



Human Competencies of an Effective Project Manager

The Role of the Professional Bodies of Knowledge and Formal Education Providers in the development of soft skills.

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Summary

The determination of the elements that lead to project success is currently a major topic among the project management community. The role of the project manager and the influence it has on the overall results of the project has become a focus point for researchers, practitioners, and academics. The attempts that have been made to identify the characteristics and competencies of effective project managers has led to the acknowledgment that there is a need for a different set of competencies than those purely technical.

The human and leadership skills of a project manager play an important role in the outcome of projects; therefore, it is important for these competencies to be taught and developed as part of project management education.

Thus, this study aims to contribute to the understanding of the human competencies needed by effective project managers today and the extent to which project management bodies of knowledge, as well as formal education programs encourage the development and practice of such competencies.

The research was carried out using a mix-method approach. Primary data was collected through semi-structured interviews with professors teaching different subjects within project management education programs. Secondary data was obtained from a thorough review of the main project management bodies of knowledge and project management postgraduate programs offered by accredited universities in the UK. The findings of this thesis suggest that there is a clear need for the development of the human side of project management, and that although there is no definite set of competencies for effective project managers, there are some key skills essential to those in the pursuit of success.

Project management associations have shown an important change in their BOKs regarding the inclusion of topics on the human aspect of the practice from one edition to another. Moreover, as universities recognize the need to promote the development of human and leadership skills there is an opportunity to narrow the gap between the human topics covered within the programs and the methods used to teach them. However, the current role of both the BOKs and education providers is still only to create awareness on the topic rather than show and explain the use and techniques for different human skills in particular situations. Among the most suitable and effective methods for developing such competencies is the encouragement of team work, soft skills trainings, coaching and self-reflection exercises. Ultimately, it is the combined effort of the project management associations, universities, researches and practitioners themselves that will enhance the development and practice of human and leadership competencies within the project manager's role nowadays.

Abbreviations

APM – Association for Project Management

APM-BOK - Association for Project Management Body of Knowledge

BOK – Body of Knowledge

CAPM - Certified Associate in Project Management

GAC - Global Accreditation Center for Project Management

ICB - IPMA Competency Baseline

IPMA – International Project Management Association

ISI - Institute of Scientific Information

PGMPSM – Project Management Professional Qualification

PMBOK – Project Management Body of Knowledge

PMI – Project Management Institute

REP – Registered Education Provider

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1. Introduction

The purpose of the introductory chapter is to present the current views on the role of project manager competencies in relation to success, and the influence of different Project Management Associations on guiding their development to satisfy the requirements of such an evolving discipline. The discussion revolves around the needs of project-based companies, and the skills required for effective project managers in the pursuit of project success. The development of project managers with a focus on the leading professional bodies will set the grounds for the research. After discussing the framework of reference, the main research questions and objectives are formulated and explained.

1.1. Background

The identification of practices that result in increased competitive advantage has been a pressing matter amongst companies who wish to rapidly respond to market needs (Yang et al., 2011, p.258). This has caused a shift from the conventional way of doing business to a project-oriented approach. Organizations are increasingly relying on projects to carry out work and gain competitive advantage (Medina & Medina, 2014, p.1459, Anantamula, 2010, p.13). Before projects were seen as long term endeavors or tasks that consumed immense quantities of time and resources; however, the high complexity and fast paced growth of projects has evolved from being seen as a single undertaking, into a broader view, driving the creation of different programs and portfolios that follow the corporate strategy (Shepherd & Atkinson 2011, p.153). Consequently, the role of project managers has gained further importance in the organizations and with it the need to validate their practices.

Pant & Baroudi, (2008, p. 124) describe how “project management is being viewed as the ‘new’ form of general management which enables organizations to integrate, plan, and control schedule-intensive and one-of-a-kind endeavors in order to improve overall organizational performance”. Nevertheless, the role of a project manager is perceived to be more challenging than that of a functional manager given that the former has to work across functional and organizational environments (Anantamula, 2010, p.14).

Project managers are constantly challenged to cope with different kinds of problems in the accomplishment of unique outcomes expected to result from limited resources and within critical time constraints (El-Sabaa, 2001, p.1). Moreover, they are required to coordinate the work of people from different disciplines in order to accomplish the defined tasks while coping with the complexity, uncertainty and constraints of the project itself (Anantamula, 2010, p.19).

Driven by the project’s specific characteristics and goals, project managers can choose to adopt a particular leadership style (Yang et al., 2011, p.258). However, since different types of projects require different leadership styles (Anantamula 2010), the project manager’s competencies should be taken in consideration to effectively assign them to projects (Müller & Turner, 2010a, p.446).

Some organizations are placing project managers in jobs that follow such discipline based only on their technical ability (Carbone & Gholston, 2004, p.10); however, it is recognized that apart from the technical competencies, such as the use and application of tools and techniques, people skills are also essential to project managers who wish to

deliver successful projects (Fisher, 2011, p.1001). Even as the perception on effective people managers has shifted from the idea that they only require managerial competencies, the necessary cross-functional team management skills are being overlooked and little is being done to develop them (Carbone & Gholston, 2004, p.16).

Although some authors believe that project managers should learn while on the job, others consider that project management requires previous training (Carbone & Gholston, 2004, p.10). Turner & Huemann (2000) state that both formal education and practice are needed to develop skills in a given profession. Carbone & Gholston (2004, p. 15) support the idea and add that formal training and experiential learning must be combined and aligned with the organizational strategy in order to successfully develop the project manager.

The need for project managers to validate their practice emerged from the urgency to be accepted as a useful, ethical, and controlled service (Shepherd & Atkinson, 2011, p. 152). Essentially, practices that are not covered by other professions need to be self-organized to control the supply of such specialized or expert labor, both to guarantee quality and enhance the status of the profession itself (Morris et al. 2006, p.711). Hence, several associations such as the Project Management Institute (PMI) in the United States and the UK based Association of Project Managers (APM), created their own internal guidelines and best practices, known today as Bodies of Knowledge (BOK).

According to Shepherd & Atkinson, (2011, p. 153) since the different BOKs are based on few books, short single volumes and little underlying research, the practice cannot be seen as a “proper” profession. As a result, practitioners, organizations, and educational bodies have been unable to reach a clear consensus on the subject matter, unlike with professions such as medicine, law, accounting, and architecture (Morris et al., 2006, p. 714).

Nonetheless, currently several institutions and organizations deliver educational programs on the subject of project management. Most trainings and development programs aim to teach the fundamentals of project management based on the Project Management Competency Development Framework (Carbone & Gholston, 2004, p.10). This model was created by the Project Management Institute (PMI) with the objective of identifying project management competencies and their direct effect on performance (Carbone & Gholston 2004, p.10); nevertheless, it is not certain that such competencies are indeed the ones of an ideal project manager.

Extensive research has been conducted on the topic of competencies required for successful management (Katz 1974; Beale & Freeman 1991; Zimmerer & Yasin 1998; El-Sabaa 2001; Loo 2002; Dulewicz & Higgs 2005; Anantatmula 2010; Stevenson & Starkweather 2010; Thal & Bedingfield 2010; Fisher 2011). The debate among educators and training program directors, as well as academics and researchers of several leading universities and institutions on what makes a good project manager is an ongoing conversation within the corresponding literature (El-Sabaa, 2001, p.1). Although infinite skills, traits, or even intangibles have been listed, no real consensus is reached.

To deal with such problem Ramazani & Jergeas (2014, p. 46) claim that not one entity should be, nor can be, in charge of developing a full well rounded manager. A cooperation between practitioners, institutions and schools is needed. Additionally, certifications should not be viewed as an end goal proving that the recipients “know everything”, instead they should be seen as a starting point on a never ending path of continuous education (Ramazani & Jergeas 2014, p.46). Finally, there is a need for

researchers to help institutions make the BOKs more robust by challenging the existing knowledge and creating new ideas, theories, frameworks and/or models that can be implemented in today's fast-paced changing environment (Morris et al. 2006, p.716).

The need for the development of project management competencies, and especially those related to human or people skills (Katz 1974; Zimmerer & Yasin 1998; Edum-Fotwe & McCaffer 2000; El-Sabaa 2001; Loo 2002; Turner & Müller 2005; Thal & Bedingfield 2010; Fisher 2011) has become an imperative for the discipline. However, little has been mentioned about the practical techniques or methods for attaining such improvements. The project management community could therefore benefit from a broader definition of formal education programs and a better understanding of how the academic institutions or accreditation bodies contribute to the development of project management competencies in terms of human skills.

1.2. Research Question

What the narrative thus far should demonstrate is that an opportunity exists to deepen the understanding around how human and leadership skills contribute to developing more effective project managers. Moreover, since the existing literature suggests that there is a lack of focus in this area it is crucial to identify the core competencies for project managers, as well as the actors within the project management discipline which validate and promote the development of such skills.

Therefore, the research questions addressed in this thesis are stated as follow:

To what extent do current project management bodies of knowledge and formal education programs promote the development of human and leadership skills within their frameworks?

How are human and leadership skills being taught and reinforced within formal education programs nowadays?

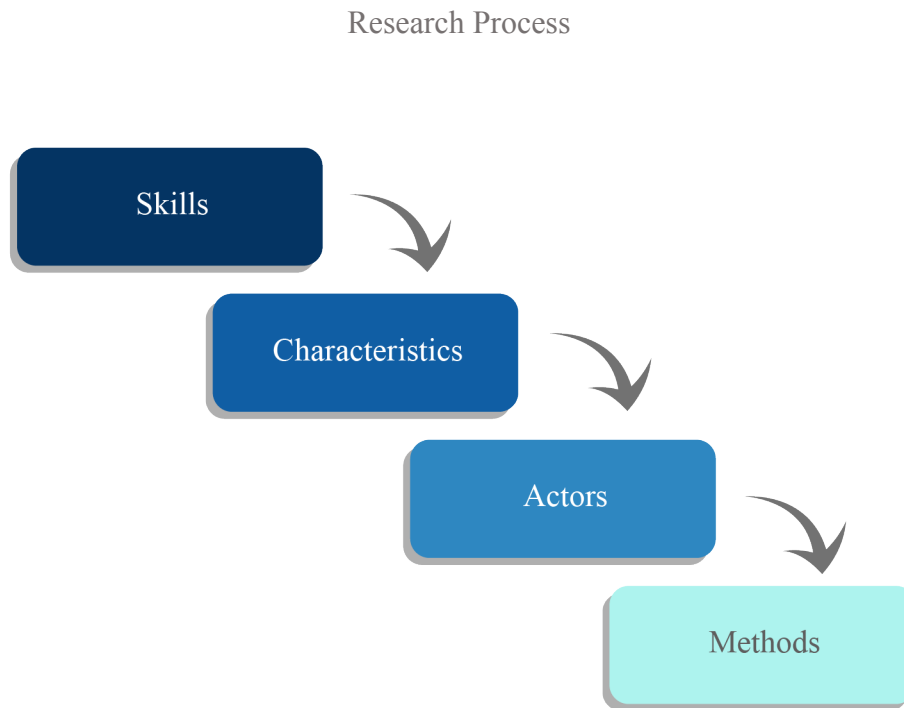
1.3. Research Objective

The main objective of this study is to understand the level of correspondence between existing project management education and the current demand for developing human and leadership skills in effective project managers.

By understanding the essential human and leadership skills that according to the professional institutions must be possessed by project managers, the researchers aim to explore the extent to which the bodies of knowledge that drive project management education nowadays promote such skills as part of the fundamental knowledge to be acquired by project managers.

By comparing the content of the BOKs and the available formal academic programs to the human and leadership skills found in the literature to be fundamental for effective project managers, it will be possible to identify potential areas of improvement. Moreover, through the understanding of how these skills are currently being taught, this study will also attempt to produce recommendations on how to improve their integration in project management education.

Figure 1, illustrates the steps followed in this research to achieve the objectives: Identifying the pertinent human and leadership skills needed by effective project managers, understanding the characteristics of such competencies, determining the main actors promoting the development of these skills, as well as the extent to which they do so, and finally recognizing the methods currently used to teach and develop these skills.



*Figure 1, Research Process.
Own Creation.*

1.4. Delimitations and Limitations

In the interest of setting a clear research scope for the thesis and reaching the main objectives, certain delimitations need to be established. On the subject of Professional Bodies in charge of setting the standards on behalf of the project management practice, this research will only contemplate those institutions or associations that own a proper guide for setting standards, so as to effectively compare them. The rationale behind this is that these bodies are the ones that have the most influence on the project management discipline, set trends, and validate the general practices. Such is the case for IPMA, APM and PMI, which further provide similar services and have a strong presence in the UK. The latter will set the geographical limits for the research.

Henceforth, accredited education providers analyzed in this study will also have to be available in the UK. The providers chosen for the research must be certified by the above-mentioned professional bodies, and should deliver project management education in the forms of undergraduate or graduate programs, professional courses or trainings.

Furthermore, due to the time constraints inherent in this thesis a cross sectional analysis will be applied to a sample of academic programs, as to seek and explain the relation between existing project management education and the current demand for the development of human and leadership skills.

This type of approach, although not common, can use qualitative methods through certain research strategies over a short period of time (Saunders et al. 2009, p.155). In this case interviews will be conducted to strengthen the arguments that will answer the research questions, which can also imply a limitation based on the availability of interviewees and any personal bias they might have.

With reference to the interviewees, the main focus will be on professors within selected education providers seeking to analyze how the development of human and leadership skills is being encouraged through different courses, modules and trainings.

2. Theoretical Method

2.1. Preconceptions

Preconceptions are part of the creation of meaning within the processes of interpretation and understanding (Wallace, 1997, p.321) of people and their contexts. When undertaking research, finding an objective stance is complicated because data interpretation relies on one self's perspectives (Savin-Baden, 2006, p.367).

As a producer of knowledge, the researcher looks at, defines, talks and writes about social reality from a specific position based on his/her understandings (Johannson, 2005 as cited in Solbue, 2011). This may pose a threat to the validity and reliability of the research and must be taken in consideration (Wallace, 1997, p.321). All researchers are prone to interpret information believed to be true based on their preconceptions; however, although it cannot be avoided, it can be controlled (Saunders et al., 2009, p.297).

The concept of reflexivity suggests an approach to dealing with the relationship between the researcher and the object of study (Saunders et al., 2009, p.292). "Part of taking a personal stance in the process of reflexivity is to recognize one's own prejudice or prejudgment" (Solbue, 2011, p.826) with the objective of deepening the understanding of the information gathered. Challenging the researcher's own prejudice, attitudes, experiences, thoughts and feelings are part of the process of reflexivity which in turn adds validity to the study. Working in this way researchers can gain a deeper understanding of the data collected on the issues at study during the interpretation process (Solbue, 2011, p.826).

As part of the methodology of this study, and with the objective of understanding the research in a meta-perspective the authors reflected on their preconceptions predominantly based on their backgrounds, experiences and interests in the study.

With a background in architecture and finance, common interests among the researchers were relatively few in terms of the field. Nevertheless, their current undertaking of a Master in Strategic Project Management resulted in a broader view of the application of project management to all areas or lines of work. This led to the identification of those topics or subjects that are most general and could be shared by all types of projects. Management, leadership, project success factors and project teams were among the most interesting to the researchers; hence, the role of the project manager which seems to be related to all of them, was chosen as the main research topic.

Previous work experience in well-known companies and in specific projects within them might influence the researchers' pre-understandings on the way projects are run and the role of the project manager in the overall delivery of projects. This could be both beneficial and disadvantageous for the research. On the one hand, having previous knowledge on how projects work can facilitate a deeper understanding of the different factors involved and add value to the research, on the other hand, such preconceptions can affect the way information is interpreted. Therefore, the researchers have tried to avoid biases and keep an open-mind throughout the study.

Nevertheless, the research was approached with the underlying assumption that the project management is relevant nowadays for all those organizations that work on a project basis. Furthermore, the researchers consider that the project manager must portray different sets of skills, and that leadership is an essential competency of those

who want to achieve success. Last, the belief that such competencies should be developed led the researchers' interest on the role of the Professional Bodies, such as the PMI, IPMA, and APM in the development of the discipline.

The aforementioned preconceptions were considered throughout the research; nonetheless, new knowledge, ideas and information gathered were accepted and incorporated in order to conduct a reliable study.

2.2. Research Philosophy

The development of knowledge and the nature of that knowledge contains important notions on the way the world is understood (Saunders et al. 2009, p.108). Therefore, when generating knowledge through research, a specific philosophical stance must be taken to describe the views on reality and the social world.

In any case the research philosophy is driven by the selection of ontological and epistemological postures that guide the research question. It is important to clarify that the main goal of choosing the convenient approach is to be able to reflect upon the philosophical choices and defend them in relation to the alternatives adopted (Saunders et al. 2009, p.108). As theory of knowledge and a view of reality underpin any research, this section seeks to demonstrate the ontological and epistemological origins at the bedrock of this research.

2.2.1. Ontology

Ontology refers to nature of reality, and reflects upon the assumptions of the observable reality (Long et al., 2000, p.190). Dichotomous in nature, ontology suggests reality can either be viewed from a constructivist or objectivist lens (Saunders et al., 2009, p.110).

Objectivism assumes that social interactions exist in a reality that is removed from the persons or organizations of study. Indeed, its claim is that relationships are separate from its actors. Constructionism, however, regards such actors as deliberately creating the interactions from their own perspective. Put otherwise, constructionism "implies that social phenomena and categories are not only produced through social interactions, but are also in constant state of revision" (Bryman & Bell, 2011, p.33).

Reality as a realm of symbolic discourse, as introduced by Smircich & Morgan (1980, p.496), takes into account how social order is formed by human beings in ways that are meaningful to them. Within the context of the organization, there may be a concern for understanding roles that language, symbols and myths play in shaping their reality.

Given that Project Management is viewed quite distinctly by different stakeholders, namely by suppliers and demanders, a certain level of subjectivity is unavoidable (Smircich & Morgan 1980). It is the subjectivity present in this study's outlook that root the research in the constructivist approach.

2.2.2. Epistemology

Briefly said, epistemology is the study of knowledge (Saunders et al., 2009, p.112). It aims to comprehend how we know what we know, and the process underwriting that knowledge. Its application here allows the researcher to be mindful of the research orientation adopted for this study (Bryman & Bell, 2011, p.29).

Knowing is believed to adhere to either positivism or interpretivism (Long et al., 2000, p.191). Under a positivistic stance, the field of research is observed from a scientific point of view using methods that are organized and measurable. Characteristically, the researcher does not interact with the field and would only measure observable patterns (Saunders et al., 2009, p.113). In contrast, interpretivism sees researchers as inadvertently interacting with the social world. Observable constructs are seen more in flux given that the stance of the researcher and the concepts under observation can be influenced during the process (Bryman & Bell 2011, p.31).

Making the link back to the study, the discourse around Project Management is volatile and ever changing. Engaging with the subject matter the researchers expect that their own limited understanding of such a controversial field will affect the way reality is observed. As such, interpretivism is regarded as the most favorable epistemological stance for this study.

2.3. Theoretical Framework

The theoretical framework refers to the propositions which have already been worked out by others in regards to the research topic (Saunders et al., 2009, p.488). It helps the researchers understand and explain to the readers the research setting within which the study is taking place (Saunders et al., 2009, p.296).

Throughout the theoretical framework the “main variables, components, themes and issues in the research project and the predicted or presumed relationships between them” (Saunders et al., 2009, p.490) are identified. This gives rise to the formulation of research questions, objectives and hypothesis key to the research (Saunders et al., 2009, p.489). Moreover, it establishes a theoretical construct to organize and direct the data analysis, and make sense of the findings (Saunders et al., 2009, p.159). Since the information gathered is scrutinized against the theoretical framework, and the conclusions are then shaped by it, it is essential to choose the appropriate one (Saunders et al., 2009, p.159).

