Journal of Business and Economics, ISSN 2155-7950, USA
July 2023, Volume 14, No. 7, pp. 307-323
DOI: 10.15341/jbe(2155-7950)/07.14.2023/001

http://www.academicstar.us

Empirical Examination of the Relationships Between General Process Management Competency, Self-Efficacy for Project Teamwork and Team Member Performance in Short-Term Project Teams

Graeme. H. Coetzer, Koffi Dodor, Tesfalidet Tukue
(College of Business, Southern University, USA)

Abstract: This research study examines the mediating influence of self-efficacy for project teamwork (SEPTW) on the relationship between general process management competency (GPMC) and team member effectiveness in short-term project teams (TME). Ninety-two professionally employed business graduate students participated in a 14-week project team. Each subject completed a self-assessment measure of SEPTW, and a close associate completed an observer version of a GPMC scale. At the end of the project, each team member rated the effectiveness of the other team members. Product moment correlations were used to examine the hypothesized relationships between TME and both GPMC and SEPTW, and between SEPTW and GPMC. The Hayes process and the Sobel test was used to test the hypothesis that SEPTW mediates the relationship between GPMC and TME. TME was significantly correlated with both SEPTW (r = 0.49, p < 0.01) and GPMC (r = 0.41, p < 0.01) and SEPTW was significantly correlated with GPMC (r = 0.52, p < 0.01). Both the Hayes process and Sobel test (Z = 2.978, p = 0.003) confirm that SEPTW partially mediates the relationship between GPMC and TME. Business educators and practitioners need to be aware of the influence of GPMC and SEPTW on TME in project teams. Education, training, and organizational development interventions that promote general process management competency and self-efficacy for project teamwork in an integrated manner should improve team member performance in project teams. This is the first study to examine the relationships between GPMC, SEPTW and TME. The results of this study highlight the importance of enhancing both general process management competency and self-efficacy for project teamwork to help improve team member performance in project teams.

Key words: process management, process management competency, conflict management, cooperative conflict management, team member performance, team member effectiveness

JEL code: L

1. Introduction

Organizations are increasingly viewed as having multiple simultaneous forms including cultural, political, learning, mechanistic, organic, psychological and many others (Lederer, Knapp & Schott, 2017; Morgan, 2006; Scott & Davis, 2015). Included within these varying points of view is the open systems perspective which has

Graeme H. Coetzer, Ph.D., Associate Professor of Organizational Management and Development, College of Business, Southern University; research area: organizational behavior. E-mail: graeme.coetzer@sus.edu.

become the dominant overarching paradigm in the organizational sciences (Levasseur, 2004; Millet, 1998). The open systems perspective, which views organizations as a set of evolving interactions both within and between organizational and environmental elements, has shifted attention from organizational elements to processes (Hernes, 2014; Langley & Tsoukas, 2010; Yoon & Kuchinke, 2005). Discrete entities, states, and events have dissolved into a network of processes which have dissolved into further processes (Rescher; 1996). The salience of the process perspective has been supported by significant business process improvement initiatives (Hammer & Champy, 1993), business process transformation arising from the integration of digital technologies (Vial, 2021), and the process focus of project and quality management (Dahlgaard, Khanji & Kristensen, 2008). This evolution in the perception of organizations has encouraged a reconfiguration of professional competencies resulting in the widespread inclusion of new competencies like systems thinking and process management (Batt et al., 2021; Davidz & Nightingale, 2008; Dolansky & Moore, 2013; Eicker et al., 2008; McGuire & Randall, 1998).

The emergence of systems and process-oriented competencies within the competency frameworks of a wide variety of business and non-business professions suggests that process-oriented competencies have both general (cross discipline) and context/task specific forms (Eicker, Kochbeck & Schuler, 2008; Gorbacheva et al., 2015; Lebid & Natal'Ya, 2020). Rapid contextualization of process management has taken place within specialized areas like business process management, quality management, risk management, operations management, information technology management, supply chain management and project management (Armistead & Machin, 1997; Chan, 2000; Biazzo & Bernardi, 2003; De Bruijn & Ten Heuvelhof, 2010). This has resulted in both a general and specialized orientation toward process management competency (Verino & Titko, 2019) which aligns with the general theory of individual performance (GTIP) (McShane & Glinow, 2017). The GTIP states that performance is predominantly the result of the interaction between motivation and competency moderated by influential role perceptions and situational contingencies (Heneman & Schwab, 1972; McClelland1973; McShane & Glinow, 2017; Sonnentag & Frese, 2002). Research on competency structures suggests that competencies often possess a pyramidal structure with general competencies toward the base and more context/task specific competencies toward the peak(s) (McClelland, 1973; Płoński, 2019). This suggests that performance is supported by multilevel competencies including both general and context/task specific competencies (see Figure 1).

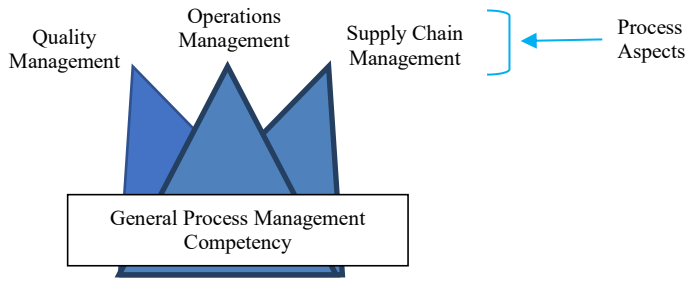


Figure 1 Pyramidal Nature of Competency Structures

The importance of general process management competency is underscored by the wide variety of professional associations that include the general competency within their lists of required competencies (see example from the National Institute of Health in appendix A). Even though general process management competency is established as an important part of the professional competency pyramid (foundational component), there appears to be little research on the behavioral and performance consequences of the competency at a general level, particularly within the domain of general management where it is particularly relevant (Coetzer, Omonuk &

No, 2022; Mathiesen et al., 2013). General managers are expected to understand and provide general support for a wide variety of processes, which makes general process management competency particularly relevant for them. Although process management receives specific attention within specialized areas of the higher education curriculum and profession specific training like supply chain management, information systems management and project management (Ahmad, Francis & Zairi, 2007; Pradabwong et al., 2017; Shtub & Karni, 2010; Thomas & Mengel, 2008), there is little evidence of explicit and widely adopted academic and professional organizational development content that targets the development of the competency for general management practitioners and management students (Coetzer, Omonuk & No, 2022). The lack of research and development content is likely to constrain the specification and adoption of the general competency. This research study helps to close the research gap by examining the influence of general process management competency within the nomological network that determines the performance of management students. More specifically, this research study examines the mediating influence of general process management competency on the relationship between task inattentiveness and self-efficacy for project teamwork within the management student population.

