

Project Management Office Manager's Competencies in Telecommunication Industries: A Case Study in Indonesia

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Abstract: - In the telecommunications and Information Technology (IT) sectors, Project Management Office (PMO) practices in Indonesia are seldom applied even though PMO has an essential role for companies as a productivity tool and to overcome existing changes in the business world. This study aimed to validate five PMO framework competencies and whether telecommunication sectors have applied these competencies. This study uses in-depth interviews and structured questionnaires to obtain robust validation data from expert PMO Managers. The data was obtained by interviewing five PMO expert respondents from PMOPI (Project Management Professional Indonesia). The raw data were analyzed using NVivo 12 by four certified expert coders. This study found that almost all PMO competencies were applied in the telecommunications industry, with significant results. This result was validated with an inter-rater percentage of 95.31%, indicating that the analyzed data had high accuracy. The business mainframe was the most utilized competency among the PMOs in the telecommunications industry, with 29.13% of findings. The occurrence percentages of each dimension with technical and professional specialists are as follows: 14.17%, effective intersocial competence is 12.60%, organizational stewardship is 9.45%, the business mainframe is 29.13%, and effective personal competence is 3.15%. This study provides the knowledge and skills required for successful performance to be demonstrated as a competent PMO manager.

Keywords: - Competence; managerial competence; PMO manager; PMO manager competence; project management; telecommunication industry; telecommunication

Received: July 26, 2022. Revised: March 20, 2023. Accepted: April 11, 2023. Published: May 16, 2023.

1 Introduction

Economic uncertainty and turbulence often occur in today's business world, which can rapidly change and sometimes spiral out of control. This threatens organizational performance when changes are inevitable, [1]. Companies established organizational business units in response to this

uncertainty, [2]. Companies can use project success to survive in this situation since a successful project helps the organization achieve its strategic objectives, [3].

The company uses Project Management Offices (PMO) to increase productivity and manage existing changes. Using PMOs will enable companies to operate more efficiently, gain a competitive

advantage, and grow in the long term despite the uncertainty of competence standards, [4]. Managing PMO plays a significant role in dealing with uncertainty; therefore, competency standards are necessary to deal with various challenges. The challenges are comprehensive, and previous research indicated that they were found across every border of a country, region, and industry, [5].

Van Der Linde & Steyn [6] found no empirical evidence that PMO involvement increases project or organizational performance. PMO skills are inhibited by several factors, including a lack of resources, complexities in using PMO software, and a lack of conceptual understanding, [7]. It is impossible to accomplish a project without a well-defined process. Maintaining the company's development efficiency ensured that the PMO process and each related activity were sustainable regarding project value creation. It is necessary to establish a set of competency criteria for project managers, [8].

Indonesia has the fastest-growing telecommunications market in the world, driven primarily by Indonesian consumers' transition to digital, [9]. The competition between service providers may be caused by the desire to meet customer needs and improve the quality of their services, including internet package programs, video calls, or unlimited activation periods, [10]. To maintain a competitive edge, telecommunications companies must implement new projects and continue providing innovative products, [11]. But in his research, Ichsan [12] found low PMO practices in Indonesia, particularly in the telecommunications and IT sectors. The development of the PMO manager competency framework, especially in the telecommunications industry in Indonesia, requires additional research to understand better PMO practice and the development of PMO manager competencies.

PMO manager competency framework was developed using five core competencies: technical professional specialty, effective interpersonal competence, organizational stewardship, business mainframe, and effective personal competence, [3]. A validation test was not conducted previously to verify that the above skills were applied correctly. In this study, the author aims to validate five skills identified through case studies implemented by the PMOs in telecommunications organizations.

This study assumes that if the five main dimensions of PMO manager competence are applied and adjusted to their company's sector, the company can increase PMO productivity and increase competence in its PMO competence. This

paper is organized as follows: section 2 presents some theoretical foundations about PMO Manager competencies and how PMO competencies have been implemented in telecommunication industries. Section 3 describes the details of collecting and processing data until the coding process with NVivo 12 software. Section 4 presents the obtained results and statistical analysis for each dimension. Section 5 presents the conclusion of this research, and section 6 presents implications, limitations, and suggestions for further study.

2 Literature Review

2.1 Competence based Human Resource Management (CBHRM) theory

The globalization of business has forced companies to compete against one another globally. Human Resources (HR) is one of the most critical assets for an organization to compete and gain a competitive advantage. CBHRM emphasizes the relationship between individual and organizational goals in achieving company goals in the industrial environment, [13]. Human Resource Management (HRM) practices have used CBHRM as a competency since the 1990s, [14]. An application of HRM, CBHRM, focuses on an individual's knowledge, skills, and attitudes rather than what is accomplished on the job. CBHRM predicts success in the workplace. CBHRM includes recruitment and selection, training and development, performance management, career management, compensation, and rewards based on competencies, [3],[15],[16],[17]. By implementing CBHRM, companies can identify and select competent human resources and meet their organizational needs.

2.2 Competency

Competence originated from the Latin word "*competentia*," which means "right to speak", [18]. Behavioral characteristics determine employee success more than intelligence or aptitude, [15]. A company's success depends entirely on the quality and level of its human resources, including knowledge, experience, skills, and behavior as described by the term competence, [19]. Competence is a functional area of work, where knowledge, skill, and application are required, [20].

The ability to be competent is a necessity in today's dynamic workplaces and changing contexts. Developing individual ability-enhancing training enables organizations to help employees recognize their strengths and weaknesses to make better career

decisions or explore new career options, [18]. According to Loufrani-Fedida & Aldebert [21] competencies are separated into two levels: individual competence (micro) and organizational competence (macro). An individual's (micro) competence provides a combination of resources that allow one to perform professional work under certain conditions, such as in specific work environments. Organizational competence offers a variety of individual skills and a collaborative environment to describe how groups work together to achieve common goals.