For the purpose of this study, the theoretical framework consists of the current literature available on project management as a relevant discipline for organizations, project success, project manager competencies, their development and the role of professional bodies in project management education. The relationship among the different variables is discussed and forms the basis for the main research.

2.4. Research Approach

The research approach refers to the extent to which the researcher is explicit about the theory at the beginning of the research (Saunders et al., 2009, p.124). It is related to the different research philosophies from which two main approaches emerge: deduction and induction. Whereas a deductive approach seeks to test a hypothesis, an inductive

approach aims to develop theory from the results of data collection and analysis (Saunders et al., 2009, p.129).

However, Eisenhardt and Graebner (2014, p. 25) suggest that both the deductive and inductive approaches are part of a cycle in which they mirror one another. The former goes from general premises to a more specific conclusion in a way of restating the premises, and the latter goes from the particular to a more general conclusion with the objective of generating knowledge (Ketokivi and Mantere, 2010, p.209). Furthermore, there is a third approach: abduction. Defined by Peirce (1965 as cited in Walton, 2006) as “the process of forming an explanatory hypothesis”, abduction it is seen as an important concept in scientific methodology because it represents the way scientists form hypothesis which they later test using deductive or inductive reasoning (Walton 2006).

If the researcher’s aim to discover new variables or relationships, and abductive approach is suitable since throughout the research the original framework is continuously modified as a result of the findings and theoretical insights attained during the process (Dubois & Gadde 2002). The process of abductive reasoning consists on different steps: problem identification, hypothesis of possible explanations, selection of the best of them and its incorporation to current frameworks (Nepomuceno et al. 2013).

Regarding this research the use of a flexible framework expected to evolve during the study as empirical data is collected suggests the use of an abductive approach, which in turn promotes the development and refining of existing theoretical models (Dubois & Gadde 2002). Moreover, in the search for the best explanation to the research question, the mere suggestion that something may be supports the chosen research approach (Walton 2006).

2.4.1. Acquisition of Theoretical Framework

High influence journals are the main strength of the innovation and development of a research topic, and the methods of selecting high influence journals and papers are always one of the focuses of the academics; nevertheless, they are not a direct measure of quality and must be used with considerable care (Amin & Mabe 2007, p.6).

In order to build a proper useful data gathering from journals many alternatives are preferred by researchers. A popular one is to evaluate the importance of particular journals within a specific field by analyzing the Impact Factor created by the Institute of Scientific Information (ISI) which can be used to measure the way a journal receives citations to its articles over time (Amin & Mabe 2007, p.2). Using the Google Scholar’s and Medeley’s engine the importance, prestige, impact, and usefulness of said journals can be evaluated easily when looking for particular keywords within papers or articles.

Following the definition of the topic of interest the search for information and related material began. A first attempt was made by choosing several keywords linked to the subject which were then inputted into online platforms in order to find literature associated with them. Among the keywords used as guidelines for the research were: project management, project manager skills, project success, effective project management, competencies, project management associations, and project management development.

As the main tool, the online search engines of Herriot-Watt University, Politecnico di Milano, and Umeå University provided a large pull of articles, books and journals to

choose from. The main databases corresponded to ScienceDirect, Elsevier, Emerald, JSTOR, and the British Library Integrated catalogue. Moreover, the main journals used in the research are prestigious in their fields and guarantee reliable information. Some of the most mentioned ones are the Project Management Journal, International Journal of Project Management, Journal of Management, Journal of Business Research, and the Engineering Management Journal.

Based on several criteria that included the number of times the article had been cited, the prestige of the journal, an appealing title and a brief reading of the abstract that confirmed the relation to the main topic, a preliminary working list of reading material was built. Further literature was acquired through the identification of topic-related articles cited on the chosen papers and suggested by the search engines themselves. As the literature search advanced and so did the knowledge gathered on the important theories, more material was collected and analyzed for its use.

3. Theoretical Frame of Reference

3.1. Project Management

The identification of practices that result in increased competitive advantage has been a pressing matter amongst companies who wish to rapidly respond to market needs (Yang et al. 2011, p.258). This has caused a shift from the conventional way of doing business to a project-oriented approach. Organizations are increasingly relying on projects to carry out work and reach corporate goals (Medina & Medina 2014; Anantatmula 2010).

In an attempt to convert the organization's vision into reality and reach the desirable future state, project-based management is implemented as a process to improve performance and successfully solve problems (Turner 2008). Regarded as a field that is indistinguishably associated to change, complexity, high risks and fast paced projects (Atkinson, 2006, p.221), project management is also considered an approach to solving corporate problems through special management techniques that drive a better control and use of existing resources (Kerzner 2013).

Whereas the Project Management Institute (thereafter PMI) defines project management as “the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements” (PMI 2015c), the Association of Project Management (thereafter APM) agrees with the most part by using similar terms in their definition. However, APM includes experience as one of the main elements to achieve the project objectives (APM 2015g).

In other terms, project management is a set of methods, theories and techniques that have evolved to manage the complexities of work that is unique and temporary (Verzuh 2011). It is the planning, organizing, directing, and controlling of company resources for a relatively short-term objective that has been established to complete specific goals (Kerzner 2013).

Pant and Baroudi, (2008, p. 124) describe how “project management is being viewed as the ‘new’ form of general management which enables organizations to integrate, plan, and control schedule-intensive and one-of-a-kind endeavors in order to improve overall organizational performance”. Moreover, in the same way as management, the urgency to be accepted as a useful, ethical, and controlled service has presented project management with the need to validate its practice (Shepherd & Atkinson 2011, p.152). Essentially, practices that are not covered by other professions need to be self-organized to control the supply of such specialized or expert labor, both to guarantee quality and enhance the status of the profession itself (Morris et al. 2006, p.711)

According to Turner (2008), a profession is a vocation that requires higher learning and seeks understanding of the underlying theory in the process of attaining knowledge, meaning that the focus is set on comprehending why and how things work before taking action (Turner & Huemann 2000)

The basis of project management professionalization is the theoretical knowledge gained by practitioners of the field which leads them to the understanding and application of different approaches that result in successful projects (Turner & Huemann 2000). Therefore, the attractiveness of project management lies in its ability to guarantee ‘control’, particularly of work of irregular nature, which is generally associated with an unpredictable level of change in the business environment (Ashleigh et al. 2012), through the appropriate use of knowledge and techniques. Success in this case is primarily

defined by the ability to ensure that the objective of the endeavor is completed. (Ashleigh et al. 2012).

3.2. Project Success

Since the 1960s the definition of project success has considerably changed from the perspective of the time, cost and performance or quality triangle to the achievement of client satisfaction and the strategic mission of the organization (Thal & Bedingfield, 2010, p.244). Turner and Müller (2005, p.56) support the previous claim by explaining how throughout the literature the definition of success has evolved from a focus on implementation, to effective planning and hand-over, to stakeholder-dependent success and interaction, and most recently to the project manager's leadership style and competency.

Industries and academia have been driven by the maturation of the project management discipline to identify the sources of project success (Stevenson & Starkweather, 2010, p.663), and although some authors still take a process approach on the matter, others have recognized the importance of human characteristics of the project manager on the achievement of such success.

Some of the most mentioned enabling factors of project success are the support of top management, the clear definition of the project's mission, roles or responsibilities, and the conflict management skills shown by the project manager (Anantatmula, 2010, p.15). Among other elements are communication, collaboration, and team cohesiveness which enhance project success in terms of schedule, cost and quality performance, as well as stakeholder satisfaction (Yang et al., 2011, p.265).

According to Beale & Freeman (1991, p. 25) there are several variables that affect project success. Variables exogenous to the project refer to its inherent nature. Variables exogenous to the project team are those usually stated by the project sponsor early in the life of the project. Endogenous variables are those that can be modified by the project manager and team. As an endogenous variable the skills and experience of a project manager, which are demonstrated through his leadership, commercial and technical abilities can have a large impact on the team performance and hence, on the overall project success (Beale & Freeman, 1991, p.26).

Defining measurable project outcomes and evaluating the team's performance against them is critical to determining project success (Anantatmula, 2010, p.19). However, formal processes of evaluation of project performance are not common amongst organizations and therefore the definition of failure or success seems to be driven by personal indices.

Through a model of givens, means and ends Anantatmula (2010, p. 19) defined seven significant people-related project performance factors that can act as enablers or barriers to project success: clarity in communication, definition of roles and responsibilities, communication of the expectations, employment of consistent processes, establishment of trust, facilitation of support and management of outcomes.

Katz (1974) stated that the interrelated technical, human and conceptual skills are the basis of successful administration, and in fact "recent research supports the idea that successful projects are led by individuals who possess a blend of technical and

management knowledge, but beyond both, leadership skills” (Zimmerer & Yasin, 1998, p.36).

Although it is believed that organizational effectiveness relies on the project manager’s combination of technical competencies, tools and leadership skills that are compatible with the internal motivation of the team and the client focus strategies (Zimmerer & Yasin, 1998, p.37), the effect of the project manager’s personality traits (Thal & Bedingfield, 2010, p.243) and leadership style has not been thoroughly explored in regards to project success (Yang et al., 2011, p.260).

However, some findings suggest that a frequent cause of problems in projects is the lack of or poor leadership on the part of the project manager (Zimmerer & Yasin, 1998, p.35) which compromises the success of the project. It also appears to be that conscientious and openness, as aspects of personality (Thal & Bedingfield, 2010, p.255) as well as a strong personal motivation of project managers influence the success of the project (Zimmerer & Yasin, 1998, p.35).

Therefore, the role of project managers has gained further importance in organizations. Their contribution to the overall delivery of results is key to the project successful completion (Zimmerer & Yasin, 1998, p.35); hence, firms that expect to remain successful should master the skills of early identification selection, training, and development of project managers (Zimmerer & Yasin, 1998, p.37).

3.3. The Project Manager

A project manager is “the person assigned by the performing organization to lead the team that is responsible for achieving the project objectives” (PMI 2015c). This person is in charge of managing the project on a daily basis, and must be competent in dealing with the six aspects of a project, i.e. scope, schedule, finance, risk, quality and resources (APM 2015d).

As project managers participate in such different aspects of the project, they are given the power and authority to forecast, establish, and maintain project results. Their proactive involvement in the processes, as well as their “contribution to the corporate bottom line, make the project management discipline a twenty-first-century core business process” (Zaval & Wagner, 2011, p.19).

The project manager guides all processes throughout the life cycle of the project and strives for its successful completion and deployment. He/she is the single point of contact for the project team members (Zaval & Wagner, 2011, p.65) and the link among the different stakeholders. His/her role in leading and directing the team and delivering results within constraints of time, budget and resources requires well-developed technical and interpersonal skills such as leadership, communication and conflict management (APM 2015d).

Project managers can come from different backgrounds and therefore possess different skills. Whereas some are chosen for their superior technical skills, others land a project manager position through their good managerial and leadership skills. There are also those who are prepared to be project managers because they went to school and studied the topic (Zaval & Wagner, 2011, p.53).

Although historically there has been great emphasis on the project manager’s technical skills and knowledge of the industry as significant criteria for accomplishing successful

projects, today's complex project environments require greater skills (Beale & Freeman 1991, p.24). The evolution in theory and practice of project management discipline has placed significant focus on the project manager and his/her competencies as fundamental elements of the project's, and organization's success (Loufrani-Fedida & Missonier 2015, p.1220). Therefore, organizations have recognized the importance of selecting and developing effective project managers which in turn has led academics and researchers in the field to investigate the project's leader role and specific skills (Fisher 2011, p.996).

3.4. Effective Project Manager Skills and Competencies

The definition of an effective project manager starts by understanding what they do and the kind of skills they demonstrate (El-Sabaa 2001, p.1). Although several authors have tried to determine the specific characteristics, skills and behaviors of successful project managers (Katz 1974; Beale & Freeman 1991; Zimmerer & Yasin 1998; El-Sabaa 2001; Loo 2002; Dulewicz & Higgs 2005; Anantatmula 2010; Stevenson & Starkweather 2010; Thal & Bedingfield 2010; Fisher 2011), little consensus has been reached. Nevertheless, researchers seem to agree on the fact that project managers need more than pure technical skills in order to meet their professional demands (Katz 1974; Zimmerer & Yasin 1998; Edum-Fotwe & McCaffer 2000; El-Sabaa 2001; Loo 2002; Morris et al. 2006; Stevenson & Starkweather 2010; Fisher 2011).

A skill implies an ability which can be developed and which is manifested in performance (Katz 1974). Edum-Fotwe & McCaffer, (2000, p. 113) recognized two types of skills: specific and general. The latter which refer to transferable skills essential to effective project management. Katz (1974) suggests that there are 3 developable skills for an effective administrator. Technical skills which refer to the understanding of a specific activity involving methods, processes, procedures or techniques; Human skills which describe the executive's ability to work effectively with others; and Conceptual skills which involve the ability to identify the relationships between the different parts of an organization and its connection to the external environment.

Although technical skills that include effective scope management, project planning, scheduling, controlling and contract management (Loo 2002, p.94) are still relevant, through their study, Stevenson & Starkweather (2010, p.667) supported the idea that soft skills are important criteria when it comes to hiring project managers. The focus on interpersonal skills surpassed that of technical expertise as being critical competencies for project managers.

Competency is seen as a specific combination of knowledge, skills and personal characteristics (Crawford, 2003 cited in Müller & Turner, 2005, p.438). Boyatsis (1982), cited in (Stevenson & Starkweather 2010, p.664) attributed motives, traits, skills and knowledge to the definition of competency, Loo (2002) in a summarized definition, described competencies as a set of knowledge, skills and abilities, and for Loufrani-Fedida & Missonier (2015, p.1221) competency refers to "the ability of an individual, a team or a company to mobilize and combine resources in order to implement an activity in situation".

The increasing interest in project manager competency has driven the development of standards for project management knowledge and practice that describe the requirement for effective performance (Crawford 2005, p.7). Various competency frameworks were developed as a result of research regarding the skills or attributes associated with

successful project managers (Thal & Bedingfield 2010, p.246). An example is Crawford's model (2005, p.9) in which there are four components of a competency. Knowledge and skills, which can be developed by training and experience, represent input competencies. Core personality characteristics are the basis of personal competencies, and demonstrable performance that corresponds to the output competencies.

Since different types of projects require different skills (Fisher 2011, p.996), competency is seen a complex construct influenced by the personality and behaviors of the people involved in the project, the context in which the project is carried out, and the specific type of project at issue (Crawford 2005, p.13). Therefore, learning about competencies is no guarantee for success. Project managers need to carry out a continuous process of application of the competencies, observation of the outcomes and modification of the behaviors to find the best fit (Fisher 2011, p.999). This is consistent with Katz' (1974) statement that “the principal criterion of skillfulness is effective action under varying conditions” and Edum-Fotwe & McCaffer (2000) belief that essential to a project’s success is that project managers develop the requisite competencies that ensure efficient performance of the specific project.

Whereas the perception on effective people managers has shifted from the idea that they only require technical or managerial competencies (Fisher 2011, p.995), it is the interrelated technical, human and conceptual skills that are the basis of successful administration (Katz 1974).

Furthermore, authors such as (El-Sabaa 2001, p.3) have recognized that most essential to project managers are the human skills that have great influence on their practices. He suggested that characteristics of human skills include communication, coping with situations, mobilization, delegation of authority, high-self-esteem, enthusiasm and political sensitivity.

Dulewicz & Higgs (2005, p.112) in their framework also acknowledged the importance of emotional and social dimensions. Competencies such as portraying emotional resilience, influencing others, and showing interpersonal sensitivity are key in their model. In more detail Zimmerer & Yasin (1998, p.36) determined different project manager characteristics or behaviors that would have a positive influence of effectiveness of a project. Reinforcing positive behavior, empowering team members, communicating effectively, demonstrating trust and respect and remaining flexible to respond to changes build a profile of a good project manager.

For Katz (1974) an effective administrator is skilled in understanding and communicating with others, creates an atmosphere of approval and security, encourages the participation of team members and is sensitive to their needs. Effective managers should demonstrate these skills in every action, taking into account the perceptions of others for decision making processes, and constantly motivating the group.

Consistent to the previous characteristics, Beale & Freeman (1991, p.28) state that to achieve success, project managers should demonstrate several human skills. Good leadership and interpersonal skills, high concern for people and high personal drive are among the main characteristics. Moreover, according to their research Stevenson & Starkweather (2010, p.663) stated that employers in search of project managers look for effective communication skills across multiple levels, leadership skills, and ability to deal with uncertainty and change.

Fisher (2011, p.1000) also identified six important skills and behaviors of effective people project managers. Understanding behavioral characteristics, leading others, influencing others, showing authentic behaviors, managing conflict, and developing cultural awareness.

Finally, Thal & Bedingfield (2010, p.254) claimed that conscientiousness and openness of the project manager are found to be strongly correlated with performance; therefore, being imaginative, broad-minded and intelligent, as well as showing optimism, confidence, clear thinking and stability are critical to project managers working in a project environment.

According to Fisher (2011, p.1001), project managers need to make great improvements in the area of people management. He states that they are able to adopt people skills and their associated behaviors anywhere in the world (Fisher 2011, p.994). Therefore, many authors recommend that project managers engage in continuous training and practice of such competencies (Katz 1974; Zimmerer & Yasin 1998; Edum-Fotwe & McCaffer 2000; El-Sabaa 2001; Loo 2002; Müller & J. R. Turner 2010; Thal & Bedingfield 2010; Fisher 2011).

3.5. Project Manager Leadership

In contrast to the general leadership literature developed over the last 80 years by researchers who have tried to define the traits, behaviors or competencies required for managers to be successful, the acknowledgement of leadership has been a latecomer in the project management literature (Müller & Turner, 2010, p.439).

In a study conducted by Zimmerer & Yasin (1998) on the leadership profile of American project managers, it was found that there is a need for project managers to focus on the leadership of the team since 76% of the success of a project can be attributed to it. However, the implementation of leadership theories in project management has encountered difficulties given that research has failed to provide tangible evidence of the benefits of adopting certain leadership behaviors (Yang et al., 2011, p.258). Nevertheless, several authors (Edum-Fotwe & McCaffer, 2000; Loo, 2002; Dulewicz & Higgs, 2005; Anantatmula, 2010; Thal & Bedingfield, 2010; Müller & Turner, 2010; Yang et al., 2011) have recognized that the role of leadership, despite not being directly related to project success, contributes to it through its influence on factors that enhance project performance.

To cope with the processes and team members of a project, project managers must fulfill both the management and leadership roles (Anantatmula, 2010, p.14). The idea that leadership must be provided throughout the three main levels (project, technical and team), involves actions such as establishing direction and vision, aligning people and inspiring subordinates (Edum-Fotwe & McCaffer, 2000, p.113). Moreover, driving change, setting a direction and motivating people to work together and achieve project objectives are part of the efforts displayed by leaders working under difficult and demanding environments (Anantatmula, 2010, p.19).

Given that work gets done through people, people-related issues that impact project performance underline the importance of the managerial and leadership roles of a project manager (Anantatmula, 2010, p.14). Such issues rise from the fact that project teams, comprised by different disciplines, are exposed to uncertain, complex and risky situations, so project managers must show strong leadership skills to work effectively

with multidisciplinary members of the project team (Thal & Bedingfield, 2010, p.254). Through openness and transparency leaders can encourage team members to collaborate, network, and innovate. By doing so and establishing trust, leaders can better manage changes and mitigate conflict amongst the team (Anantatmula, 2010, p.19).

The common diversity of project teams inspires the type of situational leadership that provides flexibility (Loo, 2002, p.96). People-oriented and participative leadership are recognized as a good leadership styles for organizations since project teams benefit from the creative freedom associated with these styles (Loo, 2002, p.97).