2. Variables

2.1 Dependent Variable — Team Member Effectiveness

Organizations are making greater use of teams and projects to complete a wide variety of complex tasks (Aguado, 2014; Wombacher & Felfe, 2017). Competencies that support the ability to work in teams and projects have therefore become increasingly important to both educators and industry (Chen, Donahue & Klimoski, 2004; Cunningham, Salomone & Wielgus, 2015; Kim, Lee & Oh, 2020; O'Neil & O'Neil, 2014; Pinter & Cisar, 2018). Research suggests that teamwork competencies are associated with individual workplace performance across a wide range of jobs (McClough & Rogelberg, 2003; Mun & Kim, 2016; Pitafi et al, 2018; Schmidt & Hunter, 1983). Improvements in workplace performance therefore requires research that continues to identify the key determinants, mediators, and moderators of team-member effectiveness (Braender & Naples, 2013; Illgen et al., 2006).

Development and measurement of the team member effectiveness construct has both global and task/context specific dimensions. Task and context specific team member effectiveness has given rise to constructs like virtual team member effectiveness (Hertel, Konradt, & Voss, 2006) and medical team member effectiveness (Leasure et al., 2013). The global operationalization and measurement of team member effectiveness has been driven by organizations and higher education programs that make use of peer assessment of team-mates to assess general dimensions of team-member effectiveness that are applicable across a wide range of team performance contexts (Aguado, Rico, Sánchez-Manzanares & Salas, 2014; Coetzer & Trimble, 2009).

Constructs and measures of general team-member effectiveness have predominantly drawn their content from work done on identifying global teamwork competencies (Coetzer & Trimble, 2009). The identification of global teamwork competencies was initially supported by team leadership research that identified the primary dimensions of support for people and productivity (task) (Hassanzadeh, 2015; Schriesheim & Bird, 1979). This was further reinforced by general team effectiveness definitions that emphasized efficient and effective completion of the required team tasks while maintain or improving the ability of participants to work together in the future (Hackman, 1983). Further refinements were made by Stevens and Campion (1994, 1999) who identified five general teamwork competencies that apply to a wide variety of teams: (1) goal setting and performance

management, (2) task mapping, coordination, and integration, (3) conflict resolution, (4) collaborative problem solving, and (5) communication. Cannon-Bowers et al. (1995) and others added other general dimensions like promoting shared understanding of the performance situation, adaptability, leadership, and interpersonal relations. To maintain the globality of the construct and related measures, expanding lists of competencies have been group into categories like task vs team competencies, and interpersonal vs self-management competencies. A review of the various general competencies and categories suggests the following general dimensions:

- goal setting
- performance assessment, problem identification, problem management, adaptability
- task identification and mapping, creating a division of labor, coordination and integration of team tasks
- open, direct and skillful communication; generating and maintaining a shared understanding of the performance situation
- establishing and maintaining constructive relationships and encouraging others to do so, promoting cohesion, constructive management of conflict
- motivating the team and providing the required leadership when necessary
- managing oneself and one's own role and task responsibilities in an efficient and effective manner (sufficient quantity and quality of direct contributions to the team's task)

General team member effectiveness is therefore defined as team member behavior that contributes to the goal setting, task management, performance management, communication, relationships, leadership, and motivation of the team; and supports efficient and effective execution of direct personal task responsibilities within the team. This research study contextualizes the definition by focusing on the demonstration of the mentioned competencies within the context of short-term project teams.

Research on the determinants of team-member effectiveness suggests that self-efficacy for teamwork is a key determinant and an important mediator of other more distal determinants (Chowdhury, Endres & Lanis, 2002; Phillips, 2001; Cohen and Bailey, 1997; Hyatt & Ruddy, 1996). Research also suggests that pre-behavioral (distal) competencies like critical thinking contribute to both self-efficacy for teamwork and team member performance (Castledine, 2010; Natale & Ricci, 2006; Richards & Schwartzstein, 2022). This suggests that there is a nomological network involving competencies like process-oriented thinking (distal) and self-efficacy for teamwork (proximal) that contribute to team-member effectiveness.

2.2 Independent Variable — General Process Management Competency

Competencies are defined as a set of abilities, knowledge, skills, perspectives, and attitudes that support solving problems and executing tasks in an efficient and effective manner (Holtkamp et al., 2015; Rychen & Salganik, 2001). General process management competency is defined as the cross-situational capacity to support the identification, modelling, analysis, development, implementation, management, and improvement of the interrelated activities that produce systems outcomes in an efficient and effective manner (Coetzer, Omunuk & No; 2022). General process management competency supports a wide variety of tasks including task management, workflow management, business process management, quality management, and project management (Nowak, Pawlowski & Schellenbach, 2022). Execution of specialized processes within specific contexts (e.g., supply chain management) often requires supplementary and specialized process competency to achieve full context specific performance (Pradabwong et al., 2017; Shtub, & Karni, 2010). This is congruent with the pyramidal model of performance-supporting competencies that includes general competencies at the base and more task/situation

specific competencies towards the peak (McClelland, 1973; Williams, et al., 2016).

General process management is increasingly viewed as an important competency within the modern workplace (Koskinen, 2012; Lederer et al., 2017; Verina & Titko, 2019) and is listed as a core competency by a wide variety of business and non-business professional associations (e.g. Project Management Institute, National Institute of Health etc., see example in Appendix A).

Process management competency is supported by both declarative (descriptive) and procedural knowledge (Langley & Tsoukas, 2010). Declarative (descriptive) knowledge refers to understanding the general nature, presence, and role of process elements; whereas procedural knowledge refers to understanding the general nature of dynamic, temporal and sequential interrelationships among the elements, and how they influence systems outcomes (Banks & Millward, 2007). General process management competency requires systems perspective-taking and thinking that supports the ability to imagine or examine a performance situation in a way that reveals the beginning-to-end interrelationships among elements of the situation that produce particular systems outcomes (Emblemsvåg & Bras, 2000; Koskinen, 2012). More specifically, general process management competency refers to the capacity to identify, map-out, organize, implement, manage, and improve both abstract and externalized processes at a general level across a wide variety of performance situations and conditions (Galanakis, 2006; Jonker & Karapetrovic, 2004). Recent research by Coetzer, Omunuk and No (2022) confirmed associations between general process management competency and important organizational behavior variables like conflict management and team member performance. Research has also confirmed that both conceptual and procedural thinking competency have a positive influence on self-efficacy (Campbell et al., 2011; Halverson, Miars & Livneh, 2006; Roshangar et al., 2020).

2.3 Meditating Variable – Self-Efficacy for Project Teamwork

Social cognitive theory (Bandura, 1986) suggests that cognitive processing of social information can influence human performance. Beliefs about one's ability to mobilize sufficient effort, cognitive resources, and the behavioral strategies necessary for successful task completion, are important determinants of performance and satisfaction (Bandura, 1997). Self-efficacy is generally defined as the perceived capacity to perform tasks (Wood & Bandura, 1989), and is developed through mastery experiences, exposure to performance modeling, social persuasion, and judgements about performance readiness (Bandura, 1982; Gist, 1987). Positive or negative efficacy information is generated by evaluating task requirements, related personal experiences, and relevant personal and situational resources and constraints (Gist & Mitchell, 1992).