Understanding an individual's competence based on their skills, knowledge, and personal characteristics will enable the organization to enhance their performance and increase the success of their projects, [22]. In this regard, organizations can use competency development and assessment to manage and develop human resources to build and maintain organizational competitiveness and performance, which designates that project managers require a variety of competencies depending on the type of project, [23].

2.3 PMO

According to the Project Management Body of Knowledge (PMBOK) Guide [24] PMO is responsible for standardizing project governance processes. Loufrani-Fedida & Aldebert [25] stated that the PMO is responsible for coordinating organizational projects, providing training and software, and formulating standard policies and procedures. Using the PMO, projects can be effectively implemented, monitored, and evaluated, saving considerable time and reducing project risks, [26]. PMO can be defined as an organization that has the specific function of managing and ensuring the success of projects using tools and methods.

PMO plays a significant role in improving the quality of projects for several reasons, such as controlling costs, increasing the predictability of cost estimates, and facilitating the management of larger and more complex projects, [6]. PMO helps manage projects and portfolios, identify projects and portfolios, develop Project Management (PM) competencies, and maintain organizational value by monitoring performance control throughout all project phases, [8]. With PMO, companies could maintain consistent levels of product quality by sharing knowledge between projects, [27].

The PMO improves performance and acts as a liaison to ensure the project aligns with the business strategy, preventing it from being handled separately, [28]. PMO managers need guidance from organizations to reach optimal project

maturity, [25]. In anticipation of organizational changes, the PMO also tends to change and evolve to fulfill various roles and functions, [29].

To provide a clear understanding of PMO functions, Zouheir & Rachid [30] identified six categories of PMO functions, which include project support, advice, and knowledge management. These categories are as follows: project management and control: monitoring projects, managing resources, auditing projects, managing risks, ensuring strategic alignment; project advice and support: managing change, recruiting, coordinating multiple projects, selecting, and prioritizing projects; implementation of PMO methods & standards: standardizing project management tools, adhering to methodological standards, and developing PM processes; increasing PM maturity: develop the skills of the PMO manager, conduct training, and promote the culture of the PMO; and extending and sharing knowledge: coordinate project communication, centralized project data, and ensure access to project information is confirmed.

2.3.1 PMO Manager Competence

Hobbs & Aubry [31] found that out of 500 PMOs, the percentage of a project manager is an essential characteristic. An organization with all or most projects under control is in a much better position to fulfill the HR function. The following are the competencies of PMO managers: experts using tools and databases to identify collaborative relationships between staff and upper management; attending training to increase knowledge governance; linking participation with other PMO members with the remuneration system; adjusting knowledge to corporate governance structures and projects to avoid friction and conflicts; as well as conducting organizational learning to manage the knowledge management for upcoming projects, [32].

The framework used by Ahsan et al. [33] is the Project Manager Competency Development (PMCD) as well as the knowledge, skills, and Ability (KSA) model. The findings indicated five essential KSA capabilities: communications, technical, stakeholder management, and time and cost management. Fig. 1 below presents the knowledge category as the crucial factor in the educational background and the project management certification. The following is an explanation of the PMCD and KSA framework models.

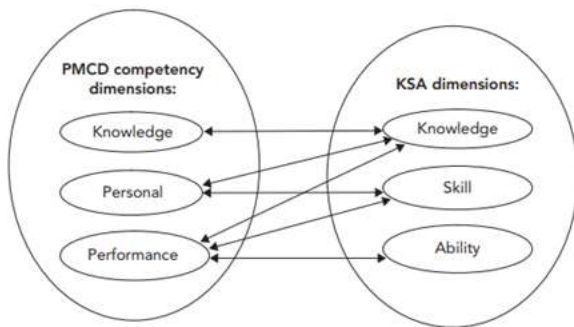


Fig. 1: PMCD and KSA framework models. [33]

The role of the PMO Manager in managing projects in an organization is described by Roden et al. [34], which includes communicating policies, establishing procedures, updating PMO deliverables, engaging with stakeholders throughout the organization, complying with project portfolios, programs, and methodologies, managing, and reviewing projects and analyzing reports. As described by Yesica et al. [3], qualifications have been developed to assess the competence of the PMO Managers based on their responsibilities. The study identified 23 dimensions of competence, which were then grouped into five core competencies.



Fig. 2: Hierarchy of Core Competence. [3]

The five core competencies of PMO managers based on their functions are listed as follows:

- Technical & professional specialties such as knowledge of the industry, expertise in PM process, and PM tools mastery.
- Effective intersocial competence includes proficient communication, influencing with impact, establishing connectivity, compassion towards others, and officiating stakeholders.
- Organizational stewardship such as: managing operational execution, conducting the tribe, fostering the people, orienting strategy, and transformation management.
- Business mainframe such as: scrutinizing data, allocating proper resources, decisive solution thinking, action with forethought, customer mindset, business understanding, and supervising implementation.

- Effective personal competence includes fluid analytics, work attitude, and emotional engagement.

2.3.2 Application of PMO Competencies in the Industry

Several PMO risks in the telecommunications industry during the project development phase, such as project initiation, planning, implementation, and closing, [35]. Risks may be present in the scope, schedule, budgeting, and resource allocation. Risks are also related to the availability and competence of labor. Implementing PMOs in the telecommunications industry with guidelines for the framework of 3 methodologies: network solutions and complex contracts; product development; and process reengineering, [36]. Companies can use Primavera software to handle complex projects or MS Project and MS Excel on other projects. PMO managers must store project documents in a public network and email updates to stakeholders. According to Shah et al. [37] the authors have discovered four competencies of PMO Managers that lead to a high success rate in the telecommunications industry, namely:

- Manager education level, it is stated that many managers are preferred to come from business graduates, which will affect performance in organizations with more training and presentations.
- With knowledge of managerial roles and skills, managers must communicate effectively and have interpersonal abilities, which implies that managers require practical knowledge and management concepts. Knowledge of organizational roles and skills will help ensure that it can be applied in the work of the PMO Manager and determine whether the manager is familiar with the management concept.
- In leadership style, managers are expected to be democratic in their behavior, to share information regularly, to hold meetings, and to ask employees for feedback to improve processes or performance.
- Motivation like providing compensation or rewards to ensure the PMO Manager is rewarded for what has been done. Establish training programs and maintain an intranet with articles and recommendations for each level.