Nevertheless, when assigning project managers to specific projects, their leadership competencies should be taken in consideration (Müller & Turner, 2010, p.446). Different types of projects require different leadership styles (Anantatmula 2010), so some project managers may adopt a particular leadership style driven by the different goals of a project (Yang et al., 2011, p.258).

Dulewicz and Higgs (2005, p.106) explored the competency areas and personal characteristics of leaders exercising their role. They established a range of behaviors that describe the way leadership is exhibited: goal leadership, involving leadership and engaging leadership.

An engaging leadership style seems to be the most suitable for projects different from those of engineering and construction, where an involving style is preferred (Müller & Turner, 2010, p.445). Furthermore, transactional leadership and a concern for process appear to be more important in simple projects, but on more-demanding projects, transformational leadership and concern for people is necessary (Müller & Turner, 2010, p.446).

Adopting a particular leadership style may result in substantial benefits for the project (Yang et al., 2011, p.261), but more importantly is that effective leadership has been seen in terms of a combination of personal characteristics, a range of skills, behaviors and styles that relate to the personality of the leader and the context where he is required to act (Dulewicz & Higgs, 2005, p.114).

3.6. Project Management Development

The focus of project management development is the way skills, ideas and knowledge are taught to project managers working on the field (Crawford 2006).

Project management development can be seen in three different ways: planned development, self-guided development and innate development. Whereas planned and self-guided development suggest the independent efforts and approaches taken by the organization or the project manager respectively, innate development refers to the autonomous development of project managers (Storm 2013).

Standard practice of planned development includes formal project management training programs that follow a framework of desired competencies, as well as commonly accepted standards or guidelines to successfully deal with the functional requirements of a project (Storm 2013).

Self-guided development involves the project manager's self-motivation and guidance through their progress towards success. Their own experience and the challenges faced determine the learning path to be followed (Storm 2013).

In terms of innate development, time and experience are considered to be the main elements. The constructive developmental theory suggests that “development is driven by new challenges that reveal the limitations of the current organizing principles”. Such principles regulate how people make sense of themselves and the world (Storm 2013).

Hence, the education and development of project management competencies can be understood as a multidimensional and complex process (Ramazani & Jergeas, 2014, p.46), where professional competency is “attained by a combination of knowledge acquired during training, and skills developed through experience and the application of the acquired knowledge” (Edum-Fotwe & McCaffer, 2000, p.112).

In relation to the means through which project management development can be undertaken there is training and education (Ashleigh et al., 2012, p.154). On the one hand, training provides a source of information and guidance concerning the different set of skills and knowledge that one needs to be successful in the organization for their present and future development (Antonacopoulou, 1999, p.18). On the other hand, project management in terms of formal education can lead to the increase of skills and the obtainment of well-recognized credentials (Walker, 2008, p.318).

Training of project managers should rely on the development of technical, management and leadership competencies (Müller & Turner, 2010, p.446). It requires as good an approximation to reality as can be provided in a classroom basis (Katz 1974), and it must cover generic knowledge areas of project management such as integration, time, cost, procurement, quality, communications, risk, scope, and human resource (Edum-Fotwe & McCaffer, 2000, p.113).

Professional bodies like the Project Management Institute and the International Project Management Association have established certain standards to support the need for developing competent project managers (Bredillet et al., 2014, p.254).

The project management professional bodies recognize and facilitate the guidelines or frameworks that underpin the training, skills and professional development of project management through their bodies of knowledge (Walker, 2008, p.317). These standards and credentials are developed based on identified ‘best practice’ within the profession (Bredillet et al., 2014, p.254).

Such competency frameworks for project managers follow a planned and standardized approach to projects under the belief that basically all of them require the same methods (Storm 2013). Nevertheless, the nature of projects and the specific context in which they are conducted rise an issue in project management competency (Crawford 2005).

Whereas training programs seem to focus on the analytical or technical skills, there are no project management standards for recognizing personal competencies in terms of skills or core personality characteristics (Crawford 2005).

However, the knowledge areas required by project managers in practice today transcend the technical aspects of traditional project management knowledge, and require general and management knowledge and skills transferable from one field to another (Edum-Fotwe & McCaffer, 2000, p.112). Project managers need to engage in continuous training courses to develop and apply human skills that match their personality with the requirements of their field (Thal & Bedingfield, 2010, p.255).

Ramazani & Jergeas (2014, p.46) suggest that both academic institutions and training agencies consider educating and training project managers in 3 main areas: “developing critical thinking for dealing with complexity, creating softer parameters of managing

projects, especially interpersonal skills as opposed to just technical skills, and preparing project managers to be engaged within the context of real life projects”.

Moreover, Ashleigh et al. (2012, p.159) propose that those involved in project management education emphasize human and conceptual skills in order to successfully prepare project managers through learning that resides on transferable skills and the available technology. Katz (1974) also states that skills can be not only improved through practice and training, but also developed by relating them to personal experience and background.

3.7. Project Management Education

Evidence presented by Koskela & Howell (2008, p.34) is strong enough to claim that a shift on how the project management discipline is imparted today is needed. This shift requires a closer relationship between a well established theoretical background and the actual day to day practice. This should be done simultaneously by all different stakeholders within the field.

According to Ramazani & Jergeas (2014, p.43) the fast-paced change of the economic, social and technical contexts has intensified the complexity projects bear. For instance, the amount of unexpected change coupled with the quantity of projects being run at the same time multiplies the effects one problem in one project could have, and ripples it unto other projects. Consequently, it is revealed that newly trained project managers more usual than not, are ill-equipped to take projects full on. It is suggested that project managers reduce these complexity “shocks” by developing the needed competencies through education.

The development of competencies requires the practitioner to have a knowledge interdependence between skills, attitudes, and behaviors in order to provide reliable and appropriate results. This merging of skills can only be attained through formal education and proper experience (Turner & Huemann 2000).

In terms of adult education, and related to the delivery of content, students constantly feel the need for more lab classes and practical workshops that will give them more experience to handle and manage projects in the real world. Group work and project/case studies assessments that emphasize interaction and feedback (Ashleigh et al. 2012, p.158) are also called for. The use of interactive projects rather than abstract examinations might more likely have a positive impact on the students’ ability to become effective practitioners of project management (Ashleigh et al. 2012, p.158). As an example, one of the interviewees on the research conducted by Ramazani & Jergeas (2014, p.44), clearly states that: “The education system should place a greater emphasis on problem solving and critical reasoning than on the regurgitation of information”.

Ramazani & Jergeas (2014, p.44) expand on this idea by stating that current education systems are not focusing on providing enough preparation for students. The misplaced belief that "one size fits all" is undermining their ability to reflect on the particular situations, and choose the appropriate techniques in order overcome complex and chaotic circumstances.

Accordingly, (Turner & Huemann 2000) propose new methods of delivering knowledge by using a multiple-method approach. Designed for a specific target group of the program, this approach encourages the participants to apply the concepts to which they

have been introduced, and by doing so gain experience. The methods include: case studies, shared experiences, simulations, and web based trainings.

Following the same train of thought, Ashleigh et al. (2012, p.160) propose that blending ‘transferable skills’ and ‘e-learning environments’ constructs will make a significant contribution to the project management teaching and learning agenda. With this in mind, combined learning does not simply refer to shrouding existing face to face teaching with teaching material uploaded onto internet based course management systems. What must be noted is that blended learning must be improved by a redesign of not only the course (modules) curriculum, but also entire programs (Ashleigh et al. 2012, p. 160; Ojiako et al. 2011, p.270).

The improvement of project management should be seen as on going, never ending process fueled by formal education and firsthand learning, so as to subdue the increasing levels of complexity that are disturbing the evolution of the project management practice (Turner & Huemann 2000). Among the several issues relating to project management education, Turner & Huemann (2000) highlight the following:

- Standardization the project management education from a global perspective, including the method of distribution and the information being taught.
- Development of fitting methods so as to meet the needs of all the stakeholders.
- Incorporation of practical needs of real projects for the development of specific skills while complying with the universities’ quality standards and its pedagogical needs.
- Gaining support from higher management in order to enrich the education of new professionals, as well as to empower the professions’ relevance
- And finally developing new models and techniques of project management education to enable the development of tacit knowledge in the classroom.

3.8. Project Management Institutions and Associations

Professional management associations and institutions, also called professional bodies, or organizations are usually nonprofit organizations seeking to increase the professions’ knowledge base, as well as to regulate and set guidelines in order to generate consensus among practitioners (APM 2015a; IPMA 2015f; PMI 2015b).

These professional bodies are involved in the development and monitoring of professional educational programs, the updating of skills, and the offer of certifications to indicate that a person or organization has the required qualifications in the subject area (APM 2015a; IPMA 2015f; PMI 2015b).

3.8.1. Project Management Institute (PMI)

The Project Management Institute (PMI) is a world-wide non-for-profit association for project, program and portfolio management, working in over 185 countries, and representing more than 650,000 practitioners. Considered to be the largest PM association in the world in charge of pushing the profession through its global ideals,

certifications and credentials, collaborative chapters and virtual communities, and academic research (PMI 2013b).

Founded in 1969 PMI supports and encourages all project professionals to pursue a new balance of global and local best practices, relationship building and sharing resources. (PMI 2015b) as well as a continuous improvement of skills and aptitudes so as to be a priority for project managers who wish to excel in the discipline (PMI 2015d).

In addition, one of PMI main undertakings is creating the standards, established by consensus and approved by a recognized body in order to ensure that your project management knowledge and frameworks are up-to-date reflecting the evolving profession known worldwide as the Project Management Body of Knowledge (PMBOK) (PMI 2015e).

PMBOK recognizes five basic process groups and ten knowledge areas typical of almost all projects. The basic concepts are applicable to projects, programs and operations. The five basic process groups are divide into: Initiating, Planning, Executing, Monitoring and Controlling, and Closing; while the ten knowledge areas focus on Project Integration, Project Scope, Project Time, Project Cost, Project Quality, Project Human Resource, Project Communications, Project Risk, Project Procurement, Project Stakeholder Management (PMI 2015e).

PMI introduced in 1984 the Project Management Professional (PMP) qualification aimed for experienced project manager responsible for all aspects of project delivery, leading and directing cross-functional teams. PMI also offers the Certified Associate in Project Management (CAPM). This qualification is for project managers who have a good level of knowledge and experience in running projects. It also has a Program Management Professional (PgMPSM) qualification for experienced program managers (PMI 2015d).

This process has the distinction of being the first ISO 9001 certified professional program in quality management systems, showing its emphasis in professional excellence. The certifications given by PMI are recognized worldwide exhibiting a proven level of knowledge and expertise in project management (Valledor & de la Fuente 2010, p.1466).

3.8.1.1. PMI's Accredited Academic Programs

The PMI Global Accreditation Center for Project Management Education Programs (GAC) is an accrediting body for “project management programs at the bachelor’s, postgraduate and doctoral levels offered within accredited institutions of higher education worldwide” (PMI 2014).

Established in 2001 aiming to advance excellence in project management education through qualified academic institutions, the GAC has up to now certified over 60 accredited programs around the world (PMI 2015a).

3.8.1.1. PMI's Registered Education Providers

Through its great influence, the PMI designates and certifies other institutions as qualified education providers that capture and deliver the value of project management.

Created in 1999 with the objective of creating a global network of education providers, the R.E.P. caters the needs of project management professionals in terms of continuous professional education (PMI 2013c).

PMI approves organizations such as “commercial training and educational firms, universities, colleges and community colleges, internal training departments of corporations, government agencies, and management consultant firms” to deliver project management training and education (PMI 2013c).

Over 1,600 R.E.P.s around the world have trained an estimate of 2.5 million students in the last few years (PMI 2015f).

3.8.2. International Project Management Association (IPMA)

The International Project Management Association (IPMA) is a non-profit international group integrated by members who operate in over 60 countries across Europe, Africa, Asia and America. Each national association runs in its own language, and according to its specific culture and national standards (Winter 2010).

It was originally constituted in 1965 under the former name of “International Project Management Organization” (INTERNET). As a forum for the exchange of experience among managers of international projects, it hosted its first international conference in 1967 in Vienna, and has grown since then (IPMA 2015f).

With the current goal of being the leading sponsor of project, program and portfolio management internationally, IPMA represents members on a global level, and plays a leading role in the development and promotion of the PM profession, providing standards and guidelines as the discipline evolves (IPMA 2015a).

Through its associations, IPMA offers internationally recognized qualifications based on the IPMA Competency Baseline (ICB), defined as the “common framework document which all IPMA Member Associations and Certification Bodies stand by to ensure that consistent standards are applied” (IPMA 2015e). The exact format of assessment varies from country to country, but generally it is as follows:

1. Level D: Certified PM Practitioners. Certifies having PM knowledge in all elements and aspects.
2. Level C: Certified PM Professionals. Professionals that are able to manage non-complex projects themselves and/or to assist managers of complex projects in all elements and aspects of PM.
3. Level B: Certified Project Managers. Focus on managers’ ability to manage complex projects themselves.
4. Level A: Certified Project Directors. Managers able to direct all projects of an organization or branch, or all projects of a program (IPMA 2015c).

According to IPMA (2015e), close to 250,000 managers were certified worldwide by the end of 2014 from which approximately a third has an advanced competency-based, professionally-assessed certification (level A, B, or C).

3.8.3. Association for Project Management (APM)

With over 21,150 individuals and 550 corporate members, the Association for Project Management (APM) is the largest professional body of its kind in Europe. Its mission is to develop and promote the project and program management discipline through the FIVE dimensions of professionalization which include Breadth, Depth, Achievement, Commitment and Accountability (APM 2015a).

As an essential part of the aforementioned FIVE dimensions of professionalization, and written by the profession for the profession, the APM Body of Knowledge (APM BOK) provides the foundation for the successful delivery of projects, programs and portfolios across all areas and activities. It is a scope statement for the profession as it sets the guidelines for all aspirants, new and experienced project managers recommending shared definitions, references and a comprehensive list of terms (APM 2015e).

APM also provides products and services that include registered memberships and qualifications, events, publications and online services; moreover APM acts as the certification body in the United Kingdom for the International Project Management Association (IPMA) (APM 2015b).

These qualifications, plus events, publications and online services position APM as the main Project Management association in the United Kingdom, as well as being a certification body for the International Project Management Association (IPMA) (APM 2015b).

3.8.3.1. APM's Accredited Academic Programs

The APM Academic Accreditation is in charge of certifying that educational programs are in alignment with the APM Body of Knowledge, reflecting a high quality of structure and content. Their mission is to help students and professionals choose the best education available for their project management careers through the identification of clear, visible and joined-up career progression opportunities (APM 2015e).

By 2015 APM had a total of 26 universities registered across the UK offering over 29 graduate and post graduate programs, ranging from bachelor and master degrees in project management, to programs with a specific focus in construction and engineering (APM 2015f)

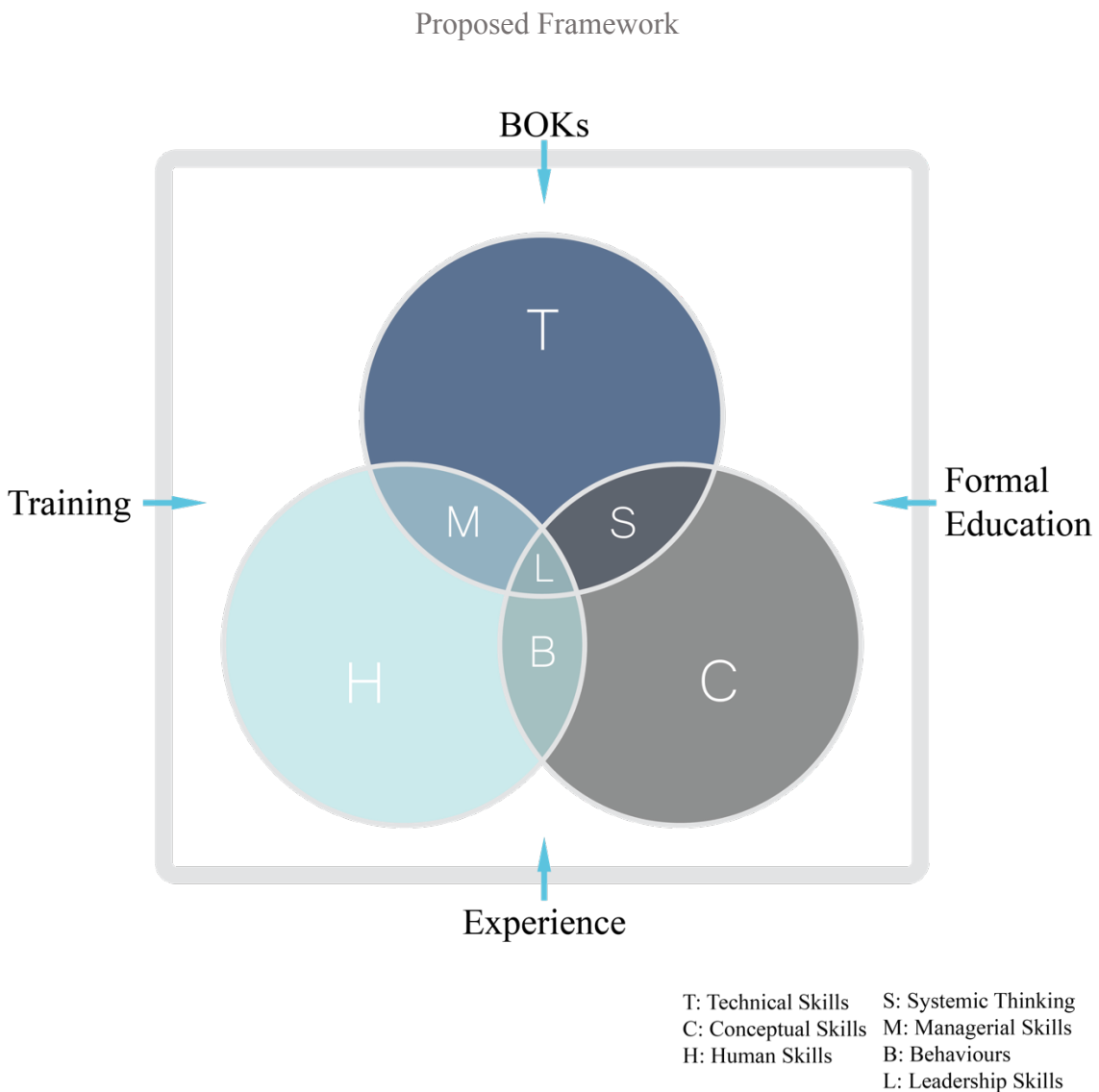
3.8.3.2. APM's Accredited Training Providers

APM also supports third party suppliers on the delivery of professional education, exclusively through their public and in house courses. By qualifying them as APM Accredited Providers, these institutions support students and professionals with the development of skills and competencies that are in line with the APM FIVE Dimensions of Professionalism framework (APM 2015g).

Having a total of 64 Accredited Providers all around the UK, APM provides professionals the appropriate tools in order for them to overcome the challenges and complexity of the ever changing management world (APM 2015g).

3.9. Proposed Framework for Analysis

The previously conducted literature review led the researchers to determine a framework through which the analysis will be made. Based on the information gathered throughout the chapter and taking into account the variables suggested by several authors regarding the skills required for effective project managers (see appendix 1), as well as the suggested ways through which such competencies can be developed, the following diagram aims to illustrate the frame of reference:



*Figure 2, Proposed Framework for Analysis.
Own Creation, based on Theoretical Framework.*

Figure 2 seeks to represent the researcher’s understanding of a well-rounded project manager who possesses technical, human, and conceptual skills which are linked through behaviors, systematic thinking approaches and managerial skills. At the center of the

diagram lays the leadership competency essential to the project manager, and in other terms, the core of it. The frame also intends to suggest that the development of such competencies can be influenced by several elements such as the BOKs, formal education programs, trainings and the project manager's own experience.