Development and measurement of the self-efficacy construct has included global, domain, and task specific dimensions suggesting that efficacy assessments occur at different levels of specificity (Henson et al, 2000; Luszczynska, Scholz & Schwarzer, 2005; Zhou et al., 2021). The inclusion of domain and task specific efficacy has given risen to numerous contextually oriented forms of efficacy, like efficacy for teaching (Chan, Maneewan & Koul, 2021), career decision making (Zhou et al., 2021), smoking cessation (Al Thani et al., 2022) and teamwork (Chowdhury, Endres & Lanis, 2002; Phillips, 2001; Cohen and Bailey, 1997; Hyatt & Ruddy, 1996). Numerous studies have confirmed self-efficacy as a valid predictor of satisfaction, effort, persistence and performance across a wide range of tasks (Gist & Mitchell, 1992; Lennings, 1994; Liao & Chuang, 2007; Stajkovic & Luthans, 1998). Meta-analysis of the efficacy-performance relationship suggests that efficacy is one of the better general predictors of performance (Judge & Bono, 2001; Sitzmann &Yeo, 2013).

Employers increasingly emphasize the need for business students to develop project and teamwork competencies (Ailes & Bosworth, 2004; Bacon, 2005). Research conducted by Scribner, Baker & Howe (2003) on working alumni perceptions of the value of student project teams suggests that team projects help to develop the confidence and competencies that support workplace performance and career advancement. It is therefore important that higher education business programs help students develop both the confidence and competence to manage and participate in project teams. Research on efficacy in the team context has mostly aggregated team member general self-efficacy or efficacy beliefs about team performance as a measure of team efficacy (potency) (Fan, Cai & Jiang, 2021). Research suggests that team efficacy is an important determinant of academic and organizational team performance (Gully et al., 2002; Lent, Schmidt & Schmidt, 2006), and a mediator of the team resources and performance relationship (Scott-Young & Samson, 2008). Research at the individual level on self-efficacy for teamwork has confirmed associations with team-member effectiveness and other important organizational behavior variables like role stress and conflict management style (Chowdhury, Endres & Lanis, 2002; Coetzer, Hanson & Trimble, 2009; Coetzer & Trimble, 2010; Eby & Dobbins, 1997; Konak & Kulturel-Konak, 2019). Self-efficacy for teamwork (SETW) is a highly influential variable within the nomological network that determines team member performance, an increasingly important capability across a wide variety of professions (Coetzer & Trimble, 2010). This research study further contextualizes self-efficacy for teamwork by focusing on confidence related to working in project teams.

3. Hypotheses

The general proposition guiding this research is that GPMC is positively related to both SEPTW and TME, SEPTW is positively related to TME, and SEPTW mediates the relationship between GPMC and TME.

This proposition is support by and helps further specify the general model of performance by examining the linkage between general level competencies and individual performance (Sonnentag & Frese, 2002). The integration of conceptual and procedural thinking systems that underpin general process management competency, is required to intellectually model the static and dynamics aspects of performance situations and map out processes for achieving required outcomes. This applies to project teams that have a particular performance context, scope, resources, and deliverables that require the development, execution and management of complex beginning-to-end processes. Team members with the ability to assist a team to intellectually model the performance context, deliverables, and the required beginning-to-end processes; and both implement and manage the established task structures; are likely to be effective team members.

Hypothesis 1: General process management competency is positively associated with team member effectiveness in short-term project teams responsible for executing complex business analysis

Hypothesis 2: Self-efficacy for project teamwork is positively associated with team member effectiveness in short-term project teams responsible for executing complex business analysis

Teamwork is a process intensive experience that requires the intellectual modelling, enactment, integration, and adjustment of both social and task related processes, particularly in project teams performing complex tasks. Team performance is dependent on the ability of team members to intellectually map out, describe, negotiate, implement, and adjust a wide variety of processes from goal setting through to performance assessment and adjustment. General process management competency supports the general ability to constructively contribution to a variety of project team processes which reinforces confidence in the ability to contribute to project teamwork.

Hypothesis 3: General process management competency is positively associated with a problem-solving conflict management

TIA influences both GPMC and SEPTW, and GPMC influences SEPTW, which suggests that GPMC mediates the relationship between GPMC and SEPTW. General process management competency requires the development and enactment of intellectual frameworks that assist in identifying and framing process elements and interrelationships in a comprehensive and organized manner. The development and use of such guiding frameworks which support the confidence of team members to make constructive contributions to a variety of project team processes, is supported by the application of sufficiently intensive and sustained attention. This suggests that a significant component of the relationship between TIA and SEPTW is transmitted via GPMC.

Hypothesis 4: Self-Efficacy for project teamwork will mediate the relationship between general process management competency and team member effectiveness

4. Measures

4.1 Team Member Effectiveness (TME)

Team member effectiveness was measured using the scale developed by Coetzer and Trimble (2009). The scale items are related to the following set of general team member competencies:

Assist the team with/by:

- setting team goals
- assessing team performance, identifying and managing problems, being flexible and making necessary adaptations
- task identification and mapping, creating a division of labor, coordination and integration of deconstructed team tasks
- open, direct, and skillful communication; generating and maintaining a shared understanding of the performance situation
- establishing and maintaining constructive relationships and encouraging others to do so, promoting cohesion, constructive management of conflict
- motivating the team and providing required leadership when necessary
- managing oneself and one's team role and task responsibilities in an efficient and effective manner (sufficient quality of direct contributions to the team's task)
- managing oneself and one's team role and task responsibilities in an efficient and effective manner (sufficient quantity of direct contributions to the team's task)

The 8 items of the scale have consistently produced a unitary factor structure and research using the scale has confirmed associations with important organizational behavior variables like process management competency, cooperative conflict styles, task attentiveness, reliance on team-mates and others (Coetzer & Trimble, 2009; Coetzer, No & Omonuk, 2022).

For this research study, an observer version of the 8-item scale was used. Example items include "(person being observed) helped the team manage performance problems and make necessary adjustments", "(person being observed) helped set useful team goals", "(person being observed) helped the team to communicate in an open, direct and skillful manner, and maintain a shared understanding of the team", "(person being observed) helped identify, divide up, and coordinate key team tasks" and "(person being observed) helped provide required

leadership when needed and motivated the team." Items were measured on a seven-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neither agree nor disagree, 5 = slightly agree, 6 = agree, 7 = strongly agree). At the end of the team project, each team member was required to assess the performance of each of their team-mates using the 8-item scale. A total team member effectiveness score for each team member was derived by averaging the peer ratings on each question and then adding up the average ratings on each of the 8 questions.

