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## Factors Affecting the Work Motivation of the Construction Project Manager\*

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### Abstract

Project manager plays a very important role in the success of any project. The primary duty of the project manager is to combine the outcomes or results of the various processes and activities of project management into a systematic project management strategy or plan for the project. In the construction industry, a lack of motivation is an urgent problem for many project managers in construction and engineering projects. Lack of motivation affects the quality and productivity of jobs, reducing profits and growth for companies, businesses, contractors or organizations that rely on human resources. The reasons for this lack of motivation are diverse ranging from salary to culture to life and working environment, among others. Through surveys and data analysis using Cronbach's Alpha reliability and EFA (Exploratory Factor Analysis), our research scaled the factors affecting work motivation of project managers in the construction industry in Vietnam. The research results identified six major groups of relevant factors including (i) salary and benefits, (ii) work environment, (iii) promotion opportunities, (iv) organizational culture, (v) interest in the job, and (vi) relationship with the organization. From there, this paper contributed useful information as well as measures for businesses, companies, contractors or organizations in the construction industry.

**Keywords:** Construction Management, Exploratory Factor Analysis, Human Resource Management, Motivation, Project Manager

**JEL Classification Code:** L74, M12, O15

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### 1. Introduction

In Southeast Asia, Vietnam is one of the countries whose economy has prospered in recent years (Lee, 2019; Nguyen & Bui, 2020; Nguyen & Nguyen, 2020; Thong et al., 2020). The economic growth rate of Vietnam in 2019 is more than 7 percent. This is due to several ventures involving domestic, international and PPP investment (Do, Veerasak, Masamitsu, & Phong, 2016; Nguyen, Likhitrungsilp, & Onishi, 2020). Moreover, many investment projects in construction industry have been successfully implemented, contributing to this development (Nguyen, Le-Hoai, Tran, Dang, & Nguyen, 2019; Nguyen & Nguyen, 2020; Khoa, Nguyen, & Nguyen, 2020). This success depends on the fundamental human philosophy of finding the right person in addition to modern and advanced technology (Vo, Nguyen, & Le-Hoai, 2019). It is the most important thing for any organization to achieve the success of a project. Indeed, the project manager is an essential part of project-based organizations in real world (Fisher, 2011; Sadeghi, Mousakhani, Yazdani, & Delavari, 2014). The project manager's primary responsibility is to integrate the results of the different project management processes and activities into a comprehensive project

management plan for the project. Then, he or she organizes and leads the project team and manages the implementation of the identified project scope, schedule, quality and cost (Goodwin, 1993; Luong, Tran, & Nguyen, 2018; Mohammadi, Sadi, Nateghi, Abdullah, & Skitmore, 2014; Odusami, 2002). Besides, they also supervise and control the entire project, comparing the results of the implementation process with the requirements for the approved plan (Jazebi & Rashidi, 2013; Torfi & Rashidi, 2011; Zavadskas, Vainiūnas, Turskis, & Tamošaitienė, 2012). Then, the project manager will promptly detect the coming problems to take appropriate corrective actions for making necessary changes in the project.

Project management organizations are aware of the importance of project managers or leaders, the human capital, as a leading source of capital (Anantatmula, 2010; Jaafar & Othman, 2013; Jazebi & Rashidi, 2013; Nguyen, Mai, & Huynh, 2019; Nguyen & Ngo, 2020). Whether the project has modern machines, good service quality, a solid infrastructure, but no project manager capable of effective work and commitment, then the project is not likely to succeed. Therefore, the problem that concerns organizations and construction organizations is how they can generate the greatest benefit at the least cost. So, they seek project managers who are the most effective, most dedicated, and enthusiastic, in general, and in their work. To do this thing, the factors that influence a project manager's motivation must be identified.