The scope of this research covers the human and leadership skills recognized by the professional bodies as essential to effective project managers, as well as the institutions' role in the instruction and development of such skills. The researchers considered only those with sufficient influence on the field. The PMI, IPMA and APM bodies along with their BOKs and the accredited academic programs are the main point of reference.

Furthermore, a summarized list of the most relevant human and leadership skills identified throughout the literature will provide a ground for the analysis. These skills were chosen based on the assumption that contrary to behaviors, attitudes and personality traits these competencies can be taught, trained and developed.

- Communication
- Team building
- Verbal and written
- Problem solving / Conflict management
- Negotiation
- Cultural awareness
- Leadership
- Change management
- Networking
- Collaboration

4. Practical Method

4.1. Research Strategy & Methods

As to reach the thesis objective of understanding the level of correspondence between existing project management education and the current demand for developing human and leadership skills in effective project managers, an exploratory research strategy was chosen.

An exploratory study is bound by asking "what is happening?", this strategy is concerned with looking for new views on a specific topic by asking the pertinent questions in order to weigh an event under different conditions (Saunders et al. 2009, p.139). This type of strategy is known to be flexible and adaptable, one of its biggest assets, since new information can drastically change the aim of the scope, improving the research through new and more valuable information. However, this does not mean that it lacks direction to the research question (Saunders et al., 2009, p. 140).

Moreover, following the two-fold discourse present in this investigation a mixed method approach was taken. According to Saunders et al. (2009, p. 109), it is completely possible to work with a variation of the usual research choices, quantitative or qualitative, regardless of ones' philosophical stance. Hence, mixed methods are possible, and conceivably highly appropriate.

The choice of method is commonly grounded on the philosophical stance, and falls along an objective-subjective continuum that ranges from research that is highly impartial in approach with its paradigm and metaphors set on those of the natural sciences, to highly subjective in approach based on models of anthropology (Long et al. 2000). It has to be emphasized when choosing a type of research, quantitative or qualitative, that there is a big difference between method and technique, where the former refers to the kind of investigation and the latter to the tools employed (Long et al., 2000b, p. 195).

A mixed method refers to the combination of more than one data collection technique. According to Smith (1981 as cited in Saunders et al., 2009, p. 154), both quantitative and qualitative methods have strengths and weaknesses; however, by applying them both a "method effect" can be carried out, cancelling out their soft spots. Additionally, the strategic use of different methods for different parts of the study, in a sequential or in parallel fashion, enables a larger grasp on the subject matter (Saunders et al., 2009, p. 151-154).

4.2. Data Collection Technique

Considering the research's main objectives, both a content analysis and semi-structured interviews were selected as the most appropriate techniques.

Content analysis, defined by Neuendorf (2002, p. 1) as a "systematic, objective, quantitative analysis of message characteristic", is catalogued as a careful examination of the interaction of social actors. There are different types of content analysis that vary from the pure quantitative collection of specific terms to a more subjective analysis of the ideas presented. For this research the type of content analysis inclined towards the more objective side of the continuum, known as coded analysis or coding (Neuendorf, 2002, p. 5-7).

Coding is the process of transforming raw data into a standardized form (Carley 1993, p.81). In other words, this method involves classifying what was observed into some quantifiable number or into a standard category. Because coding is the central task for content analysis, and because communication is usually the medium, record keeping is very important (Carley, 1993, p.81). This technique requires to have a clear, consistent, justifiable coding system. In other words, there needs to be good reason for choosing the codes and schemes, and once chosen those codes and schemes must to be repeatedly used in the same way for all sampled content.

On the one hand, this technique was applied to each of the main professional associations' BOKs (PMBOK, APM-BOK, and IPMA's ICB) using a comparative approach by seeking a coherent interaction between instances and principles through analysis and interpretations (Boddewyn, 1965, p. 262; Neuendorf, 2002, p. 6) of their content, especially regarding human competencies, or soft skills. On the other hand, a thorough examination of several academic programs' syllabi of formal education institutions was conducted. This was limited in scope by those institutions that are certified in some way by either PMI, APM or both in order to measure the correspondence between knowledge creators and the institutions transmitting it.

In addition to the content analysis of the BOKs, semi-structured interviews were conducted. As a main technique in exploratory research, interviews are seen as qualitative methods used by researchers to gather valid data relevant to the research question (Saunders et al., 2009, p.186). Defined by Qu & Dumay, (2011) as "the art of questioning and interpreting answers", the interview method can be applied in different ways. Whereas structured or standardized interviews rely on pre-established questions to limit the number of response categories, unstructured interviews are rooted in open-ended questions that aim to access the interviewee's perspective (Qu & Dumay, 2011, p.244). Furthermore, semi-structured interviews are designed with the purpose of understanding the participant's views on the topic (Saunders et al., 2009, p.334), as well as allowing the researchers to modify the style, pace and the order of questions in an attempt to obtain substantial responses (Qu & Dumay, 2011, p.246).

Semi-structured interviews are regarded as a flexible and accessible process capable of revealing important information based on the idea that like in regular human conversations, the interviewees will be able to respond in their own terms (Qu & Dumay, 2011, p.246). Hence, to fulfill the purpose of this study semi-structured interviews were conducted from a localist perspective. This approach implies taking the social context in consideration, as well as applying theoretical frames to make sense of the information gathered (Qu & Dumay, 2011, p.242).

4.3. Respondent Selection Criteria

Sampling is a central procedure to qualitative research since it reflects the study population from which data will be collected (Robinson, 2014, p.25). The sample universe is defined by the researchers based on inclusion and exclusion criteria which delineate the sampling process, as well as define who or what the study is about (Robinson, 2014, p.28).

In regards to the research conducted for this thesis, the authors defined a set of inclusion criteria that the potential respondents should fulfill in order to qualify for the study. These attributes were chosen for their theoretical role in the analysis and interpretation

processes (Robinson, 2014, p.28), and included being a professor delivering project management education within an academic or training program. This limited the sample to a rather homogeneous group; moreover, the purposive strategy followed by the researchers ensured that individuals within the sample had an important perspective on the topic in question (Robinson, 2014, p.32). However, since the participants were randomly chosen the sample included in a mix of professors teaching different subjects or topics within the project management field. This led to the collection of interesting insights not solely held by a particular type of professor teaching one specific subject in project management.

4.4. Interview Procedures

“The key to a successful interview is careful preparation” (Saunders et al., 2009, p.328). This process requires care and planning previous to, during, and after the interview since access to respondents is not easily gained and time is limited (Qu & Dumay, 2011, p.247).

Potential interviewees were first identified through a search of education providers that met the selection criteria of offering project management education in the forms of undergraduate or graduate programs, professional courses or trainings. By exploring the institutions’ websites and LinkedIn profiles in search of information on their academic staff, a list of potential respondents was developed stating the professor’s name, e-mail address, institution, role, academic major and other relevant information.

After designing a template, interview requests were sent via e-mail to all contacts. The e-mail explained the topic and the purpose of the interview, as well as the preferred method (online interviewing), and an estimated duration. It also stated the ethical considerations of the research and the researchers’ willingness to provide more information if needed.

In light of the fact that interviews can be intrusive and stressful for participants (Saunders et al., 2009, p.186) the researchers tried to prove their credibility and gain their trust by showing a proficient understanding of the topic and providing them with relevant information before the interview so as to give the participants the opportunity to prepare themselves (Saunders et al., 2009, p.328). The list of tentative semi-structured questions that was provided to the interviewees was designed under the consideration that the questions be understandable and allow the interviewees to give descriptive and insightful answers (Saunders et al., 2009, p.337).

As part of the planning for the interviews conducted in this research, and because they are considered complex events (Alvesson, 2003, p.13) a theoretical understanding was first achieved. Having in mind that the qualitative interviews act as means to produce knowledge by understanding and interpreting the interviewees ideas and impressions (Alvesson, 2003, p.13) the researchers developed sufficient knowledge of the topic areas in order to ask informed questions that would enable them to learn about the interviewees’ worldview (Qu & Dumay, 2011, p.239).

Furthermore, an interview guide was designed to reflect the themes that the researchers wanted to discuss (Saunders et al., 2009, p.328). This guide (see appendix 2) incorporated ideas that would help the interviewers make consistent and systematic questions that would lead the conversation toward the themes that they aimed to address

(Qu & Dumay, 2011, p.246). The guide was based on the literature review conducted in the previous chapter and the proposed framework for analysis.

The interviews were conducted via Skype, a software option available to facilitate communication over large distances (Deakin & Wakefield, 2014, p.604). As an opportunity to avoid travel costs and reach otherwise geographically dispersed participants, Skype was the favored choice for conducting the interviews since it provides several communication options: audio, video, landline or mobile telephoning, as well as instant messaging and file transfer facilities (Deakin & Wakefield, 2014, p.606) that allow more flexibility for the participants and interviewers.

A total of 5 interviews were carried out. At the beginning of each interview, to conform to ethical guidelines (Deakin & Wakefield, 2014, p.610), the interviewees were informed of their rights to confidentiality and anonymity, as well as their freedom to abstain from answering any question. The participants were also informed that the interview would be recorded for later analysis. This short statement led to the attainment of a full informed consent from the interviewees.

The interviews proceeded without a problem. They lasted approximately 40 minutes and were conducted in a semi-formal way which gave the participants the opportunity to feel comfortable with sharing their views on the matter. The language used in the interviews was simple and clear to make sure that the questions were understood and there were no unknown terms. As the respondents gave their answers the researchers took notes to follow up on specific topics or ideas. This practice granted the researchers a better understanding of the interviewee's perceptions and a more accurate interpretation of the results.

4.5. Primary Data Processing

In order to successfully process any type of data, a clear distinction between quantitative and qualitative data collection must be presented so as to clarify the basis of knowledge, the type of collection methods, and the type of analysis that needs to be done (Saunders et al. 2009, p.482). On the one hand, the basis for quantitative data analysis is generally numbers, collected either by numerical or statistical approaches, and analyzed through a use of diagrams and/or statistics (Saunders et al. 2009, p.482). On the other hand, qualitative data is based on meanings expressed through words, gathered through non-standardized collection methods, and analyzed through conceptualization techniques (Saunders et al. 2009, p.482). Although as stated by Kvale (1996 as cited in Saunders et al., 2009, p. 485) it might seem that data analysis is subsequent to the collection, it should be a parallel process.

Once the interviewees gave their consent, the interviews were recorded. This was done not only as a way to go back and re-listen, but as a mean for transcribing word for word the whole meeting, since according to Rowley (2012, p. 267), an immediate review should be made, in order to reflect on what was said, locate noteworthy arguments, and gain an insight on problems worth fixing before subsequent interviews.

Saunders et al., (2009, p. 485) argue that there are four ways to transcribe interviews, given that time consumption for this specific task is too high (8 to 10 hours per every hour of recorded audio). First, hiring a typist which can be expensive, and still time consuming. Second, using a foot operated recording mechanism in order to efficiently record just what is needed, lowering the amount of audio time to transcribe, but still in

need of transcription. Third, using a voice recognition software to dictate the whole conversation which can be time consuming if not done right. Last, transcribing only sections pertinent to the study. This requires a thorough listening at least a couple of times before defining what sections are going to be selected. This option proved to be most suitable, regarding this research's time and resource constraints, and the amount of interviews realized.

Rearranging the information is useful to get a sense of what was said, and to look at the bigger picture. Since the data acquired is verbal in nature, simplifying and reducing the content facilitates the analysis (Dicker 2008, p.5). Once the transcripts were finished, they were organized in data sets so that all pertinent information related to a specific topic was in the same place. This resulted in clear and structured format that was used by the researchers to familiarize with the reworked data (Rowley 2012, p.268). Conducting structured readings of said data, and selecting crucial themes previously established in the interview guide, worked in favor of deliberating on a proper form to present the findings.

Moreover, identifying the topics marked the first step towards classifying, coding and interpreting the data. The identification of all the words and terms that were repeated throughout the interviews and that were either, related to the list of human skills present in the proposed framework for analysis, or new topics, was taken into consideration. Whether they were in line with the research or emergent at the moment, they both needed to be crystallized, since these accounts contain the main insights of the research, and guide the narrative in the final chapters (Rowley 2012, p.268). Accordingly, these topics were selected by looking for trends and commonalities that deeply rooted the results.

Finally, interpreting the data is the way of making sense on what third parties said, and relate them with each other, in a way that is guided by the research question and objectives. Surfacing meaning can be biased, and one of the most important steps at this point is to try and reduce it as much as possible. As a good practice, Rowley (2012, p. 268) suggests inviting another researcher to revise the classification and coding to prove that it is actually unbiased.

This interpretation was fruitfully achieved by following Dicker's (2008, p. 5) advice on considering the findings in the sense of how the identified patterns work by evidencing: a) what such patterns are, as well as the strands of data that don't align, b) the relationship between the results and the research question, and if these results were expected or surprising, c) how meaningful the results are, regarding the gaps identified in the literature review, d) and finally if they present any recommendations not considered at the beginning of this research as well as suggestions for additional data to be collected.

4.6. Secondary Data Processing

Secondary data refers to information that has already been collected for some other purpose. This type of material is proven to be quite useful since it allows the researchers to analyze far larger data sets. The biggest benefit is that paired with information collected from interviews, or other means of primary data, it can radically increase the possibility of attaining valuable findings (Saunders et al., 2009, p. 268).

Quantitative data, by this stage in a pure raw form, has little to no meaning and needs to be processed and analyzed in order to convey any type of meaning (Dicker 2008, p.2). By using a descriptive analysis researchers can be able to bring this raw data down to an

understandable level (Dicker 2008, p.2) through methods such as frequency distribution, central tendency and variability. For the purpose of this research, frequency distribution seemed to be the most appropriate method. The use of tables and charts to evaluate ideas and concepts allowed the researchers to identify the relevant categories.

The secondary data that was collected, pertains to the competencies mentioned by the main professional bodies' (IPMA, PMI, and APM) own BOKs (ICB, PBOK and APM-BOK respectively). The researchers prioritized the chapters that focus on human, soft or team skills with the objective of identifying those competencies, and/or skills that are present in all BOKs, and those that are not. Next it was important to contrast the findings from this content analysis against competencies expressed in the literature in chapter 3, concentrating on the 10 main competencies suggested in the proposed framework for analysis. This process was repeated to identify reoccurring competencies and/or skills in the academic programs' syllabi and once more compared to the proposed framework.

5. Empirical Findings and Analysis

5.1. Primary Data – Interview Findings

Through the semi-structured interviews, the researchers were able to gather information about the respondents' view on the topic of interest that would help answer the research questions stated in chapter 1.

The data collected was categorized and arranged for further interpretation following the themes established in the interview guide. The findings are presented under six categories aligned to the research topic that establish the frame for the subsequent analysis and discussion.

The Effective Project Manager

As mentioned in the literature review in chapter 3, the definition of the skills and characteristics that make an effective project manager has been the focus of many researchers over time (Katz, 1974; Beale & Freeman, 1991; Zimmerer & Yasin, 1998; El-Sabaa, 2001; Loo, 2002; Dulewicz & Higgs, 2005; Anantatmula, 2010; Stevenson, 2010; Thal & Bedingfield, 2010; Fisher, 2011). The need to identify the competencies required for effective project managers to carry out successful projects has emerged from the growing project management practices among organizations who wish to gain a competitive advantage (Medina & Medina, 2014, p.1459, Anantatmula, 2010, p.13). Since one of the objectives of this thesis is to clarify the way project management competencies are being developed, it was important to first understand who is considered an effective project manager and what competencies he or she has.

The interviewees were asked to describe the effective project manager. Although it was considered “a tough question” by some of the respondents, the authors intended to trigger a reflexive process that would ground their subsequent answers. Whereas most of the interviewees shared their perspective directly on the effective project manager, only one of them made a distinction between the effective project manager and the ideal project manager, stating that the latter looks for the satisfaction of all stakeholders of the project and the project team (Interviewee #4).

As most of the interviewees agree, there is not one standard project manager; however, there are certain characteristics pertaining to the effective project manager like being a professional on the subject and having the necessary people skills. According to Interviewee #2 “an effective project manager is the one who reaches beyond the project goals with the least resources possible, including human resources [...] and manages to lead the strategic goals of the company”. Among the other criteria used to determine the effectiveness of a project manager was the overall satisfaction of the stakeholders, including the clients, the company and the project team. “The project manager should pursue a value proposition that is good for the customer without forgetting the company that appointed him” (Interviewee #3), as well as “making sure that by the time the project finishes all stakeholders and team members are happy and healthy” (Interviewee #4). The latter refers to avoiding that team members are worn out.

Moreover, the interviewees acknowledged the importance of human skills in selling the project and making sure that people follow the project manager to the final destination. Involving people from the beginning, engaging them in the decision making process, delegating work and giving team members the responsibility for progress and results

were some of the behaviors recognized by Interviewee #1 as key in effective project managers. Additionally, Interviewee #5 stated that “an effective project manager should be able to listen and talk to people [...] have administrative skills to keep track of the project, and be able to determine the next steps or where to go”.

The characteristics or skills mentioned throughout the interviews were recognized as being important for the delivery of the project, and while each interviewee had their own view on the profile of an effective project manager, it was taken that a different combination of skillsets can be required from project managers depending on the type of project and the size of the team they are dealing with.

Core Human Skills for Project Managers

Among the objectives of this thesis is to understand the current demand of human skills for project managers. Identifying those core skills that the interviewees consider essential would provide information to analyze and compare to those previously found in the literature review.

“Project managers need to be able to communicate, have the ability to coach people, build teams, and encourage and develop them”.
(Interviewee #5)

The most common answer shared by the respondents was that project managers must possess leadership skills. Understood as “the skills needed to drive processes and people” (Interviewee #1), “the ability to inspire others” (Interviewee #3), the faculty of “mobilizing people towards a common goal” (Interviewee #4), and “being capable of identifying what other people are good at so as to give them the correct tasks that would help them develop their own capabilities” (Interviewee #5), leadership is believed to be a core competency for project managers. Nonetheless, it was mentioned that leadership requires other human skills such as empathy and communication, as well as a visionary personality (Interviewee #2).

Communication, another important skill identified by the respondents as critical to project managers, was mostly related to listening which was in fact regarded as a core human competency. Whereas Interviewee #2 considers listening “as a way to create empathy” and understand the condition and state of team members so as to distribute the work in a more efficient way, Interviewee #1 supported this belief by stating that listening is fundamental “to understand the people’s concerns”, allowing the project manager to have a clear vision of the project based on what the real situation is. Furthermore, it was also brought up by one of the respondents that non-verbal communication is “even more important than verbal communication since 70% of what the person communicates is done non-verbally”. These skills had not been recognized within the proposed framework for analysis; however, they are considered to be important for project managers leading teams. Also in terms of communication it was said that “every project is an island” (Interviewee #3) and therefore it is helpful to be able to talk to stakeholders in the “same language”, or to have the ability to speak multiple languages when dealing with people from different backgrounds and cultures.

Among other skills recognized as important to project managers were decision making which requires courage (Interviewee #1), flexibility which involves “being able to come

up with different plans and have the mind set to go with them” (Interviewee #4), and negotiating “in order to find short term solutions to problems” (Interviewee #5).

In addition to the skills previously mentioned, Interviewee #1 indicated that “creativity is a key skill for new leaders facing the future”, and that “there is a need to stretch creative thinking skills to apply them to all the other content and knowledge” that one already has. Moreover, characteristics such as imagination, curiosity, and charisma were recognized as important for project leaders to guide their team.

Techniques for Developing Human Skills

Once the core human skills essential to project managers were identified, it was important to understand if they are being taught, and the techniques through which they are being developed. This led the researchers to ask questions regarding this matter with the objective of determining the most common methods, as well as hearing further suggestions that the respondents could have.

