A Comparative Study of the Influence of Project Management Training on Project Success Rate

Tamilselvan Mahalingam

Lecturer, Business Division, Higher Colleges of Technology, Dubai, United Arab Emirates.
Email – tmahalingam@hct.ac.ae

Abstract: *The present study is a comparative study of the influence of project management training on project success rate. The study is quantitative research in which 133 respondents were administered questionnaires. Findings show that there was a significant difference in confidence level in ability to perform project domain processes before and after completion of project management training with t (132) = -9.731, p< 0.000 where the mean score of confidence level after attending the training was significantly higher than the mean score before the project management training. The study concludes that project managers should have the necessary proficiency and adequate knowledge in various aspect of project management to ensure success in their projects.*

Key Words: *Project management training, Project success.*

1. INTRODUCTION:

The importance of project management training in the present 21st century world cannot be overemphasized. Companies are depending extensively on project management to have a competitive advantage (Crawford, 2005). In the worldwide economy, it was projected that yearly expenditure on projects to be in the billions of dollars which shows a unique and extensive application of project management (Anantatmula, 2008). It is difficult for organisations to survive without the input of adequate project management system (Scott- Young & Samson, 2008; Shenhar, Milosevic, Dvir & Thamhain, 2007). Project management enables the change process and adds value (Bredillet, 2010); a major facilitator of innovation in business and change, which places companies in a position to have a competitive edge (Shenhar et al., 2007) and enhance project culture, virtue, and effectiveness (Martinsuo, Hensman, Artto, Kujala, & Jaafari, 2006).

According to Creasy and Anantatmula (2013), project managers are vital to project success as the proficiency of a project manager is an important aspect to guarantee a positive result in projects which indirectly advance the performance of an organisational (Prabhakar, 2005). Eventually, project managers are held responsible for the outcome of projects by ensuring that projects objectives are carried out safely, within an agreed budget limit, on schedule, while performance standards or quality measures are decided by the client (Prabhakar, 2008). Likewise, successful construction firms now ensure that project managers obtain the main proficiency needed to succeed in their profession (Sommerville, Craig and Hendry, 2010). This could be as a result of the nature of the construction industry in which project managers are accountable for coordinating the entire construction processes. Having the required project management proficiency would assist in the capacity of project managers to deliver quality performance towards the achievement of project success. Project management is accomplishing a project by applying and integrating the process of project management of initiation, planning, executing, monitoring, controlling and closing. In addition, project management involves planning, arranging, directing and managing activity including stimulating what are usually the most expensive resources on the project.

Young and Jordan (2008) noted that top management support is one of the most vital significant factors of success for forecasting project success. In as much as they put in place the necessary procedures and present the pathway required for the organization to follow (Angelides, 1999), it is quite essential that the role and duties of a project manager and that of a project sponsor be clearly outlined (Bryde, 2007) so as to prevent any form of variances that may negatively affect the project.

Project management incorporates these functions continuously via the life cycle of project with the objective of persuading the stakeholders and management based on the requirements of established project. Stakeholders have a direct stake in the project and project management is impacted by project outcomes. Project success is commonly initiated when the stakeholders and management show their joint contentment based on their level of involvement.

From the construction organisations perspective, the intricacy of project environments today has generated an enormous need to make sure that construction firms have effective career development programmes to occupy project management positions with the right individuals for successful project outcomes. The ability of the project manager possessing the full understanding of the project management knowledge would largely help the project manager to record project success.

Ensuring that projects are on track, timely and within the projected budget to suit customers' need is on the rise, in spite of breakthroughs in innovation technology (Gelbard & Carmeli, 2009). The rates of failure of projects can be within the range of 18% to 50% (Gelbard & Carmeli, 2009; Schachter, 2004). Project managers in various companies have an understanding of the enormous challenges of making sure that customers are satisfied with a project. Thus, they are persistently pressurised by individuals in and out of their projects to make sure that the timeline of projects is met, on schedule and within the estimated budget. These situations also involve a high risk of project failure (Sanchez, Robert, Bourgault, & Pellerin, 2009; Söderholm, 2008; Young, Brady, & Nagle, 2010).

