



# INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES



## The Project Manager's Roles in Reducing the Occurrence of Variation Order (VO) on Construction Project

Nur'Ain Ismail, Mohamad Hilmi Abd Halim, Wan Norizan Wan Ismail, Siti Sarah Mat Isa and Norhafizah Yusop

To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v13-i4/15457>

DOI:10.6007/IJARBSS/v13-i4/15457

**Received:** 01 February 2023, **Revised:** 03 March 2023, **Accepted:** 26 March 2023

**Published Online:** 07 April 2023

**In-Text Citation:** (Ismail et al., 2023)

**To Cite this Article:** Ismail, N., Halim, M. H. A., Ismail, W. N. W., Isa, S. S. M., & Yusop, N. (2023). The Project Manager's Roles in Reducing the Occurrence of Variation Order (VO) on Construction Project. *International Journal of Academic Research in Business and Social Sciences*, 13(4), 53 – 59.

**Copyright:** © 2023 The Author(s)

Published by Human Resource Management Academic Research Society ([www.hrmars.com](http://www.hrmars.com))

This article is published under the Creative Commons Attribution (CC BY 4.0) license. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this license may be seen at: <http://creativecommons.org/licenses/by/4.0/legalcode>

Vol. 13, No. 4, 2023, Pg. 53 – 59

<http://hrmars.com/index.php/pages/detail/IJARBSS>

JOURNAL HOMEPAGE

Full Terms & Conditions of access and use can be found at  
<http://hrmars.com/index.php/pages/detail/publication-ethics>



# INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES



## The Project Manager's Roles in Reducing the Occurrence of Variation Order (VO) on Construction Project

Nur'Ain Ismail, Mohamad Hilmi Abd Halim, Wan Norizan Wan Ismail, Siti Sarah Mat Isa and Norhafizah Yusop

Department of Built Environment Studies and Technology, Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA, Perak Branch, Seri Iskandar Campus, Seri Iskandar, 32610 Perak, Malaysia

Corresponding Author's Email: nurai948@uitm.edu.my

### Abstract

Among the roles of the project manager in a project execution is to control the occurrence of variation orders. This research aims to determine the project manager's roles in reducing the occurrence of variation orders in a construction project. The research data were gathered via responses from project managers of construction companies via a questionnaire survey. The 122 responses obtained were then analysed using descriptive analysis. Out of the eight (8) project manager roles tested in the questionnaire survey, it was found that all of them are significant in helping to reduce the occurrence of variation orders in a construction project. The most significant role of the project manager in reducing the occurrence of variation orders in a construction project was effective communication between stakeholders. Good transparency in communication initiated by the project manager could avoid conflicts related to the contract documents. This research provides additional information and knowledge for researchers in further research as well as practitioners to constantly reduce the variation order on construction projects.

**Keywords:** Project Manager's Roles, Variation Order, Construction Project

### Introduction

The construction industry is dynamic and volatile in nature since each construction project would have its special situation and requirements and includes a wide range of interrelated and simultaneous activities (Wambeke et al., 2011). Some standard contract forms in construction industry contain provisions where the client or his agent able give orders to the contractor to change the works specified in the contract. The PAM Form 2006 Clause 11 stated that, the term Variation means the alteration or modification of the design, quality or the quantity of the Works including the addition, omission or substitution of any work; the alternation of the kind or standard of any materials and goods to be used in the Works; the arrangement of the machinery or asset that brought there on by the Contractor for the purpose of the Works etc. In addition, the largest variation order components are recognized labour, contractor, project, director and consultant-related variables.

Ngwepe et al (2015) clarified that client variation orders, consultant-related variation orders, contractor-related variation orders and other related variation orders are four types that involves the interaction of variation order. The findings reveal that most of the factors are connected to design, specifications, drawings, nature of work and resources. Khurshid & Nauman (2016); Zewdu (2015); Dickson et al (2014); Alaryan et al (2014) committed to this finding. Thus, project managers may need to reschedule updates on other tasks including deletions, additions and revisions. But during the construction phase, the changes occur from errors in the design documents due to miscommunications between the design team. Communication failure is directly correlated with ineffective control of instructions for the shift. For this purpose, it is the management's responsibility to create a clear communication atmosphere in all areas to understand all project specifications and requirements.

Based on that issue, the objective of this research is to determine the Project Manager's role in reducing the occurrence of the variation order on the construction project. Therefore, all Project Manager from all construction company in Peninsular Malaysia were selected as the main respondent to achieve the objective of this research.

