-based organizations has specificities, since the objective is to find the most capable people to work in a range of particular tasks and roles related to the projects. Another characteristic of project-oriented organizations is that the company's knowledge, skills, and resources are built and evolve through project execution (Hobday, 2000). According to Turner *et al.* (2000), project-based organizations use experience to help the organizational learning process and the development of individuals; thus, people who have absorbed knowledge and skills in a given project can feedback that experiences to future projects. Likewise, project performance provides ideal conditions for the creation of new knowledge. The relative lack of hierarchy and the diversity of multifunctional or multidisciplinary project structures provide a fertile ground for creativity and innovation, which, in turn, benefits the learning of new concepts (Sydow, Lindkvist & DeFillippi, 2004). This is explained, for example, by the need to find solutions that are different, new and more or less customized, in a limited time - the project period.

2.2 MITs and the remote work of project managers

We assumed in this article that specific aspects of virtual teams and their unique features of distance inter-action are relevant to address the elements of remote work, where interaction between professionals occurs by

electronic media and computer resources. According to Sørensen (2011), virtual teams can fail if there is not a basic technology appropriate for an effective and collaborative interaction; people usually face barriers in using tools to access data, make adaptations for the use of new technologies to work with shared information, and may find limitations for adding knowledge (Majchrzak *et al.*, 2000). For Hinds and Weisband (2003), virtual teams have a bigger challenge in developing a joint understanding, because they rely heavily on technologies to mediate their communications, and are not in the same working environment, which makes it difficult to spread and share knowledge.

Remote work demands familiarity and strong commitment, supported by an effective process of communication for decision-making in project management activities. For Rad and Levin (2006, p.17), "increased use of virtual teams requires more effective processes, both at the project level and at the company level". These authors also argue that not all individuals are suited for working in virtual project teams because their competencies should go beyond the abilities to manage related activities, people and technical content. They need a centralized view of the company's projects, knowledge of their interrelationships and priorities, as well as orientation towards the company's strategy and mission, and this view can be hampered by virtual interaction.

Weimann *et al.* (2013) observe that virtual teams are functional teams that depend on technology-based communication, while crossing several boundaries. According to these authors, managing projects of virtual teams is different from handling local teams, especially because projects' traditional risks (complexity, factors' uncertainty, the interdependence of tasks, etc.) must be managed in parallel with temporal, geographic and cultural dimensions, which change continuously. In addition, team performance management now includes concerns on transparency in project control and progress, selection and proper use of task support tools, and appropriate sharing of information. In the virtual environment, it is not uncommon that the unavailability of internet and broadband, as well as the lack of adequate training or difficulty to access tools, are usually imputed to individuals' different performances.

Concerns about the implementation and stay of virtual teams address: the need for a 'package' of dynamic management of tasks and people; the selection of appropriate interaction technologies; and attention to communication, which – different for local teams - becomes even more complex due to the use of different media and technological tools (Hosseini *et al.,* 2013). For Martinic *et al.* (2012), managing projects in virtual teams is more complex, requires different planning, iterative approach, as well as monitoring and control supported by appropriate information and communication technologies.

In short, there are particularities in remote project management, through electronic media interaction. Therefore, specific management processes become necessary, as well as the definition of clear rules and the use of appropriate technologies to carry out the projects (Hinds & Weisband, 2003; Rad & Levin, 2006; Martinic *et al.*, 2012).

2.3 Work mobility of project managers and inherent competencies

Studies have stressed how virtual collaboration technologies are critical for team members working in the same project (Martinic *et al.*, 2012; PMI, 2017; Schumacher, 2014). When it comes to virtual teams, these technologies become even more indispensable, because members are geographically dispersed, often in other countries. For Krumm, Kanthak, Hartmann, and Hertel (2016), there are singularities in the competencies required from professionals in virtual teams; thus, different strategies are necessary for the selection and development of individuals for this kind of team. The essential skills for geographically dispersed teams are: self-management and communication abilities; proactivity; willingness to trust; learn and collaborate; capacity for intercultural relationships; persistence; creativity; independence; assertiveness; knowledge of project management; vocation for media interactions; and appropriate use of technology and networking.