Organizations should use PMO methods and provide staff training in interpersonal, technical, and management skills. The PMO Manager must integrate a creative approach to employee relations to participate in the decision-making process for achieving goals and increase

the productivity of developing strategies for achieving those goals and achieving project success.

3 Methodology

3.1 Study Participants

A qualitative study was conducted in Indonesia by interviewing critical respondents in the field of PMO from the telecommunication industry. A qualitative approach is more toward meaning, concept, and definition, where the data is presented descriptively to solve environmental problems, [38]. This study used in-depth interviews to validate five project management competencies.

3.2 Sample and Data Collection

A population is a valuable resource for researchers that can be utilized as research material, [39]. Research focuses on competence applied to PMOs so that all those involved in project management may be considered a group. The population criterion is a member of the Indonesian PMO professional organization. There were 300 people, according to data from the Indonesian PMO professional organization. Wahyuni [40] may adjust no specific criteria for determining the number of qualitative research samples based on the research objectives. An official Indonesian PMO union organization, Project Management Office Professional Indonesia (PMOPI), aided the researcher. Twenty-five lists of potential respondents, including project managers from various fields, were provided to the researchers. Only five of the twenty-five candidates agreed to participate in the interview.

Based on Yesica et al. [3] the authors developed a structured interview and questionnaire to obtain data that supports the PMO competency validation results. The author used in-depth interviews to build interaction with the respondents and to get information from them for further analysis and validation. The structured questionnaire included questions on background, expertise, and level requirements from the PMO manager, job description, key responsibilities, and challenges faced by the PMO manager. The survey used a questionnaire as the instrument to confirm and validate the results of the previous study. The survey method produced complex explanations about participants' experience, knowledge, and challenges, [41].

3.3 Data Analysis

An interview protocol was prepared based on the research question to answer the research question. The questions explored the respondent's background, the PMO's function, and the PMO's competencies used in their organization. The authors made transcripts of each interview verbatim. The authors used NVivo 12 software to code the transcripts, which allows the code to emerge from the data when examined. The authors used the iterative process of collecting and analyzing data, which allowed us to find relevant information.

The data were processed using NVivo software. NVivo is a software developed by researchers to manage and extract meaning from peer-reviewed data. NVivo is designed to record, sort, match, and connect data to answer research questions. This study presented the data as transcripts of interviews and analyses of related papers it showed in the form of words. Using several features provided by NVivo, the data analysis process in this study utilizes NVivo software to manage qualitative data efficiently. NVivo could facilitate the visual representation of the data, [42]. It allows the researcher to validate the data from PMO interview transcripts with five PMO competencies, [3].

3.4 Coding Process

The coding process in NVivo involves filling nodes with data associated with concept categories (codes). A node is a container for storing information relevant to the concepts in each type of node system, [43]. The development of coding guidelines based on previous research, [3]. Five categories or nodes were identified, namely technical and professional specialty, effective intersocial competence, organizational stewardship, business mainframe, and effective personal

competence. In total, 23 sub-nodes exist within each node. Qualitative research instruments rely heavily on the skills of the researchers, including observation, interviewing, and recording observations. The coders are researchers certified in behavioral competency mapping. To maintain independence and avoid bias, the coders in this study were distributed equally between two males and two females. The coder used NVivo 12 to encode the data in interviewing ten people. Credibility, transferability, dependability, and confirmability are trustworthiness criteria in qualitative research. Each coder used NVivo 12 for ten pax interviews. Inter-rate percentage agreement measures the degree of agreement or reliability between raters from multiple observers, [44].

The coders conducted inter-researcher triangulation to ensure data collection accuracy and minimize bias during data analysis, [43]. Researchers triangulate their conclusions by consulting with more than one expert. Coders use the Inter-Coder Reliability (ICR) technique to reduce subjective bias in reliability testing by requiring the presence of more than one coder or rater. The common perception of the four coders is the primary key in the Reliability test. Coders used ICR in reliability testing to reduce subjective bias and determine the consistency of coding results by requiring at least two coders or raters. The four coders (researchers) are similar in their interpretation of the key informant's expressions. An inter-rate percentage agreement of 95.31% implies the reliability of the analysis is high since a range of inter-coder reliability between 70% and 94% is an acceptable level of agreement and exceptional reliability, [43]. The coders calibrated the data to ensure a common understanding of the findings presented and the preparation of analysis reports using quantitative analysis. In general, the researchers followed these steps to conduct the research:

- Researchers transcribed and typed the respondent's interviews so they could describe the problem. They also coded the raw data to be transformed systematically and categorized based on the research focus. Having completed the categorization, the researcher conducted a reconstruction analysis. The repeated data analysis and the reconstruction resulted in system relations between various related concepts.
- The researchers analyzed the relation of each category by data classification. Different atmospheric conditions influenced the

conditions for data collection, resulting in different perspectives among coders. Therefore, audio-visual recordings and field notes were observed after each observation was completed.

- In the third stage, the researcher interprets the data by explaining the meaning of each grouping according to the researcher's perspective. Furthermore, it is essential to explain the relationship between each unit and its relationship to other teams.

4 Results

4.1 Demography

Table 1. shows that all respondents were PMO experts working for five companies. They had different specialties or job titles, but all of them were from the telecommunications industry. Most respondents have more than five years of experience as a PMO manager; most were male, with an average age of 40-50.