### Literature Review

The occurrence of variation order has a negative effect on project results. Variation order impacts the efficiency of the project as negatively affect productivity and project costs. In any construction project, the variation orders are an unnecessary yet expected requirement (Arain and Pheng, 2005b). Ruben (2008) found that variation orders had an impact on overall project performance and the major adverse impact of variation orders are time and cost overruns and disputes between the parties to the contract. Thomas et al (2002) noted that variability impedes project performance. Furthermore, the contracts with several variation order allow the contractor to reach lower than expected production levels (Hanna, 2002). Thus, variation orders have a negative impact on project performance in terms of cost overruns, time overruns, property damage, health and safety issues and professional relationships.

With the aim to reduce the occurrence of the variation order, the project manager as the leader of the construction project should partaken based on the project management process which are managing, organizing, recruitment, planning, controlling and coordinating as shown in Figure 1. (Bezak, 2011). By constantly tracking the execution of the tasks, coordination and communication with the environment, the project can be effectively ended.

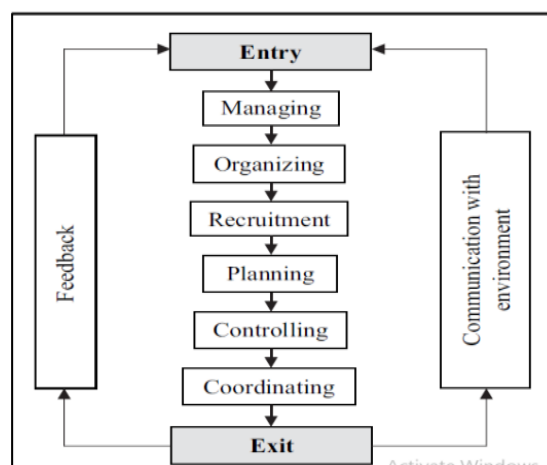


Figure 1  
Project Manager's Role

Table 1

*The Summary of Research Findings on Project Manager's Role*

Roles	Findings
Managing	'Managing' means having an influence on team members to contribute to the organization's progress and project goals.
Motivating	'Motivating' others because encouragement is a complex mechanism that is critical to achieving project objectives and advising workmanship.
Organising	'Organising' means that team members who collaborate to speed up the decision-making process must have clear responsibilities or tasks to complete.
Recuirement	'Recruitment' is described as the completion and maintenance of an inhabited area's organisational structure to manage the procurement process.
Planning	'Planning' is a choice of projects, objectives and ways to handle strategic planning.
Controlling	'Controlling', simply put, assesses the success of programmes concerning to schedules and making it possible to complete them.
Coordination	'Coordination' is the task of the Project Manager that should maintain unity between the team members' individual attempts to accomplish the entire team's previously defined goals.

Table 1 shows the summary of research findings on Project Manager's role as per Figure 1. Additionally, communication and feedback amongst stakeholders are essential. Contrary to this, a good relationship would avoid errors and promote problem solving. The creation of a comfortable and respectful climate in the project is one of the key responsibilities of the project manager. But weak communications and bad stakeholder relationships can lead to the variations order (Mohammad et al., 2010).

The briefing process is carried out to minimize the risks of ambiguous goals and bad decision-making or discrepancies in the declaration of needs. The project brief is vital to project progress and should be built from the project's earliest stages. It would help the client to catch the decisions and at the same time inform the client. The briefing process would include all stakeholders involved in the project (Malyavin, 2014) to reduce the occurrence of variation order on construction project.

### Methodology

A questionnaire was designed based upon literature containing eight (8) roles of project managers. Then the questionnaires were distributed to the Project Manager the registered Certified Construction Project Managers (CCPM). Based on the Construction Industry Development Board (CIDB) website it was found that there are 179 Project Manager in Peninsular Malaysia. The optimal number of a population for the survey is 122 by using simple random sampling estimation of 179 populations. Around 300 questionnaires were distributed to the Project Manager by hand and through email in every construction company that are in Peninsular Malaysia.

### Result and Findings

The research recognises eighth (8) variables as major important roles based on previous research. The Table 2 show the research findings on The Project Manager's roles in reducing

the occurrence of variation order (VO) on construction project. The most preferable variable that leads the top ranking for the important role of Project Manager in influencing the occurrence of the variation order is *'Communication' between stakeholders, and cooperation to avoid conflicts among contract documents*, with the mean of 4.44. This is not a surprising result since most of the researchers have highlighted that these important roles would lead to producing a strategy in minimizing the variation order. According to Bezak (2011), stated that communication between stakeholders, and cooperation. A good relationship, on the other hand, would help people prevent errors and find solutions. One of the project manager's main responsibilities is to develop a positive and respectful environment within the project. Poor communication and poor stakeholder relationships, on the other hand, might cause the variations.