## 2. Literature Review

Dynamism stimulates internal factors, manifested through the effort, diligence, and enthusiasm towards work to achieve the highest efficiency. There are many definitions of "dynamics" around the world today. According to his theory of expectations, Vroom (1962) noted that people's behavior and motivations for work are not necessarily determined by reality, but rather by people's perceptions of the expectations for the future. Motivation is the degree to which a person wants to meet and select his or her conduct to be mounted (Dunn, 2001; Johari & Jha, 2020; Mitchell, 1982). The motivation factor can be used to exert effort to achieve the highest goals of the organization, provided that the organization meets several individual needs. Motivation is the reason an individual works to satisfy a goal (Robbins, 1993; Ruble, Eisenberg, & Higgins, 1994). It can be incentivized by a job, its salary, a promotion, the supervision and co-worker relationships, all of which can affect attitudes, behavior, and determine the level of passion, commitment, participation, concentration (Crossman & Abou-Zaki, 2003). From the above concepts, we can understand that motivation is the factor that creates reasons for action, motivate people to work actively, efficiently,

quality, adapt, and help them be the most creative as they can be.

Abraham Maslow was a famous twentieth-century American psychologist and scientist. He had formulated the theory of human needs, which was published in 1943 (Garske & Arkes, 1982; Maslow, 2013). His theory clarified how human needs must be met in order for a person to lead a physically and psychologically healthy and productive life. The theory has five ranks and is arranged from low demand to high demand. Low-level demand is biological and safety needs, which include eating, sleeping, resting, living, and being safe. Without the satisfaction of these lower-order needs, no higher-order needs will arise. When low-order needs are satisfied and these needs are overpowered, human beings are motivated to attain higher level needs. High-level needs are social needs, need to be respected, need to be fulfilled that are those that are satisfied by the human factor after the low-order needs have been achieved. When people have met low-level needs, they will have sufficient food and health and, thus, will want to have social relationships, emotional relationships, and be recognized and respected by others through their accomplishments. This theory is the base for all of the other theories of motivation.

In addition, Frederick Herzberg introduced a two-factor theory of job satisfaction and motivation (Ann & Blum, 2020; Herzberg, 2017; Maidani, 1991). He divided the factors that contribute to job satisfaction and dissatisfaction into two groups. Herzberg stated that the maintenance is not the driving factor and does not bring more enthusiasm. However, if they do not exist they will lead to dissatisfaction. Motivating factors drive employees to be more enthusiastic and diligent at work, but without those factors, they will still work normally. Vroom's Expectancy theory differed from Maslow and Herzberg in that it did not focus on needs, but on outcomes (Fernet, Sénécal, Guay, Marsh, & Dowson, 2008; Parijat & Bagga, 2014). Maslow and Herzberg focused only on the relationship between the internal needs to produce results for internal needs, Vroom's Expectancy theory separated the effort made from motivation, dynamic and efficiency. Vroom argued that people's behavior and motivations are not necessarily determined by reality, but rather by people's perceptions of their expectations for the future. However, Vroom's theory has been often criticized, but it remains the most comprehensive explanation of motivation. It was built on the formula: Motivation = Attraction (reward) x Expectations (doing the job) x Means (beliefs).

On the other hand, Adams (1965) theory of equity argued that people want to be treated equally. Employees tend to gauge their equity by comparing their efforts, their returns, and their proportions to their peers: (Individual income/ Individual effort spent) vs. (Colleague income/ Colleague effort spent) and individual assessment with

colleagues. If the comparison is equal, individuals feel that they are being treated fairly, and thus, they maintain their motivation for work and increase their productivity (Folger, 1986). On the other hand, if the results of the comparison are not equitable and workers believe that they are the losers, these employees tend to decrease their working capacity and their performance will decrease. They then are likely to demand an increase in their salary and benefits, along with better working conditions.

Kovach (1987), in his publication, surveyed more than a thousand employees and managers about the factors that affect work motivation in different industries in the United States. The research results showed that ten factors affect the work motivation of workers including (i) interesting work, (ii) appreciation of the work performed, (iii) perception of personal role, (iv) job security, (v) salary level, (vi) career advancement development opportunities, (vii) working conditions, (viii) superiors' attachment to employees, (ix) criticism of skillful discipline, and (x) the willingness of superiors to help to solve personal problems. However, this research model was formed in the late 1980s, so it has several shortcomings, such as not including welfare and relationships with colleagues, that were identified later.