Table 1. Demographics of the respondents

Respondent	Job Position	Company Name	Company Sector	Experience (Years)	Gender	Age
1	Head of Strategic PMO	A	Operator Telecommunication	7 years as PMO Network 4 years as PMO of Transformation 5 years as Head of Strategic PMO	Male	48
2	Head of PMO-PQM	B	Telecommunications Infrastructure & Network Providers	4 years as Head of Network 5 years as Head of PMO-PQM	Male	45
3	Head of Project Management	C	Integrated and End to End ICT Company	5 years as Head of Project Management	Female	40
4	Project Management Office	D	Information and Communication Technology	6 years as Project Leader 5 years as Project Management Office	Male	44
5	Head of Performance Management	E	Integrated and End to End ICT Company	8 years as PM 2 years as Head of Performance Management	Male	41

4.2 Analysis of Findings

Data collected from the interview transcripts were undergone further analysis process. This process provided the validation of PMO competencies. The researchers used a total of 127 code quotes in this analysis. In addition, several statements that support competence are also found to be related to PMO functions. The result of the study showed in Fig. 3.

- The Project Support component of 14.96% primarily emphasized how to develop a team, support, control, and mentor a team project, as well as conduct stakeholder management and mentoring. "Controlling the progress of each project and ensuring each milestone is achieved as efficiently as possible from monitoring the project" (Respondent 2).
- Strategic Alignment is 2.36%. Strategic alignment included participation in portfolio management and strategic planning and contributing to the project's success. "Ensuring that the company's strategy is implemented by the target for transformation" (Respondent 1).
- Governance Oversight is 7.78%. In general, Governance Oversight entailed supporting operational activities within an organization and building relationships with stakeholders. "Coordination between projects and other internal parties and the development of Standard Operating Procedures (SOPs) coordinated with business project management" (Respondent 3).

- Project Performance Enablers at 2.36%. Project Performance Enablers guide teams, evaluate, standardize, and manage projects. "The third milestone of the implementation section poses many challenges that require coordinating all parties" (Respondent 2).
- Organizational Performance Enablers at 0.79%. The Organizational Performance Enabler is responsible for developing and implementing the project. "Monitoring the progress of each project for ongoing implementation" (Respondent 2).

Learning and Organizational Growth of 3.15%. In the PMO, Learning and Organizational Growth are related to developing members' abilities, work qualifications, competencies, and management knowledge. "PMOs are generally responsible for conducting group upgrades on knowledge projects and coaching project managers" (Respondent 3).

The findings of this study demonstrated that PMO competencies are closely related to project function, which confirmed the previous research, [3]. PMO functions in the telecommunications industry should carry out responsibilities that integrate aspects of competence and elements of the project function. A significant difference was found in the effects of the five competencies: technical and professional specialty, effective intersocial competence, organizational stewardship, business mainframe, and effective personal competence. The analysis results indicated that business acumen was the most

utilized competency among the PMOs in the telecommunication industry, with 29.13% findings, which is a significant difference from the results of other competencies. The percentage occurrence of each dimension with Technical and professional specialty is 14.17%, Effective intersocial competence is 12.60%, Organizational stewardship is 9.45%, Business mainframe is 29.13%, and Effective personal competence is 3.15%. Fig. 3 provides insight that a PMO manager must possess a certain business sense to perform their task effectively.

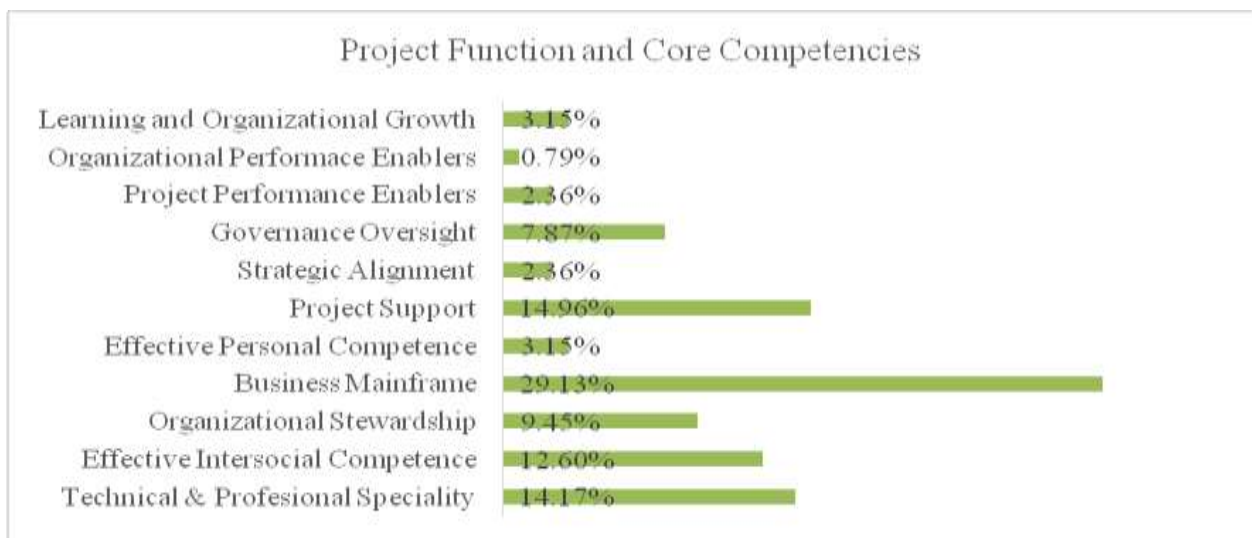


Fig. 3: Percentage of a project function and core competencies
Source: Graph generated by the authors

4.2.1 Technical & Professional Specialty Competence

Technical and professional specialty competence refers to an individual's ability related to the specific skills and knowledge necessary for performing a PM function. Regarding technical & professional specialty, competence comprises three dimensions: knowledge of the industry, experience with PM process, and mastery of PM tools, [3]. Based on the analysis results conducted to validate the previously identified three dimensions, the percentage of each dimension is shown in Fig. 4. The following analysis was conducted based on the data collected from PMO interviews in the telecommunications industry.