Organisations seek out project management as an approach to increase the odds of being successful (Kerzner, 2006). According to Schwalbe (2004), "The present-day companies, non-profit organisations, governments are of the opinion that for any success to be achieved, there must be a need to be conversant with modern project management methodologies " (p. 3). The company's environment is in a state of flux, from external and internal conflicting forces, which require the firm to be able to adapt and evolve, in order to survive. Success results when the system works in the firm, meeting the needs of the stakeholders and users.

Realising that projects are an integral part of a business, and it helps organisations to stay competitive, organisations around the world are investing in project management training and education. At many higher educational institutions, project management is one of the key subject or topic in engineering, graduate and post-graduate programs in management and execution education. In addition to the formal academic qualifications offered by academia, there are several certifications and standard organisations like Project Management Institute (PMI), Association of Project Management (APM) and International Project Management Association (IPMA) that offers professional credentials to people who engage in project management profession.

When selecting project managers to manage projects, sponsors want to ensure that the manager will concentrate on the appropriate success parameters of the project and has the experience and skills in executing the relevant success criteria. As a result, the sponsor requires a project manager that is not just with relevant proficiencies but also with an adequate concentration on the project (Muller and Turner, 2007).

According to Phillips (2009), a project is successful when it is on target, budget, schedule, budget and it satisfies customers. The success of a project is not just seen as meeting the constraints of deadline, budget and scope; rather, it is an approach that links the final result to the satisfaction of the end user's (Kenneth, 2007; Shenhar et al., 2007) targeted at attaining project success. The success of a project is much appreciated by project stakeholders, because of this, when projects are successful, project managers, customers and performing organisations succeed (Gido & Clements, 2006; Rosenfeld, 2005). As a result, the success of a project is an affirmative situation for every one of the stakeholders. Moreover, the pathway to a successful project is categorised by both inner and outer factors (Morrison & Brown, 2004) contained within the life cycle of the project management.

The success of a project is process driven. Projects undergo initiation stage, planning, execution, control or monitoring, and closing phases (PMI, 2004) to ensure that processes are carried out appropriately to attain a successful ending. Moreover, in the actual sense, many companies are always preoccupied with the project outcome and as a result give little or no attention to the intangible aspect of stating the right parameters and putting in place the process of actualising the project (Besner & Hobbs, 2008). Many companies always fail to establish the efficiency of project activities contained in the initial stage of a project. The intangible stage of project management is the stage where explicit descriptions of the project intentions are created which also include the rationality behind the choice of the project from every other project (PMI, 2004). Gido and Clements (2006) stressed that success in meeting costs and timelines, and customer satisfaction is based on efficiency right from the starting point of the project.

Project success parameters differ from project to project. According to Turner and Muller (2007), the success of project managers in managing projects is centred on their proficiency, most importantly their style of leadership that consist of intellect, emotional intelligence and management focus. The style of leadership can be evaluated by applying psychometric tests, and it is possible to know if such differences can be envisaged from simple evaluated demographic characteristic. According to Frank (2002), a project manager has direct control over 34%–47% of the success of a project. As a result, it is evident that project managers play a major role in deciding what projects are successful in the field of project management. Successful management of projects entails several skills that include interpersonal capacity, technical abilities and the ability to comprehend the business environment, the project and human management and dynamically incorporate suitable leadership skills

Collins and Baccarini (2004) evaluated success parameters within industries, and they discovered minimal difference among industries. Moreover, they revealed that in the construction firms, contractors perceive reducing cost and timeline as more vital than their clients, but clients focus more on the satisfaction of stakeholders than contractors. Also, Bryde and Robinson (2005) revealed that in the construction industry, clients and contractors place different emphasis on success parameters.