4.2 General Process Management Competency (GPMC)

The scale developed by Coetzer, Omonuk and No (2022) was used for measuring general process management competency. This scale was developed after reviewing (1) descriptions of process management competency developed by a variety of professional associations including the Association of Business Process Management Professionals and the National Institute of Health, and (2) reviewing recent research on process management and related competencies (Paim, Caulliraux & Cardoso, 2008; Poirier & Walker, 2005; Sonteya & Seymour, 2012). Research confirmed the unitary factor structure of the measure (short and long form) and associations with important organizational behavior variables like conflict management and team member effectiveness (Coetzer, Omonuk & No, 2022). For this research study, an observer version of the short form of the scale (5 items) was used to provide additional protection against single source bias. Use of an observer version was appropriate because each of the questions referenced observable behavior. Each research subject was asked to identify someone who was familiar with their task management behavior and willing to provide an honest assessment of the way the subject managed important and complex processes. Example items include — (the person being observed) manages important and complex processes by "explicitly developing a sufficiently detailed breakdown of the beginning-to-end process into the key steps and sub-steps", "explicitly identifying, reviewing, and adjusting (when necessary) the key steps to ensure that the process produces the intended outcome", "explicitly identifying, reviewing, and adjusting (when necessary) the key steps to ensure that the process is executed in a timely and cost-effective manner", and "explicitly identifying, sequencing, and organizing all the key process steps into an integrated map of the process". Items were measured on a seven-point Likert behavioral frequency scale (1 = never, 4 = sometimes, 7 = always). The total score for general process management competency was derived by adding up the scores on each of the questions.

4.3 Self-Efficacy for Project Teamwork (SEPTW)

The instrument for measuring SEPTW was developed by amending a scale developed by Coetzer and Richmond (2007) and used in multiple studies to examine the influence of individual level cognitive, emotional, and behavioral variables on self-efficacy for teamwork (Coetzer, 2016a, 2016b, Coetzer & Gibbison, 2016; Coetzer, Jackson & Evans, 2022; Coetzer & Trimble, 2010; Coetzer & Richmond, 2007). Factor analysis of the scale has consistently generated a single factor with significant factor loadings (Coetzer & Richmond, 2007). The scale was developed to measure individual team member confidence in their ability to support:

- setting team goals
- establishing and managing task execution processes
- identifying and addressing priority tasks in a timely manner
- creating a division of labor
- integrating team member contributions
- constructive team member communication and relationships

- team motivation and timely performance
- assessing performance, solving problems and resolving conflicts
- making useful direct contributions to the team's primary task (quantity and quality of contributions)

The measure contains 16 items and both the instructions and questions were amended to focus on project teams. Example items are "I have the ability to coordinate the tasks and activities of team members in project teams", "I have the ability to energize and keep a team focused on completing key tasks in project teams", "I have the ability to build effective relationships with and between team members in project teams", and "I have the ability to contribute useful ideas and help a team complete key tasks in project teams". Items were measured on a seven-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neither agree nor disagree, 5 = slightly agree, 6 = agree, 7 = strongly agree). A total self-efficacy for project teamwork score was derived by adding up the scores on each of the questions.

5. Results

5.1 Sample and Descriptives

The sample is comprised of one hundred and four graduate business management students attending a university in the northwestern United States. The average age of the subjects was 28.42 (low = 23, high = 52), and 55% identified as male and 45% as female. Each subject was randomly assigned to a four-person project team responsible for completing a semester long (14 week) business project. Each subject completed an online self-assessment measure of their general process management competency under conditions of anonymity. Each subject was also asked to identify someone who knew them well and would be willing to complete an honest assessment (under conditions of anonymity) of their conflict management style. The identified observers completed an online version of the conflict management style measure developed and validated by De Dreu et al. (2001).

A principle components factor analysis with an orthogonal rotation (varimax) was conducted to examine the structure of the general process management competencies measure. The factor analysis produced a single factor that explained 62% of the variance and generated factor loadings ranging from 0.67 to 0.86 (see Table 1). This suggests that the factor explains a reasonable proportion of the variance and that each item is making a meaningful contribution to the factor. The Cronbach α internal reliability coefficient was $\alpha = 0.91$ and could not be improved by eliminating items. This suggests that the instrument has good internal reliability and each item is making a meaningful contribution. The average intra-class correlations (two-way mixed effects model with absolute type agreement) among team member ratings of team member effectiveness ranged from 0.73 to 0.88 suggesting acceptable inter-rater reliability.

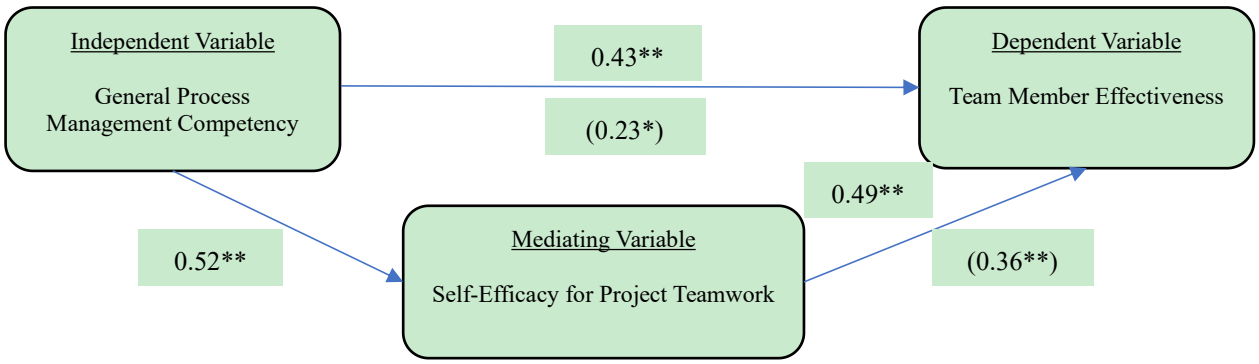
Means, standard deviations and correlations among the research variables are reported in Table 1. All variable distributions are approximately normal and demonstrate reasonable variability across their respective scales. Cronbach alpha coefficients ranged from 0.81 to 0.91 suggesting good internal reliabilities. No univariate or bivariate outliers were considered problematic and product moment correlations revealed significant associations between the relevant variables. The distribution of regression residuals produced by the mediation regression was approximately normal with no problematic outliers. The regression coefficients for the control variables of age and gender were $\beta = 0.05$ ($p = 0.57$) and $\beta = 0.03$ ($p = 0.73$) respectively suggesting that neither had significant influence within the mediation model.

Table 1 Means, Standard Deviations, Internal Reliabilities and Correlations

		Mean	SD	1	2	3	4
1	Team Member Effectiveness	36.67	7.29	0.86			
2	General Process Management Competency	26.4	5.15	0.41**	0.91		
3	Self-Efficacy for Project Teamwork	81.79	11.94	0.49**	0.52**	0.81	
4	Age	32.42	6.41	0.09	0.08	-0.01	
5	Gender			0.01	-0.01	0.01	0.08
Notes: Internal consistency reliabilities are shown in parentheses on the diagonal							
* = p < 0.05 (2-tailed), ** = p < 0.01 (2-tailed)							

5.2 Empirical Tests of Hypotheses

The significant threshold for all the empirical tests was set to α = 0.05 (2-tailed). The correlation between GPMC and TME is statistically significant (r = 0.33, p < 0.01) providing support for the hypothesis that general process management competency is positively associated with team member effectiveness. The correlation between PSCM and TME is statistically significant (r = 0.37, p < 0.01) providing support for the hypothesis that general process management competency is positively associated with team member effectiveness. The correlation between GPMC and PSCM is statistically significant (r = 0.46, p < 0.01) providing support for the hypothesis that general process management competency is positively associated with a problem-solving conflict management. The Sobel test for mediation (Sobel, 1982) is statistically significant (Z = 2.096, p = 0.036) and the Hayes bias corrected bootstrap confidence interval (Hayes, 2013) (BootLLCI = 0.017 and BootUCLI = 0.257; α = 0.95) does not contain zero suggesting the presence of mediation. The mediation results suggest that a statistically significant proportion of the association between GPMC and TME is due to the use of a PSCM (Figure 2). A significant partial correlation between GPMC and TME (r = 0.19, p < 0.047) after the mediator (PSCM) is included in the model suggests partial mediation. This suggests that GPMC does not fully account for the relationship between GPMC and TME, and that other unmeasured factors are helping to transmit the effect.