The lowest ranking is *'Motivating' others because encouragement is a complex mechanism that is critical to achieving project objectives and advising workmanship*, with the mean of 4.05. Motivation is a dynamic process since there is a role of project managers with the imperative of meeting the project goals and on the other hand, participants who wish to consider their wants, requirements and wishes (Smith, 2009). In short, inspiration is a means of meeting the needs of team members to achieve project objectives. Alternatively, there would be a disagreement and even misunderstanding, which would have an impact on the project's success.

Table 2

*The Research Findings on The Project Manager's Roles in Reducing the Occurrence of Variation Order (VO) on Construction Project*

<b>Project Manager's Roles</b>	<b>MEAN</b>	<b>RANKING</b>
'Managing' means having an influence on team members in order to contribute to the organization's progress and project goals.	4.40	3
'Motivating' others because encouragement is a complex mechanism that is critical to achieving project objectives and advising workmanship.	4.05	7
'Organising' means that team member who collaborate to speed up the decision making process must have clear responsibilities or tasks to complete.	4.28	6
'Recruitment' is described as the completion and maintenance of an inhabited area's organisational structure in order to manage the procurement process.	4.29	5
'Planning' is by definition, a choice of projects, objectives and ways to handle strategic planning.	4.43	2
'Controlling', simply put, assesses the success of programmes with respect to schedules and making it possible to complete them.	4.38	4
'Coordination' is the task of the Project Manager that should maintain unity between the team members' individual attempts to accomplish the entire team's previously defined goals	4.38	4
'Communication' between stakeholders and cooperate to avoid conflicts among contract documents.	4.44	1

## Conclusion

The project manager has concluded, based on the findings, that effective communication and cooperation among stakeholders is the key approach to prevent conflicts among contract documents. Furthermore, all survey respondents agreed on eight important roles for project managers, with ratings ranging from 4.44 to 4.05.

This research aims to investigate the reduction of variation orders in construction projects by examining the project manager's roles. The research strives to bridge gaps in the existing research on variation orders in the construction industry. However, due to constraints such as limited time, financial resources, knowledge, skills, and technical support, the research only focuses on project managers in Malaysia. For future studies, it is recommended that researchers equip themselves with various resources and support before conducting their research.

## References

- Alaryan, A., Elshahat, A., & Dawood, M. (2014), Causes and Effects of Change Orders on Construction Projects in Kuwait. *Journal of Engineering Research and Applications*, 4(2): 1-8.
- Arain, F. M., and Pheng, L. S. (2005b). 'How Design Consultants Perceive Causes of Variation Orders for Institutional Buildings in Singapore', *Architectural Engineering and Design Management*, vol. 1, no. 3, pp 181-196
- Dickson, O. D., Gerryshom, D. M., & Wanyona, D. G. (2014). Factors Contributing to Variation Orders: A survey of Civil Construction Project in Kenya. *Journal of Social Sciences and Entrepreneurship*, 1(13): 425-437.
- Hanna, A. S., Calmic, R., Peterson, P. A., Nordheim, E. V. (2002), 'Quantitative Definition of Projects Impacted by Change Orders', *Journal of Construction Engineering and Management*, vol. 128, no. 1, pp 57-64.
- Khurshid, M. B., & Nauman, S. (2016). Impact of Variation Orders on Time & Cost in Mega Hydropower Projects of Pakistan. *Journal of Construction in Developing Countries*. 5(1): 54-68.
- Malyavin, I. (2014). Report on the Project Management in Construction: Construction Contracts and Contract Variations. Auckland University of Technology School of Engineering.
- Mohammad, N., Ani, A., Rakmat, R., Yusof, M. (2010). Investigation on the causes of variation orders in the construction of building project—a study in the state of Selangor, Malaysia. *Journal of Building Performance*, 1.
- Ngwepe, L., Aigbavboa, C., & Thwala, W. (2015) The Critical Determinants of Variation Orders on SA Public Sector Construction Projects. *Journal of Engineering & Built Environment*, 7 (2): 68-77.
- Ruben, N. (2008), "An analysis of the impact of variation
- Ruben, N. (2008), "An analysis of the impact of variation orders on project performance", Cape Peninsula University of Technology, Theses & Dissertations, Paper 33
- Technology, Theses & Dissertations, Paper 33
- Thomas, R., Horman, J., De Souza, L., & Zavrski, I. (2002), 'Reducing Variability to Improve Performance as a Lean Construction Principle', *Journal of Construction Engineering and Management*, vol. 128, no. 2, pp 144-154.

Wambeke, B. W., Hsiang, S. M., Liu, M. (2011). Causes of variation in construction project task starting times and duration. *Journal of Construction Engineering and Management*, 137, 663-677.

Zewdu, T. (2015). Report on the Causes and Effects of Variation Orders in Road Construction Projects: The case of national works contract administered by Addis Ababa city roads authority. Addis Ababa University School of Graduate Studies.