Training and development enhance performance, gives rise to profitability, boost the morale of employee and ensures that an organisation has a competitive edge (Kerzner, 2006). Zwikael & Unger-Aviram (2010) stressed that training and development give rise to high level of employee motivation, effectiveness in processes, the ability to

implement new methodologies and technologies, satisfaction and improve confidence within the project team. Therefore, the present study is on a comparative study of the influence of project management training on project success rate. The following research questions will be used in this study:

i.   What is the impact of Project Management Training on Project Success?

ii. What is the effect of Project management training content on project success rate?

iii. What are the knowledge areas to be included in project management training to increase project success?

iv. What are aspects of project management training, which influences an organisation's project success?

Hypothesis One: Perception of the current project management training content and project manager expectations does not significantly affect the impact of project management training on project success.
Hypothesis Two: Aspects of project management training, which influences an organisation's project success significantly, relates to project management training content and project success rate.
Hypothesis Three: Confidence level regarding the ability to perform project domain processes after completion of project management training was not significantly different from before the management training

2. METHODOLOGY:

In this research work, primary data was used, and this study made use of a quantitative research method. A questionnaire was designed using an online Google form, and the questionnaire link is https://goo.gl/forms/QsMKUO9wgacjM3cx2. A total number of 133 respondents filled the questionnaire online. The responses of the questionnaire were analysed using SPSS Version 15.0, and statistical tests such as Frequencies, percentages, Friedman Test and Multiple Regression Analysis were used in the study.

3. ANALYSIS & DISCUSSION OF RESULTS:

The demographic characteristic of the respondents shows that 115 (86.5%) of the respondents were male while 18 (13.5%) were female. The average age of the respondents was 35.26 years, and 80 (60.2%) were within the age group of 25-35 years, 41 (30.8%) were within the age group of 36-45 years, 11 (8.3%) were within the age category of 46-55 years while one(0.8%) was above 55 years. Also, 74 (55.6%) of the respondents were graduates with Bachelors degree, 46 (34.6%) had Master's degree, 9 (6.8%) had High School/Diploma certificate while 4 (3.0%) had Doctoral degree. Based on years of experience, 58 (43.6%) of the respondents have 6-10 years' experience, 47 (35.3%) had less than 5 years' experience, 19 (14.3%) had 11-15 years' experience, 8 (6.0%) had 16-20 years' experience while 1 (0.8%) have more than 20 years' experience.

Based on training program attended related to Project management organizations, 121 (91.0%) claimed that they attended training on project management institution, 3(2.3%) claimed that they attended project management training in Prince 2 and Association of project management while 4 (3.0%) claimed that they had no training in project management related program.

Based on the number of projects worked for, 107 (80.5%) of the respondents claimed that they had worked for less than 20 projects, 22 (16.5%) of the respondents claimed that they had worked for 21-50 projects, 2 (1.5%) of the respondents claimed that they had worked for 51-100 projects while 1 (0.8%) of the respondents claimed that they had worked for more than 100 projects.

Table 1: Impact of Project Management Training on Project Success

Items	SA	A	N	D	SD
The completion of project management training has improved my overall project management approach.	55 (41.4%)	76 (57.1%)	2 (1.5%)	-	-
There is no improvement in your project success rate despite applying what was learned in the project management training	1 (0.8%)	18 (13.5%)	43 (32.3%)	58 (43.6%)	13 (9.8%)
Your organisation believes that project management training will lead to improved project success rate.	25 (18.8%)	66 (49.6%)	36 (27.1%)	4 (3.0%)	2 (1.5%)