The purpose of Lindner (1998) was to describe the importance of several factors in employee motivation at Ohio State University's Piketon Research and Expansion Center and Enterprise Center. Twenty-five employees working at Piketon Research and Expansion Center and Business Center identified 10 elements for motivation: (i) guaranteed work; (ii) supervisor sympathy with personal issues; (iii) personal loyalty to employees; (iv) interesting job; (v) good working conditions; (vi) skillful discipline; (vii) good salary; (viii) promotion and development in the organization; (ix) feeling worked; and (x) appreciate the work done. This study asked survey participants to rate the importance of the factors that motivated their work from 1 - most important to 10 - least important. The results of this study showed an "interesting job" ranked first, followed by a "good salary." The lowest ranking factor was "empathy for personal matters."

Moreover, based on Herzberg's two-factor theory, Tan, Waheed, and Teck-Hong (2011) surveyed a sales staff in Malaysia and proposed a research model of factors affecting work motivation that included: (i) promotion; (ii) success; (iii) working conditions; (iv) fine job; (v) relationship with superiors; (vi) money; (vii) relationship with colleagues; (viii) company policy; (ix) career development; (x) recognition; and (xi) nature of work. The results of this research showed that the most critical driver was working conditions. The second most crucial factor was recognition, followed by company policy and financial issues. They concluded that maintenance factors (external factors) multiplied the motivating factors for salespeople. Kukanja (2013) evaluated the factors influencing the motivation

of travel service workers in the coastal area of Piran in Slovenia. That study surveyed 191 employees who worked at restaurants, cafes, and bars and tested the following factors: (i) salary; (ii) career development; (iii) education; (iv) welfare; (v) working atmosphere; and (vi) working time. The research results revealed that the most important influence was salary, followed by social welfare and flexible working time. The least important factor was training.

Ali Shaemi Barzoki, Ali Attafar, and RezaJannati (2012) also applied Herzberg's two-factor theory in their study of 147 employees out of 640 employees at Golpayegan City Saipa Corporation. The factors identified by the researchers included: (i) company policy; (ii) occupational safety; (iii) relationship with colleagues; (iv) supervision and relationship with superiors; (v) working conditions; (v) personal life; and (vi) salary and bonus. The research showed that the salary and wage had the highest impact and the greatest influence on workers' motivation to work. The least influential impact was their personal life. Boeve (2007) conducted a study of factors affecting job satisfaction of the assistant doctor training faculty in US medical schools using Herzberg's two-factor theory. The job satisfaction factor was divided into two groups: (i) the internal group included the nature of work, training, and advancement opportunities; (ii) the group of external factors included salary, superiors' support, and relationships with colleagues. The factors that brought satisfaction and satisfaction to employees were also motivating (DeShields, Kara, & Kaynak, 2005).

Brooks (2007) interviewed via questionnaire a survey of 181 people in various occupations across the United States. The results showed that the combination of two factors that set job goals and job satisfaction is the best way to predict employee's work motivation. Also, other factors that strongly influence employee satisfaction included work performance evaluation, training, superiors, and contribution to the organization. Kukanja (2013) studied factors influencing the motivation of tourism service workers in Slovenia's coastal area of Piran of 191 employees who worked in bars, restaurants, and cafes. They were salary, career development, training, social welfare, a happy working atmosphere, and flexible working time. The research results found that wages were the most important factor, followed by social complexity and flexible working hours. Training was rated as the least important.

### 3. Research Methodology

This research was carried out according to the following procedure: (i) review relevant on the factors influencing the work motivation of construction project managers, (ii) design questionnaires, (iii) undertake pilot study, (iv) use official questionnaire survey, and (v) data analysis using statistical methods. The questionnaire was designed with

a 5-level scale (from 1 disagree to 5 strongly agree). The questionnaire was used as a document to interview managers in construction projects. Interview data were entered into the SPSS software and filtered before data analysis. Descriptive analysis, average factors ranking, and EFA (Exploratory Factor Analysis) techniques were performed to find out the main factors that influence project managers' motivation in construction projects.