Whereas some of the interviewees considered that people are born with certain human skills and the potential to develop them, Interviewee #3 stated that “if you have them you can develop them, but either you have them or you don’t”. Along with this last answer the interviewee argued that the human skills are usually associated with personality traits that one is born with, including compassion, charisma, humility, and the confidence to talk to people. If people don’t have these, it is hard for them to develop soft skills.

Nevertheless, it was agreed upon the interviewees that in order to develop human skills awareness is needed. According to Interviewee #2 “awareness is the first step to seeking support mechanisms for developing human skills”. Moreover, it was added that if one is aware that a skill is important, the same awareness will set the body in motion (Interviewee #5). This topic was usually followed by that of practice, in the sense that being aware of the need to develop human skills is not enough, but that there needs to be an understanding of theory inevitably followed by practice. One of the respondents thinks that one can learn the theory and the techniques of certain skills, but that they need to be put into practice in concrete situations in order to develop them. The following quote summarizes the perception of most of the interviewees in regards to this point:

“To develop the skills it is needed to create awareness, teach the theory and then practice [...]”, and because “skills are learnt by practice [...] experiential learning, or learning by doing is important”.
(Interviewee #2)

Among the popular techniques recognized by the respondents as helpful in the development of the human skills previously identified were activities that promote teamwork, as well as trainings that complement the technical aspect of the skills taught in schools. In the words of Interviewee #2 “training consists in giving certain exercises and creating certain environments for the people to use the skills in a safe way”.

Furthermore, other techniques were suggested by the interviewees as being effective in the learning and development of soft skills. Adding some specific coaching or mentoring programs to support the learning of skills (Interviewee #1), participating in workshops,

using case studies as an active learning process (Interviewee #2), and reflecting on one self's behaviors (Interviewee #4) were among the recommendations. This last point was shared by another one of the interviewees who added that keeping a diary of what you are doing and your thoughts at different moments, to understand why you made decisions at some point, and to refer back to that in the future, proves to be very helpful (Interviewee #5).

The Role of Bodies of Knowledge in the Development of Human Skills

As stated before professional bodies are involved in the development and monitoring of professional educational programs, the updating of skills, and the offer of certifications to indicate that a person or organization has the required qualifications in the subject area (PMI 2015b). Furthermore, the institutions aim to develop “the leadership capability of all those impacting on project success”, drive successful change and disseminate valuable knowledge (APM 2015c).

With this in mind interviewees were asked to share their perspective on the role that Bodies of Knowledge play in the development of human skills. Most interviewees agree that it is not really the institutions' focus, nor should it be the main one. Their primary role is to set the trend for the minimum technical capabilities required for project management practice, as well as to set a common language between practitioners.

Most compelling ideas, show that even though Project Management lies in great part on the social aspects of the practice, the guides created to structure said practice were developed with an engineering background in mind (Interviewee #5), with an aim on efficiency rather than effectiveness. This difference as clarified by Interviewee #3 can be expressed by bestowing these terms on specific roles. On the one hand the Project Management Officer (PMO) who is in charge of generating Gantt Charts, structuring a WBS, controlling the budget, and basically taking on all the administrative areas of a project, relies on the BOKs as its main guide to efficiency since they reveal exactly how to develop all these governance practices. On the other hand, the Project Manager (PM) in charge of safeguarding that all the people involved in the project including clients, stakeholders, shareholders, and team members work together and show commitment towards the project require something more than just the BOKs.

Interviewee #3 stated that even though the BOKs are good, important, and necessary to all project managers, they only represent 20 to 30 percent of what is really needed. According to him it is easy to know how to perform the technical part of the job, the hard thing is being a leader, as project managers might lack the knowledge on how to make people work together, inspire them to support them in reaching a set of goals. “These skills come from experience, and it is really hard to explain in a book something that cannot be put on words” (Interviewee #3). Soft skills are in a way subjective and vague, and it is impossible to put vagueness into an equation.

Respondents acknowledge that human competencies are in a way the “newcomers” in the practice of project management, and thus have not been as emphasized in the BOKs as the technical aspects are. Nevertheless, it has been recognized that they are needed within the field. Consequently, most interviewees agreed that every edition of the BOKs show improvement in the delivery of human skills content by adding more related concepts and linking them to theory and practice.

Finally, it was agreed that the human skills mentioned in the BOKs are probably the same in other professions since they are essential to most fields (Interviewee #5); however, regardless of this generalization it was agreed that role of these BOKs concerning human skills is more about creating awareness of their existence and usefulness rather than providing detailed account on how to achieve and use them.

The Role of Formal Education Programs in the Development of Human Skills

Ramazani & Jergeas (2014, p.44) evidence in their paper how formal education systems lack a proper focus on preparing students, and how “generic” teaching is undermining their ability to reflect on the particular situations and to choose the appropriate techniques in order overcome complex and chaotic circumstances. With the objective of expanding on the topic, respondents were asked about their view on the role of formal education programs have in the development of human skills.

Throughout the interviews most professors expressed their belief that it is not really the main role of schools to introduce these topics to the students, especially considering the time constrains. In the case of postgraduate programs, the relatively short time it takes to conclude a program renders professors incapable of fostering human competencies. However, Interviewee #1 argues that this can be modified, and that “the more students ask real questions, the more academics will cope to face the challenge, so the more they [students] ask, the more they get”. Ultimately it is up to the students to demand the inclusion of human skills to the content of the programs.

Interviewees #1 and #3 claim that the academics’ experience dictates the importance they give to human skills, and that since most of these courses are being taught in industrial engineering/construction faculties, professors might not have the appropriate background to touch upon people skills, reflecting a gap in the understanding of the need for these soft skills (Interviewee #2).

Another respondent considers that courses should highlight the human side as well as the technical because teaching just the technical means that schools are missing a fundamental part of academia; however, he believes that we might not see in our time (Interviewee #4).

Nevertheless, within the education programs that are mainly theoretical there are some techniques being implemented nowadays in several countries to promote experiential learning (Interviewee #2) since it is really hard to simulate people relations in classrooms (Interviewee #3). The incorporation of workshops into the programs is thought to be a good example. Interviewee #5 proposes another solution that, although subtle in a way, can turn out to be quite useful. It involves implementing teamwork dynamics during regular courses. If teamwork is promoted the soft skills are enhanced, and by facilitating activities were cooperation is fostered, over a long period of time, the soft skills can be developed. It's not much about the subject, but more the way it is imparted. It should include activities that promote teamwork even if the core is hard skills.

In the same way it is suggested that while developing a program, professors should include generic skills: leadership, communication, negotiation and networking. “These must be built into the program as well as being part of the examinations” (Interviewee #5).

Last, all interviewees agreed that, regardless of the universities’ role in teaching human skills, they do need to develop in students a sense of awareness that personal interactions

are essential to the practice. “More common than not you need to deal with people interactions, and develop them outside the institution” (Interviewee #3); therefore, the programs that are well developed will promote self-efficacy, which refers to being aware that one has the knowledge or the hard skills to achieve a better performance (Interviewee #5). Interviewee #4 added that education institutions should at least provide the fundamentals and create awareness for the future development of human skills.

Other Remarks

Throughout the interviews, the participants shared their perception on other topics as well. This helped the researchers get a broader understanding of their ideas and views on the project management discipline.

Project managers are expected to be content driven, but also to be aware of the people that build up the team. Interviewee #1 suggests that “if you have to make a choice, be ready on content and be aware of your skills to develop them, but also, make sure to choose the right people”.

Furthermore, Interviewee #5 recognized that now a day, projects are different from one another, becoming more complex, and involving with more partners and people from different backgrounds; hence, it is important to learn to work across borders. To achieve this project managers need to learn the technical skills, and redesign the way they think (Interviewee #1). They need to engage themselves in a reflective process to identify behaviors and learning gaps (Interviewee #2). Project managers also need to receive feedback for further improvement.

Aside from identifying the main human skills and behaviors of project managers, Interviewee #5 states that they should never be seen as isolated skills, but as a set of interconnected competencies in the achievement of success. Moreover, Interviewee #4 complements these notions by saying that, even though “it is crucial to develop these [people] skills, intangible behaviors like passion are vital to the delivery of results. Passionate managers are prone to succeed and motivate people to follow them, but too much passion, or channeled in the wrong direction can become negative”.

As a final remark it was found that “everyone is talking about how important it is to involve people in the process” (Interviewee #1), and how the need of soft skills is present; nevertheless, it was acknowledged by all respondents that not much progress has been made to develop them. The problem lays in the fact that companies are the ones who have identified the need for said skills, and so they are the ones investing in their training and development, whereas the approach of associations and formal education bodies towards the topic seems obsolete.

5.2. Secondary Data – Project Management Bodies of Knowledge

Secondary data was gathered in order to strengthen and expand the information obtained from the semi-structured interviews about the pertinent soft skills required by project managers, and the focus different entities have on the matter (Saunders et al. 2009). This data consists on the skills listed by the different Bodies of Knowledge (PMBOK 5th Edition, APM-BOK 6th Edition, and the ICB 4th Edition), a thorough literature review of

papers discussing the importance of human and leadership skills, and the syllabi of 8 project management UK based postgraduate programs imparted by certified universities.

A content analysis was first done through a review of the Bodies of Knowledge to identify the focus given by each institution to technical and human or leadership skills. First, it was found that PMI's PMBOK puts a greater focus on technical skills than APM and IPMA do in their BOKs (Morris et al. 2006, p.712). The PMBOK 5th edition is based in ten knowledge areas (previously listed in sub-chapter 3.8.1) and five process groups (PMI 2015e) mostly focused in technical topics. For this reason, Morris et al. (2006, p. 717) states that the PMBOK guide suggests a strong execution angle, having hardly any material on human behaviors

More specifically, the PMBOK is composed of 13 chapters adding up to a total of 60 topics. Communication and human resources are covered by one chapter each, comprised by three and four topics respectively, while change management is only covered by one out of a total of six topics in its pertinent chapter (PMI 2013a). Even though these are topics related to human skills, the PMBOK's focus is set more on the technical aspect of each competency, guiding practitioners from "one stage-gate/milestone to another", which is regularly accepted as a suitable governance practice (Morris et al. 2006, p.717). Additionally PMI added an appendix (appendix X3) for the PMBOK's 5th edition, listing a set of eleven "Interpersonal Skills" (listed below) required by project managers which, according to them, help them "analyze situations and interact appropriately" to effectively manage the project (PMI 2013a, p.513).

- Communication
- Team Building
- Conflict Management
- Negotiation
- Political and Cultural Awareness
- Leadership
- Influencing
- Motivation
- Decision Making
- Trust Building
- Coaching

Second, the UK based APM-BOK 6th edition (much broader in conceptual breadth and scope than the PMBOK) has its core based on the success and failure of projects. It is reliant on extensive review of literature and survey of professionals (Morris et al. 2006, p.717). This BOK is divided into 4 sections, composed of 64 topics, from which one whole section comprised of 13 topics, basically 1/5 of the book (listed below) addresses interpersonal skills (APM 2012, pp.5–6). According to APM applying interpersonal skills provides the opportunity to create high-performing teams, build individual effectiveness, develop confidence and drive success. Individuals who actively develop their personal skill sets are able to manage their work more successfully (APM 2015f).

APM's Body of Knowledge also presents the personal profile of a project manager. The principal characteristics of this profile are those attributes required by the project manager to bring together all stakeholders into an effective team. For example, the project manager should be positive, proactive and have a common-sense approach in

order to foster cooperation. He/she should be open minded, fair, and have an adaptable attitude to new ideas, practices and methods. Moreover, the project manager should be a prudent risk taker, show a strong commitment to the project's success, and ideally be the “keeper of the vision” (Willis 1995, p.97).

- Communication
- Conflict Management
- Negotiation
- Leadership
- Delegation
- Influencing
- Teamwork

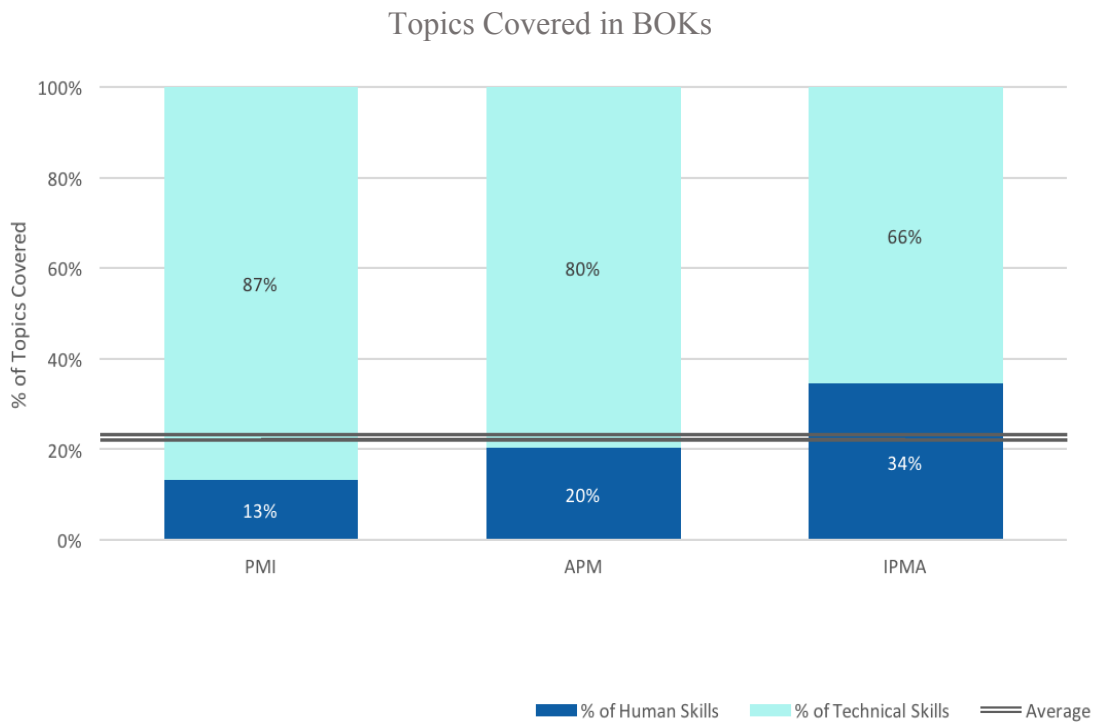
Third, IPMA’s ICB 4th edition, differs from the PMI and APM BOKs by taking one step further onto producing national guidelines for competencies of project managers instead of just project management processes (Pantouvakis et al. 2013, p.246). This evolution on the way subjects are seen can be noticed by comparing the original ICB in 1997, ICB2 in 1999, ICB3 in 2006 and the latest ICB4 published late in 2015. With each edition more and more emphasis on contextual and behavioral competencies is given through the entire volume. Moreover, a clearer and more people inclusive definition of competency is provided by stating that it is, in rough words, a particular combination of knowledge, skill, and personal characteristics (Pantouvakis et al. 2013, p.246).

The ICB’s competency baseline is divided into three core sections focusing solely on: Individuals working in project management, Individuals working in program management, and Individuals working in portfolio management. Each of these sections is subdivided into three basic domains: 1) People, 2) Perspective and, 3) Practice. This structure follows the “Eye of Competency” framework which aims to create a whole and balanced individual (IPMA 2015d). Regarding the people domain ten competencies (listed below) are listed and thoroughly explained. They represent the personal and social competencies that according to IPMA a manager needs to possess in order to be able to achieve project success.

- Personal Communication
- Negotiation
- Leadership
- Teamwork
- Self Reflection & Self Management
- Personal Integrity
- Relations and Engagement
- Conflict Crisis
- Resourcefulness
- Results Orientation

The extensive review of the BOKs led to identification of the different human or leadership competencies a project manager should have according to each of the institutions, and the extent to which they covered them in their content. Figure 3 shows the percentage of technical and human content of the three BOKs.

As stated before, PMI shows the least inclusion of soft skills in their Guide to the BOK 5th edition with a 13% of the whole content dedicated to them. Compared to past editions this small percentage is a major change since in previous editions there was no mention of soft skills at all. Regarding the APM BOOK, the focus on human or leadership skills has remained stable from past editions. With a 20% of its topics dedicated to managing people, and the behaviors necessary for project managers the APM BOK describes why these competencies are important; however, it fails to explain how to develop them. Last, IPMA’s ICB trumps the aforementioned BOKs by going over the average in regards to the amount of human-related topics addressed in their content with a 34% on their last edition (4th). This guide differentiates itself from the others by describing thoroughly how these competencies should be used in different scenarios, in projects, programs or portfolios, and the relationship each competency has, technical or human, with all others throughout the book.



*Figure 3, Topics covered in BOKs.
Own Creation, based on BOKs.*

A final list of competencies was developed from all the topics mentioned in the different BOKs. The common competencies among all sources were Communication, Conflict, Negotiation, Leadership and Change Management skills, representing 50% of all identified topics (see Figure 4). While most skills have been central to the discussion, 20% are left on the periphery including Competency, Ethics Frameworks, Learning and Development, Decision Making, Self-Reflection and Self-Management, and Results Orientation. The remaining 30% is covered by skills such as Team Building, Verbal and Written Skills, Cultural Awareness, Networking, and Collaboration.

Human Skills Identified in BOKs

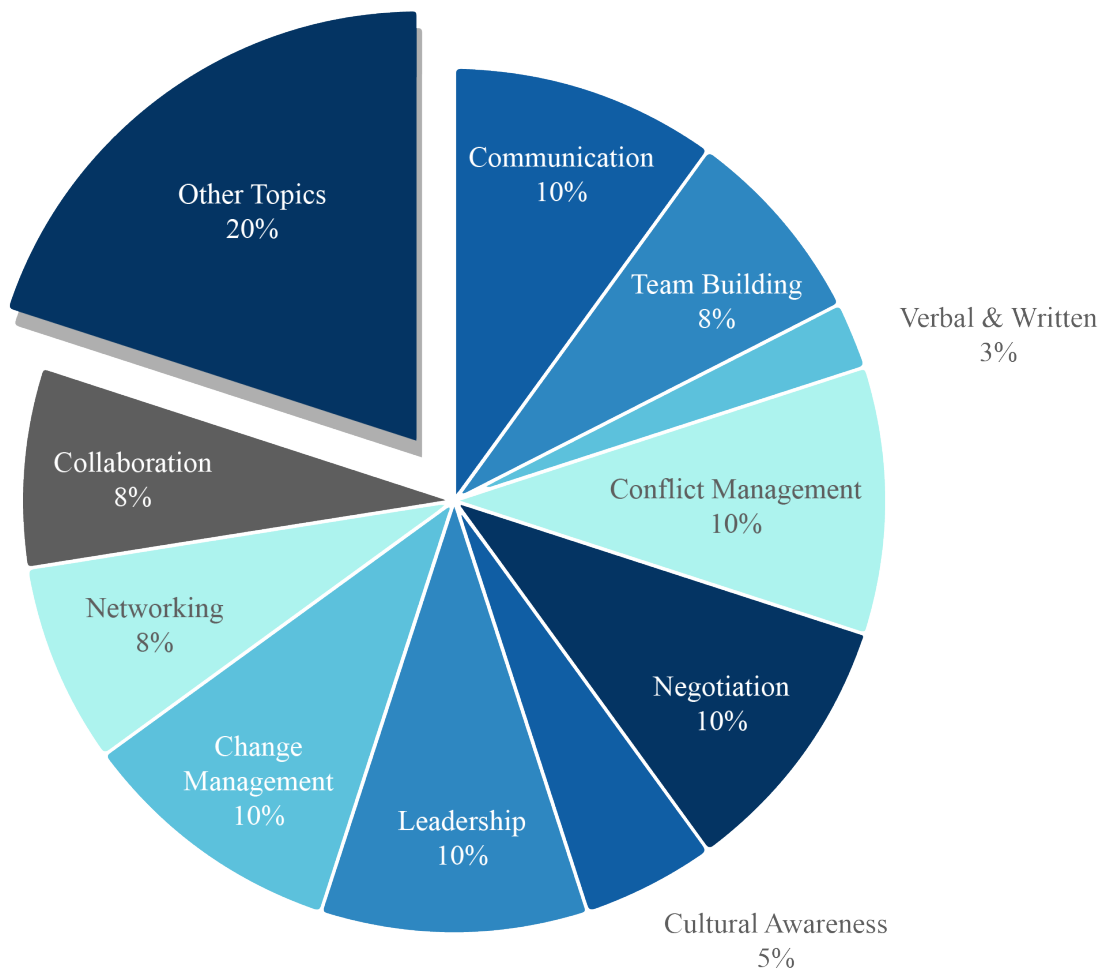


Figure 4, Human Skills Identified in BOKs. Own Creation, based on Theoretical Framework and BOKs.