Project management training is important in improving your organisation's project management methodology and maturity.	41 (30.8%)	76 (57.1%)	14 (10.5%)	2 (1.5%)	-
Your organisation provides you with the opportunity to apply the skills and knowledge you have acquired in Project Management Training on your organisation's current projects.	16 (12.0%)	71 (53.4%)	38 (28.6%)	7 (5.3%)	1 (0.8%)
You have applied the skills and knowledge acquired in Project Management Training on your organisation's current projects.	19 (14.3%)	98 (73.7%)	13 (9.8%)	3 (2.3%)	-
Your overall project management approach has improved after attending the project management training.	45 (33.8%)	84 (63.2%)	4 (3.0%)	-	-
You have introduced project management tools and techniques on projects that are considered more successful than previous ones.	19 (14.3%)	84 (63.2%)	27 (20.3%)	3 (2.3%)	-
The completion of your project management training has improved your confidence in meeting the project success criteria.	46 (34.6%)	83 (62.4%)	3 (2.3%)	1 (0.8%)	-
There is an improvement in managing stakeholders after attending the project management training.	35 (26.3%)	79 (59.4%)	19 (14.3%)	-	-

Table 1 shows that 76 (57.1%) of the respondents claimed that the completion of project management training had improved my overall project management approach, 55 (41.4%) of them strongly agree with the statement. Also, 58 (43.6%) of the respondents disagree that there is no improvement in the project success rate despite applying what was learned in the project management training. 66 (49.6%) of the respondents agree that their organisation believes that project management training will lead to improved project success rate. 76 (57.1%) of the respondents agree that project management training is important in improving an organisation's project management methodology and maturity. 71 (53.4%) of the respondents agree that their organisation provides them with the needed opportunity to apply the skills and knowledge acquired in Project Management Training on their organisation's current projects, 83 (62.4%) agree that the completion of your project management training has improved your confidence in meeting project success criteria.

Table 2: Project management training content and project success rate

Items	SA	A	N	D	SD
You believe if learned theories are applied properly, project success rate will improve	33(24.8%)	90 (67.7%)	8 (6.0%)	2 (1.5%)	-
PMBOK® Guide based project management training is suitable for current professional practices in the industry	24 (18.0%)	90 (67.7%)	19 (14.3%)	-	-
Project management training programs must be customised as per the need of different projects otherwise it will not serve the needed purpose	25 (18.8%)	48 (36.1%)	36 (27.1%)	22 (16.5%)	2 (1.5%)
You are satisfied with the content of project management training programs provided by your organisation	16 (12.0%)	58 (43.6%)	34 (25.6%)	18 (13.5%)	7 (5.3%)
The application of project management tools and techniques plays a significant role in project success	34 (25.6%)	82 (61.7%)	16 (12.0%)	1 (0.8%)	34 (25.6%)

In addition to technical training, leadership and strategic training can improve project success rate	49 (36.8%)	74 (55.6%)	10 (7.5%)	-	-
The implementation of project management training is necessary to improve the competencies of the project team members	35 (26.3%)	84 (64.7%)	12 (9.0%)	-	-
Most of the project management training lacks contents that are related to day to day issues faced in a project	7 (5.3%)	54 (40.6%)	39 (29.3%)	3 (2.3%)	-
Project management training content must include interpersonal skills which are very important for project success	30 (22.6%)	84 (63.2%)	15 (11.3%)	4 (3.0%)	-
A well-grounded theory and real-life project management training content will increase project success rate	40 (30.1%)	80 (60.2%)	11 (8.3%)	1 (0.8%)	1 (0.8%)

Table 2 shows that 90 (67.7%) of the respondents agree that they believe that if learned theories are applied properly, project success rate will improve. 90 (67.7%) of the respondents agree that PMBOK® Guide based project management training is suitable for current professional practices in the industry. 82 (61.7%) of the respondents agree that the application of project management tools and techniques plays a significant role in project success. 74 (55.6%) of the respondents agree that in addition to technical training, leadership and strategic training can improve project success rate. 84 (63.2%) of the respondents agree that project management training content must include interpersonal skills which are very important for project success while 80 (60.2%) of the respondents agree that a well-grounded theory and real-life project management training content will increase project success rate.