#### 4. Results and Discussion

Data in analysis included 105 valid surveys. Information required of the respondents to the questionnaire included current position, work experience as shown in Table 1. The percentages of construction project managers in the groups of years of experience were most concentrated in the group of 5-10 years (44.8%) and the lowest in the group was 15 years (3.8%). The other two groups within the second and third position, having less than 5 years and 10-15 years, with 28.6% and 22.9%, respectively. Regarding the current position, EM (Engineering Management) group is accounted for approximately 44.8%, with the GM (General Management) group making up 55.2%. The responsibility of functional departments was 38.1%, the project group was 34.3%, and the concurrently both groups was 27.6%. In general, data contained characteristics concerning the construction industry and was suitable for analysis.

The scale reliability test was performed for groups of questions and the entire questionnaire (Table 2). Cronbach's Alpha coefficients for component groups including Sal (0.908), Wel (0.698), Env (0.662), Rel (0.849), Pro (0.836), Cul (0.878), and Amb (0.785), were all at a value less than 0.6 and matched.

**Table 1:** Sample characteristics

Description	Frequency	Percent (%)
<b>Experience</b>		
< 5 years	30	28.6
5 - 10 years	47	44.8
10 - 15 years	24	22.9
> 15 years	4	3.8
<b>Position</b>		
Engineering management	47	44.8
General management	58	55.2
<b>Responsibility</b>		
Functional departments	40	38.1
Projects	36	34.3
Plurality	29	27.6
<b>Total</b>	105	100.0

Cronbach's Alpha for the entire questionnaire included 30 items with a value of 0.888, so the scale in this study was appropriate.

Factors affecting work motivation of project managers in construction industry in Vietnam were ranked by mean in Table 3. Ranked first was *Wel1* factor (mean = 3.97) "get additional support for the public holidays." *Wel4* factor was mean = 3.93, which was "Get periodic health check-ups" ranked second. A third was *Wel2*, "Outstanding insurance" with a mean of 3.84. Fourth-ranked was *Sal3* factor, "Salary paid on time," with a mean of 3.80, and the fifth rank was *Cul2*, "Good working manners" with a mean of 3.76. The group factors that most influence work motivation of project managers in construction industry were welfare, salary, and culture in the working environment.

An EFA analysis was done to find out the main reasons affecting the work motivation of project managers. The KMO test and Bartlett's tests also were done and the results showed that KMO = 0.721, and sig. value of Bartlett's test was  $p < 0.01$  (Table 4). Therefore, it was appropriate to conduct the EFA analysis.

There were 30 variables included in the EFA analysis. When the EFA process was done in a loop and items were excluded that did not meet the conditions. A total of 07 excluded variables including *Wel2*, *Wel3*, *Wel4*, *Env5*, *Rel2*, *Rel4*, *Amb2* after 6 EFA analysis processes. The analysis results showed that 06 component groups were established with 23 items, and the cumulative total variance explained of 72,030%. Group 1 had a percentage of variance of 15,638% and it was the group with the largest variance explained concerning "wages and benefits". Group 2 contained cultural factors (accounted for a variance of 14,760%). The third group contained promotion factors that accounted for 13,657% of the variance. The remaining groups had lower variance rates of 11.2%, 9.54%, and 7.24%, belonging to the group of the working environment, passion, and relationship, respectively (Table 5). And the loading coefficients of component factors are shown in the Table 6.

**Table 2:** Reliability statistics

Name of groups	Cronbach's Alpha	N of Items
Sal	0.908	4
Wel	0.698	5
Env	0.662	5
Rel	0.849	4
Pro	0.836	4
Cul	0.878	4
Amb	0.785	4
All	0.888	30