Notes: Type of mediation: Partial. Hayes bias corrected bootstrap confidence interval (BootLLCI = 0.089 and BootUCLI = 0.508; α = 0.95). Sobel Z-value = 2.978, p = 0.003. Direct influence = 0.23, Indirect influence = 0.20. Correlations in parentheses indicate β weights computed after the mediator has been included in the regression equation. * = p < 0.05, ** = p < 0.01. All calculations conducted with the control variables of age and gender included in the model.

Figure 2 Mediating Influence of Self-Efficacy for Project Teamwork on the Relationship Between General Process Management Competency and Team Member Effectiveness

6. Discussion

The results suggest that GPMC is positively associated with both TME and PSCM, PSCM is positively associated with TME, and PSCM partially mediates the relationship between GPMC and TME. The directionality of this relationship cannot be confirmed from this research study and both opposite and bi-directional effects are possible. The suggested close association between general process management competency and foundational intellectual competencies like conceptual and procedural thinking, combined with the general view that such cognitive dynamics precede behavioral dispositions and behavior, supports the temporal placement of variables in the model.

6.1 Implications for Organizations and Academic Institutions

The emphasis on project and teamwork competencies in both higher education and industry is increasing the need to ensure that higher education programs identify, develop and reinforce the key determinants of project and team member effectiveness (Casper, 2017; Jackson, 2009). The results of this research study highlight the importance of promoting general process management and problem-solving conflict management competencies to improve team member effectiveness. Regular and supplementary program content and learning activities need to focus on general process management and conflict management training.

6.2 Limitations, Suggestions for Future Research and Conclusion

Broader generalization of the results of this research requires the use of samples that extend beyond higher education and encourage a variety of project teams. To conclude, the results of this study suggests that a problem-solving conflict management partially mediates a significant relationship between general process management competency and team member effectiveness. This provides support for the development and use of education, training and development interventions that promote general process management competency and cooperative conflict management in an integrated manner in order to improve team-member effectiveness in project teams.

References

Ahmad H., Francis A. and Zairi M. (2007). "Business process reengineering: Critical success factors in higher education", *Business Process Management Journal*, Vol. 13, No. 3, pp. 451-469.

Ailes C. B. and Bosworth C. C. (2004). "The perception and reality of student and workplace teams", *Journalism and Mass Communication Educator*, Vol. 59, pp. 42-59.

Al Thani M., Leventakou V., Sofroniou A., Butt H. I., Hakim I. A., Thomson C. and Nair U. S. (2022). "Factors associated with baseline smoking self-efficacy among male Qatari residents enrolled in a quit smoking study", *PLoS ONE*, Vol. 17, No. 1, pp. 1-10.

American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed., DSM-IV), Washington, DC.

Armistead C. and Machin S. (1997). "Implications of business process management for operations management", *International Journal of Operations & Production Management*, Vol. 17, No. (9/10), pp. 886-898.

Association of Business Process Management Professionals (International) (2022). "Which BPM Career Path is Right for You", The ABPMP Competency Model, available online at: https://www.abpmp.org/page/CompetencyModel.

Azevedo A., Apfelthaler G. and Hurst D. (2012). "Competency development in business graduates: An industry-driven approach for examining the alignment of undergraduate business education with industry requirements", *International Journal of Management Education* (Oxford Brookes University), Vol. 10, No. 1, pp. 12-28.

Bacon, D. R. (2005). "The effect of group projects on content related learning", *Journal of Management Education*, Vol. 29, pp. 248-267.

Bandura A. (1986). "The explanatory and predictive scope of self-efficacy theory", *Journal of Social and Clinical Psychology*, Vol. 4, No. 3, pp. 359-373.

Bandura A. (1997). "The anatomy of stages of change", *American Journal of Health Promotion*, Vol. 12, No. 1, pp. 8-10.

Bandura A. (1982). "The assessment and predictive generality of self-percepts of efficacy", *Journal of Behavior Therapy and Experimental Psychiatry*, Vol. 13, No. 3, pp. 195-199.

Bandura A. (1982). "Self-efficacy mechanism in human agency", *American Psychologist*, Vol. 37, No. 2, p. 122.

Banks A. P. and Millward L. J. (2007). "Differentiating knowledge in teams: The effect of shared declarative and procedural knowledge on team performance", *Group Dynamics: Theory, Research, and Practice*, Vol. 11, No. 2, p. 95.

Barkley R. A. (2013). "Recommendations for employers concerning the management of employees with ADHD", *ADHD Report*, Vol. 21, No. 2, pp. 6-13.

Barkley R. A. (2010). *Taking Charge of Adult ADHD*, Guildford Press, New York, NY.

Batt A. M., Williams B., Brydges M., Leyenaar M. and Tavares W. (2021). "New ways of seeing: supplementing existing competency framework development guidelines with systems thinking", *Advances in Health Sciences Education*, Vol. 26, No. 4, pp. 1355-1371.

Biazzo S. and Bernardi G. (2003). "Process management practices and quality systems standards: Risks and opportunities of the new ISO 9001 certification", *Business Process Management Journal*, Vol. 9, No. 2, pp. 149-158.

Biederman J., Faraone S. V., Spencer T. J., Mick E., Monuteaux M. C. and Aleardi M. (2006). "Functional impairments in adults with self-reports of diagnosed ADHD: A controlled study of 1001 adults in the community", *Journal of Clinical Psychiatry*, Vol. 67, No. 4, pp. 524-540.

Biederman J., Petty C. R. and Woodworth K. Y. (2012). "Adult outcome of attention-deficit/hyperactivity disorder: A controlled 16-year follow-up study", *Journal of Clinical Psychiatry*, Vol. 73, pp. 941-950.

Biederman J., Petty C. R. and Fried R. (2008). "Educational and occupational under attainment in adults with attention-deficit/hyperactivity disorder: A controlled study", *Journal of Clinical Psychiatry*, Vol. 69, No. 24, pp. 1217–1222.

Brown T. E. (1996, 2001). Brown attention deficit disorder scales for adolescents and adults. New York: Harcourt Assessment Corporation.

Brown T. E. (2005). *Attention Deficit Disorder: The Unfocused Mind in Children and Adults*, Yale University Press, New Haven, MA.

Bunce D. M., Flens E. A. and Neiles K. Y. (2010). "How long can students pay attention in class? A study of student attention decline using clickers", *Journal of Chemical Education*, Vol. 87, No. 12, pp. 1438-1443.