Concerning the knowledge areas to be included in project management training to increase project success, project procurement management has the highest mean rank of 7.02, followed by project stakeholder management with mean rank of 6.47, followed by project communication management with mean rank of 5.69, project resource management has a mean rank of 5.64 and project risk management with a mean rank of 5.60. Also, project integration management has a mean rank of 5.54; project quality management has a mean rank of 5.44 while project scope management has the least mean rank of 4.42. This shows that project procurement management has the highest rank of 1, followed by project stakeholder management with a rank of 2, project communication management has a rank of 3, project resource management has a rank of 4, project risk management has a rank of 5 while project scope management has the least rank of 10.

Also, there is a statistical significant difference in the knowledge areas to be included in project management training to increase project success with Chi-square = 118.401, p=0.0000 and Project Procurement Management has the highest statistically mean rank of 7.02 while project scope management has the least mean rank of 4.42.

Table 3: Aspects of project management training which influences an organisation's project success

Items	SA	A	N	D	SD
Project management training is one of the critical success factors for most organisational projects	20 (15.0%)	75 (56.4%)	31 (23.3%)	6 (4.5%)	1 (0.8%)
Project management training has improved communication among team members	26 (19.5%)	87 (65.4%)	17 (12.8%)	3 (2.3%)	3 (2.3%)
Upon implementation of project management tools and techniques, project requirements have significantly been completed on or ahead of schedule	11 (8.3%)	71 (53.4%)	44 (33.1%)	5 (3.8%)	2 (1.5%)

Project management training is essential for managers in coping with the new business models in the contemporary world	31 (23.3%)	85 (63.9%)	14 (10.5%)	3 (2.3%)	-
Organisational goals are more attainable with the introduction of project management techniques, tools, and training	18 (13.5%)	94 (70.7%)	19 (14.3%)	2 (1.5%)	-
Conflicts among team members have remained constant despite the implementation of project management tools and techniques.	11 (8.3%)	36 (27.1%)	54 (40.6%)	30 (22.6%)	2 (1.5%)
Project management training has fostered cooperation and smooth flow of work within the organisation	12 (9.0%)	82 (61.7%)	34 (25.6%)	4 (3.0%)	1 (0.8%)
There is no noticeable difference with regards to coordination and communication within the organization after project management techniques, and tools have been implemented	3 (2.3%)	26 (19.5%)	41 (30.8%)	53 (39.8%)	10 (7.5%)
The implementation of project management techniques and tools makes clear who is responsible and accountable for all project related activities	26 (19.5%)	94 (70.7%)	11 (8.3%)	2 (1.5%)	-
Project management training has benefited you as a professional and your organisation	44 (33.1%)	76 (57.1%)	13 (9.8%)	-	-

Table 3 shows that 75 (56.4%) of the respondents agree that project management training is one of the critical success factors for most organisational projects. 71 (53.4%) agree that upon implementation of project management tools and techniques, project requirements have significantly been completed on or ahead of schedule. 85 (63.9%) of the respondents agree that project management training is essential for managers in coping with the new business models in the contemporary world. 94 (70.7%) of the respondents agree that organisational goals are more attainable with the introduction of project management techniques, tools, and training. 53 (39.8%) of the respondents disagree that there is no noticeable difference with regards to coordination and communication within the organization after project management techniques and tools have been implemented while 94 (70.7%) agree that the implementation of project management techniques and tools makes clear who is responsible and accountable for all project related activities. This implies that important aspects of project management training which influences an organisation's project success are project management techniques, tools, and training.

Hypothesis One: Perception of the current project management training content and project manager expectations does not significantly affect the impact of project management training on project success.

The result of hypothesis one shows that there is a significant positive correlation between perception on the current project management training content and project manager expectations and the impact of project management training on project success at ($r= .452$, $p<.01$). Therefore since $p<.01$, the alternative hypothesis of a significant effect between perception on the current project management training content and project manager expectations and the impact of project management training on project success was accepted.

Hypothesis Two: Aspects of project management training which influences an organisation's project success significantly relates to project management training content and project success rate

The result of the second hypothesis shows that there is a significant positive correlation between aspects of project management training which influences an organisation's project success and project management training content and project success rate at ($r= .554$, $p<.01$). Therefore since $p<.01$, the alternative hypothesis of a significant relationship

between aspects of project management training which influences an organisation's project success and project management training content and project success rate was acceptable.