5.3. Secondary Data – Project Management Academic Programs

The second part of the content analysis was done through a review of the project management academic programs provided by accredited higher education institutions in the UK.

There are 5 universities accredited by the PMI as formal education providers out of which 2 are R.E.P.s and 3 are accredited by the GAC. Such universities offer postgraduate programs in the discipline of project management. Furthermore, there are 23 universities and 1 college accredited by APM, imparting a total of 2 undergraduate

programs and 23 postgraduate programs in the UK. It is worth mentioning that from all the above there are 3 universities accredited by both PMI and APM.

Sample of Certified Programs

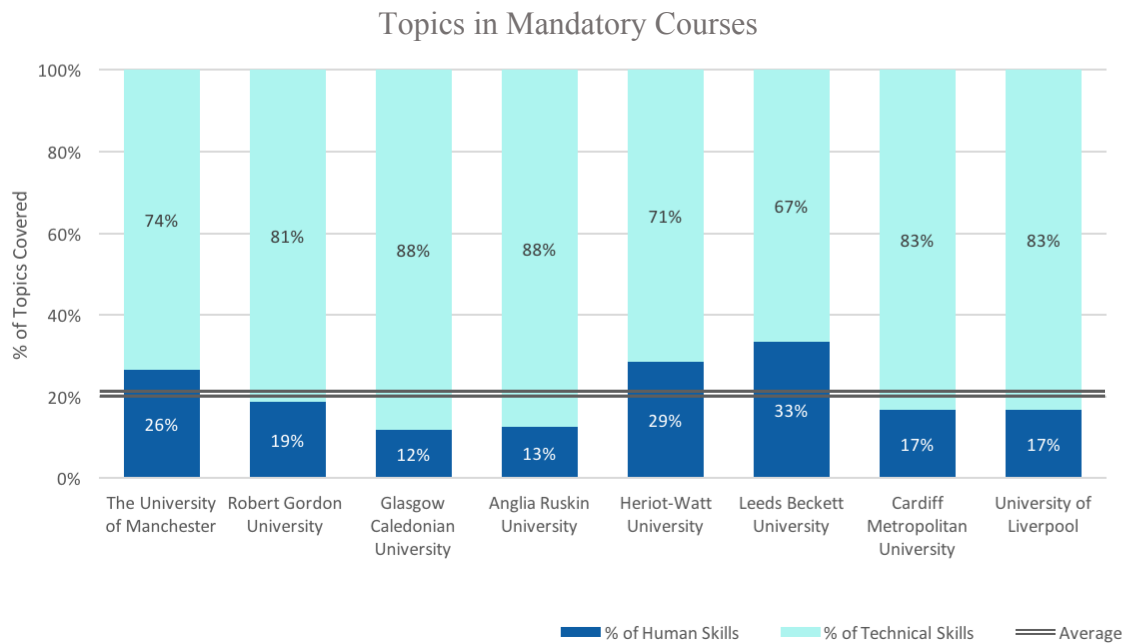
University	Level	Program	Duration (months)	Accreditation	
				PMI	APM
The University of Manchester	Postgraduate	MSc Management of Projects	12	x	x
Robert Gordon University	Postgraduate	MSc Project Management	12	x	x
Glasgow Caledonian University	Postgraduate	MSc International Project Management	12	x	x
Anglia Ruskin University	Postgraduate	MSc Project Management	12		x
Heriot-Watt University	Postgraduate	MSc Strategic Project Management	12		x
Leeds Beckett University	Postgraduate	MSc Project Management	12		x
Cardiff Metropolitan University	Postgraduate	MSc Project Management	12	x	
University of Liverpool	Postgraduate	MSc Programme and Project Management	12	x	

Table 1, Sample of Certified Programs. Own Creation, based on analyzed education programs.

A sample of 8 programs (see Table 1) was taken in order to do a content analysis that would allow the researchers to analyze the courses' structure and identify those modules that touched on human or leadership competencies. The programs were chosen randomly; however, only postgraduate programs were selected with the objective of carrying out a fair comparison.

The primary source of information were the programs' syllabi. Each of them stated the courses delivered throughout the program and whether they were mandatory or optional. Additional to the list of courses, the researchers gathered information on the specific units and learning objectives that constituted the course, along with a description of the topics and the method of delivery (lectures, practical classes, workshops, projects, and independent study). Each course within the curriculum had a total number of topics covered or established in the learning outcomes. A content analysis was done, focusing on the identification of human and leadership topics within the description of each course. The topics covering such skills were counted and weighted against the mandatory and the available optional courses.

The universities require that the students undertake a certain number of courses in order to receive the corresponding degree. 75% of the programs considered in the sample called for the completion of 9 or 10 courses, including an average of 7 mandatory courses and 1 optional, plus a master dissertation. Mandatory courses within the programs ranged from 5 to 8 and covered mostly technical topics that accounted for an average of 79% of the courses. Topics such as project management theory, project planning, project control, project costs, project procurement, project tools, risk management, and management systems were among the most common. Regarding the optional courses, 60% of the programs required that at least 1 one of them was taken. The optional courses covered mostly technical topics including contract management, logistics and operations. Figure 5 provides a summary of the distribution of the required subjects per program at each university.



*Figure 5, Topics Covered in Formal Education Programs.
Own Creation, based on analyzed education programs.*

The content analysis reflected that an average of 21% of the topics covered within the mandatory courses were related to human or leadership skills (see Figure 5), whereas these represented only 2% of the topics covered in the optional courses. The main human-related topics taught as part of the mandatory courses were focused on leadership, communication and teamwork, and on conflict management and negotiation for the optional courses.

Such topics were part of the comparison made between the human or leadership-related topics found in the syllabi of the different postgraduate programs' mandatory courses and the proposed frame of reference established in chapter 3 (see appendix 3). The topics within the optional courses were not considered for this part of the analysis based on their low proportion. As Figure 6 shows, most of the skills within the frame of reference are in fact considered in the programs' mandatory content (perhaps with a different name or approach); however, there are some that are overlooked. Furthermore, there were also new topics mentioned in the courses' content that were not previously mentioned in the frame of reference which include organizational culture, organizational behaviors, and innovation.

The topic given the most focus was team building, which includes subcategories such as team working, team development, team control, influence, and motivation of teams. These topics account for over 32% of the total number of topics covered within mandatory courses. Next was leadership, taught in 7 out of 8 programs, which represents 22.6% of the entire offer. Topics including communication, conflict management, and change management cover another 25.8%, while the remaining percentage is composed by the topics of negotiation, cultural awareness and others. There were three skills from the proposed frame of reference that were not included as topics within the mandatory courses of any of the programs: verbal and written skills, networking and collaboration.

Nevertheless, it is relevant to state that despite them not being explicitly mentioned in the information obtained about the programs, there is a possibility that they are taught or reinforced within another topic or course.

Human Skills Identified in Formal Education Programs

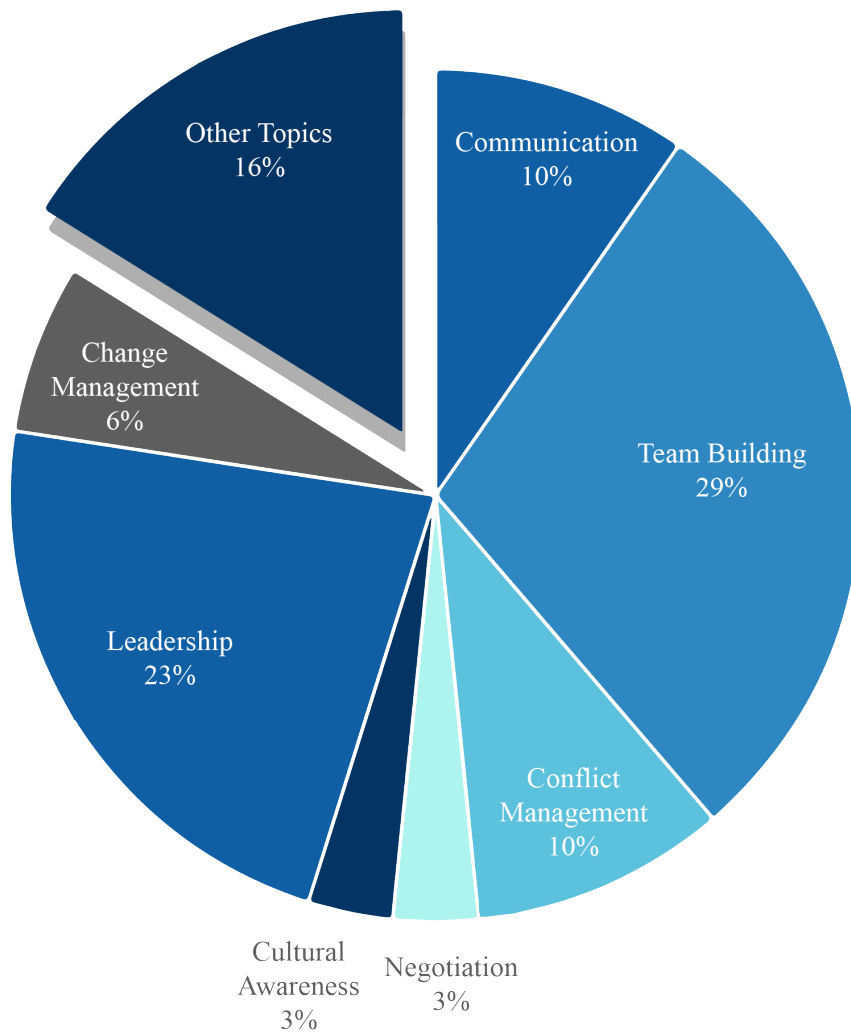


Figure 6, Human Skills Identified in Formal Education Programs. Own Creation, based on analyzed education programs.

5.4. Discussion

Through this section the researchers aim to critically evaluate the collected data in light of the proposed framework for analysis. This framework emerged from a thorough review of the literature and its interpretation, and seeks to provide an illustration of the researchers' understanding of the topic, as well as to guide their reasoning throughout the study. The analysis and discussion of the results are intended to address the research questions so as to reach a conclusion and make a significant contribution to the ongoing discourse. Through this analysis the researchers intend to answer the following research questions:

To what extent do current project management bodies of knowledge and formal education programs promote the development of human and leadership skills within their frameworks?

How are human and leadership skills being taught and reinforced within formal education programs nowadays?

The proposed framework provides a structure for the analysis. On the one hand, it represents the researchers' understanding of a well-rounded project manager, who possesses technical, human, and conceptual skills; however, the scope of this research covers only human and leadership skills. On the other hand, the proposed framework presents those elements key to the development of such skills (see Figure 2).

The first step towards the achievement of a possible response to the research questions was to identify the human and leadership skills that appeared to be most relevant to project management in regards to the proposed framework, the interviewees' perception, and the secondary data gathered. As found throughout the literature, many authors have tried to define the human skills, behaviors, and characteristics of effective project managers (Katz 1974; Beale & Freeman 1991; Zimmerer & Yasin 1998; El-Sabaa 2001; Loo 2002; Dulewicz & Higgs 2005; Anantatmula 2010; Stevenson & Starkweather 2010; Thal & Bedingfield 2010; Fisher 2011) without really reaching a consensus. However, there are some skills that seem to be prevailing in the literature. These were considered as part of the proposed framework, and were then compared to the ones mentioned by the interviewees and those found in the content analysis of the BOKs and the syllabi of formal education programs. The following table was designed to serve as a visual tool for the analysis (Table 2).

List of Identified Skills

Skill	Sub Skills	Frame of Reference	Primary Data	Secondary Data - BOKs *	Secondary Data - Academic Program	Covered
Communication	a) Listening b) Non-verbal communication	x	x	x	x	4/4
Team Building	a) Teamwork b) Team development c) Motivation d) Delegation e) Influencing f) Trust building e) Coaching	x	x	x	x	4/4
Problem Solving / Conflict MGMT	a) Flexibility	x	x	x	x	4/4
Negotiation		x	x	x	x	4/4
Cultural Awareness	a) Political awareness	x	x	x	x	4/4
Leadership	a) Empathy	x	x	x	x	4/4
Change MGMT		x			x	2/4
Networking		x	x			2/4
Collaboration		x	x			2/4
Verbal and Written		x				1/4
Self-reflection			x	x		2/4
Decision Making			x	x		2/4
Creative Thinking			x			1/4
Personal integrity and reliability				x		1/4
Relations and engagement				x		1/4
Resourcefulness				x		1/4
Results orientation				x		1/4
Organizational Culture					x	1/4
Organizational Behaviors					x	1/4
Innovation					x	1/4

* At least in one BOK

*Table 2, List of Identified Skills for Analysis.
Own Creation, based on analyzed education programs,
theoretical framework, and BOKs.*

Among the different skills identified as essential to project managers, and therefore given the most focus by the BOKs, formal education programs and professors is team building. As a wide-ranging concept, team building integrates other skills such as team work, team development, motivation, delegation of work, influencing others, trust building, and coaching. All of these skills enhance the collaboration of groups of people working together towards a common goal (APM 2012, p.6), which in the case of project management is key to the achievement of success (Yang et al., 2011, p.265).

In the case of BOKs, team building is uniformly included by all institutions, although there are some differences on the focus given to certain sub-skills. Whereas the APM-BOK (APM 2012) simply introduces the skill by describing the term in its people chapter, the PMBOK (PMI 2013a) goes further into detail by mentioning basic tasks and processes a manager can perform to successfully acquire this skill. Additionally, the latter includes a list of good practices on how to embrace this skill, like introducing an appropriate rewards/recognition schemes in the project team. The ICB (IPMA 2015e) takes a similar approach regarding team building in their people chapter. It goes into more detail by thoroughly explaining 5 key competency indicators (see below) that can strengthen the skill, and by stating its relationship to other skills, both technical and human.

- Select and build the team
- Promote cooperation and networking between team members
- Support, facilitate and review the development of the team and its members
- Empower teams by delegating tasks and responsibilities
- Recognize errors to facilitate learning from mistakes

Among other suggestions to develop this skill, is that a continued or renewed team-building effort is required. Project managers have to constantly replenish the good team dynamics previously set to “make sure that by the time the project finishes all stakeholders and team members are happy and healthy” (Interviewee #4). This can be achieved by constantly promoting teamwork, as well taking special trainings that complement the technical aspect of the skills taught in schools. Outcomes of team building include mutual trust, high quality of information exchange, better decision making, and effective project management.

Leadership skills are also covered to a greater extent than other skills within the content of the BOKs and project management programs. Moreover, it is the skill most recognized by professors and lecturers as key to effective project managers. The need to display leadership within the project team involves providing direction and guidance, as well as having the “ability to choose and apply appropriate styles of management in different situations” (IPMA 2015e, p.90). Associated with empathy, or the ability to put yourself in the position of someone else (Interviewee #2), leadership skills give project managers the opportunity to influence and guide others towards a common purpose (APM 2012, p.9). Aligning people and inspiring others are known to be primary tasks of project managers demonstrating leadership skills, as well as engaging the team in the decision making process and empowering them to achieve good results (Interviewee #1). As shown in the proposed framework for analysis (Figure 2), leadership lays in the core of what is understood to be an effective project manager, which according to the research

is supported by the interviewees who believe that leadership is a core competency that requires other types of skills and associated behaviors. For project managers to demonstrate strong leadership, they must have the sufficient technical knowledge to help other team members when required (Interviewee #3), as well as a full systematic understanding of the best way to collaborate as a team according to each person's capabilities. Therefore, it can be inferred that in order to develop leadership skills, project managers must pursue the attainment of other human, technical and conceptual skills as well. Nevertheless, since leadership is mostly related to the human behaviors (Thal and Bedingfield, 2010, p.254) and abilities it is reasonable to say that developing the other human skills mentioned in proposed framework would strengthen the leadership competency of project managers.

Present throughout the content of all postgraduate programs analyzed, leadership stands out in literature as a controversial topic because of the sheer amount of definitions and styles proposed by authors throughout time. Interestingly enough, all professional bodies do agree on its meaning and grant leadership skills an important role in the BOKs' chapters related to human skills. Nevertheless, there is a significant difference in the coverage given to this skill among the institutions. Whereas the APM-BOK (APM 2012) gives simple account on the definition of the skill, the PMBOK and ICB provide a more detailed description and listing of key tasks a project leader should perform for guiding people with respect and trust, rather than fear and submission. In regards to the ICB (IPMA 2015e) there is also a detailed list (see below) of key competency indicators that can be valuable to project managers.

- Initiate actions and proactively offer help and advice.
- Take ownership and show commitment.
- Provide direction, coaching and mentoring to guide and improve the work of individuals and teams.
- Exert appropriate power and influence over others to achieve the goals.
- Make, enforce and review decisions.

As stated before, leadership is a common topic within the university programs; however, it is usually studied through theory and lacks the simulation of "real-world" scenarios. This was mentioned by Interviewee #3, who also suggested that as a skill that can only be attained through practice, "leadership comes from experience, and it is really hard to explain in a book something that cannot be put on words".

In association with the skills mentioned above, communication is accepted as an important human skill within the frameworks established by the professional bodies of knowledge, as well as by the professors who participated in the interviews. It is also part of the content delivered in formal education programs, stressing its importance. Communication, defined as "the means by which information or instructions are exchanged" (APM 2012, p.5) is a broad skill that involves other sub-skills such as listening and non-verbal communication. This core human skill has proven to be necessary when working with teams (Zimmerer and Yasin, 1998; El-Sabaa, 2001; Loo, 2002; Dulewicz and Higgs, 2005), as project managers usually do, since it is the essence of personal interactions. Listening facilitates the understanding people and situations, promoting a more effective working environment (Interviewee #3). Furthermore, non-verbal communication skills are an important part of the process of communication, contributing to the delivery of the message. Communication is recognized in the literature (Katz 1974; Zimmerer & Yasin 1998; Edum-Fotwe & McCaffer 2000; El-

Sabaa 2001; Loo 2002; Dulewicz & Higgs 2005; Stevenson & Starkweather 2010) and throughout this research as a fundamental skill, which indicates that project managers need to possess and develop this skill as part of their overall formation.

Although, communication has been identified as one of the single most important factors for project success or failure (PMI 2013a, p.515), not much emphasis is given in the analyzed education programs. Only two out of total of eight cover this skill. In contrast, all BOKs touch on the importance of the topic as an individual competency, as well as a complementary dexterity needed by most human skills. As in most cases, IPMA (IPMA 2015e) goes further into detail by listing the key competency indicators (see below) necessary to revise the good use of the skill.

- Provide clear and structured information to others and verify their understanding.
- Facilitate and promote open communication.
- Choose communication styles and channels to meet the needs of the audience, situation and management level.
- Communicate effectively with virtual teams.
- Employ humor and sense of perspective when appropriate.

Important as this skill might seem, no specific ways of developing communication skills have been identified. Nevertheless, it was recognized by the interviewees that it is through teamwork that one might develop it.