There are several aspects to consider for the flexibilization of project managers' work; it is highly recommended to analyze individuals' previous experience in the use of technologies for remote interaction, as well as the level of maturity in project management processes. According to Iorio and Taylor (2015), the involvement of these individuals depends on the technological context

where work is done; therefore, if members of virtual teams are not competent in the use of technology, they will not be able to engage in successful interactions, or to adequately transfer information and knowledge between the projects they work in.

There are four key competencies for the project management of virtual teams: 1) flexibility - to manage changes, especially those related to the swap of team members, since the temporary nature of projects makes the team variable; 2) technology - to know how to adapt its feasibility to tasks' urgency, and how to make use of electronic communication media and collaboration tools; 3) leadership - to foster an atmosphere of cooperation and communication, and to inspire and motivate team members, by stimulating cohesion and developing trust and creativity; and 4) assertiveness - by sharing information, so that project team members are up to date most of the time; due to the big amount of data, managers must distinguish which information is relevant, in what format, at what speed, and how to share it (Schumacher, 2014).

From these views, we observe that some elements are new or more emphasized when observed from the context of project managers' work mobility, as consolidated in Figure 1.

3   Materials and methods

This was a descriptive research carried out directly with an interest group (Pinsonneault & Kraemer, 1993), through a questionnaire survey with closed and open questions, answered by a group of 114 project managers. The focus of this research was to collect patterns, traits, and behaviors about mobility in the project management scenario and the inherent project manager competencies working from a distance, in remote context. The objective was to identify, based on numbers and written reports, the participants' opinion on the three pillars of the research: work mobility, project management, and project manager's skills. According to Pinsonneault and Kraemer (1993), Freitas, Oliveira, Saccol, and Moscarola (2000), and Martins and Theóphilo (2009), a questionnaire survey allows collecting data from a group of experts in a specific subject and identifies attitudes, opinions and trends of a given population.

Key Elements from the project managers' work mobility context	Authors
To have knowledge and experience in project management, so that project managers can follow and manage the corresponding processes, in a suitable and shared way, even at distance and isolated.	Turner *et al.,* (2000) Weimann *et al.,* (2013) PMI, 2017 Medina and Medina (2014) Schumacher (2014)
To show attitudes of self-management, leadership, commitment, and collaboration, involving teams, establishing cooperative work and achieve results.	Forsberg, Mooz, and Cotterman (2005) PMI 2017 Krumm *et al.* (2016)
To know well how to use technologies, in order to achieve better results in communicating with others, to know how to store and retrieve pertinent information, and to be able to select the interaction medium that best fits the message needed to share.	Blackburn, Furst, and Rosen (2003) Beise, Carte, Vician and Chidambaram (2010) Verburg, Bosch-Sijtsema, and Vartiainen (2013) Purvanova (2014) Schumacher (2014) Henderson, Stackman, and Lindekilde (2016)

Figure 1: Key Elements from the project managers' work mobility context
Source: Created by the authors.

The questionnaire had four parts: the first with affirmative sentences on the mobility of project managers, with instructions to indicate the best option in a scale between one and five, where: 1 = Never; 2 = Seldom; 3 = Now and then; 4 = Frequently; and 5 = Always. We wanted to check to what degree respondents perceived them in their work. The second part focused on project managers' competencies, where participants used their own opinion and experience to choose a degree of relevance (value) they would score, on a scale between one and five points. The alternatives were: 1 = competence has a very low added value; 2 = competence has little value; 3 = competence has a reasonable value; 4 = competence has much value; and 5 = competence is indispensable (a very high value). The third part had an open question, and respondents should express their opinions and experience on the subject in writing; and the fourth and last part addressed attributes of their profile, such as activity sector, project characterization, position, age, graduation, and certification, among others, for better data tabulation.