**Table 3:** Ranking of factors affecting work motivation of project managers in construction industry

Code	Factors	Mean	SD	Rank
Sal1	I am well paid	3.50	0.94	16
Sal2	I am paid according to ability	3.61	0.91	11
Sal3	Salary paid on time	3.80	1.04	4
Sal4	There is a reward for my contribution.	3.57	1.01	14
Wel1	Get additional support costs for public holidays and New Year	3.97	0.92	1
Wel2	Outstanding insurance	3.84	0.81	3
Wel3	Timely attention to the life of the employee in difficulty	3.49	0.83	17
Wel4	Get periodic health check-ups	3.93	0.85	2
Wel5	Daily allowance meals	3.12	1.23	29
Env1	The place I work is perfect	3.59	0.96	13
Env2	The atmosphere where I work is fresh.	3.41	0.93	23
Env3	Full work support equipment	3.64	0.92	7
Env4	The place to work is very convenient	3.48	1.02	18
Env5	Suitable light, smoke, dust, temperature	2.94	1.08	30
Rel1	My colleagues are willing to help with work	3.72	0.97	6
Rel2	My colleagues are comfortable and easy to get along with	3.62	0.94	10
Rel3	Everyone always coordinates well to get the job done	3.62	1.02	9
Rel4	The superiors are always smiling, friendly, and supportive to the staff	3.63	0.98	8
Pro1	Enterprises always pay attention to staff training	3.60	0.92	12
Pro2	Known requirements for promotion	3.52	1.08	15
Pro3	The training program was right for me	3.45	1.01	19
Pro4	Trained every month or year	3.34	0.97	25
Cul1	Everyone is always united and love each other	3.44	1.02	22
Cul2	Good working manners	3.76	1.01	5
Cul3	Little controversy occurs	3.44	0.95	20
Cul4	Appropriate rules	3.32	1.05	26
Amb1	The work is assigned correctly for the specialized field	3.36	1.21	24
Amb2	Work helps broaden knowledge	3.44	1.14	20
Amb3	Work has a special meaning	3.29	1.15	28
Amb4	Work brings emotions	3.31	1.08	27

**Table 4:** KMO and Bartlett's test results

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</b>		0.721
Bartlett's Test of Sphericity	Approx. Chi-Square	1460.869
	df	253
	Sig.	.000

**Table 5:** Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.791	25.179	25.179	5.791	25.179	25.179	3.597	15.638	15.638
2	3.372	14.663	39.842	3.372	14.663	39.842	3.395	14.760	30.398
3	2.659	11.560	51.402	2.659	11.560	51.402	3.141	13.657	44.054
4	1.831	7.960	59.362	1.831	7.960	59.362	2.576	11.200	55.254
5	1.633	7.102	66.464	1.633	7.102	66.464	2.194	9.538	64.793
6	1.280	5.567	72.030	1.280	5.567	72.030	1.665	7.238	72.030
7	.920	4.001	76.031						
8	.802	3.488	79.520						
9	.733	3.188	82.708						
10	.596	2.591	85.299						
11	.552	2.398	87.697						
12	.459	1.994	89.692						
13	.402	1.749	91.441						
14	.338	1.471	92.911						
15	.305	1.327	94.239						
16	.258	1.124	95.362						
17	.211	.918	96.280						
18	.200	.869	97.149						
19	.198	.859	98.008						
20	.145	.630	98.638						
21	.129	.561	99.200						
22	.102	.445	99.645						
23	.082	.355	100.000						

**Table 6:** Rotated Component Matrix

	Component					
	1	2	3	4	5	6
Sal4	.929					
Sal2	.902					
Sal1	.891					
Sal3	.716					
Wel1	.595					
Cul1		.842				
Cul4		.827				
Cul2		.823				
Cul3		.808				
Pro4			.825			
Pro2			.792			
Pro1			.786			
Pro3			.762			
Env1				.808		
Env2				.741		
Env3				.719		
Env4				.672		
Amb3					.846	
Amb4					.780	
Amb1					.750	
Rel3						.700
Wel5						.688
Rel1						.671

## 5. Conclusions

This paper presents the factors that influence the work motivation of project managers in construction projects. Through analysis of the collected data, the group of influential factors of work motivation of project managers in construction industry in Vietnam was determined. They are factors such as salary and benefits, work environment, promotion opportunities, organizational culture, interest in work, relationship with the organization. The five most important factors are evaluated in descending order below: (i) get additional support for the public holidays; periodic health examination; (iii) outstanding insurance; (iv) salary paid on time; and (v) good working manners. The results of this paper are given to be able to help businesses, organizations, contractors or construction project managers have an overview of the factors affecting the work motivation of project managers or staff. From there, giving the most suitable solutions to motivate their project manager or employees to work most effectively.

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