From Fig. 4, the analysis results carried out with NVivo 12, a percentage of each dimension was obtained according to Table 2. There is knowledge of the industry at 11.11%, expertise in PM process at 50%, and PM tools mastery at 38.89%. The percentage results were determined according to the results obtained during the analysis process with the following sample data. Therefore, PMO managers

must understand PM processes before applying the relevant PM tools to ensure that this will help them do their work more effectively.

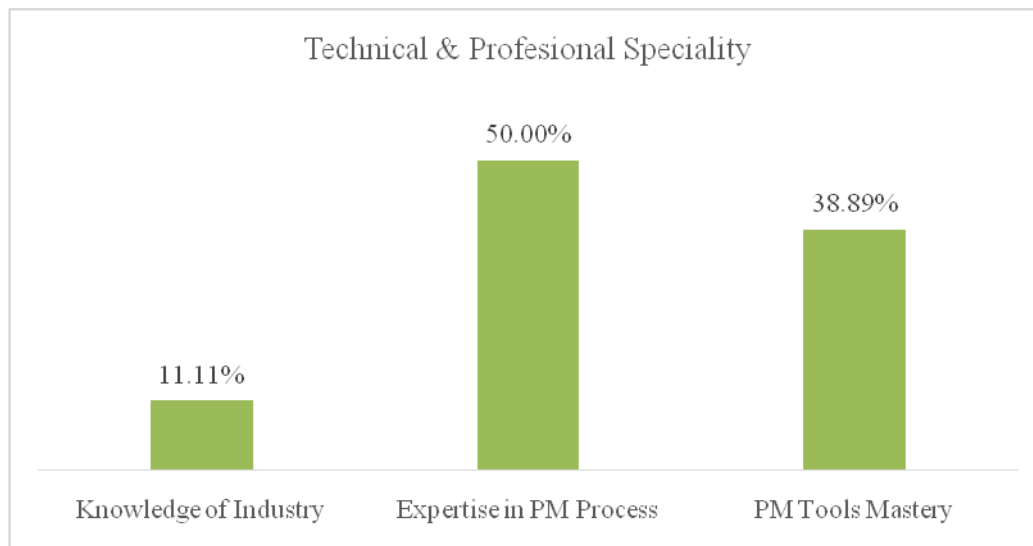


Fig. 4: Percentage of technical & professional specialty

Table 2. Detail of quotes code for Technical & Professional Specialty Competency

Core Competency	Dimension	Example quotes code for each dimension
Technical & Professional Specialty Competency (18 code quotes)	Knowledge of Industry (2 code quotes)	A gap still exists in customer experiences and digital touchpoints (knowledge). It is necessary to have a basic understanding of the field o accomplish the task. (Respondent 1)
	Expertise in PM Process (9 code quotes)	The role of the project management office (PMO) is primarily to help standardize projects and tools related to project management and to ensure that revenue is realized according to the target. (Respondent 5)
	PM Tools Mastery (7 code quotes)	The PMO and PQM have a database that allows all internal stakeholders to keep track of all projects. (Respondent 2)

4.2.2 Effective Intersocial Competence

Effective intersocial competence refers to the ability of individuals to function effectively in social interactions. Yesica et al. [3] defined several dimensions such as effective intersocial competence, namely, proficient communication, influencing with impact, establish connectivity, compassionate towards others, and officiating stakeholders. This study analyzes data from PMO interviews in the telecommunications industry to determine how much each dimension occurs. The details of each dimension are provided in Fig. 5.

Fig. 5 displays the percentage of each dimension appearing in Effective Intersocial Competence as analyzed by NVivo 12. From the data above, the following dimensions emerge proficient communication 18.75%, influencing with impact 6.25%, establish connectivity 6.25%, compassionate towards others 12.50%, and officiating stakeholders

56.25%. It can be seen from the results that officiating stakeholders have a high percentage of implementation in the PMO of the telecommunications industry. The rate of occurrence was determined by analyzing interview statements, which were subsequently analyzed by the research team. This specifies that one of the main tasks of PMO managers is to manage stakeholder's expectations as they have different interests in expecting the outputs and outcomes of their projects. At the same time, the PMO manager also expects the project stakeholders to be engaged with the projects.