More than 500 invitations were sent to project managers through a Google Forms online questionnaire link, active between September 2016 and January 2017. We got back 142 questionnaires, and, after analysis of the information provided, 114 were valid. We downloaded the original results of the survey to a spreadsheet that remains with the author.

For result analysis, we used the techniques of descriptive statistics, inference analysis and the mode, which allowed us to identify the measure of central tendency and highest occurrence of the answers (Martins & Theóphilo, 2009). In addition, we carried out a content analysis of the written reports (open question), which enabled the identification of the sense nuclei and author's interpretations based on the inference of elements and characteristics found (Bardin, 2011). These techniques indicated how respondents expressed themselves in each question so that we could compare the empirical meanings, by interpreting them in the light of the literature (Pinsonneault & Kraemer, 1993; Freitas *et al.*, 2000; Martins & Theóphilo, 2009).

4 Results

Of the 142 questionnaires received, 114 were valid, and 100% are participants with a project manager profile, of which 69.3% are men, 30.7% are women, 21.1% have the PMP certification, 71.82 % have worked in the same company for five or more years, 35.1% are between 40 and 49 years old, 34.21% are over fifty, 26.3% are between thirty and thirty-nine, and only 4.39% are under the age of thirty. They work mainly in the financial sector (62.42%), in different banking institutions, in technology (25.15%), and in other sectors such as civil construction, education, automotive, etc (12.43%). Among the projects, most of them regard the needs of products and/or services (50%), through the development of software solutions (28.9%), and other purposes, such as infrastructure projects, civil construction, education, process automation, etc (21.10%).

As to the adoption of labor mobility, 25.44% of managers work remotely at least two or three days a week, 21.93% at least once a week, 18.42% eventually, or less than four times a month, 14.04% do not work remotely, 12.28% always do, and 7.89% practice mobility at least

four days a week. Finally, as for their academic education, 32.46% have attended at least one MBA course, 27.19% at least one graduate course, 22.81% have at least an undergraduate degree, and 17.54 % have a master's degree; their education is mainly concentrated in areas related to administration, project management, technology, business, and engineering.

In general, most of the 114 project managers that answered the questionnaire agree on the large-scale use of technology to interact and carry out their attributions in project management. For example, when asked if they use mobile technologies (e-mails, chats, conferences, cell phone, video, wireless data network, and other collaboration tools) to interact with other members of the project teams, 61.4 % said that they do it always, 36% frequently, and only 2.6% say that they only use it now and then. The strong use of technologies for interaction is confirmed by two other questions: one about the regularity of interactions with people who are not physically close: 49.1% said that they always do it; 42.1% said that this occurs frequently; 7.9% do it occasionally; and only 0.9% (one person) said that remote interactions seldom occur. The second question asked participants to compare the frequency of virtual and face-to-face interactions: 21.9% answered that virtual interactions always occur, 43% stated that this occurs frequently, and 25.4% indicated that this happens now and then.

In fact, work mobility and electronic media interactions have been described as a new way of work organization and collaboration between professionals, partners and customers (Weiser, 1991; Kakihara & Sørensen, 2001; Saccol & Reinhard, 2007; Sørensen, 2011). Moreover, it is also expanding in the context of project management (Maznevski & Chudoba, 2000; Purvanova, 2014; Schumacher, 2014). In our study, we observed that, for most participants (84.2%), work mobility and the use of shared technology and tools allow greater interaction of those involved; therefore, more issues are adequately solved in project management activities.