Campbell J., Tirapelle L., Yates K., Clark R., Inaba K., Green D., Plurad D., Lam L., Tang A., Cestero R. and Sullivan M. (2011). "The effectiveness of a cognitive task analysis informed curriculum to increase self-efficacy and improve performance for an open cricothyrotomy", *Journal of Surgical Education*, Vol. 68, No. 5, pp. 403-407.

Casper C. (2017). "Teaching beyond the topic teaching teamwork skills in higher education", *Journal of Higher Education Theory and Practice*, Vol. 17, No. 6, pp. 53-63.

Chan S. L. (2000). "Information technology in business processes", *Business Process Management Journal*, Vol. 6, No. 3, pp. 224-237.

Chan S., Maneewan S. and Koul R. (2021). "Cooperative learning in teacher education: Its effects on EFL pre-service teachers' content knowledge and teaching self-efficacy", *Journal of Education for Teaching*, Vol. 47, No. 5, pp. 654-667.

Chowdhury S., Endres M. and Lanis T. W. (2002). "Preparing students for success in teamwork environments: The importance of building confidence", *Journal of Managerial Issues*, No. 3, pp. 346-359.

Coetzer G. (2016). "An empirical examination of the relationship between adult attention deficit and the operational effectiveness of project managers", *International Journal of Managing Projects in Business*, Vol. 9, No. 3, pp. 583-605.

Coetzer G. (2016). "An empirical examination of the relationship between adult attention deficit and the operational effectiveness of project managers", *International Journal of Managing Projects in Business*, Vol. 9, No. 3, pp. 583-605.

Coetzer G. and Trimble R. (2010). "An empirical examination of the relationship between adult attention deficit, co-operative conflict management and efficacy for working in teams", *American Journal of Business*, Vol. 25, No. 1, pp. 23-34.

Coetzer G., Hanson B. and Trimble R. (2009). "The mediating influence of role stress on the relationship between adult attention deficit and self-efficacy", *Journal of Business and Management*, Vol. 15, No. 2, pp. 111-128.

Coetzer G. and Richmond L. (2007). "An empirical analysis of the relationship between adult attention deficit and efficacy for working in teams", *Journal of Team Performance Management*, Vol. 13, No. 1/2, pp. 5-20.

Coetzer G., Jackson R. and Evans J. (2022). "Meditating influence of social interaction anxiety on the relationship between diversity appreciation and self-efficacy for teamwork", in: *Proceedings of the Annual Conference of the Institute of Behavioral and Applied Management*, Cleveland (Ohio) and Virtual (October).

Coetzer G., Omonuk J. and No S. (2022). "Meditating influence of a problem-solving conflict management approach on the relationship between general process management competency and team member effectiveness", in: *Proceedings of the Institute of Behavioral and Applied Management Annual Conference*, Cleveland (Ohio) and Virtual (October).

Cohen S. G. and Bailey D. E. (1997). "What makes teams work: Group effectiveness research from the shop floor to the executive suite", *Journal of Management*, Vol. 23, No. 3, pp. 239-290.

Dahlgaard J. J., Khanji G. K. and Kristensen K. (2008). *Fundamentals of Total Quality Management*, Routledge.

Davidz H. L. and Nightingale D. J. (2008). "Enabling systems thinking to accelerate the development of senior systems engineers", *Systems Engineering*, Vol. 11, No. 1, pp. 1-14.

De Bruijn H. and Ten Heuvelhof E. (2010). "Process management: why project management fails in complex decision-making processes", *Springer Science & Business Media*.

de Graaf R., Kessler R. C., Fayyad J., Have M., Alonso J., Angermeyer M., Borges G., Demyttenaere K., Gasquet I., de Girolamo G., Haro J. M., Jin R., Karam E. G., Ormel J. and Posada-Villa J. (2008). "The prevalence and effects of adult attention-deficit/hyperactivity disorder (ADHD) on the performance of workers: Results from the WHO World Mental Health Survey Initiative", *Occupational and Environmental Medicine*, Vol. 65, No. 12, pp. 835-842.

De Gangi G. and Porges S. (1990). *Neuroscience Foundation of Human Performance*, Rockville, MD: American Occupational Therapy Association Inc.

Di Nuovo S. and Smirni P. (1994). "Evaluation of attentional processes in childhood", *Archive of Psychology Neurology and Psychiatry*, Vol. 1, No. 2, pp. 74-95.

Dolansky M. A. and Moore S. M. (2013). "Quality and safety education for nurses: The key is systems thinking", *The Online Journal of Issues in Nursing*, Vol. 18, No. 3, pp. 1-12.

Eby L. T. and Dobbins G. H. (1997). "Collectivistic orientation in teams: an individual and group-level analysis", *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, Vol. 18, No. 3, pp. 275-295.

Eicker S., Kochbeck J. and Schuler P. M. (2008, May). "Employee competencies for business process management", in: *International Conference on Business Information Systems*, Springer, Berlin, Heidelberg, pp. 251-262.

Emblemsvåg J. and Bras B. (2000). "Process thinking — A new paradigm for science and engineering", *Futures*, Vol. 32, No. 7, pp. 635-654.

Fan M., Cai W. and Jiang L. (2021). "Can team resilience boost team creativity among undergraduate students? A sequential mediation model of team creative efficacy and team trust", *Frontiers in Psychology*, No. 12, pp. 604-692.

Galanakis K. (2006). "Innovation process. Make sense using systems thinking", *Technovation*, Vol. 26, No. 11, pp. 1222-1232.

Gist M. E. and Mitchell T. R. (1992). "Self-efficacy: A theoretical analysis of its determinants and malleability", *Academy of Management Review*, Vol. 17, No. 2, pp. 183-211.

Gist M. E. (1987). "Self-efficacy: Implications for organizational behavior and human resource management", *Academy of Management Review*, Vol. 12, No. 3, pp. 472-485.

Gorbacheva E., Stein A., Schmiedel T. and Müller O. (2015). "A gender perspective on business process management competences offered on professional online social networks", European Research Center for Information Systems, available online at: https://www.ercis.org/research/publications/1628276412.

Gully S. M., Beaubien J. M., Incalcaterra A. and Joshi A. (2002). "A metaanalytic investigation of the relationship between team efficacy, potency, and performance", *Journal of Applied Psychology*, Vol. 87, No. 2, pp. 819-832.

Halverson S. E., Miars R. D. and Livneh H. (2006). "An exploratory study of counselor education students moral reasoning, conceptual level, and counselor self-efficacy", *Counseling & Clinical Psychology Journal*, Vol. 3, No. 1, pp. 17-30.

Hammer M. and Champy J. (1993). *Business Process Reengineering*, Nicholas Brealey: London.

Heneman H. G. and Schwab D. P. (1972). "Evaluation of research on expectancy theory predictions of employee performance", *Psychological Bulletin*, Vol. 78, No. 1, pp. 10-16.

Henson R. K., Bennett D. T., Sienty S. F. and Chambers S. M. (2000). "The relationship between means-end task analysis and context-specific and global self-efficacy in emergency certification teachers: exploring a new model of teacher efficacy", Institute of Education Sciences Report (April), available online at: https://eric.ed.gov/?id=ED440974.