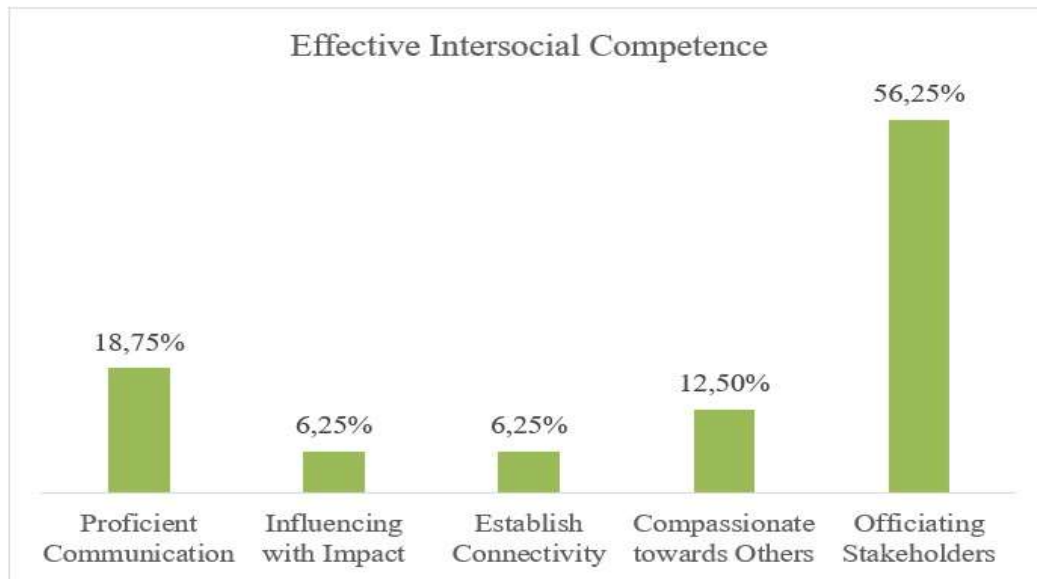


Fig. 5: Percentage of effective intersocial competence

Table 3. Detail of quotes code for Effective Intersocial Competence

Core Competency	Dimension	Example quotes code for each dimension
Effective Intersocial Competence (16 code quotes)	Proficient Communication (3 code quotes)	The most complex and challenging aspect of managing a PMO is communicating effectively. (Respondent 3)
	Influencing with Impact (1 code quote)	The most challenging aspect of starting a career as a PMO manager is that few individuals can accept this position's functions. (Respondent 4)
	Establish Connectivity (1 code quote)	Building connectivity is one of the skills that should be possessed before working as a PMO manager. (Respondent 3)
	Compassionate towards Others (2 code quotes)	The most complex challenge is coordinating all parties to adjust when dealing with different characters. (Respondent 2)
	Officiating Stakeholders (9 code quotes)	Ensure the steering committee establishes the company's long- and medium-term strategy, manages stakeholders, and coordinates activities. (Respondent 1)

4.2.3 Organizational Stewardship

Organizational stewardship is a leadership behavior that allows a person to guide others in achieving business goals. According to the previous study, five dimensions are part of the competency of organizational stewardship, including managing operational execution, conducting the tribe, fostering the people, orienting strategy, and transformation management, [3]. Analysis of the five dimensions of Organizational Stewardship competence has been performed to obtain information on the percentages of each dimension in

the PMO of the telecommunications industry. The results are shown in Fig. 6.

According to Fig. 6, there is a percentage occurrence of each dimension in the organizational stewardship competency. This includes managing operational execution at 8.33%, conducting the tribe at 50%, fostering the people at 33.3%, orienting strategy at 8.33%, and transformation management at 0%. Interestingly, this competence has a percentage of 0%, which shows no significant need for transformation management in managing PMO.

This could be because most projects in telecom companies have specific requirements and scopes.

A.T. Kearney [45] defined causes of failure of transformation management in the telecommunication industry were weak alignment (strategy is not aligned with program design and operational implementation); there is an inappropriate program scope (the program focuses too narrowly on one aspect of the operating model or is too broad, resulting in the program eventually collapsing under its weight); inadequate execution (the organization lacks the sense of ownership and urgency necessary to advance the program, and it is unable to transition to an entirely revised operating model). Furthermore, Cahyadi [46] supports that the lack of standard project management methodologies and approaches are new project management systems/tools, communication issues, lack of strong monitoring or supervision, unclear project priorities, and differences among project stakeholders can cause problems in delaying transformation management.

In Table 4, sample data from interviews with several statements of results have been analyzed to obtain the percentage data shown above. PMO managers must be able to coordinate with respective

parties, especially the project managers and their teams. It also shall imply effective communication among them to ensure everyone is aware of the existence and performance of the projects.



Fig. 6: Percentage of organizational stewardship

Table 4. Detail of quotes code for Organizational Stewardship

Core Competency	Dimension	Example quotes code for each dimension.
Organizational Stewardship (12 code quotes)	Managing Operational Execution (1 code quote)	PMs are not always placed on the proficiency scale. For example, one PM is more proficient in the core development of the application. However, it has been placed on computer-simulated recruitment, where it is more responsible for the device. (Respondent 4)
	Conducting the Tribe (6 code quotes)	The company's internal formal training is more general but focuses on leadership. If the training is specific, the PMO looks for the training itself, such as outside certification. Currently, it has not been the focus of the PMO team to focus on certification. (Respondent 3)
	Fostering the People (4 code quotes)	The most time-consuming responsibility is coaching since each PM has a different level of experience, knowledge, and expectations. Some complaints should be deferred to the intermediate level. (Respondent 4)
	Orienting Strategy (1 code quote)	The PMO's role is to translate the company's strategy to the implementation level and develop standard guidelines for project managers to follow. (Respondent 1)
	Transformation Management (0 code quotes)	-

4.2.4 Business Mainframe

A business mainframe refers to a management skill or behavior that can enhance competitive advantages within a business. Yesica et al. [3] there are seven dimensions of competence for a business mainframe: scrutinize data, allocating proper resources, decisive solution thinking, action with forethought, customer mindset, business acuity, and supervise implementation. The business mainframe competency has the highest rate dimensions among the other competencies due to its broad scope and aspect covering various skills and behaviors. A percentage of the appearance of dimensions included in business acumen competency is presented in Fig. 7. As a result, PMO shall have the visibility of the projects. In most PMO practices, the PMO managers do not have direct authority over the project implementation process. However, the PMO managers shall ensure that the project managers do their work effectively per set-up PM governance.

As shown in Fig. 7, each dimension in the business mainframe competence appears at a percentage of the total, namely, scrutinize data at 13.51%, allocating proper resources at 8.11%,

decisive solution thinking at 5.41%, action with forethought at 8.11%, customer mindset at 8.11%, business acuity at 10.81%, and supervise implementation at 45.95%. Business mainframe refers to the dimensions that contribute most to the success of other competencies. Interestingly, the research team found a significant difference in results for supervise implementation versus other dimensions when analyzing the results of the analysis conducted with NVivo 12. The supervise implementation percentage is 45.95%, as can be seen from the percentage of occurrences. This means that half of the existing findings fit into this dimension. Furthermore, it may lead to the conclusion that PMOs often implement supervision in the telecommunications industry. This percentage data comes from an analysis of several statements of interview results with sample data in Table 5. as follows.