As the fourth skill covered in both the proposed framework of reference, and the primary and secondary data gathered through the collection techniques established in subchapter 4.2, problem solving or conflict management relates to the knowledge and practice of skills and methods that reduce the amount of conflict within a project environment (PMI 2013a, p.281). As described by Fotwe and McCaffer (2000, p.114), problem solving concerns a mix of interpersonal skills and technical knowledge to identify and respond to problems. Since project management teams can be integrated by people from different backgrounds working under stressful situations, conflict is prone to exist; therefore, the need to develop conflict management skills is clear.

Recognized in all BOKs, conflict management is one of the biggest challenges a project manager faces (PMI, 2013c, p. 518). It draws upon all of the other interpersonal skills of a project manager in order to lead the team to a successful resolution of the situation in conflict. As a common pattern, APM (APM 2012) acknowledges the term, but IPMA (IPMA 2015e) enhances it by enumerating 8 knowledge areas and techniques related to the skill.

1. De-escalation techniques
2. Creativity techniques
3. Moderation techniques
4. Scenario techniques
5. Conflict stage models
6. Value of conflicts in team building
7. Crisis plan
8. Worst case scenarios

Although the development of conflict management skills is clearly necessary, university programs just barely mention the topic, but do make the link to other pertinent skills like communication, and team management.

Furthermore, pertaining to this matter is the belief that effective project managers need to develop cultural awareness. Since every project varies in terms of the type of work and the people involved (Interviewee #3), these skills enable the project managers to connect with different people and get the message across in a way that is understandable to everyone. Also covered across the content of the BOKs and the formal education programs, cultural or political awareness is described as a way to manage cultural diversity to create a favorable environment for the achievement of success (PMI, 2013c, p. 515).

Negotiation skills are considered means to balance different interests (IPMA 2015e, p.109), and can be helpful in finding solution to problems. Seen as generic skills that should be integrated into project management education (Interviewee #5), negotiation skills are found within the content of both the BOKs and formal education programs ratifying the awareness of the professional bodies and universities on the importance of these skills.

Strongly linked with communication skills and cultural awareness, negotiation is grounded on different theories, techniques and tactics clearly explained in the ICB 4th (IPMA 2015e) edition. It encourages the development of other behaviors that can strengthen the skill such as: assertiveness and drive to reach desired outcomes, empathy, patience, persuasion, and establishing and maintaining trust and positive working relationships

While these attitudes are seen as vague and hard to learn in ways other than practice, IPMA's ICB presents a 5-point punch list that can help achieve a successful negotiation experience.

- Identify and analyze the interests of all parties involved in the negotiation
- Develop and evaluate options and alternatives with the potential to meet the needs of all parties
- Define a negotiation strategy in line with own objectives that is acceptable to all parties involved
- Reach negotiated agreements with other parties that are in line with own objectives
- Detect and exploit additional selling and acquisition possibilities

When speaking of the need of organizations to gain competitive advantage (Medina & Medina, 2014, p.1459) in the fast-pacing business environment in which they compete today, it is common to come across the fact that there has been a shift from the conventional way of doing business (Anantatmula, 2010, p.13). As corporations increasingly take on a project approach towards business, the demand for change to occur has given rise to the importance of having project managers that can drive this transformation. Hence, it is recognized in the literature (Stevenson & Starkweather, 2010), as well as by education providers that the learning and development of change management skills is essential. Described as “a structured approach to moving an organization from the current state to the desired future” (APM 2012, p.8), change management skills seek to engage people in the change process and promote collaboration among the team to reach the objective (IPMA 2015e, p.185). Nevertheless, this skill is only part of only a few formal education programs, which means that its relevance has not yet been thoroughly considered and could be a potential area for improvement.

Although by this point most of the human or leadership skills proposed in the framework have been covered by all sources, and in the case of the BOKs by one institution or another, there are two skills that are only explicitly supported by the primary data: networking and collaboration. Nevertheless, these skills can be associated with the relations and engagement skills proposed by IPMA. Recognized by one of the interviewees as a generic skill that should be incorporated in the education programs and developed within the project management discipline, networking refers to establishing relations with people from the same or other organizations (PMI 2013a, p.546). It is indeed related to collaboration, which involves the engagement and commitment of several actors effectively working together towards a common purpose (IPMA 2015e, p.402). However, not much focus has been given by formal education programs and the different bodies of knowledge. A possible reason for this is that networking and collaboration overlap with other human skills, like communication and team building. Thus, professional bodies might not consider it necessary to give them a particular place within their frameworks.

The remaining skills of the proposed framework for analysis were verbal and written skills. As defined by Stevenson and Starkweather (2010) as critical competencies for project managers, verbal and written skills revolve around communication in some way; however, no particular focus has been given to these skills. In fact, they were not mentioned within the content of the BOKs or formal education programs, neither by the interviewees. Therefore, it might seem as if these skills are not as important to project managers as suggested in the literature, or that they are simply not considered as separate from regular communication skills. A more extensive analysis should be conducted to clarify this point.

Other skills that were not considered within the proposed framework, but were actually covered in the content of the BOKs, as well as by the interviewees were self-reflection and decision making. Whereas self-reflection refers to “the ability to acknowledge, reflect on and understand one’s own emotions, behaviors, preferences and values and to understand their impact” (IPMA 2015e, p.72), the interviewees recommended that project managers develop this skill with the objective of enhancing other human skills that prove to be essential. Furthermore, decision making skills were described by (PMI 2013a, p.512) as important interpersonal skills which according to one of the respondents, requires other personal attributes such as courage. On the one hand, self-reflection skills seem to be important and through further research could be added to the framework. On the other hand, decision making skills might appear to be more related to technical skills and therefore cannot be solely defined as human skills.

These topics are in a way controversial since they are not equally mentioned by all different sources. Although acknowledged by interviewees, not all BOKs include these skills in their content. The PMBOK (PMI 2013a, p.512) recognizes only decision making skills and defines four different types of decisions and a theoretical six-point guide to executing them. However, the ICB (IPMA 2015e) overlooks decision making skills, but presents a detailed account on the usefulness of self-reflection. This guide proposes a few techniques to set this skill into practice:

- Reflection and self-analysis techniques
- Stress management of self and others
- Relaxation techniques and methods
- Pace of work
- Feedback rules and techniques

-
- Prioritization techniques
 - Personal time management

Some of these techniques were also mentioned by a few interviewees who stated that managers need to engage in self-reflection processes (Interviewee #2). It is suggested that keeping a diary to revisit decisions previously taken (Interviewee #5) could be useful to develop this skill. Moreover, it is recommended that schools promote self-efficacy in students to help them acknowledge their strengths and achieve a better performance (Interviewee #5).

As part of the extra competencies that were not covered in the proposed framework, the following seven skills were included in the analysis for being mentioned in only one of the sources: creative thinking, personal integrity and reliability, resourcefulness, result orientation, organizational culture, organizational behaviors, and innovation. The fact that these were not included in the proposed list does not necessarily mean that they are less important; however, it is possible that they are not as mentioned in the current project management literature or that they have just been recently acknowledged by practitioners.

Mentioned throughout the interviews, but not found within the BOKs or the education programs, creativity represents a fundamental tool for new leaders facing the future (Interviewee #1). Imagination, curiosity and charisma are key to driving leaders' behaviors and developing creative thinking skills. Workshops and trainings are among the techniques suggested for learning and practicing such competencies. For its potential to drive change and problem solving, creative thinking skills are considered as important to project managers and should be further incorporated in the learning programs.

In the case of professional bodies, more specifically IPMA, three more skills were included as part of the human competencies in its framework: personal integrity, resourcefulness, and results orientation. Closely linked to ethics, personal integrity deals with making individual commitments to get things done while behaving consistently and supporting others (IPMA 2015e). Resourcefulness refers to having the skills to apply various techniques for the definition, analysis, and prioritization of problems, finding alternatives to cope with the different challenges (IPMA 2015e). Finally, results orientation means that the project manager maintains a critical focus on the results of the overall project and the ideal result for every one of team members (IPMA 2015e). Although these are good characteristics for a project manager to have, they can also be considered as a mix between technical and human skills as there was no sign of them within the other sources.

In regards to those human skills mentioned only by formal education providers it was found that organizational culture and behaviors deal in great part with how to become a "team-player" for a specific organization and follow its "unspoken" rules. In the case of innovation, schools have introduced topics related to entrepreneurship and the mind-set that comes with it. Associated with creativity, imagination, and curiosity, innovation skills aim to foster an "outside-the-box" thinking. Because projects differ from one another in type and size (Anantatmula 2010), and project managers could benefit from innovative thinking, it is reasonable to suggest that this competency be further integrated within project management education in terms of human or leadership skills.

As asserted throughout the analysis, human skills have been recognized by different actors in the field in multiple ways. This means that there is no standard way of promoting and teaching these skills; however, it is believed that the professional bodies,

as well as the formal education providers play an important role in creating awareness of the need to develop human and leadership skills among the project management community. Furthermore, most sources agree upon the fact that coaching, mentoring programs, participating workshops, case studies, active learning processes, and above all teamwork, can significantly improve the learning and development of the competencies.

Although some techniques are currently being used by universities and other education providers to promote this, and most of the core human skills are being acknowledged by the professional bodies, there is still a lack of focus on the matter. The average percentage of human-skills-related topics within the BOKs is 23% and 21% for the postgraduate programs, and considering the absolute importance of these skills in order to develop effective project managers, it can be said that there is still room for improvement.

The inclusion of more human or leadership topics into the content of both the BOKs and formal education programs to provide the theoretical background of these skills, as well as the encouragement to practice them through the use of different techniques is essential. This way project management professionals will be aware of the skills needed to deal with practical problems and be able to pursue the development of the lacking skills. This must be continual enhancement process for both the professional bodies that drive project management education and the project managers themselves in the sense that as the discipline expands, improvements will have to be made.

6. Conclusions and Suggestions

6.1. Conclusion

As the profession has moved past the idea that the most competent project manager is the one with the greater technical abilities (Zimmerer & Yasin 1998), the efforts made by researchers of the field to define the skills and characteristics of an effective project manager have increased (Katz, 1974; Beale & Freeman, 1991; Zimmerer & Yasin, 1998; El-Sabaa, 2001; Loo, 2002; Dulewicz & Higgs, 2005; Anantatmula, 2010; Stevenson, 2010; Thal & Bedingfield, 2010; Fisher, 2011).

The belief that beyond a project manager's technical skills, human and leadership skills have the most influence on project management practices (El-Sabaa 2001) has been supported through the ongoing discussion on the need for a greater focus on human and leadership skills in the instruction and training of project managers (Stevenson & Starkweather 2010). This validates the importance of human factors as a focal point for the achievement of project success (Beale & Freeman 1991; Zimmerer & Yasin 1998; Thal & Bedingfield 2010; Yang et al. 2011), and therefore the need for project managers to learn and develop human and leadership skills .

Nonetheless, there is a significant gap concerning the promotion of these skills, mainly because not much has been conveyed about the practical methods necessary to foster their development. Since the education and improvement of project management competencies appears to be a multidimensional and complex process (Ramazani & Jergeas, 2014, p.46), this research aimed to explore the extent to which project management bodies of knowledge and formal education programs promote the development of human and leadership skills within their frameworks. Moreover, through the understanding of how these skills are currently being taught and reinforced, this study attempted to produce recommendations on how to improve their integration in project management education.

First, it is important to refer to those human skills essential to effective project managers. Leadership, team building, communication, problem solving / conflict management, negotiation, and cultural awareness are the skills identified in this research to be considered the most important, based on the conducted data analysis. Although these competencies are covered in the content of the Bodies of Knowledge, the extent to which they are included is relatively limited. Representing 23% of all the topics explored within the guides, human skills include communication, leadership and conflict management skills among the most important. Furthermore, the formal education providers, in this case the accredited universities, give human skills 21% of the overall content within project management programs. Team building, leadership and communication skills carry the most weight in the curriculum of said programs.

Whereas the main role of the BOKs regarding human competencies is to create awareness on the need to learn and develop them as means to become an effective project manager, the formal institutions imparting project management education play a more extensive role in the instruction of human and leadership skills. Through a multi-method approach to teaching the subjects, professors use projects, case studies and assignments that encourage teamwork to promote the development of human skills.

Second, the need for actors involved in the delivery of project management education to give more focus to the development of human and leadership skills, as well as to incorporate other methods that promote the learning and application of these skills is key

to the formation of effective project managers ready to cope with the challenges they are prone to face.

Among the suggested techniques for enhancing the development of human and leadership skills are the inclusion of coaching and mentoring programs, workshops, trainings, and self-reflection exercises into project management education programs. Nevertheless, it is important to mention that for the successful development of these competencies, a joint effort among practitioners, institutions and schools must be made (Yang et al. 2011, p.260). It is also the responsibility of project management students and professionals to push for the incorporation of these topics, as well as to pursue the improvement of the skills through their own practice.

Last, the identification of other human skills that are mentioned throughout the literature and in the content of the BOKs and formal education programs, as well as those recognized by professors, leads to the belief that there is no standard set of skills for effective project managers and that they can be interrelated. Furthermore, there are other human competencies that appear to be new to the field. This supports the idea that project managers are consistently required to develop more human and leadership skills to cope with the demands of their practice in the fast-paced world of business (Thal & Bedingfield 2010). The lack of standardization for teaching human skills prompts further challenges.

Hence, to increase the level of correspondence between existing project management education and the current demand for human skills in the field, both the professional bodies and formal education providers, along with practitioners and researchers should aim for an expansion of the existing knowledge through a continual search for new methods that promote the practical understanding of these competencies.

6.2. Significance and Contribution

The professional bodies, formal education institutions, and project management professionals play an important role in the development of the project management field. This research contributes to the better understanding of the human aspect of project management, by discussing the characteristics and skills related to the topic. Therefore, this study has several implications for the actors within the field.

For Professional Bodies of Knowledge, the understanding of their role in shaping project management education and practice can lead to their collaboration with other actors in the development of the profession beyond its current intellectual foundations. To engage with the research community, acknowledging the contributions academic research can make to their BOKs, the institutions can pursue an interdisciplinary approach to the conceptualization and development of the project management profession. In order to enable the creation of knowledge perceived as useful by practitioners, the professional bodies should focus on the current needs and demands for project managers so as to comply with the existing requirements of the field. In this case, the clear need for the teaching and development of human and leadership skills.

Although, it has been stated that the bodies of knowledge role regarding human aspects is to create awareness on the topic (relying on education and training providers to develop the pedagogical rationality behind them), it is suggested that they consider giving more focus to the human or leadership topics within the content of their BOKs.

The implications for Formal Education Institutions involve a broader understanding of the need to develop human and leadership skills as well technical skills. Universities should be able to adapt their curricula to fulfill the needs of practitioners today while keeping an eye out into the future to shift their focus accordingly. This focus should consider a tailored approach to the specific background and needs of students.

Additionally, formal education providers are encouraged to put effort towards finding new learning methods that can simulate practical situations to complement the learning experience of human skills. Since it is clear that new professionals are looking to extend their education by taking workshops and trainings outside schools, it is suggested that in addition to creating awareness of the need to develop soft skills, universities work closely with other actors in the field to close the gap between the education provided and the current demand.

Finally, this study can result beneficial to Project Management Professionals who become aware of the need to embrace human and leadership competencies and seek their development through different methods and techniques. This research might lead practitioners into a reflective process of exploring their abilities, in the hope of inspiring them to further work on their improvement. In general, this thesis can, if adopted with an open mind, challenge the current views on project management competencies, as well as evidence the necessary changes that different actors within the field believe should be made. Additionally, this research might urge practitioners, students, academics, schools and professional bodies to collaborate in the definition of the future project manager.

6.3. Further Research and Suggestions

Several accounts need to be acknowledge in regards to the limitations of this thesis which might suggest new research directions. This research contemplates only those professional institutions or associations that own a proper guide for setting standards in the field of project management. Since other professional bodies who don't fulfill this criterion were excluded from the study, as well as those which don't have that much recognition in the field, there was a large volume of information left unexplored.

Similarly, the analysis of formal education providers in this thesis was limited to those accredited by the main associations and based in the UK. This guided the research to a more Anglo-Centric understanding of the practice, and could be a reason to suggest the further exploration in other contexts is needed. Additionally, a more in-depth study of the teaching techniques applied by schools and universities could result in the recognition of new methods that would help the discipline take a leap forward.

Following the same train of thought, researchers should give a closer look to training providers with the objective of comprehending which skills are the most demanded in the field, and exploring the benefits this technique has. Collecting this type of information will help institutions shorten the gap between theory and practice, promoting the effectiveness of project management education.

Regarding the data collected, although proved to be useful and insightful, it is necessary to state that it was by research standards a small sample. Moreover, since all the interviewees were professors with some type of link to project management courses, expanding these criteria to students, practitioners, and companies would strengthen the investigation. Hence, it is suggested that further research should aim for a collection of more information from different sources.

7. Quality and Truth Criteria

As stated by Guba and Lincoln (1981 as cited in Morse, p.15) a worthy research must have truth value, applicability, consistency, and neutrality. The utility and worthiness of a study depends on its attainment of reliability and validity (Morse et al. 2002, p.13), and the overall significance, relevance, and impact of the final research are considered criteria used to capture rigor (Morse et al. 2002, p.14).

On the one hand, the extent to which the techniques used in the research yield logical findings rest in several considerations taken to ensure reliability. However, some threats include subject or participant error, subject or participant bias, observer error, and observer bias (Saunders et al., 2009, p.156-157). On the other hand, validity is achieved where the findings of the research are correspondent to their actual meaning. The right choice of timing, sample universe, and research instruments help the researchers avoid validity threats (Saunders et al. 2009, p.157).

According to Greener (2008, p.37) the research design should be auditable, transparent and clear so as to instill confidence in the reader that the findings are reliable and valid. Furthermore, it is suggested that “qualitative researchers reclaim responsibility for reliability and validity by implementing verification strategies integral and self-correcting during the conduct of inquiry itself” (Morse et al. 2002, p.13).

Therefore, following the above recommendations, the research method in this study was thoroughly explained to ensure that using the same method would produce consistent results over time. Moreover, in order to avoid the risk of failing to identify reliability and validity threats in the research (Morse et al. 2002, p.14), the researchers focused on the process of verification throughout the whole study by following the strategies to establish trustworthiness. Such strategies included investigator responsiveness, methodological coherence, appropriate sampling, and theoretical thinking. Additionally, an active analytic stance was taken to ensure the iterative interaction between data and analysis (Morse et al. 2002, p.18).

Whereas the researchers’ responsiveness throughout the study was reflected in their flexibility and willingness to modify or abandon ideas that were inadequately founded (Morse et al. 2002, p.18), the use of verification strategies enabled the researchers to move back and forth between the research design and implementation. This ensured correspondence between the research questions, theoretical framework, data collection strategies, and analysis.

Moreover, through the concepts of credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985 as cited in Morse et al., 2002, p.15) the trustworthiness of this research can be assessed.

In terms of credibility, or how believable the findings are (Bryman, A., & Bell, 2011, p.35), the triangulation of data sources (in this case the BOKs, education programs’ syllabi, and interviews) aimed to produce a better understanding and confidence in the truth of the findings. Using quantitative and qualitative techniques for gathering and analyzing data from different sources, as well as using our theoretical framework for examination and interpretation of the findings, strengthened the researchers’ confidence in the truth of the data.

The extent to which findings are applicable to other contexts (Bryman, A., & Bell, 2011, p.35) determine the transferability of a research. To deliver such criteria, the researchers aimed to provide the reader with an extensive description of the research process and

theoretical background regarding the subject, so as to allow them to understand the interpretations made within the proposed framework. The argumentative logic provided throughout the research should lead the understanding of the reader, as well as their transferring their knowledge to other situations; however, this will depend on the individual's sense-making philosophies and personal understanding of the social world (Long, et al., 2000b, p.190).