Hypothesis Three: Confidence level regarding the ability to perform project domain processes after completion of project management training was not significantly different from before the management training.

The third hypothesis was tested using paired sample t-test, and the result revealed a significant difference in confidence level regarding the ability to perform project domain processes before and after completion of project management training t (132) = -9.731, p< 0.000 which shows that the mean score of confidence level regarding the ability to perform project domain processes after attending the training (M= 361.28) was significantly higher than the mean score before the project management training (M= 294.36), and this implies that the project management training improved the confidence level regarding the ability to perform project domain processes.

The findings of this study show that majority of the respondents attended training on project management institution; few of them attended project management training in Prince 2 and Association of project management while very few had no training in project management related program.

Also, many of the respondents had worked for less than 20 projects while few of the respondents had worked for more than 50 projects.

Findings also shows that project management training content had significant impact on project success rate as higher percentage of the respondents agreed that they believe if learned theories are applied properly, project success rate will improve, and the application of project management tools and techniques plays a significant role in project success. Also, many of the respondents agree that important aspects of project management training which influences an organization's project success are project management techniques, tools, and training. In addition, ranking based on knowledge areas to be included in project management training to increase project success reveals that project procurement management has the highest rank, followed by project stakeholder management, project communication management and project resource management.

Also, the result of the first hypothesis show that there is a significant positive correlation between perception on the current project management training content and project manager expectations and the impact of project management training on project success. This agrees with Turner and Muller (2006) who stressed that a project managers' success in managing projects is based on proficiency, particularly style of leadership, which involves intellectual ability and management with emotional intelligence. Similarly, Creasy and Anantatmula (2013) reported that project managers are vital to a project success as the proficiency of a project manager is an important aspect to guarantee an optimistic result in projects which indirectly advance the performance of an organizational.

The result of the second hypothesis shows that there was a significant positive correlation between aspects of project management training which influences an organization's project success and project management training content and project The result of the third hypothesis showed a significant difference in confidence level regarding the ability to perform project domain processes before and after completion of project management training with the mean score of confidence level regarding the ability to perform project domain processes after attending the training significantly higher than the mean score before the project management training. This finding supports Zwikael & Unger-Aviram (2010) who noted that training and development gives rise to high level of motivation of employee, effectiveness in processes, the ability to implement new methodologies and technologies, satisfaction and improve confidence within the project team.

4. CONCLUSION:

It is of utmost importance for project managers to have the necessary proficiency and adequate knowledge in various aspect of project management to ensure success in their projects. Project management training is very vital to ensure project success, and project sponsors must see to it that project managers are well trained and grounded in crucial aspects of project management such as necessary project techniques and tools to guarantee the success of projects. At the same time, project team members should endeavour to support the project manager in order to work together as a team for successful completion of projects.

REFERENCES:

1. Anantatmula, V.S. (2008). The role of technology in the project manager performance model, Project Management Journal, 39(1): 34-48.
2. Angelides, D. (1999). Project management and good technical and business practices. Journal of Management in Engineering, 15(3): 78-88. Retrieved from Business Source Complete database. (AN 1836825)
3. Besner, C., & Hobbs, B. (2008). Discriminating contexts and project management best practices on innovative and noninnovative projects. Project Management Journal, 39(S1): S1-S123. http://dx.doi.org/10.1002/pmj.20064.
4. Bredillet, C. (2010). Blowing hot and cold on project management. Project Management Journal, 41(3): 4-20.

5. Bryde, D. (2007). Perceptions of the impact of project sponsorship practices on project success. International Journal of Project Management, 26(8): 800. doi:10.106/ j.ijproman.2007.12.001

6. Bryde, D.J., & Robinson, L. (2005). Client versus contractor perspectives on project success criteria. International Journal of Project Management 23(8): 622–629.