Hernes T. (2014). *A Process Theory of Organization*, Oup Oxford.

Holtkamp P., Jokinen J. P. and Pawlowski J. M. (2015). "Soft competency requirements in requirements engineering, software design, implementation, and testing", *Journal of Systems and Software*, Vol. 101, pp. 136-146.

Hyatt D. E. and Ruddy T. M. (1997). "An examination of the relationship between work group characteristics and performance: Once more into the breech", *Personnel Psychology*, Vol. 50, No. 3, pp. 553-585.

Jackson D. (2009b). "An international profile of industry-relevant competencies and skill gaps in modern graduates", *International Journal of Management Education*, Vol. 8, pp. 29-58.

Jonker J. and Karapetrovic S. (2004). "Systems thinking for the integration of management systems", *Business Process Management Journal*, Vol. 10, No. 6, pp. 608-615.

Judge T. A. and Bono J. E. (2001). "Relationship of core self-evaluations traits — Selfesteem, generalized self-efficacy, locus of control, and emotional stability — With job satisfaction and job performance: a meta-analysis", *Journal of Applied Psychology*, Vol. 86, No. 1, pp. 80-92.

Kessler R. C., Lane M., Stang P. E. and Van Brunt D. L. (2009). "The prevalence and workplace costs of adult attention deficit hyperactivity disorder in a large manufacturing firm", *Psychological Medicine*, Vol. 39, pp. 137-147.

Kessler R. C., Adler L., Ames M., Barkley R. A., Birnbuam H., Greenberg P., Johnstone J. A., Spencer T. and Ustun T. B. (2005). "The prevalence and effects of ADHD on work performance in a nationally representative sample of workers", *Journal of Occupational and Environmental Medicine*, Vol. 47, No. 6, pp. 565-572.

Konak A. and Kulturel-Konak S. (2019). "Impact of online teamwork self-efficacy on attitudes toward teamwork", *International Journal of Information Technology Project Management*, Vol. 10, No. 3, pp. 1-17.

Konak A., Kulturel-Konak S. and Cheung G. W. (2019). "Teamwork attitudes, interest and self-efficacy between online and face-to-face information technology students", *Team Performance Management*, Vol. 25, No. 5/6, pp. 253-278.

Koskinen K. U. (2012). "Organizational learning in project-based companies: A process thinking approach", *Project Management Journal*, Vol. 43, No. 3, pp. 40-49.

Langley A. and Tsoukas H. (2010). "Introducing perspectives on process organization studies", *Process, Sensemaking, and Organizing*, Vol. 1, No. 9, pp. 1-27.

Lebid A. E. and Natal'Ya A. S. (2020). "Cultivating the skills of systems thinking in the context of fostering the basic and professional competencies associated with media education and media literacy", *International Journal of Media and Information Literacy*, Vol. 5, No. 1, pp. 60-68.

Lederer M., Knapp J. and Schott P. (2017). „The digital future has many names — How business process management drives the digital transformation", in: *6th International Conference on Industrial Technology and Management (ICITM)*, IEEE, 2017, pp. 22-26.

Lennings C. J. (1994). "An evaluation of a generalized self-efficacy scale", *Personality and Individual Differences*, Vol. 16, No. 5, pp. 745-750.

Lent R. W., Schmidt J. and Schmidt L. (2006). "Collective efficacy beliefs in student work teams: Relation to self-efficacy, cohesion, and performance", *Journal of Vocational Behavior*, Vol. 68, No. 1, pp. 73-84.

Levasseur R. E. (2004). "Open system theory and organizations", *Futurics*, Vol. 28, No. 1/2, pp. 79-85.

Liao H. and Chuang A. (2007). "Transforming service employees and climate: a multilevel, multisource examination of transformational leadership in building long-term service relationships", *Journal of Applied Psychology*, Vol. 92, No. 4, pp. 1006-1019.

Levy F., Hay D. A., McStephen M., Wood C. and Waldman I. (1997). "Attention-deficit hyperactivity disorder: A category or a continuum? Genetic analysis of a large-scale twin study", *Journal of the American Academy of Child & Adolescent Psychiatry*, Vol. 36, No. 6, pp. 737-744.

Luszczynska A., Scholz U. and Schwarzer R. (2005). "The general self-efficacy scale: multicultural validation studies", *Journal of Psychology*, Vol. 139, No. 5, pp. 439-457.

Mannuzza S., Klein R. G., Bessler A., Malloy P. and LaPadula M. (1993). "Adult outcome of hyperactive boys: educational achievement, occupational rank, and psychiatric status", *Archives of General Psychiatry*, Vol. 50, pp. 565-576.

Mathiesen P., Bandara W., Marjanovic O. and Delavari H. (2013). "A critical analysis of business process management education and alignment with industry demand: An Australian perspective", *Communications of the Association for Information Systems*, Vol. 33, No. 1, pp. 27-32.

McCann B. S. and Roy-Byrne P. (2000). "Attention-deficit/hyperactivity disorder and learning disabilities in adults", *Seminars in Clinical Neuropsychiatry*, Vol. 5, No. 3, pp. 191-197.

McClelland D. C. (1973). "Testing for competence rather than for intelligence", *American Psychologist*, Vol. 28, pp. 1-14.

McGuire E. G. and Randall K. A. (1998). "Process improvement competencies for IS professionals: A survey of perceived needs", in: *Proceedings of the 1998 ACM SIGCPR Conference on Computer Personnel Research*, pp. 1-8.

McShane S. and Glinow M. A. V. (2017). *Organizational Behavior*, McGraw-Hill Education.

Millett B. (1998). "Understanding organizations: The dominance of systems theory", *International Journal of Organizational Behavior*, Vol. 1, No. 1, pp. 1-12.

Morgan G. (2006). *Images of Organization*, California: Beverley Hills.

Nigg J. T. (2006). *What Causes ADHD: Understanding What Goes Wrong and Why*, Guilford Press, New York, NY.

Nikolas M. A., Klump K. L. and Burt S. A. (2012). "Youth appraisals of marital conflict and genetic and environmental contributions to attention-deficit hyperactivity disorder: Examination of GxE effects in a twin sample", *Journal of Abnormal Child Psychology*, Vol. 40, pp. 543-554.

Nowak A., Pawlowski J. and Schellenbach M. (2022). "The competency-based business process management-employee-centered process improvement for digital transformation", in: *International Conference on Knowledge Management in Organizations*, Springer, pp. 103-117.

Cham. Paim R., Caulliraux H. M. and Cardoso R. (2008). "Process management tasks: A conceptual and practical view", *Business Process Management Journal*, Vol. 14, No. 5, pp. 694-723.

Phillips D. T. (2001). *The Founding Fathers on Leadership: Classic Teamwork in Changing Times*, Hachette UK.

Pradabwong J., Braziotis C., Tannock J. D. and Pawar K. S. (2017). "Business process management and supply chain collaboration: Effects on performance and competitiveness", *Supply Chain Management: An International Journal*, Vol. 22, No. 2, pp. 34-56.

Płoński A. (2019). "Geospatial technology competency model — Geography academic competencies", *Geography and Tourism*, Vol. 7, No. 1, pp. 63-76.