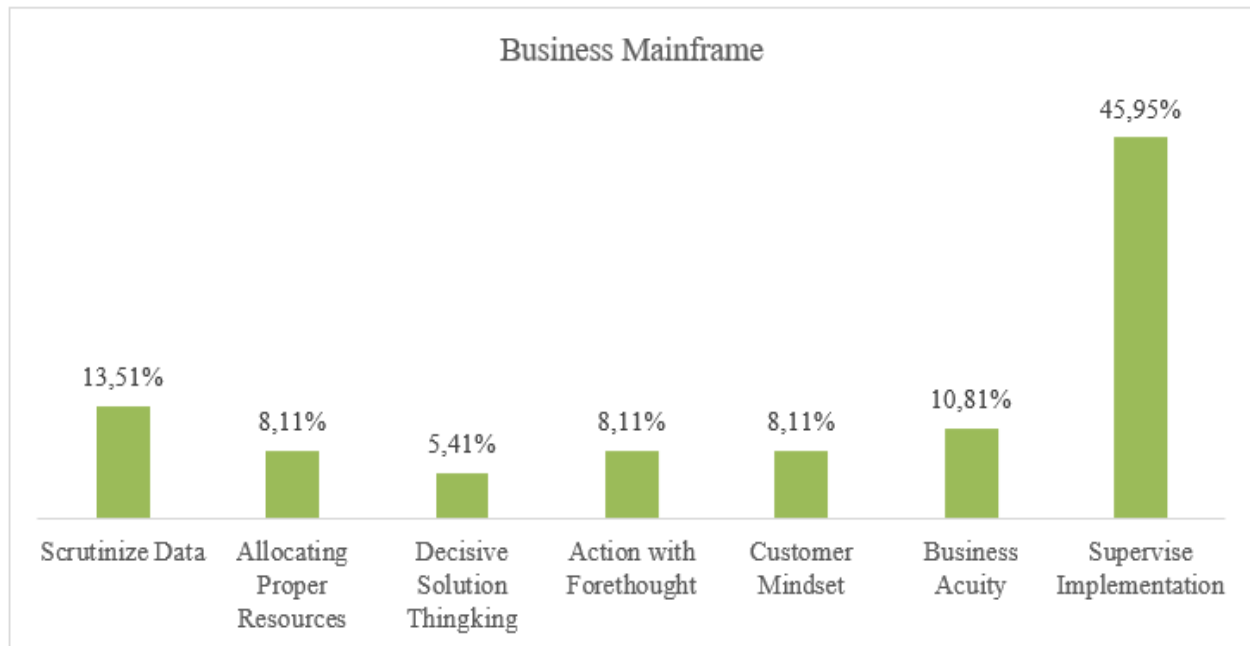


Fig. 7: Percentage of business mainframe competence

Table 5. Detail of quotes code for Business Mainframe

Core Competency	Dimension	Example quotes code for each dimension.
Business Mainframe (37 code quotes)	Scrutinize data (5 code quotes)	Analyze the status of projects that enter the list, the number of strategic projects, and the dashboard. The number of projects, the value of each project, the resources, the workload, the project manager, the support, and complaints. (Respondent 4)
	Allocating Proper Resources (3 code quotes)	A key function of the PMO team is to provide resources to the PM for the implementation of projects. (Respondent 5)
	Decisive Solution Thinking (2 code quotes)	A PMO manager's responsibilities include organizing strategic measures if there are obstacles. (Respondent 2)
	Action with Forethought (3 code quotes)	PMOs and PQMs are responsible for creating frameworks in my organization. (Respondent 2)
	Customer Mindset (3 code quotes)	When performing tasks, the most common obstacle is user complaints or requests, but these can still be accommodated. (Respondent 5)
	Business Acuity (4 code quotes)	Changing the mindset from telecommunication network-related tasks to more business-related tasks and bringing the ability to see business organizations from a broader perspective. (Respondent 1)
	Supervise Implementation (17 code quotes)	Supervise and control the performance of internal project managers as well as conduct internal visits to ensure that internal procedures are followed. (Respondent 3)

4.2.5 Effective Personal Competence

Effective personal competence is a combination of skills, preferences, and a style that can improve individual performance at work. Effective personal competency consists of three dimensions: fluid analysis, work attitude, and emotional engagement, [3]. As shown in Table 6, the research team has performed an analytical test of these three dimensions in the telecommunications industry using data obtained from PMOs.

Fig. 8 shows the emergence of each dimension of effective personal competence: fluid analysis 25%, work attitude 50%, and emotional engagement 25%. According to this study's results, the differences

within each competency are not as significant as within other core competencies. Based on the analysis results, work attitude is the dimension with the highest percentage of appearances. This specifies that working in the PMO is the most frequent application of this dimension. As shown in Table 6, the percentage data above were obtained from analyzing several statements of interview results. To perform their duties, the PMO manager shall lead the example to the rest of the project and business organization. They shall exhibit professionalism in doing their work, especially during tough times.