7. Collins, A., & Baccarini, D. (2004). Project Success – A Survey. Journal of Construction Research 5(2): 211–231.

8. Crawford, L. (2005). Senior management perceptions of project management competence, International Journal of Project Management, 23: 7- 16.

9. Creasy, T., & Anantatmula,V.S. (2013). From Every Direction—How Personality Traits and Dimensions of Project Managers Can Conceptually Affect Project Success, Project Management Journal.

10. Frank, T. (2002). The superior project manager Marcel Dekker : New York.

11. Kenneth, R. (2007). Linking project management to business strategy. Project Management Journal, 38(3): 93.

12. Gelbard, R. & Carmeli, A. (2009). The interactive effect of team dynamics and organizational support on ICT project success. International Journal of Project Management, 27(2): 464 -470. doi:10.1016/j.ijproman.2008.07.005

13. Gido, J., & Clements, J. (2006). Successful project management. Mason, OH: Thomson South-Western.

14. Kerzner, H. (2006). Project management best practices: Achieving global excellence. Hoboken, NJ: John Wiley & Sons..

15. Martinsuo, M., Hensman, N., Artto, K., Kujala, J., & Jaafari, A. (2006). Project-based management as an organizational innovation: Drivers, changes, and benefits of adopting project-based management. Project Management Journal, 37(3): 87-97.

16. Morrison, J., & Brown, C. (2004). Project management effectiveness as a construct: A conceptual study. South African Journal of Business Management, 35(4): 73-94.

17. Muller, R., & Turner, J.R. (2007). Matching the project manager's leadership style to project type. International Journal of Project Management 25(1): 21–32.

18. Phillips, J. (2009). Program management professional all-in-one exam guide. Emeryville, CA: McGraw-Hill.

19. Prabhakar, G. P. (2005). Switch Leadership In Projects: An Empirical Study Reflecting The Importance Of Transformational Leadership On Project Success Across Twenty-Eight Nations, Project Management Journal, 36(4): 53-60.

20. Prabhakar, G.P. (2008). What is Project Success: A Literature Review, International Journal of Business and Management, 3(9).

21. Project Management Institute. (2004). A guide to the project management body of knowledge. Newtown Square, PA: Author.

22. Rosenfeld, S. (2005). Setting-up a project management office. Information Week, 10(58): 86-89. Retrieved from ABI/INFORM Global database. (Document ID: 9096121 91)

23. Sanchez, H., Robert, B., Bourgault, M., & Pellerin, R. (2009). Risk management applied to projects, programs, and portfolios. International Journal of Managing Projects in Business, 2(1): 14-35. doi:10.1108/17538370910930491

24. Schachter, D. (2004). Managing your library's technology projects. Information Outlook,8(12): 10-12. Retrieved from Business Source Complete database. (AN 15451906)

25. Scott-Young, C., & Samson, D. (2008). Project success and project team management: Evidence from capital projects in the process industries. Journal of Operations Management, 26(4): 749-766. doi:10.1016/j.jom.2007.10.006

26. Shenhar, A. J., Milosevic, D., Dvir, D., & Thamhain, H. (2007). Linking project management to business strategy. PM Network, 21(9): 91.

27. Söderholm, A. (2008). Project management of unexpected events. International Journal of Project Management, 2(1): 80-86. doi:10.1016/j.ijproman.2007.08.016

28. Sommerville, J., Craig, N. & Hendry, J. (2010). The role of the project manager: All things to all people?, Structural Survey, 28(2): 132-141.

29. Young, R., & Jordan, E. (2008). Top management support: Mantra or necessity? International Journal of Project Management, 26(8): 713-725. doi:10.1016/j.ijp roman.2008.06.001

30. Young, R., Brady, S., & Nagle, D., Jr. (2010). How to save a failing project: Chaos or control. Project Management Journal, 41(1): 89.

31. Zwikael, O. & Unger-Aviram, E., (2010). HRM in project groups: The effect of project duration on team development effectiveness. International Journal of Project Management. 28(5): 413-421.