Podsakoff P. M., MacKenzie S. B., Lee J. Y. and Podsakoff N. P. (2003). "Common method biases in behavioral research: A critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88, No. 5, pp. 879-903.

Poirier C. and Walker I. (2005). *Business Process Management Applied: Creating the Value Managed Enterprise*, J. Ross Publishing and APICS, Boca Raton, FL.

Pradabwong J., Braziotis C., Tannock J. D. and Pawar K. S. (2017). "Business process management and supply chain collaboration: Effects on performance and competitiveness", *Supply Chain Management: An International Journal*, Vol. 22, No. 2, pp. 34-56.

Rescher N. (1996). *Process Metaphysics: An Introduction to Process Philosophy*, Suny Press.

Reynolds S. H. (1997). "Attention deficit disorder in adults: The missing link in the chronic accident repeater syndrome", *Professional Safety*, Vol. 42, No. 2, pp. 20-26.

Robertson H. I. and O'Connell R. (2010). "Vigilant attention", in: C. A. Nobre & T. J. Coull (Eds.), *Attention and Time*, Oxford: Oxford University Press, pp. 79-88.

Robertson I. H., Manly T., Andrade J., Baddeley B. T. and Yiend J. (1997). "'Oops!': Performance correlates of everyday attentional failures in traumatic brain injured and normal subjects", *Neuropsychologia*, Vol. 35, No. 6, pp. 747-758.

Roshangar F., Azar E. F., Sarbakhsh P. and Azarmi R. (2020). "The effect of case-based learning with or without conceptual mapping method on critical thinking and academic self-efficacy of nursing students", *Journal of Biochemical Technology*, Vol. 11, No. 1, pp. 37-44.

Rychen D. S. E. and Salganik L. H. E. (2001). *Defining and Selecting Key Competencies*, Hogrefe & Huber Publishers.

Scott W. R. and Davis G. F. (2015). *Organizations and Organizing: Rational, Natural and Open Systems Perspectives*, Routledge.

Scott-Young C. and Samson D. (2008). "Project success and project team management: Evidence from capital projects in the process industries", *Journal of Operations Management*, Vol. 26, No. 6, pp. 749-766.

Scribner L. L., Baker T. L. and Howe V. (2003). "Efficacy of group projects in support skill acquisition: Student vs. alumni perceptions", *Marketing Education Review*, Vol. 13, No. 1, pp. 59-66.

Seethamraju R. (2012). "Business process management: A missing link in business education", *Business Process Management Journal*, Vol. 18, No. 3, pp. 532-547.

Sherman D. K., Iacono W. G. and McGue M. K. (1997). "Attention-deficit hyperactivity disorder dimensions: A twin study of inattention and impulsivity-hyperactivity", *Journal of the American Academy of Child & Adolescent Psychiatry*, Vol. 36, No. 6, pp. 745-753.

Shtub A. and Karni R. (2010). *The Dynamics of Supply Chain and Process Management*, New York: Springer.

Sitzmann T. and Yeo G. (2013). "A meta-analytic investigation of the within-person self-efficacy domain: Is self-efficacy a product of past performance or a driver of future performance?", *Personnel Psychology*, Vol. 66, No. 3, pp. 531-568.

Sonnentag S. and Frese M. (2002). "Performance concepts and performance theory", *Psychological Management of Individual Performance*, Vol. 23, No. 1, pp. 3-25.

Sonteya T. and Seymour L. (2012). "Towards an understanding of the business process analyst: An analysis of competencies", *Journal of Information Technology Education*, Vol. 11, No. 1, pp. 43-63.

Stajkovic A. D. and Luthans F. (1998). "Self-efficacy and work-related performance: A meta-analysis", *Psychological Bulletin*, Vol. 124, No. 2, pp. 240-261.

Thomas J. and Mengel T. (2008). "Preparing project managers to deal with complexity–Advanced project management education", *International Journal of Project Management*, Vol. 26, No. 3, pp. 304-315.

Unsworth N. and Robison M. K. (2016). "Pupillary correlates of lapses of sustained attention", *Cognitive Affective & Behavioral Neuroscience*, Vol. 16, No. 4, pp. 601-615.

Verina N. and Titko J. (2019). "Digital transformation: Conceptual framework", in: *Proceedings of the International Scientific Conference "Contemporary Issues in Business, Management and Economics Engineering"*, Vilnius, Lithuania, pp. 9-10.

Vial G. (2021). "Understanding digital transformation: A review and a research agenda", *Managing Digital Transformation*, Vol. 28, No. 2, pp. 118-144.

Voigt R. G., Katusic S. K., Colligan R. C., Killian J. M., Weaver A. L. and Barbaresi W. J. (2017). "Academic achievement in adults with a history of childhood attention-deficit/hyperactivity disorder: A population-based prospective study", *Journal of Developmental and Behavioral Pediatrics*, Vol. 38, No. 1, pp. 1-11.

Weiss G. and Hechtman L. (1993). *Hyperactive Children Grown Up*, Guilford Press, New York: New York.

Williams B. W., Byrne P. D., Welindt D. and Williams M. V. (2016). "Miller's pyramid and core competency assessment: A study in relationship construct validity", *Journal of Continuing Education in the Health Professions*, Vol. 36, No. 4, pp. 295-299.

Wood R. and Bandura A. (1989). "Social cognitive theory of organizational management", *Academy of Management Review*, Vol. 14, No. 3, pp. 361-384.

Yoon S. and Kuchinke K. P. (2005). "Systems theory and technology: Lenses to analyze an organization", *Performance Improvement*, Vol. 44, No. 4, pp. 15-20.

Zhou S., Wu S., Yu X., Chen W. and Zheng W. (2021). "Employment stress as a moderator of the relationship between proactive personality and career decision-making self-efficacy", *Social Behavior & Personality: An International Journal*, Vol. 49, No. 10, pp. 1-13.

Appendix A National Institute of Health-Process Management Competency

National Institute of Health. (2018, Oct 19). Competencies Dictionary – Process Management. https://hr.nih.gov/working-nih/competencies/competencies-dictionary/process-management

Process Management

Develops and monitors processes and organizes resources to achieve desired results.

Key Behaviors

- Creates an effective workflow that effectively coordinates and integrates tasks and functions.
- Identifies and takes advantage of opportunities to accomplish multiple objectives and obtain synergies through process development and management.
- Effectively communicates and coordinates with other stakeholders in the process.
- Evaluates efficiency and effectiveness of resources utilization and results accomplishment.
- Establishes clear, well-defined processes necessary to achieve the desired outcomes.
- Organizes people and activities to accomplish results.
- Identifies and addresses process problems promptly and follows through to ensure that corrective or recommended process updates are effectively implemented.
- Delineates complex processes into more simple tasks and functions.
- Analyzes business processes to identify process owners, cycle time, variations, bottlenecks, and redundancies to support streamlining and other business improvements.
- Understands the various approaches for mapping the workflow of business processes to outline steps users follow and to develop a baseline for improvements or reengineering.
- Serves customers by developing and maintaining SOPs and other policy/procedure guidelines that foster continuity of operations and organizational resilience.