Dependability can be seen as equivalent to reliability (Bryman, A., & Bell, 2011, p.35); therefore, it refers to the extent to which the techniques used in the research yield logical findings (Saunders, Marc, et al., 2009, p.156). Since the methods chosen for this research were applied to investigate a certain subject, within a certain context that is prone to change, they don't intend to be repeatable (Saunders, Marc, et al., 2009, p.328). Nevertheless, a full description of the methodology and techniques used in this research seeks to clarify the processes carried out and the decisions taken to ensure reliability of the findings.

Finally, confirmability criteria aims to prove that the researchers acted in good faith (Bryman, A., & Bell, 2011, p.289). To ensure so, the researchers explained (throughout chapters 1 and 2) their interests and motives for this research, philosophical stance, and preconceptions. The research questions and objectives address the researchers' genuine concern for reaching a deeper understanding of the subject, and their desire to make significant contributions to the field. Nevertheless, the researchers tried to maintain a degree of neutrality to avoid biases, as well as adopting a reflexive attitude at every step of the research process.

8. References

- Alvesson, M., 2003. Beyond Neopositivists, Romantics, and Localists: A Reflexive Approach to Interviews In Organizational Research. *Academy of Management Review*, 28(1), pp.13–33.
- Amin, M. & Mabe, M., 2007. Impact Factors : Use and Abuse. *Perspectives in publishing*, 44(October), pp.1–6.
- Anantatmula, V.S., 2010. Project Manager Leadership Role in Improving Project Performance. *Engineering Management Journal*, 22(1), pp.13–22.
- Antonacopoulou, E.P., 1999. Training does not imply learning: the individual's perspective. *International Journal of Training and Development*, 3(1), pp.14–33.
- APM, 2015a. About APM | Association for Project Management . *Association for Project Management*. Available at: <https://www.apm.org.uk/AboutUs> [Accessed November 19, 2015].
- APM, 2012. *APM Body of Knowledge Definitions* 6th ed., Buckinghamshire: Association for Project Management.
- APM, 2015b. APM project management qualification | Association for Project Management . *Association for Project Management*. Available at: <https://www.apm.org.uk/APMQualifications> [Accessed November 19, 2015].
- APM, 2015c. Association for Project Management - Strategy 2020 | APM. *Association for Project Management*. Available at: <https://www.apm.org.uk/2020> [Accessed December 15, 2015].
- APM, 2015d. Careers and vacancies. *Association for Project Management*. Available at: <https://www.apm.org.uk/project-management-careers> [Accessed November 19, 2015].
- APM, 2015e. FIVE Dimensions of Professionalism in project management | APM. *Association for Project Management*. Available at: <https://www.apm.org.uk/APM5Dimensions> [Accessed November 19, 2015].
- APM, 2015f. What is interpersonal skills | Association for Project Management. *Association for Project Management*. Available at: <http://knowledge.apm.org.uk/bok/interpersonal-skills> [Accessed December 10, 2015].
- APM, 2015g. What is project management? | Association for Project Management. *Association for Project Management*. Available at: <https://www.apm.org.uk/WhatIsPM> [Accessed December 1, 2015].
- Ashleigh, M. et al., 2012. Critical learning themes in project management education: Implications for blended learning. *International Journal of Project Management*, 30(2), pp.153–161.

-
- Atkinson, R., 2006. Excellence in teaching and learning for project management. *International Journal of Project Management*, 24(3), pp.185–186.
- Beale, P. & Freeman, M., 1991. Successful Project Execution: A Model. *Project Management Journal*, 12(4), pp.23–30.
- Boddeyn, J., 1965. The Comparative Approach to the Study of Business Administration. *Academy of Management Journal*, 8(4), pp.261–267.
- Bredillet, C., Tywoniak, S. & Dwivedula, R., 2014. What is a good project manager? An Aristotelian perspective. *International Journal of Project Management*, 33(2), pp.254–266.
- Bryman, A. & Bell, E., 2011. *Business Research Methods*, New York.
- Carbone, T. a. & Gholston, S., 2004. Project manager skill development: A survey of programs and practitioners. *Engineering Management Journal*, 16(3), pp.10–16.
- Carley, K., 1993. Coding Choices for Textual Analysis: A Comparison of Content Analysis and Map Analysis. *Sociological Methodology*, 23, pp.75–126.
- Crawford, L., 2006. Developing Organizational Project Management Capability: Theory and Practice. *Project Management Journal*, 36(3), pp.74–97.
- Crawford, L., 2005. Senior management perceptions of project management competence. *International Journal of Project Management*, 23, pp.7–16.
- Deakin, H. & Wakefield, K., 2014. Skype interviewing: reflections of two PhD researchers. *Qualitative Research*, 14(5), pp.670–687.
- Dicker, R., 2008. Analyzing and Interpreting Data. *Field Epidemiology*, (August), pp.199–235.
- Dubois, A. & Gadde, L.-E., 2002. Systematic combining: an abductive approach to case research. *Jornal of Business Research*, 55(7), pp.553–560.
- Dulewicz, V. & Higgs, M., 2005. Assessing leadership styles and organisational context. *Journal of Managerial Psychology*, 20(2), pp.105–123.
- Edum-Fotwe, F.T. & McCaffer, R., 2000. Developing project management competency : perspectives from the construction industry. *International Journal of Project Management*, 18, pp.111–124.
- Eisenhardt, K.M. & Graebner, M.E., 2014. Theory Bilding From Cases : Opportunities and Challenges. , 50(1), pp.25–32.
- El-Sabaa, S., 2001. The skills and career path of an effective project manager. *International Journal of Project Management*, 19(1), pp.1–7.
- Fisher, E., 2011. What practitioners consider to be the skills and behaviours of an effective people project manager. *International Journal of Project Management*, 29(8), pp.994–1002.

-
- Greener, S., 2008. *Business Research Methods*, Ventus Publishing ApS.
- IPMA, 2015a. Answers | Project Management Certification, Standards, Competence Development, IPMA. *International Project Management Association*. Available at: <http://www.ipma.world/about/answers/> [Accessed November 16, 2015].
- IPMA, 2015b. Certification - Project Management Certification, Standards, Competence Development, IPMA. *International Project Management Association*. Available at: <http://www.ipma.world/certification/> [Accessed November 23, 2015].
- IPMA, 2015c. Certify Individuals | Project Management Certification, Standards, Competence Development, IPMA. *International Project Management Association*. Available at: <http://www.ipma.world/certification/certify-individuals/> [Accessed November 16, 2015].
- IPMA, 2015d. *Individual Competence Baseline* 4th ed., Zurich: International Project Management Association.
- IPMA, 2015e. IPMA Competence Baseline: ICB | Project Management Certification, Standards, Competence Development, IPMA. *International Project Management Association*. Available at: <http://www.ipma.world/certification/competence/ipma-competence-baseline/> [Accessed November 16, 2015].
- IPMA, 2015f. IPMA History | Project Management Certification, Standards, Competence Development, IPMA. *International Project Management Association*. Available at: <http://www.ipma.world/about/ipma-history/> [Accessed November 16, 2015].
- Katz, R.L., 1974. Skills of an effective administrator. *Harvard Business Review*, pp.43–72.
- Kerzner, H., 2013. *Project Management: A Systems Approach to Planning, Scheduling, and Controlling* 11th ed., New York: John Wiley & Sons, Inc.
- Ketokivi, M. & Mantere, S., 2010. Two Strategies for Inductive Reasoning in Organizational Research. *Academy of Management Review*, 35(2), pp.1–51.
- Koskela, L. & Howell, G., 2008. The underlying theory of project management is obsolete. *IEEE Engineering Management Review*, 36(2), pp.22–34.
- Kretz Zaval, L. & Wagner, T., 2011. *Project Manager Street Smarts: A Real World Guide to PMP Skills* 2nd ed., Indianapolis, Indiana: John Wiley & Sons, Inc.
- Long, R.G. et al., 2000. The “Qualitative” Versus “Quantitative” Research Debate: A Question of Metaphorical Assumptions? *International Journal of Value - Based Management*, 13(2), pp.189–197.
- Loo, R., 2002. Working towards best practices in project management: a Canadian study. *International Journal of Project Management*, 20(2), pp.93–98.
- Loufrani-Fedida, S. & Missonier, S., 2015. The project manager cannot be a hero

-
- anymore! Understanding critical competencies in project-based organizations from a multilevel approach. *International Journal of Project Management*, 33(6), pp.1220–1235.
- Medina, R. & Medina, A., 2014. The project manager and the organisation's long-term competence goal. *International Journal of Project Management*, 32(8), pp.1459–1470.
- Morris, P.W.G. et al., 2006. Exploring the role of formal bodies of knowledge in defining a profession – The case of project management. *International Journal of Project Management*, 24(8), pp.710–721.
- Morse, J.M. et al., 2002. Verification Strategies for Establishing Reliability and Validity in Qualitative Research. *International Journal of Qualitative Methods*, 1(2), pp.1–19.
- Müller, R. & Turner, J.R., 2010. Attitudes and leadership competences for project success. *Baltic Journal of Management*, 5(3), pp.307–329.
- Müller, R. & Turner, R., 2010. Leadership competency profiles of successful project managers. *International Journal of Project Management*, 28(5), pp.437–448.
- Nepomuceno, Á., Soler, F. & Velazquez, F.R., 2013. An epistemic and dynamic approach to abductive reasoning: selecting the best explanation. *Logic Journal of IGPL*, 26(1), pp.505–522.
- Neuendorf, K.A., 2002. *Defining Content Analysis*, London: Sage Publications.
- Ojiako, U. et al., 2011. Learning and teaching challenges in project management. *International Journal of Project Management*, 29(3), pp.268–278.
- Pant, I. & Baroudi, B., 2008. Project management education: The human skills imperative. *International Journal of Project Management*, 26(2), pp.124–128.
- Pantouvakis, J.-P., Nahod, M.-M. & Radujković, M.V.M., 2013. The Impact of ICB 3.0 Competences on Project Management Success. *Procedia - Social and Behavioral Sciences*, 74, pp.244–254.
- PMI, 2013a. *A Guide to the Project Management Body of Knowledge* 5th ed., Pennsylvania: Project Management Institute.
- PMI, 2015a. About the GAC | Project Management Institute. *Project Management Institute*. Available at: <http://www.pmi.org/gac/about-gac.aspx> [Accessed November 27, 2015].
- PMI, 2013b. Become a PMI Registered Education Provider (R . E . P .) Gain More Business by Aligning Yourself with the World ' s Leading Association for Project Management Practitioners. *Project Management Institute*, pp.1–6.
- PMI, 2013c. Become a PMI Registered Education Provider (R.E.P.). *Project Management Institute*. Available at: http://www.pmi.org/learning/professional-development/~/_media/PDF/Professional-Development/Become a REP_email.ashx

[Accessed November 10, 2015].

- PMI, 2014. GAC Accreditation. *Project Management Institute*. Available at: http://www.pmi.org/~media/PDF/Professional-Development/GAC/GAC_brochure.ashx [Accessed November 19, 2015].
- PMI, 2015b. PMI Fact Sheet | Project Management Institute. *Project Management Institute*. Available at: <http://www.pmi.org/About-Us/About-Us-Fact-Sheet.aspx> [Accessed November 17, 2015].
- PMI, 2015c. PMI Lexicon of Project Management Terms–Version 3.0. *Project Management Institute*. Available at: http://www.pmi.org/~media/PDF/Standards/PMI_Lexicon_PM_Terms_Ver3.ashx [Accessed November 3, 2015].
- PMI, 2015d. Professional Development | PMI Training & Development. *Project Management Institute*. Available at: <http://www.pmi.org/learning/professional-development.aspx> [Accessed November 17, 2015].
- PMI, 2015e. What is a Standard? | PMI PMBOK Guide & Standards. *Project Management Institute*. Available at: <http://www.pmi.org/pmbok-guide-and-standards/standards-overview.aspx> [Accessed November 17, 2015].
- PMI, 2015f. Why Choose a PMI Registered Education Provider (R.E.P.). *Project Management Institute*. Available at: <http://www.pmi.org/~media/PDF/Professional-Development/REP/registered-education-provider-advantage-rep.ashx> [Accessed November 3, 2015].
- Qu, S.Q. & Dumay, J., 2011. The qualitative research interview. *Qualitative Research in Accounting & Management*, 8(3), pp.238–267.
- Ramazani, J. & Jergeas, G., 2014. Project managers and the journey from good to great: The benefits of investment in project management training and education. *International Journal of Project Management*, 33(1), pp.41–52.
- Robinson, O.C., 2014. Sampling in Interview-Based Qualitative Research: A Theoretical and Practical Guide. *Qualitative Research in Psychology*, 11(1), pp.25–41.
- Rowley, J., 2012. Conducting research interviews. *Management Research Review*, 35(3/4), pp.260–271.
- Saunders, M., Lewis, P. & Thornhill, A., 2009. *Research Methods for Business Students* 5th ed., Harlow: Prentice Hall.
- Savin-Baden, M., 2006. Achieving Reflexivity: Moving Researchers From Analysis To Interpretation In Collaborative Inquiry. *Journal of Social Work Practice*, 18(3), pp.365–378.
- Shepherd, M. & Atkinson, R., 2011. Project management bodies of knowledge; conjectures and refutations. *Electronic Journal of Business Research Methods*, 9(2), pp.152–158.

-
- Smircich, L. & Morgan, G., 1980. The Case for Qualitative Research. *Academy of Management Review*, 5(4), pp.491–500.
- Solbue, V., 2011. In search of my hidden preconceptions as a researcher. *Reflective Practice*, 12(6), pp.817–828.
- Stevenson, D.H. & Starkweather, J.A., 2010. PM critical competency index : IT execs prefer soft skills. *International Journal of Project Management*, 28(7), pp.663–671.
- Storm, P.M., 2013. Development Paths Of Project Managers. *Project Management Institute*. Available at: <http://www.pmi.org/learning/development-paths-project-managers-5802?id=5802>.
- Thal, A.E.J. & Bedingfield, J.D., 2010. Successful project managers : an exploratory study into the impact of personality. *Technology Analysis and Strategic Management*, 22(2), pp.243–259.
- Turner, J.R., 2008. *The Handbook of Project-Based Management: Leading Strategic Change in Organizations* 3 edition., McGraw-Hill.
- Turner, J.R. & Huemann, M.M., 2000. Formal Education In Project Management. In *Project Management Institute Annual Seminars & Symposium*.
- Turner, J.R. & Müller, R., 2005. The project manager's leadership style as a success factor on projects: a literature review. *Project Management Journal*, 36(1), pp.49–61. 13p. 1 Diagram.
- Valledor, L. V & de la Fuente, D., 2010. Certificaciones a la gestión de proyectos. IPMA, PMI, ISPI Y APM GROUP. In *4th International Conference on Industrial Engineering and Industrial Management*. pp. 1462–1472.
- Verzuh, E., 2011. *Fast Forward MBA in Project Management* 4th editio., John Wiley & Sons, Inc.
- Walker, D.H.T., 2008. Reflections on developing a project management doctorate. *International Journal of Project Management*, 26(3), pp.316–325.
- Wallace, J., 1997. Preconceptions and Theoretical Frameworks. *Journal of Research in Science Teaching*, 34(4), pp.319–322.
- Walton, D., 2006. *Abductive Reasoning*, Tuscaloosa, AL, USA: University of Alabama Press.
- Willis, B.E., 1995. APM project-management body of knowledge: the European view. *International Journal of Project Management*, 13(2), pp.95–98.
- Winter, K., 2010. IPMA, PMI & APMG - what's the difference? | APMG-International Blog - Learning Trends for Professional Managers. *APMG International*. Available at: <http://blog.apmg-international.com/index.php/2010/12/15/ipma-pmi-apmg-whats-the-difference/> [Accessed November 16, 2015].
- Yang, L.R., Huang, C.F. & Wu, K.S., 2011. The association among project manager's

leadership style, teamwork and project success. *International Journal of Project Management*, 29(3), pp.258–267.

Zimmerer, T. & Yasin, M., 1998. A leadership profile of American project managers. *Project Management Journal*, 29(1), pp.1–13.

8.1. Appendix 1 – Human Skills Identified in the Literature

Katz, 1974	Beale & Freeman, 1991	Zimmerer & Yasin, 1998	Fotwe & McCaffer, 2000	El-Sabaa, 2001	Loo, 2002
<ul style="list-style-type: none"> - Communication - Team building - Motivating others - Interpersonal sensitivity 	<ul style="list-style-type: none"> - Concern for people - Leadership - Interpersonal skills - Drive 	<ul style="list-style-type: none"> - Leadership - Personal motivation - Team building - Reinforcement - Communication - Trust - Respect - Team development - Empowerment - Flexibility - High self-esteem 	<ul style="list-style-type: none"> - Leadership - Communication - Problem solving - Negotiation 	<ul style="list-style-type: none"> - Mobilization - Communication - Coping with situations - Delegation - Political sensitivity - High self-esteem - Enthusiasm 	<ul style="list-style-type: none"> - Leadership - Team building - Communication - Trust

Dulciewicz & Higgs, 2005	Stevenson & Starkweather, 2010	Thal & Bedingfield, 2010	Anantamula, 2010	Fisher, 2011
<ul style="list-style-type: none"> - Emotional resilience - Influencing others - Interpersonal sensitivity - Self awareness - Motivation - Conscientiousness - Intuitiveness - Developing others - Empowerment - Communication 	<ul style="list-style-type: none"> - Leadership - Communication - Verbal / written skills - Change management 	<ul style="list-style-type: none"> - Leadership - Conscientiousness - Openness - Emotional stability - Imagination - Confidence - Dependable - Broad-minded - Drive 	<ul style="list-style-type: none"> - Trust - Motivation - Promote excellence - Support team - Develop team - Innovation - Set direction 	<ul style="list-style-type: none"> - Leadership - Authenticity - Conflict management - Cultural awareness

8.2. Appendix 2 – Interview Guide

- Presentation to the respondents.
 - Aim of the interview: Explore how they perceive and understand the way soft skills are being taught or reinforced within formal education programs.
 - Remind that the anonymity of participants will be maintained.
 - Ask if it is OK to record the conversation for future analysis.
 - Tell them that the interview is meant for academic purposes only and that the thesis will be published in the University database.
1. How would you describe an effective Project Manager (PM)?
 2. What are the core human competencies you believe a PM should have?
 3. How do you consider these human competencies are learnt and developed?
 4. In your opinion, what is the role of the project management formal bodies of knowledge (BOK) in developing these competencies?
 - a. Do you think there is enough focus on human competencies within their frameworks?
 5. Aside from the PM BOKs, do you believe formal education programs are enhancing the development of human competencies?
 - a. How are they being taught or promoted?
 - b. Do you believe education providers should take a greater stance on the development of human skills?
 - c. How would you suggest this can be further improved within the programs?

8.3. Appendix 3 – Education Providers Skill List

	Communication	Team Building	Verbal and Written	Problem Solving / Conflict MGMT	Negotiation	Cultural Awareness	Leadership	Change MGMT	Networking	Collaboration
The University of Manchester	Motivation and Leadership of Teams	X					X			
	Communication and Teamwork	X					X			
	Negotiation				X					
	Motivation									
	Team Working	X								
	Communication	X								
	Conflict Management			X						
	Organizational Culture									
	Change Management							X		
	Organizational Behaviors									
Robert Gordon University	Conflict Management / Negotiation			X	X					
	Leadership / Teamwork	X					X			
	Leadership / Governance						X			
	Team Member	X								
	Project Cultures					X				
	Project Teams and Leadership	X					X			
	Personal Skills									
	Leadership						X			
	Strategic Change							X		
	Innovation									
Leeds Beckett University	Leadership and Team Development	X					X			
	Project Leadership						X			
	Teamwork	X								
	Project Teams	X								
	Team development	X								
	Leadership						X			
	Conflict Management				X					
	Influencing Team		X							
	Team Control		X							
	Communication	X								
University of Liverpool										



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