With regard to the professional's maturity to do his tasks in project management, results showed that it is a favorable condition for the success of job mobility. 59.65% of the respondents believe that maturity always favors mobility, 34.21% say that this factor is often positive, 3.51% say that it is favorable occasionally, and 2.63%

believe that this is seldom positive. In order to enable a complementary analysis, we asked them if previous experience in project management increased the likelihood of success in the work mobility of project managers. For this question, 46.50% said yes, that experience in project management always favors work mobility; 42.98% said that this occurs frequently, 3.51% indicated that previous experience is beneficial now and then, 5.26% believe that it is seldom positive, and 1.75% (two respondents) consider that previous experience is never beneficial to work mobility of project managers. Data on maturity and previous experience are presented in Table 1.

Therefore, data suggest that previous experience in project management, along with professional's maturity, can foster work mobility of project managers (Turner *et al.,* 2000; Weimann *et al*., 2013; PMI, 2017; Medina & Medina, 2014).

When questioned if the established practices for project management contribute to successful work mobility, 56.14% indicates that this is always a beneficial factor for work mobility of project managers; 32. 46% consider it as frequently favorable; 7.89% say that this occurs now and then; and 3.51% say that this never occurs. Table 2 presents these data and indicates that project management practices are positively related to the likelihood of success in the work mobility of project managers.

In addition, respondents added free observations, aligned with this positive perception:

> "It is necessary to have clear rules for the use of mobile technologies by those involved in the projects, and also in project management processes, so that the defined objectives are achieved" (Respondent 25).
> "Planning needs to be more detailed and accurate to achieve the goal. Project implementation is better due to the quality of activities' planning, the team and the results delivered, and not because of mobility" (Respondent 089).
> "Team commitment does not result from the need to be physically close, but rather from the ability of managers to arouse interest in team participation and in keeping the necessary conditions and planning" (Respondent 101).

By exploring the most valuable competencies for project management, this study found the ability to have good communication with those involved in the project is the most important skill, with 91 participants (79.82%) that referred to it as an indispensable competence, of high value in the mobile context of project managers. When it

Table 1: Maturity and previous experience favor work mobility (n=114)

	Never (n) %	Seldom (n) %	Now and then (n) %	Frequently (n) %	Always (n) %
Maturity in the attributions of project management favors work mobility of project managers	(00) 0.00%	(03) 2.63%	(04) 3.51%	(39) 34.21%	(68) 59.65%
Having previous experience in project management increases the likelihood of success in work mobility of project managers	(02) 1.75%	(06) 5.26%	(04) 3.51%	(49) 42.98%	(53) 46.50%

Source: Created by the authors.

Table 2: Practices in project management favor work mobility (n=114)

	Never (n) %	Seldom (n) %	Now and then (n) %	Frequently (n) %	Always (n) %
Established practices for project management contribute to the work mobility of project managers	(00) 0,00%	(04) ,51%	(09) 7,89%	(37) 32,46%	(64) 56,14%

Source: Created by the authors.

comes to appropriate attitudes for remote work, they also considered commitment (63.16%), discipline (57.89%), cooperation and collaboration (55.26%), and self-management (53.51%) as indispensable.

Next, marked as highly valuable skills, come the organization (48.25%), with 48 respondents (42.11%) choosing it as indispensable; to know and apply the concepts of project management well (50%), selected by 41 participants (35.96%) as indispensable; adaptability and ease of use of MITs (60.53%), plus 28 respondents (24.56%) who consider it indispensable; good work relationship with those involved in the projects (46.49%), together with 44 participants (38.60%) who indicate it as indispensable; and to have a multicultural sensitivity to interact with a variety of people (51.75%), plus 37

responses (32.46%) that considered it indispensable for a successful remote performance of the project manager.

Table 3 shows the trend perceived by the research target population, presenting the 16 investigated skills complete list of in descending order and, in blue letters, the ten skills described in the above paragraphs. The first five have the highest percentage of responses concentrated on option 5 = competence is indispensable (very high value); for the others, we consider that the sum of answers 4 and 5 = competence is very valuable.