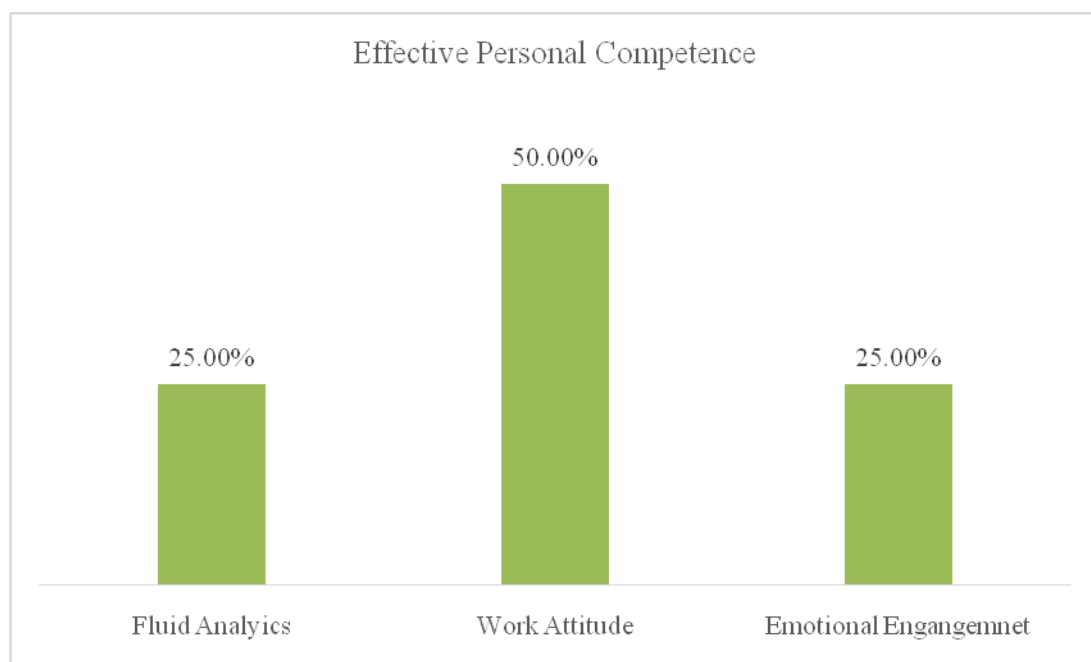


Fig. 8: Percentage of effective personal competence

Table 6. Detail of quotes code for Effective Personal Competence

Core Competency	Dimension	Example quotes code for each dimension.
Effective Personal Competence (4 code quotes)	Fluid Analysis (1 code quote)	Future innovations are desired to make the future better. (Respondent 3)
	Work Attitude (2 code quotes)	One of the skills needed before becoming a PMO manager is the ability to adapt to change. (Respondent 1)
	Emotional Engagement (1 code quote)	Being patient is one of the most challenging aspects of being a PMO manager. (Respondent 3)

4.2.6 Overlapping Coding

As a result of the analysis performed by the research team, exciting findings were obtained, as well as validating the five dimensions, [3]. Furthermore, the researchers found that the data analysis results showed that competencies and project functions were implemented in the PMO. There was overlapping coding among the quotes that supported competence and project function statements based on this analysis.

The overlapping coding was found in the analysis of ten respondents' data. Overlapping data has been found in the core competencies and project functions, supervise implementation and project support (74% to 93%), conducting the tribe and learning and organization growth (56% to 64%), and officiating stakeholders and governance oversight (96% to 100%). In addition, overlapping was found in the core competencies dimension; officiating stakeholders (17% to 33%) is the dimension with the most overlapping frequency based on the research team's analysis results.

5 Conclusion

This paper validates the findings of Yesica et al. [3] related to the five core competencies of a PMO manager, namely: technical & professional specialty, effective intersocial competence, organizational stewardship, business acumen, and effective personal competence, and it focuses on the domain of ICT (Information Communication Technology) industry. Based on Yesica et al. [3] only the PMO manager competency framework was found, and there has been no further research into the implementation process. In this research, the authors validated the competency framework. It was found that Business Mainframe is the core competence, followed by the Supervise Implementation dimension with the most code quotes. These two dimensions include management skills and behaviors that contribute to increased competitive advantage in business since today's business world is characterized by uncertainty and turbulence. Also since skills that require interpersonal competence are more challenging to develop. PMO Managers in the telecommunication industry must supervise implementation capability to ensure that business processes are within the planning corridor and that implementation is monitored and followed up to be effective. This dimension is essential for business success, especially in the telecommunication sector.

Most of the dimension in a previous study has been implemented in the analyzed companies,

except for one dimension with 0% results, transformation management. A.T. Kearney [45] and Cahyadi [46] suggested that transformation management can be delayed due to weak alignment (the strategy does not align with a program design or implementation), a lack of intense supervision and monitoring, the lack of empowerment of the PMO, and differences in priorities among project stakeholders. The competencies identified can be used in the design of competency-based training for PMO managers and in updating job descriptions for PMO managers. By providing the knowledge and skills needed for successful performance, competence as a PMO manager can be demonstrated when preparing and accepting future projects. This research is expected to support PMO productivity and improve the quality of products or services in the industry, especially in the telecommunications sector. Hopefully, this research will be helpful and expand to other industry domains such as construction, oil and gas, financial services, and other industries.

6 Implications, Limitations, and Suggestions for Further Research

Based on Yesica et al. [3] findings, most of the dimensions of the competency theory have been applied to five companies in the telecommunications sector. As a result, it is hoped that PMO managers in Indonesia could comprehend the importance of competencies based on their job position, company sector, and experience. Furthermore, this study's findings will help academics and researchers in the field of PMO manager competency identify the specific competencies needed to succeed in the role of PMO manager. Due to the low implementation of PMO competencies in Indonesia, this can be a key opportunity to assist practitioners in implementing competencies for the telecommunications sector and other relevant industries.

Since PMOs are seldom applied in Indonesia, especially in telecommunication industries, the main limitation of this study is the high degree of subjectivity. But, only five respondents have more than five years of experience in the field of PMO and are all a member of PMOPI. This demonstrated that small sample sizes are effective for qualitative research because the respondents can reach saturation, [47]. Codes could be achieved relatively efficiently in an in-depth interview, assuming that five respondents are enough to accomplish this research objective and represent the full dimensionality of people's experiences, [48]. To

understand and substantially represent the full dimensionality of people's experiences, five interviews should suffice among a group of relatively homogeneous individuals and enable the development of meaningful themes and proper interpretations, [49].

Organizational stewardship depends highly on the coordination between PMO managers and their respective parties, particularly with project managers and their teams. Finding out how to influence the PMO manager's leadership to support this transformation management movement so it can be communicated to top management or stakeholders would be immensely helpful for future study. More research could explore how leadership in PMO regulates every PMO activity and how to fully understand the dependence on top management empowerment since, without it, PMO cannot effectively influence the organization.

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Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

The authors equally contributed in the present research, at all stages from the formulation of the problem to the final findings and solution.

Sources of Funding for Research Presented in a Scientific Article or Scientific Article Itself

No funding was received for conducting this study.

Conflict of Interest

The authors have no conflict of interest to declare.

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