Our understanding, from data analysis and triangulation with the quoted literature, enabled grouping the elements, and categories identified by the research in knowledge, skills, and attitudes, as well as the professional profile that holds the essential competencies required from project managers who choose work

Table 3: Competencies (Knowledge, Skills and Attitudes) required from the project manager in remote work (n=114)					
	Competence has very low added value (n) %	Competence has little value (n) %	Competence has a reasonable value (n) %	Competence has much value (n) %	Competence is indispensable (very high value) (n) %	
Good communication with those involved in the project	(00) 0.00%	(01) 0.88%	(00) 0.00%	(22) 19.30%	**(91) 79.82%**	
Commitment	(00) 0.00%	(02) 1.75%	(05) 4.39%	(35) 30.70%	**(72) 63.16%**	
Discipline	(01) 0.88%	(01) 0.88%	(06) 5.26%	(40) 35.09%	**(66) 57.89%**	
Attitude of cooperation and collaboration	(00) 0.00%	(00) 0.00%	(05) 4.39%	(46) 40.35%	**(63) 55.26%**	
Self-management	(00) 0.00%	(01) 0.88%	(07) 6.14%	(45) 39.47%	**(61) 53.51%**	
Organization	(00) 0.00%	(00) 0.00%	(11) 9.65%	**(55) 48.25%**	(48) 42.11%	(103) 90.36%
To know and apply well the concepts of project management (scope, time, costs, quality, human resources, communication, risks, acquisitions, integration, and interested parties).	(00) 0.00%	(03) 2.63%	(13) 11.40%	**(57) 50.00%**	(41) 35.96%	(98) 85.96%
To adapt easily to the use of Mobile Information Technologies	(01) 0.88%	(02) 1.75%	(14) 12.28%	**(69) 60.53%**	(28) 24.56%	(97) 85.09%
To keep good work relationships with those involved in the projects	(00) 0.00%	(03) 2.63%	(14) 12.28%	**(53) 46.49%**	(44) 38.60%	(97) 85,09%
To have a multicultural sensitivity for interacting with a diversity of people.	(02) 1.75%	(01) 0.88%	(15) 13.16%	**(59) 51.75%**	(37) 32.46%	(96) 84.21%
Proactivity	(01) 0.88%	(01) 0.88%	(18) 15.79%	(51) 44.73%	(43) 37.72%	(94) 82.45%
To have maturity (experience) in project management	(01) 0.88%	(05) 4.39%	(15) 13.16%	(65) 57.02%	(28) 24.56%	(93) 81.58%
Leadership profile	(00) 0.00%	(03) 2.63%	(19) 16.67%	(50) 43.86%	(42) 36.84%	(92) 80.7%
Flexibility	(00) 0.00%	(03) 2.63%	(25) 21.93%	(55) 48.25%	(31) 27.19%	(86) 75.44%
Business and market knowledge related to the project	(00) 0.00%	(02) 1.75%	(35) 30.70%	(66) 57.89%	(11) 9.5%	(77) 67.54%
Knowledge of the technology needed for the project	(01) 0.88%	(01) 0.88%	(49) 42.98%	(52) 45.61%	(11) 9.65%	(63) 55.26%
				A	B	(A + B)

Source: Created by the authors.

Categories	Essential elements for remote work in project management
Knowledge	Of processes and practices of project management
	Previous experience in project management
	To know how to use information, collaboration and communication technologies
Skills/Abilities	Assertive, verbal and written communication
	Organization
	Self-management
	To adapt easily to the use of MITs
	Multicultural sensitivity
Attitudes	Commitment
	Discipline
	Initiative for Cooperation and Collaboration
Professional Profile	Maturity and attitude of being available
	Familiarity with mobile devices
	Orientation toward interactions by electronic media
	Orientation toward results
	Willingness to exercise autonomy

Figure 2: Essential competencies for work mobility of project managers
Source: Created by the authors.

mobility (Figure 2 presents the consolidated view of these categories and elements).

In the category knowledge, we grouped: to know the processes and practices of project management well; to have previous experience; and to know how to use information, collaboration and communication technologies. In the category skills/abilities, we grouped assertive, verbal and written communication; organization; self-management; easy adaptation to the use of mobile technologies; and multicultural sensitivity. In the category attitudes, we found commitment; discipline; and initiative for cooperation and collaboration. In the category professional profile, maturity and attitude of being available; familiarity with mobile devices; orientation toward media interactions; orientation toward results; and willingness to exercise autonomy (Frame, 1999; Kosaroglu & Hunt, 2009; De Vos et al., 2011; PMI, 2017; Medina & Medina, 2014; Schumacher, 2014; Krumm et al., 2016).

5   Final remarks

To specifically address work mobility and answer how mobility has been changing project management

and the skills required for project managers, this study sought to identify what views, trends, and elements emerge from work mobility in the context of project management, to establish the most valuable skills, and rank these elements into categories, in order to support implementation plans and work mobility management of project managers. Hence, this research achieved its objectives by observing through 114 project managers' opinion that work mobility is made visible by the large-scale use of technology, to remotely perform the necessary project management interactions and assignments (Maznevski & Chudoba, 2000; Purvanova, 2014; Schumacher, 2014). Work mobility is favored by maturity and professional experience in project management (Turner et al., 2000; Weimann et al., 2013; PMI, 2017; Medina & Medina, 2014), and will succeed, as long as the standardization of good practices in project management increases (Kerzner & Kerzner, 2017; Martinic et al., 2012; Verburg et al., 2013).

Regarding the topic 'competencies', this study allowed us to list the most valuable knowledge, skills, and attitudes, and we learned that: a) to be familiar with the processes and practices of project management, to have previous experience in project management, and to

know how to use information, collaboration and communication technologies, is essential knowledge to ensure that the professional, even working from a distance, is able to satisfactorily comply with his/her duties in the projects; b) assertive, verbal and written communication, organization, self-management, easy adaptation to technologies, multicultural sensitivity, relationship, and analytical ability stood out as essential skills and capacities for project managers that work remotely; and c) commitment, discipline, and cooperation and collaboration initiatives are relevant in remote project management. In addition, the research provided inputs that indicate the most appropriate professional profile for project managers who choose work mobility, by emphasizing: the importance of professional maturity and the attitude of being available; familiarity with the use of mobile devices and his/her orientation toward interactions by electronic media; orientation toward results; and willingness to exercise autonomy.

Hence, this research contributes to the knowledge base of project management, by clarifying that work mobility of project managers must be part of organizational strategies. This will ensure assertiveness in remote project management processes (Martinic *et al.*, 2012; Krumm *et al.*, 2012), provide appropriate tools for the proper exercise of competences (Hinds & Weisband, 2003; Rad & Levin 2006; Martinic *et al.,* 2012; Yan & Dooley, 2013; Krumm *et al.*, 2016), and select professionals with profile and experience compatible with the expected performance in projects that will be conducted remotely. Having knowledge and experience in project management can guarantee that the project manager will follow and manage processes in a satisfactory and shared way (Turner *et al.,* 2000; Weimann *et al.*, 2013; PMI, 2017; Medina & Medina, 2014; Schumacher, 2014).

A potential limitation may be associated with the questionnaire survey, in which answers about respondents' perceptions may often not correspond to what they really think. This means of data collection does not consider interpersonal factors that can interfere with data analysis. Thus, to reduce this bias, we made an intentional selection of a group with known features, the 114 project managers with relevant experience in this special environment, which is the core of the research (Gil, 2008).

The possibility to confirm statistically, through quantitative analysis, the relationship between project management practices and the success of work mobility is an interesting research opportunity. It seems useful to investigate, for example, the influence factor between the maturity of project management processes and the success of work mobility in the context of projects. Thus, the results of this type of research will allow advancing academic knowledge on the subject, besides helping organizations and their executives in decision-making processes on when to implement mobile work for project managers.

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